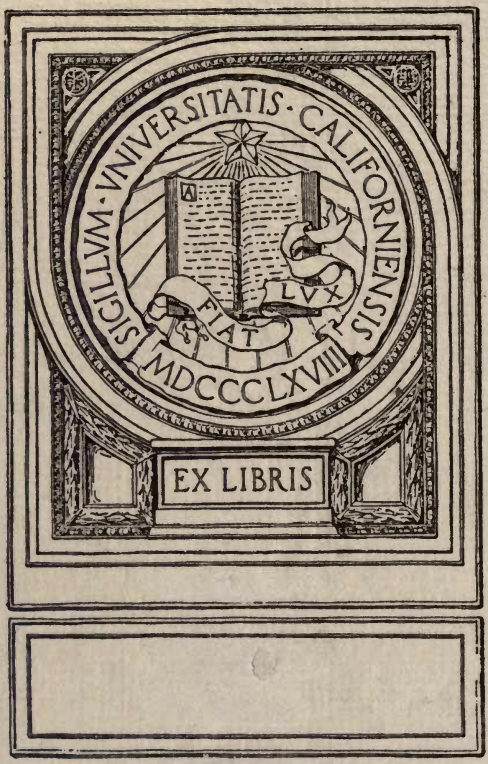
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JOHNSON'S GARDENERS' DICTIONARY

EDITED BY J. FRASER, F.L.S., F.R.H.S., AND A. HEMSLEY

JOHNSON'S GARDENERS' DICTIONARY

Edited by T. Baker, F.L.S., F.R.H.S., and A. Hanbury

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GARDENERS' DICTIONARY

AND

CULTURAL INSTRUCTOR

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J. FRASER, F.L.S., F.R.H.S., AND A. HEMSLEY

A NEW EDITION

Based on the Original Edition of 1846, thoroughly recast and brought down to the year 1917

LONDON

GEORGE ROUTLEDGE & SONS, LIMITED

NEW YORK: A. T. DE LA MARE PRINTING & PUBLISHING CO., LTD.

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PREFACE TO THE NEW EDITION

BASING a new edition of the GARDENERS' DICTIONARY on the original one of 1846 involved the addition of many thousand names, and in doing so we have consulted the Kew *Bulletin* for new plants from 1876 to 1910 inclusive; also the seven Kew *Hand-lists* of plants actually in cultivation there, which means most of those grown at the present day. The lists of new Chinese plants, issued by Messrs J. Veitch and Sons have also been added.

Much of our information has been gleaned from the living plants themselves, during our close contact with the Kew collections since 1880.

All the names have been checked, altered if wrong, and brought up to date, according to the arrangement in the *Genera Plantarum*, by Bentham and Hooker, aided by the Kew *Hand-lists*, the *Index Kewensis*, and *Synopsis Filicum* for Ferns.

To avoid the repetition of synonyms the old names have been retained in their proper alphabetical order, and, if altered, the reference is given to the modern ones. The genus Prunus now includes Amygdalus, Persica, Armeniaca, Prunus, Cerasus, Padus, and Laurocerasus, but for horticultural purposes their identity has been preserved by arranging the species in six alphabetical lists, under such headings as Almonds and Peaches, Apricots, Plums, Cherries, Bird Cherries, and Laurel Cherries. In like manner Pyrus includes Pyrus, Malus, Aria, Sorbus, Aronia, Pseudocydonia, and Mespilus, but, although this is not new in all cases, the species have been grouped under such well-recognised names as Pears, Apples, White Beam Trees, Mountain Ashes, Medlars, etc. The Quinces are still retained under Cydonia. Azalea, Rhododendron, Cactus, Echium, Orobus, Pinus, and Pyrethrum have been dealt with somewhat similarly, but the cross-references will make clear what the correct or modern names are.

As in the first edition, the English translation or meaning of each generic and specific name has been given by reference to the original Latin or Greek, except in the case of proper or commemorative names and names of places, which are more obvious.

In the pronunciation of Greek and Latin names every vowel or diphthong is equivalent to a syllable; and an accent is placed after the vowel upon which emphasis or stress should be laid in speaking.

The cultural articles on flowers, fruits and vegetables have been amended and brought up to date, or in some cases rewritten.

The height of plants is given in feet or some fraction of a foot. The use of technical terms has been avoided in all cases, except for fungi, where they are strictly limited.

Critical species or forms of minor importance, having no horticultural value, have been omitted; also most of the hybrids, which are not likely to have any permanent value.

THE EDITORS.

PREFACE TO THE NEW EDITION

THE EDITORS.

THE GARDENERS' DICTIONARY AND CULTURAL INSTRUCTOR

A

AAR (*Alnus glutinosa*). See ALNUS.

AARON (*Arum maculatum*). See ARUM.

AARON'S BEARD (*Hypericum calycinum* and *Saxifraga sarmentosa*). See HYPERICUM and SAXIFRAGA.

AARON'S ROD (*Verbascum Thapsus*). See VERBASCUM.

ABCHASIAN HELLEBORE. See HELLEBORUS ABCHASICUS.

ABE'LE TREE (*Populus alba*). See POPULUS.

ABE'LIA. (After *Dr. Abel*, physician to the embassage of Lord Amherst to China. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. Sys. 5-*Pentandria* 1-*Monogynia*.) Half-hardy evergreen shrubs; may be turned out into the borders in summer. Cuttings in summer, in light turfy loam and peat, and layers in spring.

A. chine'nsis. 5. Pink and white. September. China. 1844.
„ „ *grandiflo'ra.* Garden variety. Hardy. Rev. Hort., 1886, p. 488.
„ *floribu'nda* (many-flowered). 3. Rosy-purple. Requires a little peat. March. Mexico. 1842.
„ *rupe'stris* (rock). See A. CHINENSIS.
„ *spathula'ta.* White. Japan. 1881. B. M., t. 6601.
„ *triflo'ra* (three-flowered). 5. Pale red. September. Hindostan.
„ *uniflo'ra* (one-flowered). 3. China.

ABELMO'SCHUS. See HIBISCUS.

ABERRANT. Deviating from a typical form.

A'BIES, Silver Fir. (From *abeo*, depart [from the ground]: applied on account of the height that some of the species attain.) Ord. CONIFERÆ. A widely distributed genus, chiefly from the Northern Hemisphere, and growing farther north of Norway and Sweden than any other timber trees. There is some confusion regarding names, and they are by some authorities included with *Pinus*. According to Humboldt, there is a line across Norway and Sweden beyond which wheat cannot be grown. Birch and Barley grow farther north, and beyond this the Spruce Firs is the only woody vegetation. For culture, see CONIFERÆ.

A. ajane'sis. See PICEA AJANENSIS.
„ *a'lba.* See PICEA ALBA.
„ *alberti'na.* See TSUGA MERTENSIANA.
„ *alcoquia'na.* See PICEA ALCOCKIANA.
„ *ama'bilis.* 180. April. N. California. 1831. G. C., 1880, v. 14, p. 136.
„ *aroma'tica.* 100. Oregon.
„ *arizon'ica* (G. C., 1901, xxix. 86; 134, f. 52, 3). Coniferæ. H. Arizona. (Henkel, Darmstadt.)
„ *babore'nsis.* See A. NUMIDICA.
„ *balsa'mea.* 45. May. N. Amer. 1696. Pin. Wob., t. 37. Balm of Gilead.
„ „ *columna'ris* (M. D. G., 1903, 94). Coniferæ. H. (Diedorf Experiment Garden, Germany.)
„ „ *hudso'nica.* N. Amer. Syn. *A. Fraseri hudsonica.*
„ „ *lute'scens* (M. D. G., 1903, 94). H. (Diedorf Experiment Garden, Germany.)
„ *bi'fida.* Japan. 1861; a form of *A. firma.*
„ *brachyphy'lla.* 120. Japan. 1879. G. C., 1879, v. 12, p. 556.
„ *bractea'ta.* 120. California. 1853. V. M. C., p. 90.
A. brunonia'na. See TSUGA BRUNONIANA.
„ *canade'nsis.* See TSUGA CANADENSIS.
„ *carolinia'na.* See TSUGA CAROLINIANA.
„ *cephalo'nica.* 60. Mountains of Greece. 1824. Syn. *A. Reginæ-Amaliæ.*
„ *cili'cica.* 40 to 60. Asia Minor.
„ *co'ncolor.* 80 to 150. California. 1851. J. L. S., 22. p. 178. Syn. *A. Parsonii.*
„ „ *au'rea* (M. D. G., 1906, 144). Coniferæ. H. C. Ansorge, Klein Flottbek, Hamburg.
„ „ *brevifo'lia* (M. D. G., 1906, 144). C. Ansorge, Klein Flottbek, Hamburg.
„ „ *falca'ta* (M. D. G., 1905, 212). Coniferæ. H. W. F. Niemetz, Temesvár, Hungary.
„ *Delava'yi* (G. C., 1906, xxxix. 212, f. 82). Western China.
„ *Dougla'sii.* See PSEUDOTSUGA DOUGLASII.
„ „ *glau'ca.* Hort.
„ *dumo'sa.* See TSUGA BRUNONIANA.
„ *Ei'chleri.* 100. Caucasus.
„ *Engelma'nni* and var. *candidi'ssima.* See PICEA ENGELMANNI.
„ „ *glau'ca.* Glaucous spruce fir.
„ *excе'lsa.* See PICEA EXCELSA.
„ „ *attenua'ta.* The thin-leaved spruce.
„ „ *brevifo'lia.* The short-leaved Norway spruce.
„ „ *clanbrasilia'na.* Lord Clanbrasil spruce.
„ „ *e'legans.* Knight's dwarf spruce.
„ „ *eremi'ta.* Syns. *A. miniata, Picea excelsa eremita.*
„ „ *finedone'nsis.* The Finedon spruce.
„ „ *gregorya'na.* Gregory's dwarf spruce.
„ „ *horizonta'lis.* The horizontal spruce.
„ „ *Max'welli.* Maxwell's dwarf spruce.
„ „ *monstro'sa.* Syn. *P. excelsa*, var. *virgata.*
„ „ *mucrona'ta.* The spike-leaved spruce.
„ „ *muta'bilis* (W. G., 1888, 107). H. Garden variety of *Picea excelsa.*
„ „ *parvifo'rmis.* The minute spruce.
„ „ *pu'mila.* The low-growing spruce.
„ „ *pygmæ'a.* One of the dwarfest of firs.
„ „ *pyramida'lis.* The pyramidal spruce.
„ „ *stri'cta.* The upright Clanbrasil spruce.
„ „ *variega'ta.* The variegated spruce.
„ *falca'ta.* 35. Oregon.
„ *Farge'sii* (G. C., 1906, xxxix. 212, f. 83). Central and Western China (J. Veitch & Sons.)
„ *fi'rma.* 100. Mountains of Japan. V. M. C., p. 95. 1801. Syn. *A. bifida.*
„ *Fortu'nei.* See *Keteleeria Fortunei.* G. C., 1884, v. 21, p. 348.
„ *Frase'ri.* 30. May. Pennsylvania. 1811.
„ „ *hudso'nica.* See A. BALSAMÆA.
„ „ *na'na.* Dwarf.
„ *Gle'hni.* See PICEA GLEHNII.
„ *gra'ndis.* 170. May. New California. 1831. V. M. C., p. 97.
„ „ *pe'ndula* (M. D. G., 1896, 28). H. A weeping form, of garden origin.
„ *heterophy'lla.* See TSUGA MERTERSIANA.
„ *homole'pis.* Japan.
„ *hookeria'na.* Sir W. Hooker's spruce. See TSUGA PATTONIANA.
„ *insula'ris.* See PINUS.
„ *jezoe'nsis.* See KETELEERIA FORTUNEI.
„ *Khu'trow.* See PICEA MORINDA.
„ *lasiosca'rpa.* British Columbia to Colorado.

A. lowia'na. Sierra Nevada.
,, *magni'fica.* Californian Sierras.
,, ,, *xanthoca'rpa.*
,, *Mariæ'sii.* Japan. 1879. G. C., 1879, v. 12, p. 189.
,, *Menzie'sii.* Menzies spruce. See PICEA MENZIESII.
,, *Merku'sii.* See PINUS.
,, *mertensia'na.* Californian hemlock spruce. See TSUGA.
,, *microphy'lla.* 180. Oregon.
,, *microspe'rma.* The small-seeded Japan spruce. See PICEA AJANENSIS.
,, *minia'ta.* See PICEA EREMITA.
,, *Mori'nda.* The Himalayan spruce. See PICEA MORINDA.
,, *mucrona'ta.* 180. Oregon. See PICEA EXCELSA MUCRONATA.
,, *na'na.* See TSUGA SIEBOLDII NANA.
,, *ni'gra.* See PICEA NIGRA.
,, *no'bilis.* 200 to 300. California. 1831. G. C., 1885, v. 24, p. 653.
,, ,, *robu'sta.* 200. California. 1851. See A. MAGNIFICA XANTHOCARPA.
,, *nordmannia'na.* 80. Crimea. 1848. B. M., t. 6992.
,, ,, *au'reo-variega'ta* (M. D. G., 1903, 94). Diedorf Experiment Garden, Germany.
,, ,, *horizonta'lis.* Garden variety.
,, ,, *pe'ndula* (R. H., 1890, 440, f. 132). H. Garden variety.
,, *numi'dica.* Algerian mountains. G. C., 1888, iii. 140, f. 23.
,, *obova'ta.* The obovate spruce. See PICEA OBOVATA.
,, *Omo'rica* (Servian spruce). See PICEA OMORICA.
,, *orienta'lis.* The Oriental spruce. See PICEA ORIENTALIS.
,, *Parso'nii.* See A. CONCOLOR.
,, *pattonia'na.* See TSUGA PATTONIANA.
,, *pectina'ta.* 80 to 100. Central Europe. 1603.
,, *Pi'cea*, with vars. *Apolli'nis* and *leiocla'da.* See PICEA EXCELSA.
,, *pi'chta.* See A. SIBIRICA.
,, *Pi'ndrow.* 100. May. Himalayas. 1837. G. C., 1886, v. 25, p. 689.
,, *Pinsa'po.* 65. Spain. 1838. G. C., 1885, v. 24, p. 465. (*A. andre'ana, A. beiss'neriana, A. ke'ntiana, A. masters'iana,* Garden varieties.) (R. H., 1902, 163, 164). Coniferæ. H. (Moser, Versailles.)
,, *poli'ta.* Japanese Fir. See PICEA POLITA.
,, *pu'ngens.* See PICEA.
,, ,, *glau'ca.* (Blue spruce.)
,, ,, *pen'dula.*
,, *Regi'næ-Ama'liæ.* See A. CEPHALONICA.
,, *religio'sa.* 150. Mexico. 1839. B. M., t. 6753.
,, *Roe'zlii.* 50. Mexico. 1870.
,, *ru'bra*, with vars. *arctica* and *violacea.* See PICEA RUBRA.
,, *sachaline'nsis.* Island of Yesso. 1879. G. C., 1879, v. 12, p. 589.
,, *schrenkia'na.* Schrenk's fir. See PICEA OBOVATA SCHRENKIANA.
,, *sibi'rica.* 50. May. Siberia. 1820. Syn. *A. pichta.*
,, *Siebo'ldi.* 25 to 30. Japan. See TSUGA SIEBOLDI.
,, *sitche'nsis.* See PICEA SITCHENSIS.
,, *smithia'na.* See PICEA MORINDA.
,, *subalpi'na.* 60 to 100. High mountains of Colorado. Variety of *A. lasiocarpa.*
,, ,, *Beissne'ri* (Gfl., 1903, 47). H. (H. A. Hesse, Weener, Germany.)
,, *trigo'na.* See SEQUOIA RAFINESQUEI.
,, *Tsu'ga.* See TSUGA SIEBOLDII.
,, *Vei'tchii.* 140. Japan. 1861. J. L. S., 18, t. 20.
,, *webbia'na.* 90. Himalayas. 1822. G. C., 1886, v. 25, pp. 688 and 788.
,, *Williamso'ni.* See TSUGA PATTONIANA.

ABO'BRA. (Its native name. Nat. ord. Cucurbitaceæ.) Intermediate greenhouse plant. Seeds sown in light soil in April. The tubers can be stored in winter.
A. viridiflo'ra. Climbing perennial. Pale green. Brazil.

ABO'RTION. Imperfect development. A seed vessel may swell or a fruit develop the pulpy portion, but no perfect seeds produced. In some instances pollen transferred from other flowers will produce perfect seeds, but there are some hybrids which prove abortive under any conditions. The term is also applied to unnatural developments in the growth of plants.

ABRAHAM OF MAMRE OAK (*Quercus pseudococcifera*). See QUERCUS.

ABRA'XAS GROSSULARIA'TA. Magpie moth. See INSECT PESTS.

ABRO'MA. (From *a*, not, and *broma*, food; on account of its deleterious qualities. Nat. ord. *Byttneriads* [Sterculiaceæ]. Linn. 18-*Polyadelphia* 1-*Decandria.*)
Stove evergreen shrubs. Seed in March in heat; or cuttings of half-ripe wood, April, in strong heat, under a bell-glass; loam and peat. Summer temp., 65° to 75°; winter, 50° to 55°.
A. augu'sta (smooth-stalked). 10. August. Purple. E. Ind. 1770.
,, *fastuo'sa* (prickly-stalked). 10. June to October. Purple. N. S. Wales. 1800.
,, *latifo'lia,* B. M., t. 6546.
,, *sinuo'sa.* Madagascar. 1884.

ABRO'NIA. (From *abros*, its involucrum being delicate. Nat. ord. *Nyctagos* [Nyctaginaceæ]. Linn., 5-*Pentandria* 1-*Monogynia.* Allied to Mirabilis.)
Half-hardy perennial trailers. Cuttings or seeds; sandy peat, with a little light loam.
A. arena'ria. 1½. Lemon. California. 1865.
,, *fra'grans.* 1. White. Rocky Mountains. 1865. Night blooming. B. M., t. 5544.
,, *latifo'lia.* 1½. Yellow. August. N.W. Amer. B. M., t. 6546.
,, *melli'fera* (honey-bearing). ½. July. Orange. California. 1826.
,, *pulche'lla* (neat). ½. July. Pink. California. 1848.
,, *ro'sea* (rose-coloured). See A. UMBELLATA.
,, *umbella'ta* (umbel-flowered). ½. April and May. Pink. California. 1823. Purple Sand Verbena.

A'BRUS *precato'rius.* Wild Liquorice. (From the leaves being soft and delicate, *abros*, and prayer, *precatorius*, because its seeds are used for rosaries. Nat. ord. *Mimosads* [Leguminosæ]. Linn. 17-*Diadelphia*, 1-*Decandria.*)
Stove climber. Cuttings in sand, under a glass; sand and peat.
12. Pale purple. March to May. W. Ind.

ABU'TA. (Native name. Nat. ord. Menispermaceæ.) Free-growing stove evergreen climber, and is used medicinally in Cayenne. Cuttings root freely in ordinary propagating frame. Pot in good loam and leaf-mould.
A. rufe'scens. 10. Grey outside, purple inside. March. Cayenne. 1820.

ABU'TILON. (Arabic name for a plant like a mallow. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia* 8-*Polyandria.*)
An interesting class of flowering plants of which we have many garden varieties, under favourable conditions they flower throughout the year. Though regarded as greenhouse plants, they succeed well in the open during the summer. Cuttings may be taken at any season of the year, and will root freely in a close frame where there is a little bottom heat. For the cuttings sandy loam may be used (see PROPAGATING); for potting good fibrous loam with manure and sand added. Light and air with a temperature of from 50° to 60° during the winter will ensure success.
A. auranti'acum (orange-coloured). Orange. Brazil.
,, *auri'tum* (eared). Red. December. Tropics, Old World. 1821.
,, *bedfordia'num* (D. of Bedford's). 15. Yellow and red. November. Brazil. 1838.
,, *brazilie'nse.* G. C., 1882, vol. 18, p. 498.
,, *chrysoste'phanum compa'ctum* (W. G., 1888, 123).
,, *cri'spum* (crisped). 3. Yellow. Tropics. 1827.
,, *Darwi'nii.* 4. Orange-red, veins blood-red. April. S. Brazil. 1871. B. M., t. 5917.
,, *escule'ntum.* Yellow. Brazil. 1880.
,, *floribu'ndum.* Orange-red. Rev. Hort., 1881, p. 350.
,, *grave'olens* (strong-scented). 6. Orange and red. E. Ind. 1842. Stove.
,, *insi'gne* (handsome-flowered). White and carmine. January. New Grenada.
,, *intege'rrimum* (whole-leaved). 14. Yellow. May. New Grenada. Stove.
,, *Lemoi'nei* (F. M., t. 287). G.
,, *longicu'spe* (long-pointed). Bluish-purple. Abyssinia. 1908.

A. megapola'micum. 3. Yellow, with scarlet calyx. Spring. Rio Grande. 1864. Syn. *A. vexillarium.*
,, *mo'lle* (soft). Peru.
,, *Ochse'nii* (Ochsen's). Purple. Chili. 1866.
,, *plenifio'ra* (double-flowered). Orange, with red stripes, double. 1885.
,, *pæoniflo'rum* (peony-flowered). Pink. January. Brazil. 1845.
,, *pulche'llum* (pretty). See PLAGIANTHUS PULCHELLUS.
,, *rufine'rve* (red-nerved). Pale yellow. August. Rio Janeiro. 1845.
,, *Sawi'tzii* (G. C., 1899, xxv. 276). Malvaceæ. G. A pretty foliage plant. (Lord Leigh.)
,, *sellovia'num marmora'tum.* Leaves marbled creamy-yellow. Brazil. Stove.
,, *sine'nse* (Chinese). Orange-yellow, with brown-red blotches. Central China. 1909.
,, *stria'tum* (striped). 10. Orange and red stripes; continually blooming. Brazil. 1837. In Hampshire and south of England, large old plants flower freely turned out under a south wall, being there all but hardy.
,, ,, *kewe'nse* (Kew). Middle lobe of leaf short. 1885.
,, ,, *Thompso'nii* (Thompson's). Leaves smooth, tessellated with yellow. 1885.
,, *Thompso'ni flore pleno* (R. H., 1885, t. 324). See A. PLENIFLO'RA.
,, *Thompso'nii spu'rium* (spurious). Leaves downy, tessellated with yellow. 1885.
,, *veno'sum* (veined). Orange and red stripes. July. Mexico. 1846.
,, *vitifo'lium* (vine-leaved). 6. White. July. Chili. 1837.

There are now many garden varieties, including those with variegated foliage. Of the latter *A. sellovianum, marmoratum*, a large leaved variety, is one of the handsomest, and *A. megapolamicum* is another much appreciated variety. Hybrid varieties vary in colour from white, yellow, pink, up to deep crimson, and are too numerous to include in this work. Years ago they were very popular, but it is only a few of the most decided colours that are now grown.

ABYSSINIAN PRIMROSE (*Primula verticillata boveana*).

ACACA'LLIS. (From *ake*, a point, and *kallos*, beauty; the points of the segments are deep blue. Nat. ord. Orchidaceæ.)

Stove epiphytal orchid. Fibre of peat, sphagnum, and crocks. Increased by division.

A. cya'nea (blue). White, tipped deep blue. August. Brazil. 1843.
,, ,, *a'lba* (white). Lip pure white. 1885.

ACA'CIA. (From *akazo*, to sharpen, on account of the prickliness of the species first noticed. Nat. ord. *Mimosads* [Leguminosæ]. Linn., 23-*Polygamia*, 1-*Monœcia*.)

This is an extensive and variable genus, most of which require greenhouse treatment. They all succeed best in turfy loam and peat, with sand added, and those grown for ordinary decorations or for market are limited to a few species. Those grown as flowering plants are propagated from cuttings. The most useful sorts are *armata, cordata, dealbata, ovata, riceana*, and *Drummondi*. Cuttings from short-jointed shoots after the flowering period are taken off close to the old wood, put in a compost of equal parts of good loam, peat, and sand, and placed where there is a little bottom heat and a close cool surface. *Lophantha* and many others may be raised from seeds. The seeds will germinate better if soaked in tepid water until they swell. All succeed best if placed in the open during the summer.

STOVE SPECIES.

A. acanthoca'rpa (spine-podded). See MIMOSA.
,, *acapulce'nsis* (Acapulcan). See LYSILOMA.
,, *ara'bica* (Arabian). 20. White. E. Ind. 1596. This tree produces gum-arabic.
,, *bancroftia'na* (Bancroft's). See CÆSALPINIA BIJUGA.
,, *brachyaca'ntha* (short-spined). See MIMOSA ACANTHOCARPA.
,, *burmannia'na* (Burmann's). 6. Ceylon. 1818.
,, *cæ'sia* (grey). 20. Yellow. E. Ind. 1773.
A. Ca'techu (catechu). 40. Pale yellow. E. Ind. 1790. This tree produces that most powerful astringent, catechu. The bark of all the other species also abounds in astringent principle, useful for tanning.
,, *centrophy'lla* (spur-leaved). 20. White. Jamaica. 1818.
,, *Cerato'nia* (Ceratonia). See MIMOSA CERATONIA.
,, *chrysosta'chys* (golden-spiked). 15. Mauritius. 1824.
,, *conci'nna* (neat). 20. White. E. Ind. 1823.
,, *concordia'na* (Concord's). See PITHECOLOBIUM UMBELLATUM.
,, *copalli'na* (copal). 20. 1825.
,, * *corni'gera* (horn-bearing). See A. SPADICIGERA.
,, *coronillæfo'lia* (coronilla-leaved). 10. N. Africa. 1817.
,, *di'ptera* (two-winged). See PROSOPIS JULIFLORA.
,, *dumo'sa* (bushy). See A. LATRONUM.
,, *ebu'rnea* (ivory-thorned). 5. Yellow. E. Ind. 1792.
,, *edu'lis* (eatable-fruited). See A. FARNESIANA.
,, **farnesia'na* (farnesian). 15. Yellow. July. St. Domingo. 1656. "Cassie."
,, *ferrugi'nea* (rusty). E. Ind. 1818.
,, *filici'na* (fern-leaved). 20. Mexico. 1825.
,, *formo'sa* (beautiful). See CALLIANDRA FORMOSA.
,, *frondo'sa* (leafy). See LEUCÆNA GLAUCA.
,, *frutico'sa* (shrubby). See MIMOSA FRUTICOSA.
,, *Gira'ffæ* (cameleopard's). 40. Cape of Good Hope. 1816.
,, *gra'ta* (grateful). See PIPTADENIA MACROCARPA.
,, *guayaquile'nsis* (Guayaquil). See MIMOSA.
,, *guiane'nsis* (Guiana). See STRYPHNODENDRON.
,, *Hæmato'xylon* (bloody-wooded). 20. Yellow, white. Cape of Good Hope. 1816.
,, *heteroma'lla* (one side woolly-leaved). Yellow. June. N. Holland. 1818.
,, *I'ntsia* (*Intsia*). See A. CÆSIA.
,, * *Jacara'ndæ* (Jacaranda-like). 20. Yellow, white. S. Amer. 1825.
,, *kalko'ra* (kalkora). See ALBIZZIA JULIBRISSIN.
,, *kermesi'na* (kermesina). Purple.
,, *latisi'liqua* (broad-podded). See LYSILOMA.
,, *latro'num.* 20. E. Ind. 1818. Syn. *A. dumosa.*
,, *laurifo'lia* (laurel-leaved). 4. Yellow. May. Tanna. 1775.
,, *Le'bbek* (lebbek). See ALBIZZIA.
,, *lentiscifo'lia* (lentiscus-leaved). 20. Cuba. 1824.
,, *lepro'sa.* Yellow. Australia. 1817. B. R., t. 1441.
,, ,, *tenuifo'lia.* 1883.
,, *leptophy'lla* (slender-leaved). See A. FARNESIANA.
,, *leucophlæ'a* (white). 12. Pale yellow. E. Ind. 1812.
,, *longifo'ra.* 1884.
,, *lu'cida* (shining). See ALBIZZIA.
,, *macraca'ntha* (long-spined). 20. Jamaica. 1820.
,, *macranthoi'des.* See A. MACRACANTHA.
,, *Ma'ngium* (Mangium's). 10. Yellow. E. Ind. 1820.
,, *microphy'lla* (small-leaved). See PIPTADENIA PEREGRINA.
,, *nudiflo'ra.* 30. White. 1823. Syn. *A. rohriana.*
,, *odorati'ssima* (most fragrant). See ALBIZZIA.
,, *oligophy'lla* (few-leaved). 4. Yellow. 1817.
,, *penna'ta* (feather-leaved). 20. Yellow. E. Ind. 1773.
,, *pilo'sa* (downy). See CALLIANDRA HÆMATOMMA.
,, *pinna'ta.* See A. PENNATA.
,, *plumo'sa* (feathery-leaved). 20. Yellow. A climber.
,, *portorice'nsis* (Porto Rico). See CALLIANDRA.
,, *prisma'tica* (prismatic). 6. Yellow. 1818.
,, **pulche'rrima* (fairest). See STRYPHNODENDRON FLORIBUNDUM.
,, *quandrangula'ris* (four-angled). See CALLIANDRA TETRAGONA.
,, *ripa'ria.* 10. W. Ind. 1820. Syn. *A. sarmentosa.*
,, *rohria'na* (Rohr's). See A. NUDIFLORA.
,, *Ro'ssii* (Ross's). 40. 1822.
,, *sarmento'sa* (twiggy). See A. RIPARIA.
,, *sca'ndens* (climbing). See ENTADA.
,, *semicorda'ta* (half-heart-shaped). 40. E. Ind. 1820.
,, *Senega'l* (Senegal). 30. White. Africa. 1823.
,, *Seri'ssa* (Shireesh). 20. E. Ind. 1822.
,, *spadi'cigera* (B. M., t. 7395). One of the bull's horn acacias. Central America and Cuba. 1692. Syn. *A. cornigera.*
,, *specio'sa* (showy). See ALBIZZIA LEBBEK.
,, *Spi'ni* (Spine's). 15. Red, yellow.
,, *stipula'ta* (large-stipuled). See ALBIZZIA.
,, *Su'ma.* 10. E. Ind. 1820.

A. tamarindifo'lia (tamarind-leaved). 4. White. W. Ind. 1774.
,, *tomento'sa* (woolly). 20. E. Ind. 1816.
,, *tricho'des* (hairy). See LEUCÆNA TRICHODES.
,, *va'ga* (common). 40. White. Brazil. 1818.
,, *venu'sta* (charming). 6. Pink. S. Amer. 1816.
,, *ve'ra* (true, Egyptian thorn). See A. ARABICA.
,, *vire'scens* (strong-growing). 20. S. Amer. 1829.
,, *Wallichia'na* (Wallich's). See A. CATECHU.

GREENHOUSE SPECIES.

A. abieti'na (fir-like). See A. LINIFOLIA.
,, **affi'nis* (kindred). 5. Yellow. May. N. Holland. 1822. This is the Green Wattle Mimosa of the settlers. A variety of *dealbata*.
,, *ala'ta* (wing-stalked). 6. Yellow. May. N. Holland. 1803.
,, *amœ'na* (pleasing). 5. Yellow. May. N. Holland. 1820.
,, *angula'ta* (angular). See A. DISCOLOR.
,, *angustifo'lia* (narrow-leaved). See A. LONGIFOLIA.
,, *argyrophy'lla*. See A. BRACHYBOTRYA.
,, **arma'ta* (armed, simple-leaved). 10. Yellow. May. N. Holland. 1803. Syn. *A. hybrida* and *A. tristis*.
,, *a'spera* (rough). 4. Yellow. May. N. Holland. 1824. Syn. *A. Ausfieldii* and *A. densifolia*.
,, *baileya'na* (G. C., 1894, xv. 37, f. 4). Leguminosæ. Australia.
,, *bifio'ra* (two-flowered). 3. Yellow. May. N. Holland. 1803.
,, *binerva'ta* (two-nerved). 8. Yellow. May. N. Holland. 1824.
,, *brachybo'trya*. 8. Yellow. April. Swan River. B. M., t. 4384. Syn. *A. argyrophylla*.
,, *brevifo'lia* (short-leaved). 3. Yellow. May. N. Holland. 1820.
,, *bre'vipes* (short-stalked). See A. MELANOXYLON.
,, *buxifo'lia* (box-leaved). 4. Yellow. April. N. Holland. 1824.
,, *calamifo'lia* (reed-leaved). Yellow. May. N. Holland. 1823.
,, *canalicula'ta* (channeled). Yellow. May. N. Holland. 1824.
,, *cave'nia*. See A. FARNESIANA.
,, *celastrifo'lia* (celastrus-leaved). See A. MYRTIFOLIA.
,, *cilia'ta* (fringe-winged). See A. STRIGOSA.
,, *cinera'scens* (ash-coloured). See A. GLAUCESCENS.
,, *cochlea'ris* (spoon-leaved). 4. Yellow. May. N. Holland. 1818.
,, *confe'rta* (crowded). Yellow. April. N. Holland. 1824.
,, *coria'cea* (leathery-leaved). 5. Yellow. May. N. Holland. 1825.
,, *crassica'rpa* (thick-fruited). 6. Yellow. April. N. Holland. 1824.
,, *cultrifo'rmis* (knife-shaped). 15. Yellow. April. N. Holland. 1820.
,, *cunea'ta* (wedge-shaped). Yellow. April. Swan River. 1837.
,, *cuspida'ta*. See A. DIFFUSA.
,, *cyanophy'lla* (blue-leaved). Yellow. April. Swan. River. 1838.
,, *Cyclo'ps* (Cyclops-like). 4. Yellow. May. N. Holland. 1824.
,, *cycno'rum* (Swan River). See A. OBSCURA.
,, *daviesiæfo'lia* (Daviesia-leaved). 6. Yellow. June. N. Holland. 1817.
,, **dealba'ta* (whitened). 10. Yellow. May. N. Holland. 1823.
,, **deci'piens præmo'rsa* (deceiving, bitten-leaved). 3. Yellow. May. N. Holland. 1830.
,, **decu'rrens* (decurrent). 6. Yellow. June. N. S. Wales. 1790.
,, *densifo'lia*. See A. ASPERA.
,, *denti'fera* (tooth-bearing). Yellow. April. Swan River. 1839.
,, *depe'ndens* (weeping). See A. LONGIFOLIA.
,, *de'tinens* (detaining). 3. Yellow. May. S. Africa. 1828.
,, *difu'sa*. Yellow. May. Tasmania. B. R., t. 634. Syn. *A. cuspidata*.
,, *dilata'ta*. 6. White. April. N. Holland. 1827.
,, **dillwyniæfo'lia* (Dillwynia-leaved). 3. Yellow. May. N. Holland. 1828.

A. dimidia'ta. 6. Yellow. June. N. Holland. 1814.
,, *di'ptera* (two-winged).
,, ,, *erio'ptera* (woolly-winged). Yellow. September. Swan River. 1840.
,, *di'scolor* (two-coloured). 10. Yellow. May. N. S. Wales. 1784.
,, *divarica'ta* (straggling). See A. DILATATA.
,, **dolabrifo'rmis* (hatchet-leaved). See A. DIMIDIATA.
,, *Drummo'ndii*. 10. Yellow. April. Swan River.
,, *echi'nula* (prickly). See A. JUNIPERINA.
,, *elonga'ta* (long-branched). 6. Yellow. May. N. Holland. 1824.
,, *emargina'ta* (single-notched-leaved). See A. STRICTA.
,, *erioca'rpa* (woolly-fruited). Pale yellow. April. N. Holland. 1845.
,, *eriocla'da* (woolly-branched). Yellow. June. N. Holland. 1849.
,, *Esterha'zia* (Prince Esterhazy's). 4. Yellow. May. N. Holland. 1824.
,, **falca'ta* (sickle-leaved). 6. Yellow. May. N. S. Wales. 1790.
,, *falcifo'rmis* (sickle-shaped). See A. PENNINERVIS.
,, **floribu'nda* (many-flowered). See A. LONGIFOLIA.
,, *glau'ca* (milky-white). See LEUCÆNA GLAUCA.
,, *glauce'scens*. 10. Yellow. May. N. Holland. 1824.
,, **gra'ndis* (great). See A. PULCHELLA.
,, *grave'olens* (strong-smelling). See A. VERNICIFLUA.
,, *gummi'fera* (gum-bearing). 30. N. Africa. 1823.
,, *harpophy'lla* (Gard., 1902, lxi. 168; J. of H., 1902. xliv. 190. Queensland. (Mrs. Denison.)
,, *hastula'ta* (halbert-leaved). 4. Yellow. May. N. Holland. 1824.
,, *heteraca'ntha* (varied-prickled). 15. Cape of Good Hope. 1816.
,, *heterophy'lla* (variable-leaved). 5. Yellow. May. N. Holland. 1824.
,, *hispidi'ssima* (hairiest). See A. PULCHELLA.
,, **holoseri'cea* (all silky). Yellow. April. N. Holland. 1820.
,, *homoma'lla* (equal-woolled). See A. GLAUCESCENS.
,, **Huege'lii* (Baron Huegel's). Pale yellow. February. N. Holland. 1846.
,, *humifu'sa* (trailing). N. Holland. 1820.
,, *hy'brida* (hybrid). See A. ARMATA.
,, *ine'rmis variega'ta* (G. C., 1902, xxxi. Suppl. May. 31, iii).
,, *interme'dia* (intermediate). See A. LONGIFOLIA.
,, *interte'xta* (interwoven). See A. LONGIFOLIA.
,, **juniperi'na* (juniper-leaved). 6. Yellow. May. N. S. Wales. 1790.
,, *lambertia'na* (Lambert's). See CALLIANDRA LAMBERTIANA.
,, *lani'gera* (woolly). 6. Yellow. April. N. Holland. 1824.
,, *Lawso'ni* (Lawson's). N. S. Wales.
,, *lepro'sa*. Australia. 1817.
,, *leptoca'rpa* (slender-podded). 6. Yellow. April. N. Holland. 1821.
,, *leucophy'lla* (white-leaved). See A. HOLOSERICEA.
,, *ligula'ta* (strap-shape-leaved). See A. SALICINA.
,, *linea'ris* (linear). 3. Yellow. May. N. S. Wales. 1820.
,, *linifo'lia*. 4. Yellow. May. N. S. Wales. 1790. Syn. *A. abietina*.
,, *longifo'lia*. 6. Yellow. May. Australia. 1792. B. M., t. 2166. Syn. *A. intertexta*.
,, ,, *floribu'nda*. 6. Yellow. April. N. S. Wales. 1816. Syns. *A. angustifolia* and *A. intermedia*.
,, ,, *mucrona'ta*. Yellow. March. Tasmania. 1819. Syn. *A. dependens*.
,, ,, *So'phoræ*. 10. Yellow. May. Tasmania. 1805. Syn. *A. Sophoræ*.
,, **longi'ssima* (longest-leaved). See A. LINEARIS.
,, *lopha'ntha*. See ALBIZZIA.
,, *luna'ta*. 2. Yellow. April. N. S. Wales. Syn. *A. oleæfolia*.
,, *Meisne'rii*. Yellow. May. S.W. Australia.
,, *melano'xylon*. 6. Yellow. N. S. Wales. B. M., t. 1659. Syn. *A. brevipes*.
,, *melli'fera* (honey-bearing). White. Arabia. 1826.
,, *mo'llis* (soft). See ALBIZZIA JULIBRISSIN.
,, *mottea'na* (G. C., 1906, xxxix. 213).
,, *myrtifo'lia*. 3. May. N. S. Wales. 1789. B. M., t. 302.

A. myrtifo'lia celastrifo'lia. 6. Yellow. May. Swan River. 1842.
,, *Ne'mu.* See ALBIZZIA JULIBRISSIN.
,, *ni'gricans.* 6. Yellow. April. King George's Sound. B. M., t. 2188.
,, *obli'qua.* 6. N. Holland. 1842.
,, *obscu'ra.* 2½. Yellow. Swan River. 1852. Syn. *A. cycnorum.*
,, *oleæfo'lia.* See A. LUNATA.
,, *Oxyce'drus.* 10. Yellow. May. N. S. Wales. B. M., t. 2928.
,, *penninervis falcifo'rmis.* 6. Yellow. May. Australia. 1818. Syn. *A. falciformis.*
,, *pentade'nia.* 10. Yellow. May. N. S. Wales. B. R., t. 1521.
,, *platyphyl'la* (broad-leaved). 10. Yellow. June. N. Holland. 1820.
,, *podalyriæfo'lia* (G. C., 1906, xxxix. 213). E. Australia. (Sir T. Hanbury, La Mortola.)
,, *pube'scens.* 6 to 10. N. Holland. 1790.
,, *pulche'lla gra'ndis.* Golden yellow. March. Australia. 1846. Syn. *A. grandis.*
,, ,, *hispidi'ssima.* 3. Yellow. Swan River. 1800. B. M., t. 4588. Syn. *A. hispidissima.*
,, *ricea'na.* Yellow. May. Tasmania. Maund. Bot., t. 135.
,, *Richardso'ni* (Richardson's). 10. Yellow. June. N. Holland. 1822.
,, *rotundifo'lia.* See A. OBLIQUA.
,, *ruscifo'lia.* See A. VERTICILLATA LATIFOLIA.
,, *salici'na.* Yellow. March. N. S. Wales. 1818. Syn. *A. ligulata.*
,, *Se'ntis.* 8 to 10. Australia.
,, *sali'gna.* 6 to 10. N. Holland. 1818.
,, *serica'ta* (silky). Yellow. April. N. Holland. 1820.
,, *Si'msii* (Sims's). Yellow. April. N. Holland. 1819.
,, **So'phoræ* (sophora-podded). See A. LONGIFOLIA.
,, **specta'bilis* (remarkable). Yellow. April. N. S. Wales. 1837.
,, *sphæroce'phala.* Mexico.
,, *squama'ta* (scaly). Yellow. April. N. Holland. 1836.
,, *stenophy'lla* (short-leaved). Yellow. March. N. S. Wales. 1818.
,, *stri'cta* (erect-headed). 2. Yellow. March. N. S. Wales. 1790.
,, *strigo'sa.* 4. Yellow. W. Australia. Syn. *A. ciliata.*
,, *strombuli'fera* (spiral-podded). See PROSOPIS.
,, *suave'olens* (sweet-scented). 4. Yellow. April. N. S. Wales. 1790.
,, *subula'ta* (awl-shaped). 4. Yellow. May. N. Holland. 1824.
,, *sulca'ta* (furrowed-leaved). 2. Yellow. July. N. Holland. 1803.
,, **taxifo'lia* (yew-leaved). See A. RICEANA.
,, *trapezoi'dea* (trapezium-leaved). See A. DECIPIENS.
,, *trinerva'ta* (three-nerved). 6. Yellow. April. N. Holland. 1820.
,, *tri'stis* (dull green-coloured). See A. ARMATA.
,, *umbella'ta* (umbellate). Yellow. April. N. Holland. 1819.
,, *uncina'ta* (hook-leaved). See A. UNDULÆFOLIA.
,, *uncinophy'lla.* 7. Yellow. April. Swan River.
,, *undulæfo'lia* (wave-leaved). 4. Yellow. May. N. Holland. 1824.
,, *urophy'lla* (tail-leaved). Pale yellow. April. Swan River. 1836.
,, *vernici'flua* (varnish-flowing). 6. Yellow. April. N. Holland. 1818.
,, **verticilla'ta* (whorl-leaved). 10. Yellow. April. Van Diemen's Land. 1780.
,, ,, *angu'sta* (narrow-leaved). 10. Yellow. April. N. Holland. 1780.
,, * ,, *latifo'lia* (broad-leaved). 10. Yellow. April. N. Holland. 1780. Syn. *A. ruscifolia.*
,, *vesti'ta* (clothed). 6. Yellow. June. N. Holland. 1820.
,, *vimina'lis* (twiggy). Yellow. April. N. Holland. 1820.
,, *virga'ta* (branchy). See A. VERNICIFLUA.
,, *viridira'mis* (green-branched). See XEROCLADIA ZEYHERI.
,, *visci'dula.* Extra tropical E. Australia. Gfl., t. 1109.
,, *vomerifo'rmis* (plough-share-shaped). Yellow. April. N. Holland. 1818.

HALF-HARDY SPECIES.

A. Julibri'ssin (silk-tree). 20. White. August. Levant. 1745. See ALBIZZIA JULIBRISSIN.

ACÆNA. (From *akaina*, a thorn, in allusion to the slender spines on the calyx.) Ord. ROSACEÆ. Dwarf shrubby plants, propagated from cuttings, as recommended for other hardy rock plants, or from divisions of the roots, which should be done early in the spring.

A. adsce'ndens (B. T. O., 1888, 331). Rosaceæ. H. Patagonia.
,, *adsu'rgens.* 9 in. Hort.
,, *Bucha'nanii.* 9 in. New Zealand.
,, *microphy'lla.* ½. Green. New Zealand.
,, *millefo'lia.* Myriad-leaved.
,, *myriophy'lla.* 6 in. to 1 ft. Argentina. 1828.
,, *No'væ-Zeala'ndiæ.* 9 in. New Zealand.
,, *ovi'na* (B. T. O., 1888, 332). H. Australia.
,, *pinnati'fida.* 1828. Chili. B. R., t. 1271.
,, *pulche'lla.* Leaves bronzy.
,, *Sanguiso'rbæ.* Australia.
,, ,, *sarmento'sa* (B. T. O., 1888, 332). H. per. Tristan d'Acunha.
,, *seri'cea* (B. T. O., 1888, p. 332). H. per. Mexico.
,, *sple'ndens* (B. T. O., 1888, 332). H. Chili.

ACA'LYPHA. A name given by Hippocrates to the nettle, mostly stove or intermediate greenhouse plants, propagated from the terminal shoots, in light sandy soil, potted on in good loam, leaf-mould, and manure. *Sanderi* (or *hispida*) is remarkable for the long racemes of crimson flowers, others have inconspicuous flowers and showy variegated foliage.

A. Chantrie'ri (R. H., 1897, 402).
,, *godseffia'na* (G. C., 1898, xxiii. 241, f. 87). New Guinea.
,, *hamiltonia'na* (Bruant Cat., 1895).
,, *his'pida ramo'sa* (Jard., 1906, 99). Syn. *A. Sanderi Hort.* New Guinea. 1896.
,, *macafeea'na.* Rev. Hort., 1882. p. 288. See A. WILKESIANA.
,, *macrophy'lla.* 1876.
,, *mortifontane'nsis* (R. H., 1897, 402).
,, *musa'ica.* Polynesia. 1877.
,, ,, *Cowba'rnii* (G. C., 1904, xxxv. 117).
,, *obova'ta.* South Sea Islands. 1884.
,, *Sande'ri* (G. C., 1896, xx. 392). 10 to 15. New Guinea. Syn. with *A. hispida.*
,, ,, *alba* (G. C., 1902, xxxi. 440). Syn of *A. hispida.*
,, *to'rta.* 1 to 2. Samoa. 1876.
,, *triu'mphans* (Ill. H., 1888, 55, t. 55). Solomon Isles.
,, *wilkesia'na.* New Hebrides. 1866. Syn. *A. tricolor.*
,, ,, *margina'ta.* Fiji Island. 1875.

ACA'MPE. (From *akampes*, inflexible.) Nat. ord. Orchideæ; tribe Vandeæ; sub-tribe Sarcantheæ. Epiphytal orchids which need a stove temperature. For culture, see ORCHIDS.

A. conge'sta (crowded). Yellow, crimson. E. Ind.
,, *denta'ta.* Sikkim, Moulmein. 1873.
,, *longifo'lia* (long-leaved). 1½. Yellow, red, white. September. E. Ind. 1847.
,, *madagascarie'nsis* (G. C., 1891, x. 408).
,, *multifo'ra.* China. Syn. *Vanda multiflora.*
,, *pachyglo'ssa* (thick-lipped). E. Trop. Africa.
,, *papillo'sa.* India. B. R., t. 1552. Syn. *Saccolabium papillosum.*
,, *wightia'na* (Wightian). S. India.

ACANTHO'DIUM. See BLEPHARIS.

ACANTHOLI'MON. (Derivation uncertain. Nat. ord. Plumbagineæ, allied to Statice.)

Hardy evergreen perennials, dwarf compact habit, with narrow, sharply-pointed leaves; succeed best in dry soil; cuttings early in the autumn or layers in spring. May also be raised from seed.

A. acero'sum. Armenia. Syn. *Statice acerosa.*
,, *gluma'ceum.* ½. Pink. Asia Minor. 1851 Fl. Ser., t. 677. Syn. *Statice Ararati.*
,, *Hohena'ckeri* (Hohenacker's). ½. Red. July. Caucasus. 1813.
,, *venu'stum.* ½. Pink. Cilicia. 1873. Rev. Hort., 1866, p. 451.

ACANTHOMI'NTHA. (From *akantha*, a thorn, *minthe*, mint. Nat. ord. Labiatæ.)
Border annual, raised from seeds sown in spring.
A. ilicifo'lia. Purple, yellow, white. July. California. 1838. B. M., t. 6750.

ACANTHONE'MA. (From *akantha*, a spine, and *nema*, a filament. Nat. ord. Gesneraceæ. Allied to *Streptocarpus*.)
Stove plant, with the habit of *Streptocarpus*. Seeds sown in early spring in sandy loam; manure is added after potting later.
A. strigo'sum. ½. Deep purple, with whitish tube. Fernando Po. 1862. B. M., t. 5339.

ACANTHOPA'NAX.
A. aceriifo'lium. 1908.
,, *divarica'tum.* Japan. 1901.
,, *Henry'i.* 5. Green. W. China. 1910.
,, *japo'nicum.* Japan.
,, *ricinifo'lium.* Japan. 1868.
,, *sessiliflo'rum.* China.
,, *spino'sum.* Japan.
,, ,, *variega'tum* (variegated). Leaves edged creamy-white. Japan. 1874.

ACANTHOPHI'PPIUM. (From *acanthos*, a thorn, and *ippion*, a horse; but why, is not apparent. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Loam and peat in a rough state; division or pseudo bulbs; 50° to 60° when at rest; 70° to 80° when growing.
A. bi'color (two-coloured). Yellow and red. June. Ceylon. 1833.
,, *Curti'sii.* Malay Archipelago.
,, ,, *a'lbidum* (L., t. 619). Malayan Archipelago.
,, *ebu'rneum* (G. C., 1896, xx. 266). S. Malaya (?).
,, *java'nicum* (Javanese). Crimson, rose. August. Java. 1844.
,, *mantinia'num* (J. O., 1896, 138; L., xii. t. 536). S. Philippines.
,, *stria'tum* (striped-flowered). White-striped. June. Nepaul.
,, *sylheti'nse* (Sylhet). White. June. Sylhet. 1837.

ACANTHOPHŒ'NIX. (From *akantha*, a spine, and *phœnix*, the date palm. Nat. ord. Palmaceæ. Allied to Areca.)
Useful stove palms, increased by seeds only, which are germinated in a moist bottom-heat, in a compost of one part loam, one of peat, one of leaf-mould, and the remainder of sand.
A. crini'ta. Seychelles. 1824. Fl. Ser., t. 1706.
,, *gra'ndis* (Ill. H., 1895, 185). Palmæ S.
,, *ru'bra.* Madagascar. 1823. Syns. *Calamus dealbatus* and *C. Verschaffelti*.

ACANTHOPHY'LLUM. (From *akantha*, a prickle, and *phullon*, a leaf; leaves spiny. Nat. ord. Caryophyllaceæ.)
Hardy perennial herbs. Seeds; cuttings. Ordinary well-drained soil.
A. pu'ngens (prickly). See A. SPINOSUM.
,, *spino'sum* (spiny). 2. Pink. July. Caucasus. 1831.
,, *verticilla'tum* (whorled). ½. White. July. Armenia. 1823.

ACANTHORHI'ZA. (From *akantha*, a spine, and *rhiza*, a root. Nat. ord. Palmaceæ.)
Stove palms. For culture, see THRINAX.
A. aculea'ta. Mexico. 1864. Syn. *Chamœrops stauracantha.* Kerch. Palm, t. 24.
,, *arbo'rea.* Country unknown.
,, *Walli'sii.* Trop. America. 1879. Gfl., t. 977, f. 2.
,, *Warscewi'czii.* Chiriqui. Gfl., t. 860, f. 3.

ACANTHOSTA'CHYS. (*Acanthos*, a spine, *stachys*, a spike. Nat. ord. *Bromeliads* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Stove herbaceous plant. Suckers; equal parts of sand, leaf-mould, and decayed wood.
A. strobila'cea (cone-fruited). 4. Red and yellow. June. Brazil. 1840.

ACA'NTHUS. Bear's Breech. (*Acanthos*, a spine; some being prickly. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Herbaceous plants. Seeds, and root division; light rich garden-soil, sown in autumn or early in spring.
A. arbo'reus (G. C., 1902, xxxi. 221, f. 70). 20. N.E. Tropical Africa.
,, *carduifo'lius* (thistle-leaved). See BLEPHARIS.
,, *Ca'roli-Alexa'ndri.* 1 to 1½. White, rosy. Greece. 1886.
,, *hispa'nicus* (Spanish). See A. NIGER.
,, *longifo'lius.* 3½ to 5. Purple-rose. Dalmatia. 1869.
,, *mo'llis* (soft). 3. White. August. Italy. 1548. The leaves of this are said to have given rise to the Corinthian style in architecture.
,, *monta'nus.* 3. W. Africa. 1865.
,, *ni'ger* (black). 3. White. August. Portugal. 1759.
,, *Perri'ngi* (G. C., 1905, xxxvii. 2; Gartenwelt, ix. 354). Acanthaceæ. 1 to 1½. Cappadocian Anti-Taurus.
,, *spino'sus* (spiny). 3. White. August. Italy. 1629.
,, ,, *spinosi'ssimus* (most-spiny). 3. White. August. South of Europe. 1629.

A'CARUS. The Mite. See INSECT PESTS.

ACCLI'MATISA'TION.—In years gone by, when we were getting more new plants from various regions, this was an important subject, and even at the present time it requires consideration. Taking all Japanese shrubs and plants, when newly introduced, they start into growth too early in the season and suffer from frost. *Aucuba japonica*, when first introduced (in 1783), was regarded as a tender shrub, and was first grown in the stove, then the greenhouse, and later was found to be quite hardy. *Pæonia Moutan* is another example. The Japanese maples are quite hardy, except that when we get a frost late in the spring they suffer on account of having started into growth too early. It is the same with *Astilbe japonica* though the roots (or crowns) are quite hardy, yet they start into growth early in the spring, and it frequently happens that the late frost cuts them down, and though introduced at least fifty years ago will still persist in starting early in the season. It seems inherent with all Japanese plants to start into growth early in the season, and some seasons they may escape damage by frost, but they more often suffer. It is the same with plants from other regions—take *Dicentra* (*Dielytra*) *spectabilis*, though found in Japan is also a native of Siberia, and is one of our first hardy plants to flower in spring, but will suffer from frost. The conifers from Mexico, which grow in the mountainous regions, are not so impulsive, and it is only when we get an exceptionally late frost that they suffer. When we first had the tuberous begonias from Brazil they were treated as stove plants, now they are grown in the open, yet they suffer from the first frost we get in the autumn. It is the same with many other succulent plants, take the dahlias, tomatoes, or even potatoes; they are from the Tropics, but do well out of doors here in England during the summer. It is shrubs and trees which will, after a time, become acclimatised and withstand our winters. The difficulties to contend with are the early growth in spring and the late unripened growth in the autumn. To provide against these evils, means should be taken to ripen shrubs off early, and also to prevent them starting too early in the spring.

A'CER. The Maple. (*Acer*, hard, or sharp; because the wood was used for lances. Nat. ord. *Maples* [Sapindaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)
We have had many additions to this genus during the past few years. The Japanese varieties are beautiful but of slow growth. They may be propagated either from grafting or budding on the common species, which are raised from seeds. They may also be propagated from layers. *A. saccharinum* produces sugar, and *Pseudo-platanus* is a useful timber tree. The varieties of *A. japonicum* may be recommended for pot plants for the cool conservatory.
A. austri'acum (Austrian maple). See A. CAMPESTRE AUSTRIACUM.
,, *barba'tum* (bearded-calyxed). See A. SACCHARINUM.
,, *Bo'scii.* Siberia. 1820.
,, *campe'stre* (common). 25. Green and yellow. May. Britain.
,, ,, *austri'acum.* 30. Green and yellow. June. Austria. 1812.
,, ,, *colli'num* (hill-dwelling). 25. Green and yellow. April. France.
,, ,, *hebeca'rpum* (downy-fruited). 25. Green and yellow. June. Britain.

A. campe'stre læviga'tum (smooth-leaved). 30. Green and yellow. June.
" " *na'num* (dwarf). 6. Green and yellow. June.
" " *postele'nse* (M. D. G., 1896). Sapindaceæ. H. Yellow-leaved form of the common maple.
" " *Schwer'ini* (M. D. G., 1902, 104). Sapindaceæ. H.
" " *tau'ricum* (Taurian). Leaves larger and less divided.
" " *variega'tum* (variegated). 25. Green and yellow. May. Britain.
" *cissifo'lium* (Cissus-leaved). 6 to 12. Japan.
" *circina'tum* (round-leaved). 30. Green and yellow. April. Columbia. 1827.
" *col'chicum au'reum*. See A. LAETUM.
" " *tri'color* (R. H., 1886, 371).
" *cre'ticum* (Cretan). 6. May. Levant. 1752.
" *dasyca'rpum* (hairy-fruited). Green and yellow. April. N. Amer. 1725. Timber.
" " *pulveule'ntum*. Leaves spotted white.
" *Da'vidi* (G. C., xxxiii. 62). Sapindaceæ. H. Central China.
" *digita'tum*. A variety of *A. palmatum*.
" *di'scolor* (two-coloured). Leaves bluish-white beneath. China. 1908.
" *disse'ctum*. A variety of *A. palmatum*.
" *Dougla'sii*. See A. GLABRUM.
" *Du'retti au'reo-margina'tum* (M. D. G., 1896, 79). H.
" *erioca'rpum*. See A. DASYCARPUM.
" *ero'sum* (G. C., 1903, xxxiii. 100). H. Central China.
" *Franche'ti* (G. C., 1903, xxxiii. 100). Central China.
" *Ginna'la*. Amur River.
" " *a'lbo-variega'tum* (white-variegated). Leaves with pure white blotches. 1910.
" *gla'brum*. 15 to 30. N. W. Amer. Syns. *A. Douglasii* and *A. tripartitum*.
" " *rhodoca'rpum* (red-fruited). Fruits red. 1910.
" *glau'cum*. See A. SANGUINEUM.
" *gri'seum* (G. C., 1903, xxxiii.).
" *Heldrei'chii* (Gfl., t. 1185). H. Greece.
" " *purpura'tum* (M. D. G., 1906, 212). H. Sapindaceæ.
" *He'nryi* (G. C., 1903, xxxiii. 100). H. Central China.
" *heterophy'llum* (various-leaved). Green and yellow. May. Levant. 1759. Evergreen.
" *ibe'ricum* (Georgian). See A. MONSPESSULANUM.
" *insi'gne* (B. M., t. 6697).
" *insi'gne Wol'fi* (M. D. G., 1905, 210). Sapindaceæ. H. Caucasus.
" *japo'nicum*. Japan.
" " *vitifo'lium*. Japan. 1874. Syn. *A. japonicum compactum* of gardens.
" *la'tum cultra'tum* (G. C., 1903, xxxiii. 100). H. Central China.
" " *au'reum* (golden). Leaves red and golden. 1909.
" " *ru'brum*. Young leaves red.
" " *tricauda'tum* (J. R. H. S., xxix. 354 f.).
" *læviga'tum Farge'sii* (J. R. H. S., xxix. 353 f.).
" *laurifo'lium*. See A. OBLONGUM.
" *laxiflo'rum* (G. C., 1903, xxxiii. 63). H. Central China.
" *loba'tum* (lobed-leaved). See A. BOSCII.
" *Lobe'lii*. 50. May. Naples.
" *macrophy'llum* (long-leaved). 25. Green. May. N. Amer. 1812.
" *marmora'tum*. See A. PICTUM.
" *Mi'cets*. Japan. 1864.
" *Miya'bei* (Späth Cat., 1894–5). H. Japan.
" *monspessula'num* (Montpellier). 8. Green and yellow. May. France. 1739.
" " *Biederma'nni* (Gfl., 1899, 410).
" *monta'num*. See A. SPICATUM.
" *Negu'ndo*. 40. United States. 1688.
" " *borea'le* (M. D. G., 1896, 2). H.
" " *califo'rnicum au'reum* (R. H., 1898, 327). Sapindaceæ. H.
" " *fo'liis margina'tis au'reis* (R. H. B., 1889, 268). H.
" " *Guicha'rdi* (R. H. B., 1889, 268). H.
" " *odessa'num* (M. D. G., 1896, 2). H.
" " *pe'ndulum* (Jard., 1895, 128). H.
" " *Schwer'ini* (M. D. G., 1905, 212). H.
" *ni'grum* (black). See A. SACCHARINUM NIGRUM.
" *nikoe'nse* (Niko). Japan. 1881.
" *oblo'ngum* (oblong-leaved). 20. Green and white. Nepaul. 1824.

A. obtusifo'lium (blunt-leaved). See A. CRETICUM.
" *opulifo'lium* (Guelder-rose-leaved). 20. Green and yellow. May. France. 1823.
" " *obtusa'tum* (blunt-lobed-leaved). 40. Green and yellow. May. Hungary. 1825. This is the *Neapolita'num* of the Italians, and the *hy'bridum* of London nurseries.
" " *O'palus* (Opalus). See A. OPULIFOLIUM.
" *orna'tum*. Dull red, mixed with copper-red. Japan. 1867.
" *palma'tum* (palmate-leaved). 10. Green. Japan. 1820.
" " *Ao'hii* (Gfl., 1892, t. 33). H. tree.
" " *atropurpu'reum*. Japan.
" " *cri'spum*. Japan. 1871.
" " *disse'ctum*. 30. Red. May. Japan. 1845.
" " " *ro'seo-pi'ctum*. 1886. Garden variety.
" " " *orna'tum*. Brownish-red, with yellowish-green mid-ribs. Japan. 1871.
" " *palmati'fidum*. See *Var. dissectum*.
" " *reticula'tum*. Emerald green, with dark green veins. Japan. 1865.
" " *ro'seo-margina'tum*. Light green edged rose. Japan. 1875.
" " *sangui'neum*. Deep reddish-crimson. 1874.
" " *septemlo'bum*. Purplish. Spring. Japan. 1864.
" " " *bi'color*. Variegated with bronze-red and rose. Japan. 1874.
" " " *e'legans*. Tipped with red when young. Japan. 1874.
" " " *margina'tum*. Green, with pale reticulated edges. Japan. 1874.
" *pennsylva'nicum* (Pennsylvanian or striped bark). 20. Green and yellow. May. N. Amer. 1755.
" " *erythrocla'dum* (Späth Cat., n. 116, 72). Sapindaceæ. H.
" *pi'ctum* (painted). 20. Temperate Asia. 1840.
" *platanoi'des* (plane-like). 50. Green and yellow. June. Europe. 1683. Timber.
" " *columna're* (R. H., 1878, 346). H. tree.
" " *compa'ctum* (Gfl., 1886, 117). H. tree.
" " *integri'lobum* (Gfl., 1887, 431 ff.). H. tree.
" " *Joui'nii* (Jouin's). Leaves with yellow blotches. 1910.
" " *lacinia'tum* (cut-leaved). 30. Green and yellow. June. Europe. 1683. Must be grafted or budded. Timber.
" " *mu'lticolor* (Gfl., 1886, 219). H.
" " *sangui'neum* (blood-red). Leaves blood-red in autumn. 1910.
" " *undula'tum* (R. H., 1887, 63). H. tree.
" " *variega'tum* (variegated). 30. Green and yellow. June. Europe. 1683. Must be grafted or budded.
" " *Waldersе'i* (Späth Cat., n. 116, 73). H.
" " *Wittma'chii* (Gfl., 1903, 337, t. 1516). H.
" *Pseu'do-pla'tanus* (the sycamore). 50. Green and yellow. April. Britain. Timber.
" " *brillianti'ssima* (Gard.. 1905, lxvii. 318). H.
" " *erythroca'rpum* (W. G., 1904, 151). H.
" " *euchlo'rum* (B. H., 1879, 270). H. tree.
" " *purpu'reum* (purple-leaved). Purple. May. 1828.
" " *rubicu'ndum* (reddish). Leaves mottled with dark rose. 1910.
" " *subobtu'sum* (slightly blunt-leaved). 50. Green and yellow. May.
" " *variega'tum* (variegated S.). 50. Green and yellow. April. Britain. Must be grafted or budded.
" *ru'brum* (red-flowered or swamp-maple). There are two varieties, one with leaves variegated with white, and the other with yellow. 40. Red. April. N. Amer. 1656.
" " *magni'ficum* (magnificent). Leaves red in autumn. 1910.
" *rufine'rve albo-limba'tum*. Green. May. Japan. 1869.
" *sacchari'num* (sugar-maple). 40. Yellow. April. N. Amer. 1735. Timber.
" " *chloro'cinctum* (R. W., 1906, 128). H.
" " *ni'grum*. 40. April. N. Amer. 1812.
" *sangui'neum*. Carr. in Rev. Hortic., 1867, 280.
" *Semeno'vi*. Turkestan. 1879.
" *sempervi'rens*. See A. HETEROPHYLLUM.
" *sieboldia'num*.
" *sine'nse co'ncolor* (J. R. H. S., xxix. 348 f.). H.

A. spica'tum. United States. 1750.
,, ,, *lacinia'tum.* Leaves deeply cut. 1907.
,, *stachyophy'llum* (G. C., 1903, xxxiii. 62). Himalaya and Central China.
,, *sutchuene'nse* (J. R. H. S., xxix. 353 f.).
,, *tarta'ricum.* 20. Green and yellow. May. Tartary. 1759.
,, *tegmento'sum* (covered). Leaves nearly 6 in. long. Amur region. 1909.
,, *tene'llum* (G. C., 1903, xxxiii. 100). H. Szechuen, China.
,, *tetra'merum lobula'tum* (J. R. H. S., xxix. 353 f.).
,, *Trautvette'ri erythroca'rpa* (Cat. Nat. Arb. Zösch., 1892, 11). H. tree. Caucasus.
,, *Van Volxe'mii.* Greenish, silvery beneath. Caucasus. 1877.
, *veluti'num.* See A. INSIGNE.

ACERA'NTHUS. (From *acer*, sharp, and *anthos*, a flower. Nat. ord. Berberidaceæ.)
Hardy perennial herb. Divisions. Ordinary soil.
A. diphy'llus (two-leaved). ¼. Red. May. Japan. 1830.

A'CERAS. (From *a* without, and *keras* a horn.) Nat. ord. Orchidaceæ, of which there are two species, our British "man orchid" being one of the most interesting, and is found on dry, chalky pastures in Sussex, but has proved difficult to establish under cultivation.
A. anthropo'phora. The green man orchid. June. H. 1 ft.
,, *bollea'na* (G. C., 1898, xxiii. 365, f. 138).
,, *secundiflo'ra* (B. R., t. 1525). See HABENARIA INTACTA.

ACETA'RIOUS PLANTS. Salading.

ACHILLE'A. Milfoil. (*Achilles*, pupil of Chiron, first used it in medicine. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
This genus includes some useful herbaceous plants, which are readily propagated by division. All except one are hardy, and thrive in any ordinary garden soil. *A. Ptarmica flore-pleno* is very useful for cut bloom. *A. Tournefortii* is a greenhouse species of a shrubby habit, and requires to be propagated from cuttings in the spring.
A. abrotanifo'lia (southern-leaved). See TANACETUM MILLEFOLIATUM.
,, *acumina'ta* (taper-pointed). 2. White. August. 1830.
,, *ægypti'aca* (Egyptian). See A. TOURNEFORTII.
,, *ageratifo'lia.* ½. White. May. Greece. 1874.
,, *Age'ratum* (sweet maudlin). 2. Yellow. September. South of Europe. 1570.
,, *al'bida* (whitish). See A. TENUIFOLIA.
,, *alpi'na* (Alpine). 6 inches. White. September. Europe. 1731.
,, *asplenifo'lia* (asplenium-leaved). 1½. Pink. July. N. Amer. 1803.
,, *atra'ta* (black-cupped). White. August. Austria. 1596.
,, *au'rea.* See CHRYSANTHEMUM ACHILLEÆFOLIUM.
,, *auricula'ta* (eared). 1. Yellow. July. Asia Minor. 1827.
,, *Barrelie'ri* (Barrelier's). 1. White. August. Italy. 1825.
,, *chamæmelifo'lia* (chamomile-leaved). 9 inches. White. July. France. 1825.
,, *coarcta'ta* (compressed). See A. COMPACTA.
,, *compa'cta* (compact). 1. Pale yellow. July. 1803.
,, *cre'tica* (Cretan). 1. White. July. Candia. 1739.
,, *crista'ta* (crested-leaved). See A. ALPINA.
,, *decolo'rans* (staining). 1. White, yellow. July. 1798.
,, *decu'mbens* (decumbent). 6 inches. Yellow. July. Kamtschatka. 1816.
,, *Eupato'rium* (fern-leaved). See A. FILIPENDULINA.
,, *falca'ta* (sickle-leaved). 6 inches. Pale yellow. July. Levant. 1739.
,, *filipendula'na* (G. C., 1881, vol. 16, p. 429). 4. Yellow. July. Caspian shore. 1803. One of the best, continuing long in flower.
,, *glomera'ta* (spherical). See A. COMPACTA.
,, *grandiflo'ra* (large-flowered). 1. White. July. Caucasus. 1818.
,, *holoseri'cea* (velvety). 1½. White. August. Parnassus. 1817.
,, *Hute'ri* (Huter's). ½. White. Switzerland. 1908.
A. impa'tiens (impatient). 2. White. August. Siberia. 1759.
,, *lana'ta* (woolly). 1. White. July. 1804.
,, *leptophy'lla* (slender-leaved). Pale yellow. July. Tauria. 1816.
,, *lingula'ta buglo'ssis* (Gard., 1900, lvii. 485). H. 1½ to 2.
,, *macrophy'lla* (long-leaved). 3. White. July. Italy. 1710.
,, *micra'ntha.* 1. Light yellow. August. Orient. 1730.
,, *Millefo'lium* (milfoil). 2. White. August. Britain. Found sometimes with reddish flowers.
,, *mongo'lica* (Mongolian). See A. SIBIRICA.
,, *moscha'ta* (musky). 2. White. June. Italy. 1775.
,, *myriophy'lla* (myriad-leaved). See TANACETUM MILLEFOLIATUM.
,, *na'na* (dwarf). 6 inches. White. July. Italy. 1759.
,, *no'bilis* (noble). 2. White. Germany. 1640.
,, ,, *ochroleu'ca* (yellowish-white). 1½. Pale yellow. August. 1804.
,, *odora'ta* (sweet-scented). 6 inches. White. July. Europe. 1729.
,, *pectina'ta* (comb-leaved). 1½. Pale yellow. August. Hungary. 1801. Thought by some to be the same as *ochroleu'ca.*
,, *Pta'rmica flo're ple'no* (double-blossomed sneezewort). 1. White. August.
,, *pube'scens* (hairy). See A. MICRANTHA.
,, *puncta'ta* (dotted). See A. ODORATA.
,, *recurvifo'lia* (recurve-leaved). See A. CHAMÆMELIFOLIA.
,, *rupe'stris* (B. M., t. 6905; R. H., 1887, 166). Compositæ. H. per.
,, *Santoli'na* (lavender-cotton). 1. Pale yellow. July. Levant. 1759.
,, *santolinoi'des* (lavender-cotton-like). 1. White. July. Spain.
,, *seta'cea* (bristly). 1. White. July. Hungary. 1805.
,, *sibi'rica.* N. Asia. White. June. 1818.
,, *siehea'na* (K. B., 1906, 73). Compositæ. H. 2 to 2½.
,, *specio'sa* (showy). See A. PTARMICA.
,, *squarro'sa* (rough-headed). 1. White. July. 1755.
,, *tau'rica* (Taurian). See A. LEPTOPHYLLA.
,, *tenuifo'lia* (thin-leaved). 1. Yellow. July. Orient. 1658.
,, *tomento'sa* (downy). 2. Yellow. July. Britain.
,, *Tournefo'rtii.* 1. Pale yellow. August. Levant. 1640.
,, *vermicula'ris* (worm-like). 1½. Yellow. August. Russia. 1835.

ACHIME'NES. (From *cheimaino*, to suffer from cold, and *a* prefixed as an augmentive, alluding to the tenderness of the genus. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*). This genus includes a number of interesting species, and many garden varieties. Although usually treated as stove plants, the ordinary varieties may be grown under much cooler treatment than is generally recommended, and they make more serviceable plants. All except where otherwise indicated ripen off in the autumn. They are increased from the tubercules which are found at the base of the stems, and they may also be propagated from cuttings and raised from seed. These should be kept in dry soil during the winter, and started in January or February. Achimenes are very effective as basket plants; when suspended they droop over and form a mass of bloom. They may also be grown in pans, as they do not require much root run, but are benefited by liquid manure after they are well advanced in growth. Formerly they were grown under shading and kept very moist, but if started where they are well exposed, and watering at the roots is properly attended to, they will be more satisfactory.
A. ama'bilis. See NÆGELIA MULTIFLORA.
,, *argyrosti'gma* (silver-spotted). See KŒLLIKERIA.
,, *atrosangui'nea* (dark crimson). See A. FOLIOSA.
,, *ca'ndida* (white). 1½. July. White. Guatemala. 1848.
,, *chontale'nsis.* See EPISCIA.
,, *cocci'nea* (scarlet). Scarlet. August. Jamaica. 1778. A variety, *A. c. major*, is good.
,, *cuprea'ta* (coppery). Scarlet. July. New Grenada. 1847.

A. Esche'rii (Escher's). Purple, crimson. June. Gardens. 1849.
„ *floribu'nda e'legans* (many-flowered). Purple, crimson. October. Gardens. 1848.
„ *folio'sa*. 1½. Crimson. August.
„ *formo'sa* (handsome). Rose. September.
„ *gloxiniæflo'ra* (gloxina-flowered). See GLOXINIA GLABRATA.
„ *grandiflo'ra* (large-flowered). Pale crimson. This is a greenhouse herbaceous plant. October. Mexico. 1842. A variety of this, *Skinnerii*, is a stove plant. Gautemala. Shaded scarlet. 1847.
„ *heterophy'lla* (various-leaved). Scarlet. Van Houtte. July.
„ *hirsu'ta* (hairy). 2½. Rose. September. Brazil. 1844.
„ *interme'dia* (intermediate). 1. Scarlet. August. Gardens. 1847.
„ *Jaure'guia* (Jaureguia's). See A. LONGIFLORA.
„ *Jay'ii* (Jay's). Violet-purple. June. Gardens. 1848.
„ *lana'ta* (woolly). ½. Purple. October. Mexico. 1856.
„ *Liebma'nni* (Liepmann's). 1½. Pale crimson. July.
„ *lilacine'lla*. Lilac. 188. Syn. *Eucodonia lilacinella*.
„ *longiflo'ra* (long-flowered). This is a greenhouse herbaceous plant. Violet. August. Gautemala. 1841. A stove variety, *A. l. major*, is good.
„ „ *a'lba* (white, long-flowered). White. October. Guatemala. 1849. Same as *Jaureguia?*
„ „ *Jaure'guia*. White. Carmine eye. October. Mexico. 1848.
„ „ *Klee'i* (Klee's). ½. August. Pink and purple. Guatemala. 1848.
„ „ *latifo'lia*. Lilac. Guatemala.
„ „ *ma'jor*. Violet. Guatemala.
„ *magni'fica*. 2. Scarlet. New Grenada.
„ *marga'rita*. White. Central America.
„ *mi'sera* (poor-flowered). See DICYRTA WARSCEWICZIANA.
„ *Mountfo'rdii* (Mountford's). Scarlet. August. Garden. 1847.
„ *multiflo'ra* (many-flowered). 1. Lilac. October. Brazil. 1843.
„ *ocella'ta* (eye-spotted). 1½. Red. July. Panama. 1847.
„ *pa'tens* (spreading). 1. Violet. June. Mexico. 1846. A small variety of this is not worth growing.
„ *pedunicula'ta* (long-stalked). 2. Scarlet, yellow. June. Guatemala. 1840.
„ *pi'cta* (spotted). See TYDÆA.
„ *pyropæ'a* (flame-coloured). See A. COCCINEA.
„ *ro'sea* (rosy). 1. Pink. June. Guatemala. 1841.
„ *Schee'rii*. ½. August. 1850. Syn. *Scheeria mexicana*.
„ *Skinne'ri* (Skinner's). See A. HIRSUTA.
„ *sple'ndens*. Violet. Guatemala.
„ *tubiflo'ra* (tube-flowered). 2. White. March. Mexico. 1815.
„ *tyrianthi'na* (Tyrian blue). 1½. Violet-blue. August. Mexico. 1849.
„ *venu'sta* (charming). 1½. Purple. July. Hybrid. 1848.
„ *Verschaffe'ltii*.

[In addition, a long list of garden hybrids might be given.]

A'CHRAS. (The native name. Nat. ord. Sapotaceæ.) Evergreen stove tree. Cuttings in sand in bottom-heat. Loam, peat and sand.

A. Sapo'ta (Sapota). 20 to 50. Whitish. May. Trop. Amer. 1731. "Sapodilla Plum."

ACHYRA'NTHES VERSCHAFFE'LTII. See IRESINE HERBSTII.

ACIDANTHE'RA. (From *akis, akidos*, a point, and *anthera*, an anther; the anthers are pointed. Nat. ord. Iridaceæ.)

Stove bulbs. Offsets. Loam, peat, and sand.

A. aquinoctia'lis (æquinoctial). ½. White, with red spots in the throat. Sierra Leone. 1842.
„ *cape'nsis* (Cape). 1 to 1½. Whitish. September. S. Africa. 1793.
„ *tubulo'sa* (tubular). 1. White or tinged pink. S. Africa. 1825.

ACINE'TA. (From *akineta*, immovable; the lip being jointless. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

A. A'rcei. Yellow. Central Amer. 1866.
„ *Barke'ri*. 2. Yellow. May. Mexico. 1837. Syn. *Peristeria Barkeri*.
„ *colo'ssea* (D. R., 1899, 169). Orchidaceæ. S.
„ *de'nsa*. 1½. Central Amer. 1889. B. M., t. 7143.
„ *hrubya'na* (G. C., 1882, xviii. 102). White, purple. New Grenada. 1882.
„ *Humbo'ldtii*. 2. Chocolate and crimson. May. Venezuela. 1841. Syns. (B. R., 1843, t. 18) *Peristeria Humboldtii* and *Anguloa superba*.
„ „ *Colma'nii* (G. C., 1903, xxxiii. 270). Orchidaceæ. S.
„ „ *strami'nea*. Straw, dotted. Columbia. 1872.
„ *sulca'ta* (G. C., 1879, xi. 652). Ecaudor. 1879.
„ *Wrig'htii* (Gard. World, 1889, v. 673; L. iv. 88). See LACÆNA SPECTABILIS.

ACIO'TIS. (*Akis*, a point, and *ous*, an ear; from shape of petals. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove plants allied to *Osbeckia*, and though requiring heat during the winter may be grown in the greenhouse in summer. Propagate from cuttings early in the spring, using loam, sand, and peat in equal parts; pot on in good loam, adding some leaf-mould and peat.

A. aqua'tica (water). 9 inches. White and red. June. S. Amer. 1793.
„ *di'scolor* (various-coloured). 1. White and red. June. Trinidad. 1816.
„ *fra'gilis* (fragile). ¾. White. June. Guiana. 1822.
„ *paludo'sa* (marsh). ¾. Rose. June. Brazil. 1825.
„ *pendulifo'lia* (drooping-leaved). ¾. Rose. March. Guiana. 1826.
„ *purpu'rascens* (purplish). 4. White. Guiana. 1817.

ACIPHY'LLA. (From *ake*, a point, and *phyllon*, a leaf; referring to the sharply-pointed leaf segments. Nat. ord. Umbelliferæ. Allied to *Angelica*.)

May be propagated by divisions which should be done early in the spring, and may also be raised from seeds sown in April or May; they are all natives of New Zealand, and are suited for the rock-garden. Plant in rich sandy loam.

A. Colenso'i. 6. White. New Zealand. 1875.
„ *Lya'lli*. New Zealand. 1889. (W. G., 1889, 123.)
„ *squarro'sa*. 6. White. New Zealand. (G. C., 1884, vol. 22, p. 328.)

A'CIS. (After *Acis*, a Sicilian shepherd. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Dwarf bulbous plants suitable for a sunny position on the rock-garden. They are rather delicate plants and should be planted in fibrous loam and leaf-mould, propagated by divisions; but the clump should not be disturbed too frequently, for they do better after the second or third year. They are now placed under Leucojum.

A. autumna'lis (autumn-blooming). 3 inches. Pink. September. Portugal. 1829.
„ *ro'sea* (rose-coloured). 3 inches. August. Corsica. 1820.
„ *trichophy'lla* (hair-leaved). 6 inches. White. January. Spain. 1820.
„ „ *grandiflo'ra* (large-flowered). 6 inches. White. August. Numidia. 1820.

ACISANTHE'RA. (*Akis*, a point; *anthera*, an anther, having pointed anthers. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

An evergreen stove-shrub, the rest herbs; allied to *Heeria*; cultivated like *Aciotis*.

A. brevifolia (short-leaved). ½. Purple. Trinidad 1822. Annual.
„ *quadra'ta* (square-branched). 3. Jamaica. 1804.
„ *recu'rva* (recurved). 1. Purple. Trinidad. 1820. Perennial.
„ *triva'lvis* (three-valved). 1. Purple. Guiana. 1825. Annual.

ACMADE'NIA. (*Acme*, a point; *aden*, a gland; the anthers having glands. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen plant, allied to *Diosma*. Propagate from cutting early in the spring, using sand, peat, and loam in equal parts. Pot on into loam and leaf-mould, with sand added.

A. juniperi'na (Juniper-like). 1. May. 1823.
„ *tetrago'na* (four-angled). 2. White. June. Cape of Good Hope. 1798.

ACME'NA. (*Acmena*, a fabulous nymph. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)
Greenhouse evergreen shrubs propagated from young side-shoots early in the spring, in sand and peat. For potting on add loam and leaf-mould; pot firmly, and give careful attention to watering. They are now placed under Eugenia.

A. floribu'nda (many-flowered). 6. White. July. N. Holland. 1788.
„ *ova'ta* (Bull. Cat., 1882, 13).

ACNI'STUS. (Derivation not clear. Nat. ord. Solanaceæ.)
Small greenhouse tree. Cuttings in sand in bottom-heat. Loam, peat, and sand.

A. arbore'scens (tree-like). Mexico.

ACOKA'NTHERA.

A. lycioi'des. 4. White. S. Africa. 1824.
„ *specta'bilis*. 10. White. Spring. S. Africa. 1872.
„ *venena'ta*. 10. White. Spring. S. Africa. 1787.

ACONIO'PTERIS. See ACROSTICHUM.

ACONI'TUM. (Being plentiful near *Acona*. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 3-*Trigynia*.)
Hardy herbaceous plants, some of which are very beautiful and will grow under the shade of trees, and succeed well in any common garden soil, propagated from divisions or seeds. Our indigenous species (*A. Napellus*), the Common Monkshood, is one of the most virulent poisons to cattle and to human beings; the roots, though distinct, have been taken for horse-radish, and fatalities have occurred through the mistake. Almost all other species are equally dangerous.

TUBEROUS ROOTED.

A. acumina'tum (acuminate). See A. PANICULATUM.
„ *acu'tum* (acute-leaved). See A. NAPELLUS.
„ *albi'dum* (whitish). See A. NAPELLUS.
„ *a'lbum*. See A. VARIEGATUM.
„ *amæ'num* (pleasing). See A. NAPELLUS.
„ *ampliflo'rum* (large-flowered). See A. NAPELLUS
„ *angustifo'lium* (narrow-leaved). See A. NAPELLUS.
„ *bernhardia'num* (Bernhard's). See A. NAPELLUS.
„ *biflo'rum* (two-flowered). ½. Pale blue. June. Siberia. 1817.
„ *Brau'nii* (Braune's). See A. NAPELLUS.
„ *callibo'tryon* (fine-racemed). See A. NAPELLUS.
„ *Ca'mmarum* (Cammarum). 3. Purple. August. Austria. 1752.
„ „ *stœrkianum*.
„ *ce'rnuum* (drooping). See A. CAMMARUM.
„ „ *flexicau'le* (zigzag-stemmed). 3. Blue. July. Switzerland. 1819.
„ „ *pauciflo'rum* (few-flowered). 3. Blue. July. Switzerland. 1821.
„ „ *ramo'sum* (branchy). 3. Blue. July.
„ *Clu'sii* (Clusius's). See A. NAPELLUS.
„ *columbia'num*. Western North America.
„ *commuta'tum* (changed, or tall dog's-bane). See A. NAPELLUS.
„ *delphinifo'lium* (larkspur-leaved). See A. NAPELLUS.
„ *dissec'tum* (Gfl., 1886, 226, f.). H. per.
„ *ela'tum* (tall). See A. NAPELLUS.
„ *e'minens* (eminent). See A. NAPELLUS.
„ *erioste'mum* (woolly-stamened). See A. CAMMARUM.
„ *eusta'chium* (well-spiked). See A. NAPELLUS.
„ *exalta'tum* (exalted). See A. CAMMARUM.
„ *Fische'ri* (B. M., t. 7130). Blue. Syn. *A. californicum*. North-east Asia, Japan, and N. Amer.
„ *fla'ccidum* (flaccid). 5. Blue. July. Siberia. 1822.
„ *florkea'num* (Flörke's). 3. Blue. July. Siberia. 1822.
„ „ *bi'color* (two-coloured). 3. Blue, white. June. Switzerland. 1801.
„ *formo'sum* (handsome). See A. NAPELLUS.
„ *Fu'nckii* (Funke's). See A. NAPELLUS.
„ *galea'tum* (lizard's-bane). See A. ORIENTALE.
„ *gibbo'sum* (swollen). See A. VARIEGATUM.
„ *Gmeli'ni* (Gmelin's). See A. LYCOCTONUM.
A. gra'cile (slender). See A. VARIEGATUM.
„ *gymna'ndrum* (B. M., t. 8113). H. 6. Tibet and W. China. 1907.
„ *Halle'ri* (Hallet's). See A. NAPELLUS.
„ „ *bi'color* (two-coloured). 4. Blue. June. Switzerland. 1820.
„ *hama'tum* (hooked). See A. VARIEGATUM.
„ *hebe'gynum* (hairy-styled). See A. PANICULATUM.
„ „ *multi'fidum* (many-cleft). 3. Purple. July. Switzerland. 1819.
„ *hemsleya'num* (J. R. H. S., xxviii. 58, f. 13). H. Blue. Central China. 1905.
„ *heterophy'llum* (greenish-yellow). Himalayas. 1874.
„ *hi'ans* (gaping). 4. Blue. June. South of Europe. 1823.
„ *Ho'ppii* (Hoppe's). See A. NAPELLUS.
„ *illini'tum* (anointed). See A. VARIEGATUM.
„ *interme'dium* (intermediate). See A. VARIEGATUM.
„ *inu'nctum* (anointed). See A. NAPELLUS.
„ *japo'nicum* (Japan). 6. Flesh. August. Japan. 1790.
„ „ *cœru'leum* (azure). 4. Blue. July. Japan. 1700.
„ *kœlea'num* (Kœlle's). See A. NAPELLUS.
„ „ *pygmæ'um* (pigmy). 2. Blue. June. South of Europe. 1822.
„ *Köhle'ri* (Köhler's). See A. NAPELLUS.
„ *lacinio'sum* (jagged). See A. VARIEGATUM.
„ *læ'tum* (joyful). See A. NAPELLUS.
„ *la'xum* (loose). See A. NAPELLUS.
„ *leuca'nthum* (white-flowered). 3. White. June. 1823.
„ *ma'ximum* (largest). See A. FISCHERI.
„ *melo'ctonum* (badger's-bane). See A. LYCOCTONUM.
„ *Meye'ri* (Meyer's). See A. NAPELLUS.
„ *mo'lle* (soft). See A. PANICULATUM.
„ *Nape'llus* (monk's-hood). 4. Blue. June. Europe. 1596.
„ „ *a'lbum* (white-*flowered*). 4. White. June. Switzerland. 1819.
„ „ *e'minens* (B. M., t. 8152). 9. Rhenish Prussia.
„ „ *rube'llus* (small red-*flowered*). 4. Blue. June. Switzerland. 1819.
„ *nasu'tum* (great-nosed). See A. FISCHERI.
„ *neomonta'num* (new-mountain). See A. NAPELLUS.
„ *neuberge'nse* (Neuberg). See A. NAPELLUS.
„ *ni'tidum* (shining). See A. LYCOCTONUM.
„ *oligoca'rpum* (few-podded). See A. NAPELLUS.
„ *orienta'le*. Caucasus. 1822.
„ *ottonia'num* (Otto's). See A. CAMMARUM.
„ *panicula'tum* (panicled). 3. Pale blue. July. France. 1815.
„ *plica'tum* (plaited). See A. NAPELLUS.
„ *produ'ctum* (long-*lipped*). See A. NAPELLUS.
„ *pube'scens* (pubescent). See A. NAPELLUS.
„ *reco'gnitum* (recognised). See A. VOLUBILE.
„ *rhyncha'nthum* (bill-flowered). See A. VARIEGATUM.
„ „ *bi'color* (two-coloured). 4. Whitish-blue. July. Switzerland. 1819.
„ *ri'gidum* (rigid). See A. NAPELLUS.
„ „ *grandiflo'rum* (large-flowered). 3. Blue. June. 1826.
„ *rostra'tum* (beaked). See A. NAPELLUS.
„ „ *pilosiu'sculum* (rather hairy). 3. Purple. July. Carpathian mountains. 1800.
„ *scapo'sum pyramida'le* (G. C., 1904, xxxvi. 155). H. Heliotrope. Central China.
„ *Schleiche'ri* (Schleicher's). See A. NAPELLUS.
„ *semigalea'tum* (half-helmeted). See A. NAPELLUS.
„ *specio'sum* (showy). See A. CAMMARUM.
„ *Sprengel'lii* (Sprengel's). See A. CAMMARUM.
„ *squarro'sum* (squarrose). See A. LYCOCTONUM.
„ *stri'ctum* (upright). See A. NAPELLUS.
„ *tau'ricum* (Taurian). See A. Napellus.
„ *tortuo'sum* (twisting). 6. Purplish-blue. June. 1812.
„ *to'xicum* (poisonous). See A. PANICULATUM.
„ *umbro'sum* (shady). 3. Blue. July. Switzerland. 1825.
„ *uncina'tum* (hooked). 2. Blue. July. N. Amer. 1768.
„ „ *michauxia'num* (Michaux's). 2. Blue. July. N. Amer. 1800.
„ *variega'tum* (variegated). 5. Purplish-white. July. South of Europe. 1597.
„ „ *albiflo'rum* (white-flowered). 4. White. July. Switzerland. 1819.

A. variega'tum bi'color (two-coloured). 4. Whitish-blue. July. Switzerland. 1821.
,, ,, *cæru'leum* (blue). 4. Blue. July. Switzerland. 1819.
,, *venu'stum* (beautiful). See A. NAPELLUS.
,, *Vilmori'ni* (Vilmorin's). Blue. China. 1908.
,, *virga'tum* (twiggy). See A. NAPELLUS.
,, *volu'bile* (twining). 6. Blue. July. Siberia. 1799.
,, ,, *latise'ctum* (broadly-cut). See A. VILMORINI.
,, ,, *tenuise'ctum* (finely-cut). 6. Blue. Manchuria. 1910.
,, *Willdeno'vii* (Willdenow's). See A. NAPELLUS.
,, *Wilso'ni* (Gard., 1903, lxiv. 340, f.). H. China.
,, *zoo'ctonum* (poisonous). See A. LYCOCTONUM.

FIBROUS ROOTED.

A. A'nthora (Anthora). 1½. Pale yellow. July. Pyrenees. 1596.
,, *anthoroi'deum* (Anthora-like). See A. ANTHORA.
,, *austra'le* (southern). See A. LYCOCTONUM.
,, *autumna'le* (autumnal). See A. FISCHERI.
,, *barba'tum* (bearded). See A. LYCOCTONUM.
,, *carpa'ticum* (Carpathian). See A. LYCOCTONUM.
,, *chine'nse* (Chinese). 4. Blue. September. China. 1833.
,, *cyno'ctonum* (*tall* dog's-bane). See A. LYCOCTONUM.
,, *Decando'llii* (Decandolle's). See A. ANTHORA.
,, *deco'rum* (neat). See A. CAMMARUM.
,, *eu'lophum* (well-crested). See A. ANTHORA.
,, *grandiflo'rum* (large-flowered). See A. ANTHORA.
,, *hi'spidum* (rough-haired). See A. LYCOCTONUM.
,, *Jacqui'ni* (Jacquin's). See A. ANTHORA.
,, *Lama'rckii* (Lamarck's). See A. LYCOCTONUM.
,, *laxiflo'rum* (loose-flowered). See A. NAPELLUS.
,, *lupici'dum* (wolf's-bane). See A. LYCOCTONUM.
,, *Lyco'ctonum* (wolf's-bane). 3. Purple. July. Alps. Europe. 1596.
,, ,, *pyrenai'cum*. 3. Yellow. June. Pyrenees. 1739.
,, ,, *ranunculiflo'lium*.
,, *macrophy'llum* (large-leaved). See A. ORIENTALE.
,, *molda'vicum* (Moldavian). See A. LYCOCTONUM.
,, *nemoro'sum* (grove). See A. ANTHORA.
,, *Nutta'llii* (Nuttall's). 5. Pale blue. August. N. Amer. 1829.
,, *ochra'nthum* (pale-flowered). See A. LYCOCTONUM.
,, *ochroleu'cum* (yellowish-white). See A. LYCOCTONUM.
,, *ova'tum* (ovate-leaved). See A. HETEROPHYLLUM.
,, *Palla'sii* (Pallas's). See A. ANTHORA.
,, *pyrena'icum* (Pyrenean). See A. LYCOCTONUM.
,, *re'ctum* (upright). See A. LYCOCTONUM.
,, *rubicu'ndum* (reddish). See A. LYCOCTONUM.
,, *septentriona'le* (northern). See A. LYCOCTONUM.
,, *stoerkia'num* (Stoerk's). See A. CAMMARUM.
,, *therio'phonum* (beast's-bane). See A. LYCOCTONUM.
,, *trago'ctonum* (goat's-bane). See A. LYCOCTONUM.
,, *versi'color* (various-coloured). See A. CAMMARUM.
,, *vulpa'ria* (fox-bane). See A. LYCOCTONUM.

A'CORUS. (From *a*, privative, and *kore*, the pupil of the eye; referring to its medical qualities. Nat. ord. *Aroids* [Araceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

A small genus of herbaceous plants, having sword-like leaves. *A. Calamus* is a useful medicinal plant—a native of our marshes; but now used chiefly by perfumers for the fragrance of its roots. Hardy marsh perennials. Thrives on river-banks or on the margins of ponds.

A. Ca'lamus (sweet-flag). 2. June. Britain.
,, ,, *terre'stris*. 1. June. China. 1822. Sch. Gen. Ar., t. 98.
,, ,, *variega'tus*. A useful garden variety.
,, *grami'neus* (grass-leaved). ½. February. Japan. 1796.
,, ,, *variega'tus*. A garden variety used for rockeries.

ACRADE'NIA. (From *akros*, the top, and *aden*, a gland. Five glands are seen on the top of the ovary. Nat. ord. Rutaceæ.)

A cool greenhouse evergreen shrub, with trifoliate leaves dotted with glands; cuttings from side-shoots in spring; put in the close propagating frame. Pot in good loamy soil.

A. Frankli'niæ. 8. White. Tasmania. 1845.

ACRE is the usual land-measure in Great Britain. The Statute Acre throughout the United Kingdom now contains 4 square *roods*; a rood contains 40 square *perches*, *rods*, *poles*, or lugs; and a perch contains 30¼ square yards. A Statute Acre, therefore, contains 4840 square yards. The *Irish Acre* contains 7840 square yards, or nearly equal to 1 acre, 2 roods, and 19 perches, Statute measure. The *Scotch Acre* contains 5760 square yards, equal to 1 acre, 1 rood, and 2 perches, Statute measure.

ACRIDOCA'RPUS. (From *akris*, a locust, and *karpos*, fruit; in reference to a resemblance of the fruit to a locust. Nat. ord. Malpighiaceæ.)

A pretty greenhouse climber; should be potted in a rough, porous soil, with good drainage; and requires liberal supplies of water. Usually increased from imported seeds, but may also be propagated from cuttings taken from young growths, and put in the propagating frame where there is bottom-heat.

A. natali'tius. Yellow. July. Natal. 1867. B. M., t. 5738.
,, *zanziba'ricus* (Zanzibar). 10. Yellow. Zanzibar. 1825.

ACRIO'PSIS. (From *akros*, top, and *opsis*, eye. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

A small genus of pretty stove orchids.

A. densiflo'ra (crowded-flowered). Green and pink. Borneo. 1846.
,, *i'ndica* (G. C., 1881, xv. 656). India.
,, *java'nica*. White, green, and purple. August. Bantam. 1842. Syn. *A. picta*.
,, *latiflo'lia* (broad-leaved). Whitish-yellow, striped red-purple. Straits Settlements. 1909.
,, *pi'cta* (painted). See A. JAVANICA.

ACROCHÆ'NE. (From *akros*, top, and *chaino*, to gape. Nat. ord. Orchidaceæ; tribe, Epidendreæ; subtribe, Dendrobieæ.)

A. Rima'nni. Lilac purple. Tropical Asia.

ACROCLI'NIUM. See HELIPTERUM.

ACROCO'MIA. (From *akros*, top, and *kome*, a tuft; referring to the way the leaves are produced. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*.)

A genus of South American Palms; a race of plants including some of the most majestic specimens of the vegetable kingdom, whose products of fruit, root, stems, and leaves are applied to numerous economical purposes. The suckers or stems from the roots require to be taken off carefully and potted in sandy loam.

A. aculea'ta (prickly). See A. SCLEROCARPA.
,, *cube'nsis*. See A. LASIOSPATHA.
,, *fusifo'rmis* (spindle-shaped). 40. Trinidad. 1731.
,, *globo'sa* (globular). 20. St. Vincent. 1824.
,, *guiane'nsis* (Guiana). 30. Demerara. 1824.
,, *ho'rrida* (horrid). 30. Trinidad. 1820.
,, *lasiospa'tha*. Para. 1846. Syn. *A. cubensis*.
,, *mi'nor* (smaller). 20. Trinidad. 1820.
,, *scleroca'rpa* (hard-fruited). 40. W. Ind. 1731.
,, *tenuifo'lia* (fine-leaved). 30. Brazil. 1824.

ACRONY'CHIA. (From *akros*, top, and *onyx*, a claw; referring to the curved points of the petals. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

A fine greenhouse evergreen tree, producing sweet-scented blossoms, not unlike those of the orange. Cuttings of small side-shoots in July, in sand, under a bell-glass; soil, sandy loam and peat. Winter temp., 40° to 45°.

A. Cunninghami (Cunningham's). See MEDICOSMA.
,, *laurifo'lia* (laurel-leaved). 4. Yellow. Trop. Asia. 1820.
,, *lævis* (smooth). White. April. Australia. 1825.

ACROPE'RA. (From *akros*, the end, and *pera*, a pouch; referring to a pouch-like appendage at the end of the labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 29-*Gynandria*, 1-*Monogynia*.)

A pretty stove orchid. For culture, see ORCHIDS.

A. Loddige'sii (Loddiges's). See GONGORA GALEATA.

ACRO'PHORUS. See DAVALLIA.

ACROPHY'LLUM. (From *akros*, top, and *phyllon*, a leaf; referring to the way in which the leaves are produced at the summit of the branches above the flowers. Nat. ord. *Cunoniads* [Saxifragaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse evergreen shrub. Cuttings of half-ripe shoots in July; soil, sandy peat and loam.

A. veno'sum. 6. Pink and white. May. N. Holland. 1836.

„ *verticilla'tum* (whorled). See A. VENOSUM.

ACRO'PTERIS. (From *akros*, a point, and *pteris*, a fern. Nat. ord. *Filices*. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Allied to *Asplenium*, the Spleenwort. Stove Ferns, propagated by division; soil, light, loam and peat. See ASPLENIUM.

A. austra'lis (southern). Brown. N. Holland.

„ *canarie'nsis* (Canary). Brown. Canaries. 1824.

„ *cauda'ta* (tailed). Brown. I. of Luzon. 1824.

„ *falca'ta* (sickle-like). 1. Brown. India. 1843.

„ *laserpitiifo'lia* (laserpitium-leaved). Brown. I. of Luzon. 1843.

„ *oxyphy'lla* (sharp-leaved). Brown, yellow. I. of Luzon. 1843.

„ *pellu'cida* (clear). Brown. I. of Luzon. 1843.

„ *platyphy'lla* (flat-leaved). Brown, yellow. Malacca. 1843.

„ *præmo'rsum* (bitten-leaved). A synonym of *Asplenium furcatum*.

„ *radia'ta* (rayed). Brown. N. Amer. 1793.

„ *Ru'ta-mura'ria* (wall-rue). ½. Brown. Britain. 1793.

„ *septentriona'le* (northern). ½. Brown. Britain. 1844.

„ *Se'rra* (saw-leaved). Brown. North of Europe. 1844.

„ *spathuli'na* (spathulate). I. of Luzon. 1844.

„ *va'rians* (varying). I. of Luzon. 1844.

„ „ *au'reum*. Syn. *A. marginatum*.

These are now all included under the Aspleniums, and modern authors do not recognise the name.

ACRO'STICHUM. (From *akros*, top, and *stichos*, order; in reference to the lines on the back of the leaves; but the application is not very obvious. Linn. 24-*Cryptogamia*, 1-*Filices*. Nat. ord. *Ferns* [Filices].)

Nearly all stove Ferns. Seed and root division; loam and peat, equal parts. Winter temp. not below 50°.

A. acumina'tum. 2. Brazil. 1831.

„ *alcico'rne* (elk's-horn). See PLATYCERIUM.

„ (*Cordreyi*, „ „ *dive'rgens*, „ „ *Hi'lli* „ „ *ma'jus*, garden varieties. See PLATYCERIUM.)

„ *apiifo'lium* (celery-leaved). July. Philippines.

„ *appendicula'tum* (appendaged). 2. W. Ind. 1824.

„ *articula'tum* (jointed). 2–3. Philippines.

„ *aspleniifo'lium* (asplenium-leaved). 1. Brown, yellow. July. Brazil. 1833.

„ *au'reum* (golden). 4. August. W. Ind. 1855.

„ *auri'tum* (eared). 1–1½. Philippines, Malaya.

„ *bifurca'tum* (twice-forked). ½–¾. March. St. Helena.

„ *brasilie'nse*. 1. Brazil.

„ *cervi'num* (stag's-horn-like). 3–5. Mexico to Peru. 1823.

„ „ *corcovade'nse* (Corcovado). Fronds simply pinnate. Brazil. 1837.

„ *citrifo'lium* (orange-leaved). ½. Yellow, brown. September. W. Ind.

„ *confor'me*. ½. Trop. Amer.

„ *crena'tum*. Syn. *A. crispatulum*. Variety of *A. virens*.

„ *crini'tum* (hairy). 1. July. W. Ind. 1793.

„ *decora'tum*. 1. W. Ind.

„ *decur'rens*. 1. Philippines.

„ *fimbria'tum* (fringed). Brazil. 1824.

„ *flabella'tum* (fan-shaped). ½. Colombia to Peru.

„ „ *triparti'tum* (three-parted). Colombia.

„ *fla'cidum* (feeble). ½–1. Panama to Brazil.

„ *flagelli'ferum* (rod-shaped). 2. E. Ind. 1828.

„ *fœniculá'ceum* (fennel-like). ½–¾. Andes of Ecuador.

„ *fusifo'rme* (spindle-formed). 1. Brown, yellow. July. Malacca.

„ *glandulo'sum* (glandulous). 1. Jamaica. 1825.

„ *gran'de* (magnificent). See PLATYCERIUM.

„ *Herminie'ri*. Trop. Amer. 1871.

„ *juglandifo'lium* (walnut-leaved). 2. Yellow, brown. August. Surinam. 1832.

„ *latifo'lium* (broad-leaved). 1. Yellow, blue. Jamaica.

„ *lechleria'num* (Lechlerian). 3½–5. Peru and Ecuador. 1886.

A. longifo'lium (long-leaved). See A. LATIFOLIUM.

„ *ma'gnum*. 1. Demerara.

„ *musco'sum*. 1. Trop. Amer.

„ *nicotianæfo'lium* (tobacco-leaved). 2. Brown. October. W. Ind.

„ *no'bilis*. 2. Brazil.

„ *osmunda'ceum*. Syn. *Polybotrya osmundaceum*.

„ *pelta'tum* (shield-like). ¼–½. Mexico to Peru and Brazil.

„ *piloselloi'des* (mouse-ear-leaved). See A. SPATHULATUM.

„ *preslia'num*. 1. Trop. Amer.

„ *punctula'tum* (finely-dotted). 1½–2½. Mascarene Isles.

„ *quercifoli'ium*. Syn. *Gymnopteris quercifolium*.

„ *rig'idum*. 1. Brazil.

„ *sca'ndens*. Syn. *Stenochlæna scandens*.

„ *scolope'ndrifolium* (scolopendrium-like). 2. Brown. August. E. Ind.

„ *serratifo'lium* (serrate-leaved). 2–3½. Venezuela; Brazil; Peru.

„ *si'mplex* (simple-leaved). 1. Jamaica. 1793.

„ *spathula'tum*. 2. Brown, yellow. July. E. Ind. 1822.

„ *Stemma'ria* (Stemmaria). See PLATYCERIUM ÆTHIOPICUM.

„ *subdia'phanum* (semi-transparent). Brown. India.

„ *villo'sum*. 1. Trop. Amer.

„ „ *undula'tum*. 1. Trop. Amer.

„ *vi'rens crispa'tulum*. Pinnæ crisped.

„ *visco'sum*. ½. Trop. Amer.

ACROTRE'MA. (From *akros*, a point, and *trema*, a perforation. Nat. ord. Dilleniaceæ.) Greenhouse plants. Treatment as given for Doliocarpus.

A. Walke'ri (B. M., t. 5353). Yellow. June. Ceylon. 1861. Warm greenhouse.

ACRO'TRICHE. (From *akros*, top, and *thrix*, hair; referring to the hairs on the sepals. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 6-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Cuttings in sandy peat, under a bell-glass, in cold frame. Temp., 40° to 45°.

A. corda'ta (heart-leaved). See A. OVALIFOLIA.

„ *divarica'ta* (straggling). ½. White. May. N. Holland. 1824.

„ *ovalifo'lia* (oval-leaved). ½. White. May. N. Holland. 1823.

ACTÆ'A. (From *aktaia*, the elm; referring to the leaves. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Hardy herbaceous perennials of little beauty. Propagated by dividing roots.

A. palma'ta. A synonym of *Trautvetteria palmata*.

„ *spica'ta* (spiked or *bane-berry*). 3. White. May. Britain.

„ „ *ni'gra*.

„ „ *ru'bra*.

ACTINE'LLA. (From *aktin*, a ray. Nat. ord. Compositæ.) In open border with light sandy soil.

A. grandiflo'ra. ½. Yellow. Colorado.

„ *lana'ta*. See ERIOPHYLLUM CÆSPITOSUM.

„ *scapo'sa*. 1. Yellow. Texas.

ACTINI'DIA. (From *aktin*, a ray.) Nat. ord. Ternstrœmiaceæ. Syn. *Trochostigma*. Ornamental, hardy, deciduous climbing shrubs, with axillary corymbs of blooms. They thrive in a light rich soil; increased by seeds, layers, or cuttings. Useful as climbers on a wall or trellis-work.

A. callosa. (Rev. Hort., 1874, f. 395.) White. N.E. Asia.

„ *chine'nsis*. (The Gard., 1882, vol. xxi. p. 101.) Bright yellow. Central China.

„ *Henry'i*. Leaves bronze-red. China. 1906.

„ *Kolomi'cta*. See A. CALLOSA.

„ *poly'gama*. White. Japan. 1870.

„ *volu'bilis*. (Rev. Hort., 1874, f. 395.) White. Japan 1874.

ACTINOCA'RPUS. (From *aktin*, a ray, and *carpos*, fruit; referring to its radiated appearance. Nat. ord. *Alismads* [Alismaceæ]. Linn. 6-*Hexandria*, 4-*Polygynia*.) Now included with Damasonium.

Aquatics. *A. minor* grows in sandy peat immersed in water; seeds sown in sandy peat; temp., 40° to 50°.

A. Damaso'nium (Damasonium). ½. White. July. England.
„ *mi'nor* (smaller). ½. White. June. N. S. Wales.

ACTINOLE'PIS. (From *aktin*, a ray, and *lepis*, a scale. Nat. ord. Compositæ.) A free-growing annual, very pretty as an edging plant, also known as *Shortia californica*.

A. corona'ria (B. M., t. 3828). 1. Yellow. California. September. 1839. Syns. *Bœria coronaria* and *Hymenoxys californica*.

ACTINO'MERIS. (From *aktin*, a ray, and *meris*, part; referring to the radiated aspect of the parts. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*.)
Ornamental hardy plants, allied to Coreopsis, and of easy culture. Propagated by dividing roots.

A. ala'ta (wing-stalked). See VERBESINA OCCIDENTALIS.
„ *helianthoi'des* (sunflower-like). 3. Yellow. S. Amer. 1825.
„ *proce'ra* (tall). See A. SQUARROSA.
„ *squarro'sa* (squarrose). 3. Yellow. July. N. Amer. 1640.

ACTINIO'PTERIS. (From *aktin*, a ray, and *pteris*, a fern.) Nat. ord. *Ferns* [Filices]. A very distinct genus, having small palmate fronds, deep green, and requiring a moderate stove temperature. Should be raised from spores (see TREATMENT OF FERNS). They like an open compost consisting chiefly of loam, peat, and sand; with good drainage.

A. radia'ta. India. 1869. (Ic. Pl., t. 975.)
„ „ *austra'lis*. (Ic. Pl., t. 976.)

ACTINO'TUS. (From *actinotos*, meaning radiated, on account of the form of the involucrum. Nat. ord. *Umbelliferæ* [Umbelliferæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Perennials requiring greenhouse treatment; in winter the temperature should not fall below 35° to 40°; propagated by divisions of roots; grow in good fibrous loam, or peat may be added if the loam is heavy.

A. Helia'nthi (sunflower). 2. White. June. N. Holland. 1821.
„ *leucoce'phalus* (white-headed). Swan River. 1837.

ACU'MINATED. Having a long, slender point.

A'CYNOS. (A Greek word of no obvious meaning, applied to balsamic plants. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.) Now referred to Calamintha.
These thyme-like plants are all hardy. Increased either by seeds or division of roots.

ANNUALS.

A. heterophy'llus (variable-leaved). ½. Purple. June. Italy. 1822. See CALAMINTHA SUAVE'OLENS.
„ *suave'olens* (sweet-scented). 1. Red. July. Greece. 1817.
„ *vulga'ris* (*Ba'sil-leaved*, common). Violet. July. Britian. See CALAMINTHA ACINOS.
„ *villo'sus* (villous). ½. Red. July. Germany. 1817.

BIENNIALS.

A. alpi'nus (Alpine). ½. Purple. August. Austria. 1731.
„ *grandiflo'rus* (great-flowered). ½. Purple. July. 1810.
„ *patavi'nus* (Paduan). ½. Flesh. July. S. Europe. 1776.
„ *purpura'scens* (purplish). ½. Purple. June. Spain. 1820.

EVERGREEN SHRUBS.

A. grave'olens (strong-scented). 1. Purple. July. Crimea. 1820.
„ *He'rba-baro'na* (herb-barona). 1. Purple. July. Corsica. 1820. See THYMUS HERBA-BARONA.
„ *rotundifo'lius* (round-leaved). ½. Purple. June. Spain. 1820. See CALAMINTHA ALPINA.

A'DA. (A name probably given in honour of some lady. Nat. ord. Orchidaceæ.) Tribe, Vandeæ. A genus of epiphytes, containing two species found at high elevations on the Columbian Andes, succeed well in a cool greenhouse. May be grown with the Odontoglossums.

A. auranti'aca (B. M., t. 5435). Orange. New Grenada. 1864.
„ *Lehma'nni*. Leaves marbled with grey. A newer introduction.

ADAM'S APPLE. A name applied to several different plants, including *Citrus Limetta* and *Musa paradisiaca*.

ADAM'S NEEDLE. See YUCCA.

ADA'MIA. (In honour of *John Adam*, M.D., of Calcutta. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 5-*Pentagynia*. Now referred to Dichroa.)
Greenhouse evergreen shrubs. Pot in light fibrous loam, or add peat and leaf-mould; propagate from cuttings in close frame.

A. cya'nea (blue-berried). See DICHROA FEBRIFUGA.
„ *sylva'tica* (wood). See DICHROA FEBRIFUGA.
„ *versi'color* (many-coloured). See DICHROA FEBRIFUGA.

ADA'MSIA SCILLOI'DES. See PUSCHKI'NIA.

ADANSO'NIA. The Baobab. A single African tree comprehends this genus. Is regarded as one of the largest trees in the world.

A. digita'ta. White. Senegal. 1724. B. M., t. 2791-2.

ADDER'S-TONGUE. A Fern. *Ophioglo'ssum*.

ADELA'STER ALBIVE'NIS. An excellent foliage plant, with leaves of a dark green, veined with white. Now referred to Eranthemum.

ADE'LGES ABIE'TIS. See INSECT PESTS.

ADE'LIA. (From *a*, not, and *delos*, visible; in reference to the minute parts of fructification. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 22-*Diœcia*, 1-*Monandria*.)
Stove evergreen shrubs. Peat and loam; cuttings in sandy loam, after their cut end is dry.

A. Acido'ton (spiry). 3. Greenish-white. June. Jamaica. 1768.
„ *Berna'rdia* (Bernard de Jussieu's). 6. Green. July. Jamaica. 1768. See BERNARDIA DICHOTOMA.
„ *ricine'lla* (ricinus-like). 6. Greenish-white. July. Jamaica. 1768.

ADELOBO'TRYS. (From *adelos*, obscure, and *botrys*, a cluster. Nat. ord. Melastomaceæ.) Stove epiphytes. For culture, see PLEROMA.

A. Linde'ni. White changing to purple. Brazil. 1866.
„ *sca'ndens*. White. Guiana.

ADENA'NDRA. (From *aden*, a gland, and *aner*, the stamen or male organ; referring to the aspect of the anthers. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. This genus was formerly included in Diosma.)
Greenhouse evergreen shrubs, propagated from half-ripened shoots in close frame with a little bottom-heat; may be grown in the open during the summer, and in a light airy house during the winter, with a temperature not falling much below 40°. Pot in light fibrous loam, with leaf-mould and peat added; careful attention to watering is necessary.

A. acumina'ta (acuminate). See A. AMŒNA.
„ *amœ'na* (pleasing). 2. Red. June. Cape of Good Hope. 1798.
„ „ *acumina'ta*. 2. White. June. Cape of Good Hope. 1812.
„ *coria'cea* (leathery-leaved). 2. Pink. June. Cape of Good Hope. 1720.
„ *fra'grans* (fragrant). 3. Pink. June. Cape of Good Hope. 1812.
„ *linea'ris* (linear-leaved). See A. UNIFLORA.
„ *margina'ta* (margined). 2. Pink. June. Cape of Good Hope. 1806.
„ *specio'sa* (showy). See A. UMBELLATA.
„ *tetrago'na*. See ACMADENIA TETRAGONA.
„ *umbella'ta* (umbel-flowered). 2. Pink. June. Cape of Good Hope. 1790.
„ „ *multiflo'ra* (many-flowered, showy). 2. Pink. June. Cape of Good Hope. 1790.
„ „ *pauciflo'ra* (few-flowered, showy). 2. Pink. June. Cape of Good Hope. 1790.

A. uniflo'ra (one-flowered). 1. Pink. June. Cape of Good Hope. 1775.
,, ,, *linea'ris*. 1. Pink. June. Cape of Good Hope. 1800.
,, ,, *pube'scens*. 2. Pink. June. Cape of Good Hope. 1786. Syn. *A. villosa*.
,, *villo'sa* (shaggy). 2. Pink. June. Cape of Good Hope. 1786.

ADENANTHE'RA. (From *aden*, a gland, and *anthera*, an anther; referring to the gland on each anther. Linn. 10-*Decandria*, 1-*Monogynia*. Nat. ord. *Leguminous Plants* [Leguminosæ], and allied to Mimosa.)
Stove evergreen trees. Loam and peat; cuttings.

A. chrysosta'chys. See PIPTADENIA.
,, *falca'ta* (sickle-shaped). 5. Yellow. E. Ind. 1812.
,, *pavoni'na* (peacock-like). 5. Yellow, white. July. E. Ind. 1759.
,, *sca'ndens*. See ENTADA.

ADENA'NTHOS. (From *aden*, a gland, and *anthos*, a flower; referring to the glands on the flowers. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)
Greenhouse evergreen shrubs. Sandy peat cuttings in spring, under a glass, in sand; soil, peat and loam. Winter temp., 40° to 45°.

A. barbi'gera (bearded). Swan River.
,, *cunea'ta* (wedge-leaved). 5. Red. July. N. Holland. 1824.
,, *obova'ta* (obovate-leaved). 5. Red. July. N. Holland. 1826.
,, *seri'cea* (silky). 5. Red. N. Holland. 1824.
,, *termina'lis* (terminal-flowered). Swan River.

ADE'NIUM. (From *Aden*, where it is native. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Greenhouse shrub, allied to Alstonia. It is propagated from cuttings of the young shoots in sand, under a glass, with bottom-heat, in spring. Soil, loam, leaf-mould, and some manure; if loam is heavy, add some peat and pot firmly.

A. obe'sum. 3. June. Pinky crimson. Aden. 1845. B. M., t. 5418. Syn. *A. Honghel*.

ADENOCALY'MNA. (From *aden*, a gland, and *calymna*, a covering; referring to the conspicuous glands on the leaves and floral coverings. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
A genus allied to Spatho'dea. Stove evergreen twiner. Loam and peat; cuttings in sand and peat in the stove propagating pit.

A. como'sum (hairy). 20. October. Yellow. Brazil. 1841.
,, *longeracemo'sum*. Yellow. October. Brazil.
,, *ni'tidum*. Yellow. Brazil. 1869. Pax. Fl. Gard., t. 2.

ADENOCA'RPUS. (From *aden*, a gland, and *carpos*, fruit; referring to the glands on the fruit. Nat. ord. *Mimosads* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Cytisus.)
This genus is chiefly made up of old species of cytisus, brooms, and allied plants. All are yellow-flowered. The first two greenhouse plants, others hardy; sandy loam, but with a little peat for the first two. Seeds sown in March, and cuttings any time in spring and summer.

A. anagy'rus. 2. June. Canaries. 1815. This and *foliolosus* are evergreen and require protection from frost.
,, *deco'rticans*. May. Sierra Nevada. Rev. Hort., 1883, p. 156.
,, *foliolo'sus* (slightly-leaved). 6. May. Canaries. 1629.
,, *frankenioi'des* (frankenia-like). See A. ANAGYRUS.
,, *hispa'nicus* (Spanish). 3. June. Spain. 1816.
,, *interme'dius* (intermediate). 4. June. Sicily.
,, ,, *parvi'fo'lius* (small-leaved). 4. June. South of France. 1800.
,, *telone'nsis* (Toulon). 3. June. South of France. 1800.

ADENOPE'LTIS. (From *aden*, a gland, and *pe'lte*, a small shield; the shape of the glands. Nat. ord. Euphorbiaceæ.)
A stove evergreen shrub. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

A. Colligua'ya (Colliguaya). 6. White. May. Chili. 1796.

ADENO'PHORA. (From *aden*, a gland, and *phoreo*, to bear. Nat. ord. *Bellwort* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Hardy herbaceous plants, like *Campanula*. Common soil. Seeds. All bear blue or bluish flowers.

A. commu'nis (common). 4. July. Europe. 1810.
,, ,, *hy'brida*. 2. June. Siberia. 1816.
,, ,, *suave'olens*. 2. June. Siberia. 1816.
,, *corona'ta*. B. R., t. 149. See A. MARSUPIIFLORA.
,, *coronopifo'lia* (buckthorn-leaved). 1. June. Dahuria. 1822
,, *denticula'ta* (finely-toothed). See A. TRICUSPIDATA.
,, *Fische'ri* (Fischer's). See A. COMMUNIS.
,, *Gmeli'ni* (Gmelin's). 2. June. Siberia. 1820.
,, *interme'dia* (intermediate). See A. COMMUNIS.
,, *Lama'rckii* (Lamarck's). 2. July. Siberia. 1820.
,, *latifo'lia*. 2. June. Siberia. 1821.
,, *lilitifo'lia*. B. R., t. 236. See. A. COMMUNIS.
,, *marsupiiflo'ra* (purse-flowered). 2. July. 1818.
,, *pere'skiæfo'lia* (pereskia-leaved). See A. LATIFOLIA.
,, *periplocæfo'lia* (periploca-leaved). 1. August. Siberia. 1824.
,, *rabelaisia'na* (Rabelais's). 2. August. Siberia. 1823.
,, *reticula'ta* (netted). 2. July. Siberia. 1820.
,, *stri'cta* (erect). Dark blue Japan. 1904.
,, *stylo'sa* (long-styled). 2. May. Siberia. 1820.
,, *tricuspida'ta*. 1. July. Siberia. 1817.
,, *verticilla'ta* (whorl-leaved). 2. June. Siberia. 1783.

ADENO'SMA. (From *aden*, a gland, and *osme*, smell; The plants exhale a mint-like scent from the glands. Nat. ord. Scrophulariaceæ. Syn. *Pterostigma*.)

A. grandiflo'rum. 3. Violet. Hong-Kong. 1845. Syn. *Pterostigma grandiflorum*. B. R., 1846, t. 16.

ADENOSTE'MMA. (From *aden*, a gland, and *stemma*, a crown; the anthers are often crowned with a gland. Nat. ord. Compositæ.)
Greenhouse perennial. Seeds; cuttings under a bell-glass. Loam, leaf-mould, and sand.

A. visco'sum (clammy). 2. White. June. Tropics of Old World. 1821.

ADENO'STOMA. (From *aden*, a gland, and *stoma*, a pore. Nat. ord. *Sanguisorbs* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.) Hardy shrub, allied to Lady's Mantle (*Alchemilla*).
Propagated by cuttings of the young shoots in spring, under a glass, in sand. Soil, rich loam and peat, in equal proportions.

A. fascicula'tum (fascicled). 3. White. California. 1848.

ADENO'STYLES. (From *aden*, a gland, and *stulis*, a style. Nat. ord. Compositæ.)
Hardy perennial herbs. Divisions. Ordinary garden soil.

A. a'lbida (whitish). 2. Purple. July. Europe.
,, *a'lbifrons* (white-leaved) See A. ALBIDA.
,, *alpi'na* (alpine). See A. VIRIDIS.
,, *gla'bra* (smooth). See A. VIRIDIS.
,, *Petasi'tes* (Petasites). See A. ALBIDA.
,, *vi'ridis* (green). 2. Purple. July. Europe. 1739.

ADENOTRI'CHIA. (From *aden*, a gland, and *thrix*, hair; having hairs with glands. Nat. ord. *Composites* [Compositæ]. Linn. 16-*Syngenesia*, 2-*Superflua*. Allied to Groundsel.) Now classed with Se'necio.
Half-hardy herbaceous plant. Propagated from seeds sown in the spring in a gentle hotbed. Planted out in summer. Soil, light rich loam.

A. amplexicau'lis (stem-clasping). 2. May. Yellow, Chili. 1826. See SENECIO ADENOTRICHIUS.

ADE'SMIA. (From *a*, not, or without, and *desmos*, a bond; in reference to the stamens being free. Linn. 16-*Monadelphia*, 6-*Decandria*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Greenhouse and half-hardy plants, allied to Hedysarum, all more or less of a trailing habit.)
Annuals, sown in spring in slight hotbed. Cuttings of others in summer, in sandy loam, in close propagating frame with bottom-heat. Winter temp., 40° to 45°.

ANNUALS.

A. murica'ta (point-covered). 1. Yellow. June. Patagonia. 1793.
„ *pappo'sa* (downy-podded). 1. Yellow. June. Chili. 1823.
„ *pe'ndula* (pendulous-flowered). 1. Yellow. June. Buenos Ayres. 1625.

EVERGREEN SHRUBS.

A. balsa'mica. Yellow. March. Chili. B. M., t. 6921.
„ *glutino'sa* (sticky). Yellow. Chili. 1831.
„ *Loudo'nii* (Loudon's). 2. Yellow. May. Valparaiso. 1830.
„ *microphy'lla* (small-leaved). Yellow. Valparaiso. 1830.
„ *uspallate'nsis* (uspallatan). 1. Yellow. July. Chili. 1832.
„ *visco'sa* (clammy). 12. Yellow. August. Chili. 1831.

ADHATO'DA. (Native name. Nat. ord. Acanthaceæ. Allied to Justicia.) Propagated from cuttings early in the spring in the stove, and require stove treatment. Should be potted in porous loamy soil, with good drainage.

A. cydoniæfo'lia. 5. Purple, white. August. Brazil. 1855. B. M., t. 4962.
„ *pa'tula* (spreading). White. April. S. Africa. 1824.
„ *reflexiflo'ra* (reflexed-flowered). 1. Purple. June. W. Ind. 1824.
„ *Va'sica.* 10. Purple. July. E. Ind. 1699. B. M., t. 861. Syn. *Justicia Adhatoda.*

ADIANTO'PSIS. (From *adiantum*, and *opsis*, like; resembling the Maidenhair. Nat. ord. *Ferns* [Filices]; considered sometimes as a section of Cheilanthes. For culture, see FERNS.

A. pteroi'des. Java.
„ *radia'ta.* 1. S. Amer.

ADIA'NTUM. Maidenhair. (From *adiantos*, dry, as if plunged in water, yet remaining dry. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.*)

This extensive genus includes species from all climates, and in addition to the many distinct species there are numerous garden varieties. They vary considerably, some having simple, or undivided fronds, and others have broad-spreading fronds with numerous small pinnules. They also vary in habit; most of them may be raised from spores; some are proliferous from the fronds, others from the roots. For general culture, see FERNS.

A. æ'mulum (G. C., 1878–584). Brazil. See A. CUNEATUM.
„ *æthio'picum* (Æthiopian). 2. Brown. September. 1838.
„ *affi'ne.* Syn. *A. Cunninghami.*
„ *ama'bile.* See A. MOOREI.
„ *amæ'num.* Syn. with *A. flabellulatum.*
„ *andic'olum.* See A. GLAUCOPHYLLUM.
„ *aneite'nse.* Aneiteum Isles. 1880.
„ *assi'mile.* A form of *A. æthiopicum.*
„ „ *crista'tum* (Bull. Cat., 9). Victoria.
„ *Bau'sei.* A garden hybrid. 1879.
„ *be'llum.* Bermuda. 1879.
„ *bessonia'num* (G. C., 1896, xx. 75). A variety of *A. tenerum.* W. Ind.
„ *Birkenhea'dii* (G. C., 1886, xxv. 648).
„ *Bou'rnei* (FL and P., 1882, 105). A form of *A. cuneatum.*
„ *Bu'rnii* (G. C., 1887, i. 447).
„ *Capi'llus-ve'neris* (Venus's hair). Common maidenhair.
„ „ *cornubie'nse* (Cornish).
„ „ *cri'spulum* (crisped).
„ „ *daphni'tes* (glistening).
„ „ *digita'tum* (G. C., 1887, i. 547).
„ „ *fi'ssum* (divided).
„ „ *Foo'ti* (Foot's). Allied to the variety *fissum.*
„ „ *gra'nde* (G. C., 1886, xxvi. 103).
„ „ *imbrica'tum* (G. C., 1887, i. 547).
„ „ *inci'sum* (deeply cut).
„ „ *magni'ficum* (magnificent).
„ „ *moritzia'num.*
„ „ *rotunda'tum* (rounded). Isle of Man.
„ „ *undula'tum* (wavy).
A. cardiochlæ'na (heart form *indusium*). See A. POLYPHYLLUM.
„ *cauda'tum* (tailed).
„ „ *cilia'tum* (ciliated).
„ *Clæ'sii* (Ill. Hort., 1894, t. 137). Brazil.
„ *Colli'sii* (Veitch Cat., 1885, 9).
„ *colpo'des* (deep hollow). Ecuador and Peru. 1875.
„ „ *ro'seum* (G. and F., 1888, i. 376).
„ *conci'nnum* (neat). Trop. Amer.
„ „ *Flemi'ngii* (Fleming's).
„ „ *la'tum* (broad).
„ *conglomera'tum* (G. M., 1903, p. 269).
„ *crena'tum* (crenated). Mexico. Syn. *A. wilesianum.*
„ *crista'tum* (crested). W. Ind. and Venezuela. 1844. Syn. *A. kunzeanum.*
„ *crowea'num* (G. M., 1904, 211).
„ *cube'nse.* Cuba and Jamaica.
„ *cunea'tum* (wedge-shaped). Brazil. 1820.
„ „ *æ'mulum.* Brazil. 1878.
„ „ *Ba'rdii* (W. G., 1903, 119).
„ „ *defle'xum* (G. C., 1884, xx. 716).
„ „ *disse'ctum* (G. C., 1879, xii. 84).
„ „ *e'legans* (G. C., 1885, xxiv. 134).
„ „ *fragranti'ssimum* (G. C., 1887, i. 447, and ii. 198–9, f. 49).
„ „ *graci'llimum.*
„ „ *Gordo'ni* (W. G., 1888, 107).
„ „ *gra'ndiceps* (G. C., 1882, xvi. 685).
„ „ *Lawso'ni* (Lawson's).
„ „ *Legra'ndi.*
„ „ *mu'ndulum* (neat). 1879.
„ „ *Paco'ttii.*
„ „ *stri'ctum* (upright).
„ *Cunningha'mii.* See A. AFFINE.
„ *curva'tum* (curved). Trop. Amer. 1841.
„ *cycloso'rum* (with circular spore masses). Ecuador.
„ *Da'ddsii* (G. C., 1887, i. 42).
„ *deco'rum* (decorous). See A. WAGNERI.
„ „ *argé'nteo-stri'atum* (R. H. B., 1904, 240).
„ *delto'deum* (deltoid). W. Ind. Islands.
„ *dia'phanum* (transparent). S. E. China. New Zealand, &c. Syn. *A. setulosum.*
„ *digita'tum* (finger-leaved). Peru. Also cultivated under the name of *A. speciosum.*
„ *dolabrifo'rme* (Fl. and P., 1882, 105).
„ *dolo'sum* (deceiving). Syn. *A. Wilsoni.*
„ *Edgewo'rthii* (Ill. Hort., 1878, t. 286). India.
„ *e'legans* (G. C., 1886, xxv. 200).
„ *eleganti'ssimum* (G. C., 1892, xii. 249). A sport from *A. cuneatum.*
„ *emargina'tum* (notched). See A. ÆTHIOPICUM.
„ *exci'sum* (bluntly cut). Chili.
„ „ *Ley'i* (Ley's).
„ „ *multi'fidum* (much cut).
„ *farleye'nse.* See A. TENERUM FARLEYENSE.
„ *fascicula'tum* (G. C., 1897, xxii. 9).
„ *Fe'ei.* Syn. *A. flexuosum.*
„ *Ferguso'ni* (G. C., 1884, xxii. 360). Ceylon.
„ *fe'stum* (G. C., 1887, i. 110).
„ *fluvia'tile multi'fidum* (G. C., 1879, xii. 84).
„ *flabellula'tum* (small fan-leaved). Syn. *A. amœnum.*
„ *flexuo'sum* (zigzag). Syn. *A. Feei.*
„ *formo'sum* (beautiful). Australia. 1820.
„ *fovea'rum* (pitted). See A. TETRAPHYLLUM.
„ *fu'lvum* (tawny). New Zealand.
„ *Ghiesbre'ghtii.* See A. TENERUM SCUTUM.
„ *glaucophy'llum* (grey-leaved). Syns. *A. andicolum* and *A. mexicanum.*
„ *graci'llimum* (very graceful). A form of *A. cuneatum.*
„ *gro'ssum* (large). 2. Colombia. 1909.
„ *henslovia'num* (Henslow's). Columbia, Peru, &c., 1833. Syns. *A. lætum, A. Reichenbachii,* and *A. sessilifolium.*
„ *Hewa'rdia.* June. Guiana. Syn. *Hewardia adiantoides.*
„ *hi'ans* (gaping). New Caledonia.
„ *hispi'dulum.* Syn. *A. pubescens.*
„ *interme'dium.* Trop. Amer. from the Antilles, and southward to Peru and Rio Janeiro. 1824. Syn. *A. triangulatum.*
„ *kunzea'num.* Syn. *A. cristatum.*
„ *læ'tum* (joyful). Syn. *A. henslovianum.*
„ *lambertia'num* (W. G., 1890, 345). A variety of *A. cuneatum.*
„ *La'thomi* (Lathom's). Stated to be a sport from *A. tenerum.*

A. Legra'ndii (Fl. and P., 1882, 105). See A. CUNEATUM.
„ *Linde'ni* (Linden's). Amazons. 1866.
„ *linea'tum* (Ill. Hort., 1895, 185, 312, t. 44).
„ *lu'cidum* (shiny). W. Ind. Islands and Trop. Amer.
„ *luddemannia'num*. A crested variety of *A. cuneatum*.
„ *lunula'tum* (crescent-leaved).
„ „ *cele'bicum* (Ill. Hort., 1878, t. 329).
„ *macro'cladum* (long-branched). Syn. with *A. polyphyllum*.
„ *macrophy'llum* (long-leaved). Trop. Amer. 1793.
„ „ *albo-stria'tum* (G. C., 1892, xi. 816).
„ „ *bipinna'tum* (Williams Cat., 1885, 7).
„ *macro'pterum* (long-winged). Syn. *A. Wilsoni*. See A. DOLOSUM.
„ *Mairi'sii* (G. C., 1885, xxiv. 294). Garden variety of *A. Capillus-veneris*.
„ *manica'tum* (Gard., 1890, xxxviii. 94).
„ *mexica'num* (Mexican). See A. GLAUCOPHYLLUM.
„ *microphy'llum* (short-leaved). See A. VENUSTUM.
„ *mono'chlamys* (once covered). Japan.
„ *monoso'rum* (uni-soriate). Solomon Islands.
„ *Moo'rei* (Moore's). Andes of Peru. Syn. *A. amabile*.
„ *moritzia'num* (Moritz's). S. Amer. See A. CAPILLUS-VENERIS.
„ *mu'ndulum* (G. C., 1879, xii. 84). Dwarf variety of *A. cuneatum*.
„ *nebulo'sum* (G. C., 1893, xiii. 415). A seedling form of *A. gracillimum*.
„ *neo-caledo'niæ* (G. C., 1883, xix. 720). New Caledonia.
„ *neoguinee'nse*. New Guinea. 1877.
„ *obli'quum* (oblique). W. Ind. 1826.
„ „ *min'us* (Bull. Cat., 1883, 11). Colombia.
„ *obtu'sum*. Jamaica. 1879.
„ *Owe'ni* (G. C., 1887, i. 110).
„ *Paco'ttii* (Fl. and P., 1882, 105). A variety of *A. cuneatum*.
„ *palma'tum* (G. C., 1877, vii. 40, f. 5). Peru.
„ *Paradi'si* (G. C., 1889, vi. 558). S. Africa.
„ *pa'tens* (spreading). Brazil, &c. 1824.
„ *peda'tum* (pedate). N. Hindostan, the United States, &c.
„ *peruvia'num* (Ill. Hort., 1878, t. 331). Peru.
„ *polyphy'llum* (many-leaved). Colombia. Syns. *A cardiochlæna* and *A. macrocladum*.
„ *populifo'lium* (poplar-leaved). See A. SEEMANNI.
„ *pri'nceps* (princely). New Grenada. 1875.
„ *prionophy'llum* (saw-leaved). See A. TETRAPHYLLUM.
„ *pube'scens* (downy). See A. HISPIDULUM.
„ *pulverule'ntum* (dusty). W. Ind.
„ *regi'næ* (Veitch Cat., 1888, t. 331). Garden variety.
„ *reichenba'chii*. See A. HENSLOVIANUM.
„ *renifo'rme* (kidney-shaped).
„ „ *asarifo'lium* (Asarum-leaved).
„ *rhodophy'llum* (G. C., 1881, xxi. 372).
„ *rhomboi'deum* (G. C., 1879, xii. 84). See A. OBTUSUM.
„ *rube'llum* (reddish). Bolivia. 1868.
„ *schizophy'llum* (L'Hort. Int. Cat., 1888–9, 45).
„ *scu'tum* (shield). Syn. *A. Ghiesbreghtii*. See A. TENERUM.
„ „ *ramo'sum* (G. C., 1903, xxxiii. 382). See A. TENERUM.
„ „ *ro'seum* (rosy). Fronds rose. 1910.
„ *Seema'nnii* (Seemann's). Central Amer. 1868. Syns. *A. populifolium* and *A. Zahnii*.
„ *sessilifo'lium* (stalkless). See A. HENSLOVIANUM.
„ *setulo'sum* (bristly). See A. DIAPHANUM.
„ *specio'sum* (showy). See A. DIGITATUM.
„ *subvolu'bile* (nearly twining). E. Peru.
„ *te'nerum* (tender). Mexico, &c.
„ „ *alcico'rne*.
„ „ *farleye'nse*. Barbadoes. 1865.
„ „ *Latho'mi*.
„ „ *ramo'sum*.
„ „ *scu'tum*.
„ „ *Victo'riæ*. 1882.
„ *tetraphy'llum* (four-leaved). Trop. Amer.
„ „ *gra'cile* (Bull. Cat., 1878, f. ix.). Colombia.
„ „ *Henderso'nii* (Henderson's).
„ „ *obtu'sum* (Ill. Hort., 1889, 65, t. 86). Congo.
„ *ti'nctum* (tinted). Trop. Amer.
„ *trapezifo'rme* (rhomb-shaped). W. Ind. 1793.
„ „ *Catheri'næ*.
„ „ *cultra'tum* (sharpened).
„ „ „ *Fu'nckii* (Funck's).
A. trapezifo'rme pentada'ctylon (five-fingered).
„ *triangula'tum* (triangle-leaved). See A. INTERMEDIUM.
„ *va'rium* (various). Undoubtedly syn. with *A. villosum*.
„ *veitchia'num* (Veitch's). Peruvian Andes. 1868.
„ *veluti'num* (velvety). Colombia. 1866.
„ *venu'stum* (charming). Himalayas. Syn. *A. microphyllum*.
„ *versaille'nse* (G. and F., 1888, i. 376). Crested form of *A. Capillus-veneris*.
„ *Victo'riæ* (G. C., 1882, xvii. 428). See A. TENERUM.
„ *villo'sum* (hairy stalked). W. Ind. 1775.
„ *Wagne'ri* (Wagner's). Syn. *A. decorum*.
„ *Walto'ni* (G. C., 1887, i. 111).
„ *Weiga'ndii* (G. C., 1884, xx. 748). American garden variety.
„ *wilesia'num* (Wiles). See A. CRENATUM.
„ *Willia'msii* (G. C., 1878, x. 45, f. 4). Peruvian Andes.
„ *Wilso'ni* (Wilson's). Jamaica. Syn. *A. macropterum*. See A. DOLOSUM.

A'DINA. NAUCLEA ADINA is a synonym. Ten other names have been given to Nauclea.

A pretty little stove plant; may be propagated from cuttings put in loam, peat, and sand, under a bell-glass or in the stove propagating pit. Pot in sandy loam and leaf-mould, with good drainage.

A. cordifo'lia (heart-leaved). 40. Yellow. E. Ind.
„ *globiflo'ra* (globe-flowered). 3. White. July. China. 1804.

ADLU'MIA. (Named after *Adlum*, an American author. Nat. ord. *Fumeworts*. Allied to *Corydalis* [Papaveraceæ]. Linn. 17-*Diadelphia*, 2-*Hexandria*.)

A biennial climber, requiring common soil. Seeds. Does not climb or flower until the second year.

A. cirrho'sa (tendriled). 15. White. August. N. Amer. 1778.

ADO'LPHIA. (A commemorative name. Nat. ord. Rhamnaceæ.)

Stove evergreen shrub. Cuttings in sand in bottom-heat. Loam, peat, sand.

A. infe'sta (troublesome). 4. Mexico. 1824.

ADO'NIS. (Named after *Adonis* of the Classics. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Hardy plants; common soil; the annual species from seeds, and the perennial from seed or root division.

ANNUALS.

A. æstiva'lis (summer). 2. Scarlet. June. South of Europe. 1629.
„ „ *citri'na* (citron-coloured). 1. Orange. June. South of Europe. 1819.
„ *autumna'lis* (autumnal. Pheasant's eye). 1. Crimson. July. Britain.
„ *fla'mmea*. 1. Scarlet. Austria.

PERENNIALS.

„ *amure'nsis* (G. C., 1896, xix. 240). Manchuria.
„ „ *flor'e ple'no* (G. W., 1903, 126).
„ *apenni'na* (Apennine). See A. PYRENAICA.
„ *davu'rica* (Dahurian). See A. VERNALIS.
„ *disto'rta* (distorted). 1. April. Yellow. Naples. 1827.
„ *pyrena'ica* (Pyrenean). 1½. July. Yellow. Pyrenees. 1817.
„ *sibi'rica* (Siberian). 2. April. Yellow. Siberia. 1827.
„ *verna'lis* (spring). 1. March. Yellow. Europe. 1629.
„ „ *a'lba* (J. of H., 1906, lii. 39).
„ „ *ma'jor*. Dwarfer. Flowers larger. 1879. G. C., 1879, v. 11, p. 621.
„ *volge'nsis* (Volga). 1. April. Yellow. Russia. 1818.

ÆCHME'A. (From *aichme*, a point; in reference to the rigid points on the calices or flower-envelopes. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*. 1-*Monogynia*.)

Suckers; light turfy loam and leaf-mould; very handsome. Stove herbaceous perennials.

Æ. augu'sta (august). Trop. Amer.
„ *Barle'ei*. 3. Primrose. Brit. Honduras. 1877.

Æ. bractea'ta. Yellow, bracts crimson. W. Ind. 1873.
„ *brasilie'nsis* (Gfl., t. 1202). Brazil.
„ *bromeliæfo'lia* (Bromelia-leaved). 1½. Blue. February. Trinidad. 1824.
„ *cærule'scens.* 1. Bluish. S. Amer. 1870. Syns. *A. cærulea, Lamprococcus,* and *Hoplophytum cæruleascens.*
„ *calycula'ta.* ½. Yellow, bracts red. 1862. Syns. *Hohenbergia calyculata, Hoplophytum calyculatum,* and *Macrochordium luteum.*
„ *cæle'stis.* Sky-blue. Brazil. Syns. *Hoplophytum cæleste* and *Hohenbergia cælestis.*
„ *Co'rnui* (R. H., 1885, t. 36). Brazil.
„ *cyathifo'rmis* (cup-shaped). Brazil. Syn. *Canistrum cyathiforme.*
„ *cylindra'ta* (Gfl., 1898, t. 1447). Brazil.
„ *di'scolor* (vari-coloured). See A. FULGENS.
„ *distícha'ntha.* 1. Red, purple. S. Brazil. 1852.
„ *drakea'na* (R. H., 1888, 401). Ecuador.
„ *erythrosta'chya.* Rose, red. Brazil. 1864. Syn. *Hohenbergia erythrostachya.*
„ *exsu'dans.* 2. White. W. Ind. 1824. Syns. *Bromelia exsudans, Hohenbergia exsudans, H. capitata.*
„ *fascia'ta.* 1½. Pink, bracts rose. Rio Janeiro. 1826. Syns. *Bilbergia fasciata* and *B. rhodocyanea.*
„ „ *purpu'rea.* Purple.
„ *Ferna'ndæ.* 2. Yellowish. Para. 1872. Syns. *Ananas mensdorfiana* and *Bromelia Fernandæ.*
„ *flexuo'sa* (G. C., 1887, i. 8). See *Æ.* SPECTABILIS.
„ *fu'lgens.* 1. Scarlet, blue. September. Cayenne. 1842.
„ „ *discolor.* (B. M., t. 4293.)
„ *Furstenbe'rgii.* 1. Rose. Bahia. 1879.
„ *germinya'na.* 2. Reddish-white. New Granada. Syns. *Bromelia daguensis* and *Chevaliera germinyana.*
„ *gi'gas* (B. M., t. 8107). Allied to *Æ. Lalindei.* Probably Brazil .
„ *Glazio'vii.* 7. Red, purple. S. Brazil. 1880. Belg. Hort., 1881, t. 13.
„ *glomera'ta.* Violet, bracts crimson. Bahia. 1866. Syn. *Pironneava glomerata.*
„ *Hooke'ri.* Scarlet, purple, yellow. Brazil. 1864.
„ *hy'strix.* 2½. Violet, bracts scarlet. February. Cayenne. 1880.
„ *Lali'ndei* (Ill. Hort. 1882, t. 481). Colombia.
„ *lavandula'cea* (B. M., t. 8005). W. Ind.
„ *legrellia'na.* ½. Red, purple. 1865. Syn. *Hohenbergia legrelliana.* See ORTGIESIA LEGRELLIANA.
„ *lingula'ta* (tongue-leaved). 1½. Yellow. May. S. Amer. 1759.
„ *luddemannia'na.* Red, green. S. Amer. 1866. Syn. *Pironneava luddemanniana.* See A. CÆRULESCENS.
„ *macraca'ntha.* See *Æ.* SCHIEDEANA.
„ „ *Pellie'ri.* 3 to 4. Whitish, bracts carmine. 1880.
„ *Mari'æ-Regi'næ.* Blue, white, bracts carmine. April. Costa Rica. 1863.
„ *Melino'nii.* 1. Crimson-pink. S. Amer.
„ *Merte'nsii* (*Merten's*). Green, red. March. Demerara. 1830.
„ *mexica'na* (G. C., 1897, i. 8). 2. Green, crimson.
„ *morrenia'na.* 2. Purple, S. Amer. 1875. Mexico.
„ *mucronifló'ra* (spiny-petaled). Yellow. September. Peru. 1852.
„ *myriophy'lla* (B. M., t. 6939). 2½. Pink, fading to lilac. Trop. Amer. 1887.
„ *nudicau'lis.* 1. Yellow. Trop. Amer. 1825. Syns. *Billbergia* and *Hohenbergia nudicaulis.*
„ „ *glabriu'scula* (smooth). Greenish-yellow ; bracts carmine.
„ *odo'ra.* 7. Yellowish. Guiana. 1879.
„ *Ortgie'sii.* Red. 1860. See ORTEGSIA TILLANDSIOIDES.
„ *panicula'ta* (R. H., 1880, 245). 2. Rosy-purple, bracts white, woolly. Peru. 1877.
„ *paniculi'gera* (Bull. Cat., 1882, 13). 3. Red-purple. Jamaica. 1882. Syn. *Hohenbergia paniculigera.*
„ *pinelia'na.* 1. Yellow, bracts red. Brazil. 1862. Syns. *Echinostachys* and *Macrochordium pinelianum.*
„ *purpu'rea* (Williams' Cat., 1889, 22). 1 to 1½. Leaves, crimson-purple. Colombia.
„ *regula'ris.* 1. White, bracts red. S. Brazil. 1873.
„ *schiedea'na.* Pale yellow. Central Mexico. 1880. Syn. *Æ. macracantha.*
Æ. specta'bilis. Rose-crimson. Guatemala. 1875. Syn. *Æ. flexuosa.*
„ *suave'olens* (sweet-scented). 2½. Pink. April. Brazil. 1838. Syn. *Billbergia melanacantha.*
„ *Vei'tchii.* 1. Scarlet. Colombia. 1877. Syn. *Chevalliera Veitchii.*
„ „ *supe'rba* (R. H., 1880, 450 t.).
„ *Weilba'chii.* 1½. Pink, light violet ; scape and bracts scarlet. Brazil. 1854.
„ „ *leodie'nsis.* Scarlet, violet, green. Brazil. 1887.

ÆCI'DIUM. A genus of small cup-shaped fungi, parasitic on certain plants. *Æ. berberidis,* one of the best-known species, lives on the leaves of the ordinary barberry. There are numerous other species, including *Æ. convallariæ, Æ. ficariæ,* and *Æ. violæ.*

ÆGI'CERAS. (From *aix,* a goat, and *keros,* a horn ; alluding to the shape of its fruit. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.*)
Greenhouse evergreen shrub. Propagated from cuttings of the half-ripe shoots in close frame with bottom-heat. Pot in good loam, leaf-mould, and peat.
Æ. fra'grans (fragrant). See *Æ.* MAJUS.
„ *ma'jus.* White. N. Holland. 1824.

ÆGI'PHILA. (From *aix,* a goat, and *philos,* dear ; referring to its being a favourite with goats. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 4-*Tetrandria,* 1-*Monogynia.*)
Stove evergreen shrubs. Sandy rich loam ; cuttings in sand, under a glass, with bottom-heat. Winter temp., 50° to 60° ; summer, 65° to 80°.
Æ. arbore'scens (arborescent). 10. White. Trinidad. 1823.
„ *diffu'sa* (diffuse). 2. Yellow. July. W. Ind. 1824.
„ *ela'ta* (tall). 12. Pale yellow. August. W. Ind. 1823.
„ *fœ'tida* (stinking). 2. Lilac. July. W. Ind. 1820.
„ *grandiflo'ra* (large-flowered). 2. Yellow. November. Havannah. 1843. See CLERODENDRON GRANDIFLORUM.
„ *la'vis* (smooth). June. Yellow. Guinea. 1824.
„ *martinice'nsis* (Martinique). 6. White. W. Ind. 1780.
„ *obova'ta* (obovate). 2. Yellow. September. W. Ind. 1804.
„ *tri'fida* (three-cleft). 4. White. June. Jamaica. 1826.

ÆGLE. Bengal Quince. (From *Ægle,* one of the Hesperides. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 13-*Polyandria,* 1-*Monogynia.*)
The Marmelos is a delicious Indian fruit, possessing high medicinal qualities. Stove evergreen shrub. Cuttings of ripe-wooded shoots, in sand, and peat in stove propagating pit ; pot in good loam, leaf-mould, and manure.
Æ. Ma'rmelos (ma'rmelos). 6. Whitish-red. E. Ind. 1759.
„ *sepia'ria* (hedge). 6. White. May. China and Japan. 1869.

ÆGOPO'DIUM. (From *aix,* goat, and *podion,* a little foot, probably from shape of leaflets. Nat. ord. Umbelliferæ.)
Free-growing, hardy plant. There is a variegated form which makes a very pretty edging.

ÆGOCHLO'A. See GILIA NAVARE'TTIA.

ÆOLA'NTHUS. (From *aiolo,* to vary, and *anthos,* a flower ; referring to the variableness of the flowers. Nat. ord. *Labiates,* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia,* 2-*Angiospermia.*)
Stove annuals. Fibrous loam, leaf-mould, and sand ; seeds.
Æ. Livingsto'nei. Brown. E. Africa. 1859.
„ *suave'olens* (sweet-scented). See A. SUAVIS.
„ *sua'vis.* 1. White. July. Brazil. 1825.

ÆO'NIUM. See SEMPERVIVUM.

AËRANTHES. (Nat. ord. *Orchids* [Orchidaceæ].)
A. Arachni'tis. ½. Green. Madagascar. 1873.
„ *grandiflo'rus.* ½. White. Madagascar.

AËRA'NTHUS. (From *aer*, air, and *anthos*, a flower, referring to the way in which the plant grows. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Division of root; on wood, or in a basket.

A. brachy'centron (Act. Hort., Petrop, 1890, xi. 303).
,, *curnowia'nus*. Madagascar. 1883.
,, *grandidieria'nus* (O., 1888, 200).
,, *grandiflo'rus* (large-flowered). See AËRANTHES.
,, *Leo'nis* (G. C., 1885, xxiii. 726; xxiv. 80, f. 17–18). See ANGRÆCUM HUMBLOTII.
,, *ophiople'ctron* (G. C., 1888, iv. 91).
,, *trichople'ctron* (G. C., 1888, iii. 264). Madagascar.

AERA'TION. Exposing soil to the air. This is referred to under soils, but it may be remarked here that it is a most important factor in the cultivation of all vegetable products both in the ground and in pots.

AËRIDES. (From *aer*, the air; in reference to the power these have of living on the air. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. These all require a summer temp. of 60° to 85°; winter, 50° to 65°. Grow best in baskets filled with sphagnum or white bog-moss.

A. affi'ne. Rosy. India. Syn. *A. roseum*. See A. MULTIFLORUM.
,, *augustia'num* (G. C., 1890, vii. 9). Philippine Islands.
,, *ballantinia'num* (G. C., 1885, xxiv. 198). See A. SUAVISSIMUM.
,, *bernhardia'num* (G. C., 1886, xxiv. 650). Borneo.
,, *Broo'kei* (Sir A. Brooke's). Purple and white; fragrant. Bombay. See A. CRISPUM.
,, *Burbi'dgei sple'ndens*. Rich purple, ochre. 1885.
,, *crassifo'lium* (G. C., 1877, vii. 590). Purplish. Burma.
,, *cri'spum* (B. M., t. 4427). S. Ind.
,, ,, *lindleya'num*. 1. White, pink. E. Ind.
,, ,, *Warne'ri*.
,, *cyli'ndricum* (B. M., t. 4982). See A. VANDARUM.
,, *dasyca'rpum*. Brownish, rosy. India (?). 1865.
,, *diffo'rme*. See ORNITHOCHILUS FUSCUS.
,, *Duque'snei* (J. H. F., 1906, 777). White, dotted with rose.
,, *Emeri'cii* (G. C., 1883. xviii. 586). Pale lilac. May. Andaman Islands. 1882.
,, *expa'nsum*. White, light rose. 1882. Syn. *A. falcatum*, var. *expansum*.
,, ,, *Leo'niæ*. Spur green.
,, *falca'tum*. White, pale violet. Tenasserim. 1862. Syns. *A. Larpentæ* and *Mendelii*.
,, ,, *compa'ctum* (G. C., 1888, iii. 744).
,, *Farme'ri*. 1½. White, yellow. June. E. Ind.
,, *Fieldi'ngii*. Purple, white. India. 1855.
,, ,, *a'lbum* (L., xii., t. 538). 1896.
,, ,, *Willia'msii*. White, rose. India.
,, *formo'sum* (Fl. and P., 1882, 105).
,, *godefroya'num* (G. C., 1886, xxv. 814). Cochin-China.
,, *gutta'tum*. See RHYNCHOSTYLIS RETUSA.
,, *houlletia'num*. Yellow, purple, lip white and amethyst. E. Trop. Asia.
,, *Hutto'ni*. See SACCOLABIUM.
,, *illu'stre* (G. C., 1882, xviii. 71).
,, *Ianso'ni* (G. C., 1890, viii. 66). Burma.
,, *japo'nicum*. ½. Yellowish, white, purple. June. Japan. 1862. Greenhouse.
,, *Lawre'nceæ* (G. C., 1884, xx. 460). Philippines.
,, ,, *amesia'na* (G. C., 1891, x. 393). 1891.
,, ,, *sanderia'num*.
,, *lawrencia'num*. White, carmine. Trop. Asia. 1882.
,, *ledouxia'num* (G. C., 1898, xxiv. 134).
,, *leea'num*. Trop. Asia.
,, *le'pidum*. White. India. 1883.
,, *lindleya'num*. See A. CRISPUM.
,, *macula'tum formo'sum* (L., i., t. 11). Whitish, rose. June.
,, *maculo'sum*. 1½. Purple spotted. May. Bombay. 1840.
,, ,, *illu'stre*. White. India. 1882.
,, ,, *Schrœde'ri*.
,, *margina'tum* (G. C., 1885, xxiii. 533). Yellow, blotched purple, brown. 1885.
,, *Micholi'tzii* (O. R., 1904, 181). Annam.
A. mitra'tum. White, lip violet. April. Moulmein. 1864.
,, *multiflo'rum*. 1. White, rose. India. 1837. Syns. *A. affine* (B. M., t. 4049), *Lobbii trigonum*, and *Veitchii*.
,, *odontochi'lum*. 2. Sylhet. 1837.
,, *odora'tum*. 1½. White. August. E. Ind. 1800. Syn. *A. cornutum*.
,, ,, *birma'nicum*. Purple.
,, ,, *Demido'ffi* (L., i., t. 14). White, rose.
,, ,, *purpura'scens* (G. C., 1881, xvi. 596).
,, *ortigiesia'num* (G. C., 1885, xxiii. 501). White, purple. 1885.
,, *pachyphy'llum* (G. C., 1880, xiv. 231). Crimson-lake. Burma. 1880.
,, *panicula'tum* (B. R., t. 220). See SARCANTHUS.
,, *Pico'ti* (Orch., 1890, f. 288). Cochin-China.
,, *picotia'num* (G. C., 1888, iv. 378). See A. HOULLETIANUM.
,, *platychi'lum* (K. B., 1893, 64).
,, *quinquevu'lnerum*. ½. Pink. June. Philippines. 1838.
,, ,, *purpura'tum* (G. C., 1881, xvi. 230).
,, ,, *schadenbergia'num* (Gfl., 1886, 606).
,, *radico'sum* (rooting). S. India.
,, *Reichenba'chii co'chin-chine'nse* (G. C., 1881, xiv. 620). Cochin-China. See A. SUAVISSIMUM.
,, *Roebele'nii* (G. C., 1884, xxi. 310). Philippines.
,, *rohania'num* (G. C., 1884, xxi. 206). See A. SUAVISSIMUM.
,, *sanderia'num*. White, purple, yellow. E. Trop. Africa (?). 1884. See A. LAWRENCEÆ.
,, *savagea'num* (Veitch Man., vii. 78). Philippines.
,, *Schrœde'ri*. 1½. White, pink. E. Ind. See A. MACULOSUM.
,, *suavi'ssimum*. White, lilac. June. Malacca. Syns. *A. ballantinianum, nobile, Reichenbachii*, and *rohanianum*.
,, ,, *bla'ndum* (Gfl., 1891, 576).
,, *tessella'tum*. See VANDA ROXBURGHI.
,, *testa'ceum*. See VANDA PARVIFLORA.
,, *thibautia'num*. White amethyst. Polynesia. 1866.
,, *vanda'rum*. White, yellow. India. 1867. Syn. *A. cylindricum*.
,, *Vei'tchi* (B. H., 1881, 123, t. 8–9). See A. MULTIFLORUM.
,, *vi'rens*. Whitish-purple. April. Java. 1843.
,, ,, *Elli'sii* (W. O. A., ii., t. 298). White, tinged with rose. Java.
,, ,, *Sande'ræ* (G. C., 1906, xl. 36). Pure white.
,, *wightia'num*. See VANDA PARVIFLORA.

There are also several garden hybrids.

Æ'RVA (derivation not known). Amarantaceæ. Tender herbs or shrubs, allied to Achyranthes. Lanate plants of Tropical Asia and Africa, with perfect or imperfect flowers, the perianth segments short and hyaline; stamens 5 or 4, sterile filaments intervening; flowers very small, usually in clusters, white with a red shade.

Æ. java'nica (Javanese). 2. White. E. Ind. 1768.
,, *lana'ta* (woolly). See A. TOMENTOSA.
,, *Monso'nia* (Monsonia). 2. White. August. E. Ind. 1776.
,, *sanguinole'nta* (*A. sanguinea*, Hort). Leaves 1½ to 2½ inches long, opposite or alternate. Cultivated for its dark red leaves. Java.
,, *tomento'sa*. 1. White. E. Ind. 1691.

ÆSCHYNA'NTHUS. (From *aischuno*, to be ashamed, and *anthos*, a flower. Nat. ord. *Gesneriworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreens, some of which are very showy, propagated from cuttings in spring, under ordinary treatment of stove plants.

Æ. a'lbida (whitish). 1. Java. 1849.
,, *atropurpu'rea*. See A. PURPURASCENS.
,, *atrosangui'nea* (dark-bloody). Dark red. July.
,, *Auckla'ndiae* (Lady Auckland's). Scarlet. Borneo. 1847.
,, *boschia'na* (Bosch's). See A. LAMPONGA.
,, *bractea'ta*. Scarlet. April. E. Ind. 1839.
,, *cordifo'lia*. Red. Borneo.
,, *Fee'i*. Mexico. Scandent.
,, *fu'lgens*. Crimson, yellow. October. E. Ind.
,, *grandiflo'ra* (large-floweted). 5. Scarlet. August. E. Ind. 1837.
,, *Hildebra'ndii* (B. M., t. 7365). Burma.

A. Horsfie'ldii (Horsfield's). 2. Pale scarlet. August. Java. 1844.
,, *java'nica* (B. M., t. 4503). Red. yellow. Java. 1849.
,, *Lampo'nga*. Scarlet. July. Sumatra. 1843.
,, *Linde'ni*. Amazons. 1866.
,, *lobbia'na* (Lobb's). 1. Scarlet. June. Java. 1845.
,, *longiflo'ra* (long-flowered). 2. Scarlet. June. 1845.
,, *macroca'lyx* (N. B., iv. 314, t. 1). Siam. 1907
,, *macula'ta* (spotted). 3. Scarlet. August. India. 1839.
,, *marmora'ta*. 1½. Scarlet. June. Java. 1847.
,, *minia'ta* (vermilion). 1½. Scarlet. June. Java. 1845.
,, *obco'nica* (B. M., t. 7336). Malaya.
,, *Paxto'nii* (Paxton's). See A. BRACTEATA.
,, *pu'lchra* (fair). Scarlet. 1. July. Java. 1845.
,, *purpura'scens* (purplish). 1. Purple, yellow. March. Java. 1845.
,, *radi'cans* (stem-fibred). Red. August. Sumatra. 1845.
,, *ramosi'ssima* (most-branched). 3. Scarlet. June. E. Ind. 1837.
,, *Roxbu'rghii* (Roxburgh's). Scarlet. July. E. Ind. 1837.
,, *specio'sa* (showy). 2. May. Orange. Java. 1845.
,, *splе'ndida*. 1881. Garden hybrid.
,, *tri'color* (B. M., t. 5031).
,, *veluti'na*. Colombia. 1866.
,, *zebri'nus* (striped). See A. MARMORATA.

ÆSCHYNO'MENE. (From *aischuno*, to be ashamed; in reference to the supposed sensitiveness in the leaves. Nat. ord. *Leguminous Plants*. Allied to *Hedysarum* [Leguminosæ]. Linn. *Diadelphia, Decandria*.)

Stove plants. The annuals by seed in a high temperature, and the shrubs by cuttings in peat, loam, and sand, in close stove propagating pit in good heat; rich sandy loam. Winter temp., 60° to 75°; summer, 70° to 80°.

ANNUALS.

Æ. america'na (American). 2. Yellow. July. Jamaica. 1732.
,, *a'spera* (rough-stemmed). 2. Yellow. June. E. Ind. 1759.
,, *hi'spida* (rough-haired). 2. Yellow. N. Amer. 1803.
,, *i'ndica* (Indian). 2. Yellow. June. E. Ind. 1799.
,, *pu'mila* (dwarf). See Æ. INDICA.
,, *subvisco'sa* (subviscid). See Æ. INDICA.
,, *visci'dula* (viscidish). 1. Yellow. July. Florida. 1816.

SHRUBS.

Æ. cre'pitans (rattling-podded). 4. Yellow. July. Caraccas. 1820.
,, *pa'tula* (spreading). See Æ. SENSITIVA.
,, *pe'ndula* (drooping). 3. Yellow. July. Mauritius. 1826.
,, *sensiti'va* (sensitive). 3. White. W. Ind. 1733.

Æ'SCULUS. Horse Chestnut. (From *esca*, nourishment; referring to the ground flour from the kernels of some species. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. *7-Heptandria, 1-Monogynia*.)

The Horse Chestnut and others of the same genus produce nutritive fruits (or nuts), but others of the same order are poisonous; propagated by seeds of the species; variegated and double varieties by grafting. Succeed best in good, deep, loamy soil. All hardy deciduous trees.

Æ. califo'rnica (B. M., t. 5077). 20. White. July. California. 1820.
,, *ca'rnea*. Syn. *Æ. rubicunda*. Garden hybrid. Grafts or buds. 1820.
,, ,, *Brio'tii* (R. H., 1878, 370).
,, ,, *ru'bro petiola'ta* (Späth Cat., No. 104, 73).
,, *chine'nsis* (W. G., 1889, 452). See Æ. TURBINATA.
,, *di'scolor* (Hort). See Æ. FLAVA PURPURASCENS.
,, *fla'va*. Sweet Buckeye. N. Amer. 1764.
,, ,, *purpura'scens* (purplish). 4 to 25. Red, yellow. June. N. Amer. 1812.
,, *gla'bra* (smooth-leaved). 12. Greenish-yellow. May. N. Amer. 1812. Grafts.
,, *Hippoca'stanum* (common Horse C.). 40. White. May. Asia. 1629. Seeds.
,, ,, *flo're-ple'no* (double-flowered). 40. White. May. Gardens. Grafts.
A. Hippoca'stanum fo'liis arge'nteis (silver-leaved). 40. White. May. Garden. Grafts.
,, ,, *Henke'li* (M. D. G., 1903, 126).
,, ,, *variega'tum* (common striped-leaved). 16. White. May. Asia. 1629. Layers.
,, *i'ndica*. 40. White. July. Himalayas. 1844.
,, *macroca'rpa* (Hort). See Æ. PAVIA.
,, *negle'cta* (neglected). 20. Pale yellow. May. Hybrid. 1823.
,, *ohioe'nsis* (Ohio). See Æ. GLABRA.
,, *pa'llida* (pale-flowered). See Æ. GLABRA.
,, *parviflo'ra*. White. July. United States. 1785.
,, *Pa'via*. Red Buckeye. 1711.
,, ,, *ro'sea variega'ta* (M. D. G., 1906, 211).
,, *plantiere'nsis* (R. H., 1894, 246).
,, *rubicu'nda* (red-flowered). See Æ. CARNEA.
,, *ru'bra* (Hort). See Æ. PAVIA.
,, *turbina'ta* (R. H., 1888, 120–124, 496). Cultivated under the name of *Æ. chinensis*. Japan.

ÆTHIONE'MA. (From *aithо*, to scorch, and *nema*, a filament; in reference to some burnt appearance in the stamens. Nat. ord. *Crossworts*, or *Crucifers* [Cruciferæ]. Allied to Lepidium. Linn. *11-Tetradynamia, 1-Monogynia*.)

The order of Crucifers—to which our Cabbages, Mustard, Cress, Turnips, and Horse-radish belong—has the universal character of being possessed with antiscorbutic and stimulating qualities. Hardy alpine plants, suited for rock-work. Common light soil; seeds and cuttings.

ANNUALS.

Æ. Buxbau'mii (Buxbaum's). See Æ. CAPPADOCICUM.
,, *cappado'cicum*. ½. Pale red. June. Levant. 1823.
,, *gra'cile* (slender). ½. Pale red. June. Carniola. 1823.
,, *oppositifo'lium* (opposite-leaved). 1. White. July. Syria. 1827.
,, *saxa'tile* (rock). ½. Flesh. June. S. of Europe. 1759.

BIENNIAL.

Æ. monospe'rmum. ½. Pale purple. Spain. 1778.

PERENNIALS.

Æ. coridifo'lium. Rosy-purple. May. Asia Minor. 1871.
,, *dia'strophis* (Gard., 1903, lxiii. 109 f.).
,, *grandiflo'rum* (Gfl., t. 1102). 1½. Rose. May. 1879.
,, *heterocar'pum* (variable-podded). ½. Purple. July. Armenia. 1837.
,, *membrana'ceum* (membranous-podded). ½. Lilac. July. Persia. 1829.
,, *parviflo'rum* (small-flowered). ½. Lilac. July. Persia. 1830.
,, *pulche'llum*. Similar to *Æ. coridifolium*. Armenia.

ÆTHIO'NIA. (From *Æthion*, one of Phœbus' horses. Nat. ord. *Composites* [Compositæ]. Linn. *19-Syngenesia, 1-Æqualis*.)

Greenhouse evergreen shrubs. Cuttings; common light soil. They are now referred to Tolpis.

Æ. filifo'rmis (thread-leaved). 1½. June. Yellow. Madeira. 1777.
,, *frutico'sa* (shrubby). 2. Yellow. June. Madeira. 1785.

AFRICAN ALMOND. *Brabe'jum.*

AFRICAN FLEABANE. *Tarchona'nthus.*

AFRICAN LILY. *Agapa'nthus.*

AFRICAN MARIGOLD. *Tage'tes ere'cta.*

AFZE'LIA. (In honour of *Dr. A. Afzelius*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. *8-Octandria, 1-Monogynia*. Allied to Amherstia.)

Stove evergreen tree. Sandy peat and leaf-mould. Cuttings in sand, under a bell-glass. Winter temp., 55° to 60°; summer, 60° to 80°.

A. africa'na (Africa). Crimson. June. Sierra Leone. 1821.

AGA'LMA. See HEPTAPLEURUM.

AGA'LMYLA. (From *agalma*, an ornament, and *hule*, a forest. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. *14-Didynamia, 2-Angiospermia*.)

It is a fine stove plant, with scarlet tubular flowers, suitable for growing on branches of trees, in baskets or in pots, in the orchid-house or moist stove. Propagated from cuttings. Sandy, fibrous peat suits it.

A. longisty'la (Rev. Hort., 1873, p. 271). See A. STAMINEA.
,, *stami'nea* (long-stamened). 2. November. Scarlet. June. Java. 1846.

AGANI'SIA. (From *aganos*, desirable; in reference to the beauty of these neat little plants. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Grown on a block in stove; division of root.

A. cæru'lea. Blue, with darker blue blotches. Brazil. 1876. Now referred to *Acacallis cyanea*.
,, *cya'nea* (B. R., 1845, t. 28). White, blue. August. Colombia. 1843. Syns. *Warrea cyanea*. Now referred to *Acacallis cyanea*.
,, *fimbria'ta*. White, lip blue, fringed. Demerara. 1874.
,, *grami'nea*. ½. Yellow, red.
,, *iono'ptera*. White, violet. Peru. 1871. Syn. *Kœllensteinia ionoptera*.
,, *i'pida* (L., ix., t. 400). Brazil.
,, *oliveria'na* (G. C., 1878, ix. 558). Brazil.
,, *pulche'lla*. ½. Cream-coloured. June. Demerara. 1838.
, *tri'color*. Yellow, faint blue, lip red and orange. Amazon. 1888.

AGANO'SMA. (From *aganes*, mild, and *osme*, smell. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
The order of Dogbanes includes a host of most beautiful plants—as Allamanda, Echites, Oleander, &c. They are venomous in many cases, and always to be suspected. These stove plants are propagated by cuttings in sand, under glass, and with bottom-heat; they prefer a mixture of loam, sand, and peat.

A. acumina'ta (pointed-leaved). See A. MARGINATA.
,, *calyci'na*. White, fragrant. October. E. Ind. 1812. Shrubby twiner.
,, *caryophylla'ta* (clove-scented). Pale yellow. October. E. Ind. 1812. Shrubby twiner.
,, *cymo'sa* (cymose-flowered). White, fragrant. Sylhet. Shrub.
,, ,, *e'legans* (elegant). Purple. E. Ind. Shrubby twiner.
,, *margina'ta* (bordered). White, fragrant. Sylhet. Shrubby twiner.
,, *Roxbu'rghii* (Roxburgh's). See A. CALYCINA.
,, *Walli'chii* (Wallich's). See A. CALYCINA.

AGAPA'NTHUS. Blue African Lily. (From *agape* love, and *anthos*, a flower. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Half-hardy plants from the Cape of Good Hope. Sandy loam; suckers. Require to be kept in a cold pit during winter.

A. caule'scens (Gfl., 1901, 21; 281, t. 1487). Allied to *A. umbellatus*.
,, *insi'gnis* (Gard., 1903, lxiv. 67 f.). S. Africa.
,, *umbella'tus*. 3. Blue. April. 1692.
,, ,, *a'lbidus*. 2. Whitish. September.
,, ,, *albiflo'rus* (Maund. Bot., v. ii., t. 86). White.
,, ,, *ca'ndidus*. White. S. Africa. 1880.
,, ,, *exce'lsus* (Bull. Cat., 1878, 154). S. Africa.
,, ,, *flo're-a'lbo*. 1879.
,, ,, ,, *ple'no* (Bull. Cat., 1878, 154). S. Africa.
,, ,, *giga'nteus*. 3. Dark blue. 1879.
,, ,, *globo'sus* (G. C., 1905, xxxviii. 237, f. 459). Orange River Colony.
,, ,, *interme'dius*.
,, ,, *Leichtli'nii* (G. C., 1879, x. 428). S. Africa.
,, ,, *ma'ximus* (B. R., 1843, t. 7).
,, ,, *mi'nimus* (B. R., t. 699).
,, ,, *moorea'nus*. Blue. September. S. Africa. 1872.
,, ,, ,, *mi'nor*. 1½. Dark blue. 1879.
,, ,, *Saint-pau'lii* (Gard., 1903, lxiv. 90).
,, ,, *variega'tus*. 2. Blue. April.

AGAPE'TES. (From *agapetos*, admired; referring to the brilliant flowers. Nat. ord. Vacciniaceæ.)

A. buxifo'lia (B. M., t. 5012). 5. Red. Bootan.
,, *gla'bra* (smooth). 6. Deep rose. September. India.
A. macra'ntha (large-flowered). White, yellow, red. India. 1849.
,, *Ma'nnii*. Khasia. 1892.
,, *Moo'rii* (B. M., t. 7928).
,, *pulche'rrima* (B. M., t. 4303). Syn. *Thibaudia pulcherrima*. See A. VARIEGATA.
,, *seti'gera* (bristle-bearing). Scarlet. Himalaya. 1837.
,, *specio'sa* (G. C., 1907, xli. 224, 230, f. 101).
,, *vaccina'cea*. Khasia. 1837. See VACCINIUM SERRATUM.
,, *variega'ta*. Scarlet. Khasia. 1837. Syn. *Thibaudia variegata*.

AGA'RICUS. (From *Agaria*, the name of a town in Sarmatia. Nat. ord. *Mushrooms* [Basidiomycetes]. Linn. 24-*Cryptogamia*, 5-*Fungi*.)
This very large genus of fungous plants includes the Mushroom (*A. campestris*) and the Fairy-ring Mushroom (*A. pratensis*), with a few others, which are eatable; but except the two named, they are too dangerous for us to recommend them. See MUSHROOM.

AGARI'STA. (A mythological name; alluding to the beautiful aspect of the flowers. Nat. ord. Ericaceæ.)

A. calliopsi'dea. See LEPTOSYNE CALLIOPSIDEA.
,, *neriifo'lia*. Syns. *Andromeda neriifolia* and *Leucothoë neriifolia*.
,, *pu'lchra*. Syn. *Leucothoë pulchra*.

AGA'STACHYS. (From *agastos*, admirable, and *stachys*, a spike. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)
A greenhouse evergreen shrub. Ripe-wooded cuttings in sand, under a glass, and in a cold frame; equal parts loam, sand, and peat.

A. odora'ta (fragrant). 3. Pale yellow. June. N. Holland. 1826.

AGATHÆ'A. (From *agathos*, excellent; in reference to the beauty of the flowers. Nat. ord. *Composites*, allied to Aster [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Also referred to as Felicia.
Greenhouse plants; cultivated like the Cineraria, which they much resemble.

A. cæle'stis (heavenly). 2. Blue. June. Cape of Good Hope. 1759.
,, *linifo'lia* (flax-leaved). 2. Blue. June. Cape of Good Hope. 1800.

AGATHE'LPIS. (From *agathos*, pleasant, and *thelis*, a woman. Nat. ord. *Selagiads* [Selaginaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Greenhouse evergreen shrubs. Cuttings of half-ripe shoots in April, in sandy loam, under a glass without heat. Soil, peat, and sandy loam, equal parts. Winter temp., 40° to 45°.

A. angustifo'lia (narrow-leaved). White. May. Cape of Good Hope. 1823.
,, *parvifo'lia* (small-leaved). White. May. Cape of Good Hope. 1816.

AGA'THIS (*agathis*, glome; the flowers in clusters). Half-hardy conifers, yielding Dammar resin.

A. austra'lis (southern). New Zealand.
,, *robu'sta* (Mast.). *Dammara robusta*, C. Moore. A tree reaching upwards of 100 feet in Australia.

AGATHOPHY'LLUM. Madagascar Nutmeg. (From *agathos*, pleasant, and *phyllon*, a leaf; referring to the pleasant, clove-like smell of the leaf. Nat. ord. *Laurels* [Lauraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)
Stove evergreen tree. Peat, and light rich loam; cuttings.

A. aroma'ticum (aromatic). 30. White. Madagascar. 1823. Now referred to Ravensara.

AGATHO'SMA. (From *agathos*, pleasant, and *osme*, smell. Nat. ord. *Rueworts*. Allied to Diosma [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
The Rueworts are principally distinguished for their bitterness and powerful smell. Greenhouse evergreen shrubs, all from the Cape of Good Hope, and all blooming in May and June. Peat and sand; cuttings of young shoots in sand, under a glass, without heat. Winter temp., 40° to 45°. In summer a rather shady place.

A. acumina'ta (sharp-pointed-leaved). See A. IMBRICATA
,, *ambi'gua* (doubtful). 2. White. 1810.

A. brevifo'lia (short-leaved). See A. ERECTA.
„ *brunia'des* (Brunia-like). See A. CUSPIDATA.
„ *cerefo'lium* (chervil-leaved). 2. White. 1774.
„ *cilia'ta* (eyelash-haired). 2. White. 1774.
„ *cuspida'ta*. 2. Purple. 1820.
„ *ere'cta* (upright). 2. Blue, white. 1816.
„ *hi'rta* (hairy). 2. Purple. 1794.
„ „ *exsicca'ta* (dried-up, hairy). 2. Purple. 1718.
„ „ *purpu'rea* (purple, hairy). 2. Purple. 1791.
„ *hi'spida* (rough-haired). 1. Violet. 1786.
„ *imbrica'ta* (imbricated). 3. Pink. 1774.
„ *linifo'lia* (flax-leaved). 2. White. 1823.
„ *orbicula'ris* (round-leaved). 2. White. 1800.
„ *proli'fera* (proliferous). 2. White. 1790.
„ *pube'scens* (downy). 1. White. 1798.
„ *refle'xa* (reflex-leaved). 2. Purple. 1820.
„ *rugo'sa* (coarsely-wrinkled). 2. White. 1790.
„ *squamo'sa* (scaly). 1. June. 1818.
„ *ventenatia'na* (Ventenat's hairy). 2. Purple. 1794.
„ *vesti'ta* (clothed). 2. White. 1824.
„ *villo'sa* (long-haired). 2. Violet. 1786.

AGATHYRSUS. (From *agathos*, pretty, and *thyrsus*, a thyrse, or dense panicle; referring to the handsome flowers so produced. Nat. ord. *Compositæ*. Allied to Hawkweed [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

All hardy herbaceous perennials, except *A. floridanus*, which is biennial. Root division and seeds. Common garden-soil. Now referred to Lactuca.

A. alpi'nus (alpine). 4. Blue. July. Scotland. See LACTUCA ALPINA.
„ *cya'neus* (blue). 2. Blue. July. Nepaul. 1802. See LACTUCA HASTATA.
„ *florida'nus*. See LACTUCA CRETICA.
„ *Plumie'ri* (Plumier's). 6. Blue. August. France. 1804. See LACTUCA.
„ *sibi'ricus* (Siberian). 2. Blue. August. Siberia. 1794. See LACTUCA.
„ *tata'ricus* (Tartarian). 4. Blue. August. Siberia. 1784. See LACTUCA.

AGA'TI. (The Sanscrit name for it. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Galega. Now referred to Sesbania.)

Stove evergreen trees. Loam and peat in equal proportions; cuttings in sand, under a glass, with bottom-heat.

A. cocci'nea (scarlet). 45. Red. August. E. Ind. 1768.
„ *grandiflo'ra* (large-flowered). 20. Red. August. E. Ind. 1820.

AGAU'RIA. (From *agauros*, proud; the bright appearance of the plants. Nat. ord. Ericaceæ.)

Evergreen stove or greenhouse shrubs. Layers. Peaty soil.

A. buxifo'lia (box-leaved). 2. Pink. July. Bourbon. 1822.
„ *salicifo'lia* (willow-leaved). 4. Pale green. June. Trop. Africa. 1825.

AGA'VE. Aloe. (From *agavos*, admirable; referring to the stately form in which some of them flower. Nat. ord. *Amaryllids*. Linn. 6-*Hexandria*, 1-*Monogynia*.)

The fibre of some species of aloe has been manufactured into ropes and paper, and the juice into an intoxicating liquor called pulque, from which, in its turn, brandy is distilled. Stove and greenhouse succulent plants. Rich loamy soil, decayed vegetable mould, and brick rubbish; suckers.

A. a'lbicans. 4. Greenish-yellow. Mexico. 1860.
„ *a'lbida*. See A. ALBICANS.
„ *Alibe'rtii* (G. C., 1883, xix. 176). Syn. *Allibertia intermedia*.
„ *america'na* (B. M., t. 3654). 24 to 36. Yellowish. Trop. Amer. About 1554.
„ „ *Mille'ri*. A dwarf variety. 1768.
„ „ *orna'ta*.
„ „ *pi'cta*. Leaves variegated.
„ „ *variega'ta*. 12. Yellow. August. S. Amer. 1640.
„ *amæ'na*. See A. SCOLYMUS.
„ *amure'nsis*. A dwarf form of *A. xylonacantha*.
„ *angustifo'lia*. See A. RIGIDA.
„ *angusti'ssima* (G. and F., 1893, vi. 5, fig. 1). Mexico.
A. applana'ta. Mexico. 1869.
„ *arma'ta* (R. H., 1903, 227). Mexico.
„ *aspe'rrima*. 2. Yellow. Texas. 1864.
„ *atrovi'rens*. Mexico.
„ *Bake'ri* (Gard., 1902, lxi. 240 ff.). Mexico (?).
„ *Baxte'ri* (G. C., 1888, iii. 392). Mexico.
„ *Beauca'rnei*. Mexico. See A. KERCHOVEI.
„ *Bernha'rdii*. Mexico. 1868.
„ *besseria'na* (B. M., t. 5940). 2. Green. Mexico. 1869. See A. MACRANTHA.
„ *Botte'rii* (B. M., t. 6248). Greenish. Mexico. 1875.
„ *Bou'chei*. 6. Yellowish-green. Mexico. 1861.
„ *brachysta'chys*. 3. Green. Mexico. 1820.
„ *bracteo'sa* (G. C., 1882, xviii., 776, f. 138–9). Monterey, Mexico.
„ *braunia'na*. Mexico. 1865.
„ *bromeliæfo'lia*. Mexico. 1834.
„ *bulbo'sa*. Colombia. 1871.
„ *califo'rnica*. See A. FALCATA.
„ *candela'brum*. See A. RIGIDA ELONGATA.
„ *carchario'donta*. Country unknown. 1907.
„ *caribæ'a*. Martinique. 1877.
„ *celsia'na*. 4. Green. May. Mexico. 1839.
„ *chloraca'ntha*. 6. Green. Mexico. 1842.
„ *cocci'nea*. 2. Mexico. 1859.
„ *cochlea'ris*. 25. Yellowish-green. Mexico. 1867.
„ *cærule'scens*. See A. LOPHANTHA.
„ *conci'nna*. Mexico. 1877.
„ *conduplica'ta*. Mexico. 1865.
„ *Cordero'yi*. Mexico. 1872.
„ *crena'ta*. See A. SCOLYMUS.
„ *cuculla'ta*. Mexico. 1860.
„ *dasyliriοi'des*. 10. Green. Mexico. 1846.
„ „ *angustifo'lia*. Mexico. 1871.
„ „ *compa'cta*. Mexico. 1871.
„ *dealba'ta*. See A. DASYLIRIOIDES.
„ *decaisnea'na*. Mexico.
„ *de-meesteria'na*. Mexico.
„ *densiflo'ra*. 6. Green. September. Mexico. 1857.
„ *Dese'rti*. 4 to 10. Yellow. California. 1877.
„ *desmetia'na*. See A. HORRIDA.
„ *diplaca'ntha*. Mexico.
„ *echinoi'des*. See A. STRIATA.
„ *Ehrenbe'rgii*. 5. Mexico. 1864.
„ *elemeetia'na*. 14. Yellowish-green. Mexico. 1864.
„ *elonga'ta*. See A. RIGIDA.
„ *ensi'fera*. See A. UNIVITTATA.
„ *exce'lsa*. Honduras.
„ *expa'nsa*. See A. AMERICANA.
„ *falca'ta*. Mexico. 1869.
„ *fenzlia'na* (B. M., t. 6589). Mexico.
„ *fe'rox*. Mexico. 1861.
„ *fili'fera*. 6. Greenish. Summer. Mexico.
„ „ *filamento'sa*. 10. Green, purplish. Mexico.
„ „ *variega'ta*. 1881.
„ *fla'ccida*. Mexico. 1872.
„ *flave'scens*. See A. MACRANTHA.
„ *fo'etida*. See FURCRÆA GIGANTEA.
„ *Franzosi'ni* (K. B., 1892, 3).
„ *Fuerstenbe'rgii*. See A. AMERICANA.
„ *funkia'na*. See A. LOPHANTHA.
„ *Galeo'ttei*. Mexico. 1877.
„ *gemina'ta*.
„ *geminiflo'ra*. 15. Reddish-brown. Mexico. 1810.
„ *Ghiesbre'ghtii*. Mexico. 1862.
„ *Gilbe'yi*. See A. HORRIDA.
„ *Gilbe'rti* (M. K., 1904, 126). See A. BAKERI.
„ *glauce'scens*. Syn. *A. attenuata*.
„ *gœppertia'na*. 8. Mexico. 1865.
„ *Guedeney'ri*. 12. Yellowish-green. Mexico. 1875.
„ *gutta'ta*. Mexico. 1860.
„ *Haselo'ffi*. 7. Green. Mexico. 1864.
„ *Hayna'ldii*. 10. Pale green. Autumn. 1879.
„ *Henrique'sii* (G. C., 1887, i. 732). 12. Green, tinged brown. Mexico. 1887.
„ „ *glomuliflo'ra*.
„ *heteraca'ntha*. 6. Olive-green. Mexico.
„ *Hooke'ri* (B. M., t. 6539). 30. Greenish. Mexico.
„ *horizonta'lis*. 6. Reddish-brown. Mexico. 1865.
„ *ho'rrida*. 6 to 8. Yellowish-green. Spring. Mexico. 1862.
„ „ *Gilbe'yi*. Mexico. 1873.
„ „ *le'vior*. Leaves longer and narrower. Mexico. 1870.
„ „ *macrodo'nta*. Mexico. 1876.

A. ho'rrida micraca'ntha. Mexico. 1876.
,, *Houlle'tii.* Mexico. 1865.
,, *humboldtia'na.* Mexico. 1865.
,, *imbrica'ta.* Mexico.
,, *ine'rmis.* See A. KERCHOVEI.
,, *interme'dia.* See A. ALIBERTII.
,, *I'xtli.* See A. RIGIDA.
,, *ixtlioi'des.* See A. RIGIDA ELONGATA.
,, *jacquinia'na.* See A. LURIDA.
,, *Kara'tto.* 5. Green. S. Amer. 1768.
,, *Kercho'vei.* Mexico. 1864.
,, ,, *canalicula'ta.*
,, ,, *ma'jor.*
,, ,, *ine'rmis.*
,, ,, *Vei'tchii.*
,, *kewe'nsis.* Mexico. 1865.
,, *Langla'ssei* (R. H., 1901. 349, ff. 147–8).
,, *latici'ncta.* Mexico. 1869.
,, *lati'ssima.* See A. ATROVIRENS.
,, *laurentia'na.* Mexico. 1865.
,, *la'xa.* 1834.
,, *laxifo'lia* (B. M., t. 7477). Mexico.
,, *legrellia'na.* See A. EHRENBERGII.
,, *leguaya'na.* See A. GHIESBREGHTII.
,, *Lindle'yi.* Mexico. 1867.
,, *littœoi'des.* 8. Greenish-yellow. Country unknown. 1909.
, *longifo'lia.* Mexico.
,, *lopha'ntha.* 10 to 12. Mexico.
, ,, *cœrule'scens.*
,, *lu'rida.* 8. Green. June. Vera Cruz. 1731.
, *macra'ntha.* 3. Greenish. Mexico Mountains. 1830. Syn. *A. flavescens.*
,, *macraca'ntha.* Mexico. 1869.
,, *macrodo'nta.* See A. KERCHOVEI.
,, *macula'ta.* ½ to 3. Purplish-green. Texas. 1856.
,, *maigretia'na.* See A. HORRIDA.
,, *marlia'na.* Mexico. 1864.
,, *maximilia'na.* Mexico. Syn. *A. gustaviana.*
,, *maximowiczia'na.* 6½. Green. 1889.
,, *melanaca'ntha.* Mexico. 1863.
,, *me'scal.* See A. SCOLYMUS.
,, *mexica'na.* 5. Green. Mexico. 1817.
,, *micraca'ntha.* 6. Greenish-yellow. Mexico. 1860.
,, *mi'nor.* 6. Leaves entire. 1869.
,, *miradore'nsis.* 2c. Yellow, green. Summer. Mexico. 1869.
,, *mi'tis.* 10. Yellowish. Mexico. 1860.
,, *moorea'na.* New Grenada. 1873.
,, *Morri'sii* (G. C., 1887, i. 543, 549, f. 105). 15 to 20. Bright yellow. Jamaica. 1887.
,, *Mulma'nni.* 5. Mexico. 1871.
,, *Nichel'si* (R. H., 1895, 579). Texas.
,, *Nisso'ni.* Mexico. 1874.
,, *oblonga'ta.* 8. Mexico. 1868.
,, *ofjoya'na.* Mexico. 1862.
,, *oligophy'lla.* Mexico (?). 1878.
,, *oxtgiesia'na.* Mexico. 1876.
,, *parrasa'na* (N. B., iv. 250). Mexico. 1907.
,, *Parry'i* (G. C., 1879, xii. 237, 39). Arizona.
,, *paucifo'lia* (G. C., 1878, ix. 266). Mexico.
,, *pavolinia'na.* 7. Green-yellow. Country unknown. 1910.
,, *Peaco'ckii.* Mexico. 1873.
,, *pectina'ta.* Mexico. 1869.
,, *Pfersdo'rffi* (R. H., 1904, 326).
,, *polyaca'ntha.* 6. Green. August. 1800.
,, *polyacanthoi'des.* Mexico. 1835.
,, *Poselge'ri.* See A. HETERACANTHA.
,, *potato'rum.* 12. Greenish-yellow. Mexico. 1813.
,, *pruino'sa.* Mexico. 1863.
,, *pube'scens.* 3. Greenish. 1870.
,, *pugionifo'rmis.* Mexico. 1830.
,, *pulche'rrima.* Mexico. 1835.
,, *recu'rva.* See A. STRIATA.
,, *regelia'na.* Mexico. 1865.
,, *re'gia.* Mexico. 1872.
,, *revolu'ta.* 4. Greenish. Mexico. 1840.
,, *ri'gida.* 6. Green. Mexico. 1790.
,, ,, *elonga'ta.* Mexico. 1871.
,, ,, *I'xtli.*
,, *rœzlia'na.* Mexico. 1869.
,, *Roha'nii.* See A. GHIESBREGHTII.
,, *rube'scens.* Mexico. 1834.
,, *ru'dis.* Mexico. 1864.

A. rupi'cola. 8. Yellowish. Mexico. 1858.
,, *salmia'na.* 20 to 30. Greenish-yellow. Mexico. Syns. *A. tehuacanensis* and *A. jacobiana.* See A. ATROVIRENS.
,, *Sapona'ria.* See A. BRACHYSTACHYS.
,, *Sarto'rii.* 6. Green. Mexico. 1860. Syns. *A. Noachii, A. æspitosa,* and *A. pendula.*
,, *Saunde'rsii.* See A. SCOLYMUS.
,, *schidi'gera.* 6. Greenish. Mexico. 1861.
,, *Schnittspa'hni.* See A. SCOLYMUS.
,, *Sco'lymus.* 14. Greenish-yellow. Mexico. 1830. Syns. *A. amœna* and *A. auricantha.*
,, ,, *crena'ta.*
,, ,, *Saunde'rsii.*
,, *Seema'nni.* 6. Nicaragua. 1868.
,, ,, *acu'ta.* Nicaragua. 1869.
,, ,, *papillo'sa.* Nicaragua. 1869.
,, ,, *parvispi'na.* Nicaragua. 1869.
,, *serrula'ta.* Mexico. 1842.
,, *Sha'wii* (Gfl., t. 902, f. a-c G.). California.
,, *Si'msii.* Mexico. 1871.
,, *Simo'ni* (R. H., 1904, 297, ff. 128–130).
,, *smithia'na.* Mexico. 1865.
,, *soboli'fera.* 10. Yellowish. Mexico. 1678.
,, *spica'ta.* 15. Greenish. Cuba. 1802.
,, *sple'ndens.* Mexico.
,, *stria'ta.* 6. Yellow-green. Mexico. 1856.
,, ,, *recu'rva.*
,, ,, *Richa'rdsii.* Mexico.
,, ,, *stri'cta.* Mexico. 1869.
,, *Taylo'ri.* See A. WRIGHTII.
,, *Terraccia'noi* (Gfl., 1893, 66, f. 14); probabiy Mexico or Texas.
,, *Theome'tel.* 10. Yellowish-green. Mexico.
,, *thomsonia'na.* Mexico. 1865.
,, *tonelia'na* (G. C., 1881, xv. 362). 2. Mexico. 1881.
,, *triangula'ris.* See A. HORRIDA.
,, *undula'ta.* 3. Mexico. 1840.
,, *univitta'ta.* Green. Mexico. 1830.
,, *Vandervi'nneni.* Mexico.
,, *variega'ta.* 1½. Green. Leaves green, with dark blotches. Mexico. 1865.
,, *Verschaffe'ltii.* See A. SCOLYMUS.
,, *Victo'riæ-Regi'næ.* 8. Mexico. 1875. Syn. *A. Consideranti.*
,, *villa'rum* (R. H., 1886, 465). Garden hybrid.
,, *virgi'nica.* 3. Purple. N. Amer. 1765.
,, *viridi'ssima.* Mexico. 1877.
,, *vivi'para.* 15. Green. September. S. Amer. 1731. Syns. *A. Cantula* and *A. bulbifera.*
,, *Walli'sii.* Colombia. 1867.
,, *warellia'na.* Mexico.
,, *Watson'i* (K. B., 1907, 322). Probably Central Amer. 1907.
,, *Webe'ri* (Jard., 1901, 265). Mexico.
,, *wiesenberge'nsis.* 8. Greenish-yellow. Mexico. 1885.
,, *Willia'msii.* Trop. Amer. 1872.
,, *Wislize'ni.* 12. Mexico.
,, *Woodro'wi* (G. C., 1899, xxvi. 432). A form of *A. vivipara.*
,, *Wri'ghtii.* 10. Green, edged cream. Central Amer. 1909.
,, *xalape'nsis.* 13. Mexico. 1875.
,, *xylonaca'ntha.* 8. Green. Mexico. Syn. *A. Vanderdonckii.*
,, ,, *vitta'ta.* Syn. *A. hybrida.*
,, *yuccæfo'lia.* 6. Yellow. 1816.

AGDE'STIS. (A mythical hermaphrodite monster, the genus being an anomalous one in its order.) Phytolaccaceæ. A monotypic genus. Tender climbing shrub. Mexico.

A. clemati'dea, Moc. and Sesse. With axiliary or terminal branched racemous cymes.

AGENO'RA. See HYPOCHŒRIS.

AGE'RATUM. (From *a,* not, and *geras,* old; in reference to the flowers being always clear. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia,* 1-*Æqualis.*) All annuals, but may be kept perennials by cuttings, or in pots, if not allowed to ripen seeds. The first two greenhouse; the others, except *A. mexicanum,* hardy. Light rich soil; cuttings and seeds. There are many garden varieties of *mexicanum,* which are extensively

used for bedding. Imperial Dwarf Blue and Imperial Dwarf White were among the first we had, but there are now numerous names from different raisers. They all come fairly true from seed, but it is desirable to propagate from cuttings, as there is little trouble in keeping plants through the winter, and cuttings root freely early in the spring.

A. angustifo'lium (narrow-leaved). 1. White. July. Monte Video. 1827.
,, *cæru'leum* (sky-blue). See A. CONYZOIDES.
,, *cælesti'num* (B. M., t. 1730). See A. CORYMBOSUM.
,, *conyzoi'des* (conyza-like). 1. Light blue. July. America. 1714.
,, *corymbo'sum*. 1. Blue. July. Mexico. 1732.
,, *Lasseau'xii* (Rev. Hort., 1870, p. 90). See CONOCLINIUM.
,, *latifo'lium* (broad-leaved). See A. CONYZOIDES.
,, *mexica'num* (Mexican). 2. Blue. June. Mexico. 1822. Greenhouse.
,, *puncta'tum* (Jacq. H. Schœnb., t. 300).
,, *stri'ctum* (upright). See ADENOSTEMMA VISCOSUM.
,, *sufrutico'sum* (Gft., t. 108).
,, *Wendla'ndi* (R. H., 1885, 9). Mexico.

AGLA'IA. (The name of one of the three Graces. Nat. ord. *Meliads* [Meliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Until very recently this interesting Chinese plant was referred to the Citronworts. Stove evergreen shrub. Light loam, decayed dung, and peat; half-ripe cuttings in sand; in stove-propagating frame with bottom-heat.

A. odora'ta (sweet-scented). Striped. February. China. 1810.

AGLAOMO'RPHA. (From *aglaos*, beautiful, and *morphe*, a form. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove herbaceous Fern. Root division and seed; light, rich loam and peat.

A. meyenia'na (Meyenian). Yellow. May. Island of Luzon. See POLYPODIUM MEYENIANUM.

AGLAONE'MA. (From *aglaos*, bright, and *nema*, a thread, alluding to the shining stamens. Nat. ord. Araceæ.)

Stove evergreen perennials, some of which are remarkable for their beautiful variegated foliage. They require a warm, moist atmosphere, and may be propagated from cuttings in sand and peat; some may be propagated from divisions, and others from seeds; pot in fibrous loam, peat, and leaf-mould, with sand added.

A. acutispa'thum. Light green; leaves dark green, paler beneath. Canton.
,, *commuta'tum* (B. M., t. 5500).
,, *commuta'tum pi'ctum*.
,, *hookeria'num*. Spathe green, paler inside. India. 1874.
,, *Lava'lleei*. Syn. *Schismatoglottis Lavalleei*.
,, *Ma'nnii*. (B. M., t. 5760). Whitish. W. Africa. 1868.
,, *marantifo'lium*. Malaya.
,, *nebulo'sum*. Leaves dark green, blotched with whitish green. Java. 1887.
,, *ni'tidum*. See A. OBLONGIFOLIUM.
,, *oblongifo'lium*. Malaya.
,, *pi'ctum*. 1 to 2. White; leaves blotched. August. Borneo. 1880.
,, ,, *compa'ctum*. Shining green. Java. 1888.
,, *si'mplex*. 2 to 3. White. July. Java.
,, *versi'color* (Bull. Cat.). E. Ind.

AGNO'STUS. See STENOCA'RPUS.

AGONIO'PTERIS. See ACRO'STICHUM.

AGO'NIS. (From *agonos*, without children, or *a*, privative, and *gonu*, a joint. Nat. ord. Myrtaceæ.)

Evergreen greenhouse shrubs. Cuttings in sand, under a bell-glass. Loam, peat, and sand.

A. flexuo'sa (flexuous). 2. June. Australia. 1823.
,, *margina'ta* (margined). 2 to 3. White. June. Australia. 1827.

AGRIMO'NIA. Agrimony. (From *agremone*, a plant used by the Greeks in cataract of the eye. Nat. ord. *Roseworts* [Rosaceæ]. Allied to Potentilla. Linn. 11-*Dodecandria*, 2-*Digynia*.)

Hardy herbaceous plants. Root division; common garden soil.

A. Eupato'ria (Eupatoria). 3. Yellow. June. Britain.
,, *nepale'nsis* (Nepaul). See A. EUPATORIA.
,, *odora'ta* (scented). 4. Yellow. July. England and Ireland.
,, *parvifo'ra*. 3. Yellow. July. Virginia. 1810.
,, *suave'olens* (sweet-smelling). See A. PARVIFLORA.

AGROMY'ZA VIOLÆ. Pansy Fly. Attacks the flower by puncturing the petal, and extracting the juice; the puncture causes the colouring matter to fade. Very minute; shining black; bristly; eyes green; head orange. Appears in May. See IRIS FLY, also INSECT PESTS.

AGROSTE'MMA. Rose Campion. (From *agros*, a field, and *stemma*, a crown; referring to the beauty of the flowers. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 4-*Tetragynia*.)

Hardy herbaceous perennials. Common soil; division or seed. All are now referred to Lychnis, which see.

A. bungea'na (Don Bunge's). 1. Scarlet. July. Russia. 1834.
,, *decu'mbens* (hanging-down). 1. Crimson. July.
,, *pyrena'ica* (Pyrenean). 1. Pale rose. June. Pyrenees. 1819.
,, *sue'cica* (Swedish). See LYCHNIS ALPINA.

AGRO'STIS. Bent grass. (From *agros*, a field. The Greek name for a kind of grass. Nat. ord. Gramineæ.)

A. e'legans. 1. Russia. 1834.
,, *nebulo'sa*. 1½. Spain.
,, *pulche'lla*. ½ to 1. Sicily.
,, *Spica-ve'nti*. England. See APERA SPICA-VENTI.

AGRO'TIS. The Turnip Moth. See TURNIP.

AGYNE'IA. (From *a*, without, and *gune*, female. The male and female are in different flowers. Nat. ord. Euphorbiaceæ.)

Stove annual. Seeds. Loam, leaf-mould, and sand.

A. baccifo'rmis (berry-formed). 2. Green, yellow. July. India; Malaya. 1793.

AILA'NTHUS. (From *ailanto*, tree of heaven; referring to its lofty growth. Nat. ord. [Simarubaceæ]. Linn. 23-*Polygamia*, 11-*Diœcia*.)

Deciduous trees. Cuttings of the roots; sandy loam and peat. Glandulosa makes a very handsome tree.

A. exce'lsa (lofty). 50. Green. E. Ind. 1800. Stove.
,, *Gira'ldii* (Girald's). Leaves long. China. 1907.
,, *glandulo'sa* (glandulous). 20. Green. China. 1751. Hardy.
,, ,, *pendulifo'lia* (R. H., 1906, 545, f. 205).
,, ,, *tri'color* (three-coloured). Leaves with rose blotches becoming white. 1907.
,, *sutchuene'nsis* (Sutchuen). Fruits flat, 2½ in. long. Central China. 1907.
,, *vilmorinia'na* (R. H., 1904, 444, f. 184). W. China. Syn. *A. glandulosa spinosa*.

AINSLÆ'A. (Named after *Dr. Whitelaw Ainslie*, an authority on Indian drugs. Nat. ord. Compositæ.)

A. a'ptera (Bull. Cat., 1882, 13). Purple. Sikkim. Himalaya. 1882.
, *Walke'ri* (B. M., t. 6225). 1. White. Hong-Kong. 1875.

AIR. Atmospheric air is uniformly and universally composed of—

Oxygen	21
Nitrogen	79

Every 100 parts, even in the driest weather, containing, in solution, one part of water; and in every 1000 parts having admixed about one part of Carbonic Acid. The average proportions are—

Air	98.9
Watery vapour	1.0
Carbonic Acid Gas	0.1

All these are absolutely necessary to every plant, to enable it to vegetate with all the vigour of which it is capable; and on its due state depends, in a great measure, the health of any plant requiring the protection of glass. See LEAVES ROOTS, VENTILATION.

AIR (Giving). This is a term used by gardeners for ventilation, or opening the top sashes to let out the stagnant air and admit fresh, by giving ventilation from the sides or lower portion of the houses; modern growers rarely give much side ventilation. On consideration, any one will agree that it is not a natural state of things to have a cold draught from beneath the plants where they are grown on stages.

AI'RA. (From *aira*, the Greek name for *Lolium temulentum*. Nat. ord. Gramineæ.)

A. flexuo'sa. 1½. Shining brown. Britain. See DESCHAMPSIA.
„ *pulche'lla.* ½. S. Europe. Correct name *Gastridium australe.*

AIR-PLANT. *Aë'rides.*

AITO'NIA. (In honour of *Mr. W. Aiton*, once head-gardener at Kew. Nat. ord. *Meliads* [Meliaceæ]. Linn. 16-*Monadelphia*, 5-*Pentandria.*)

Greenhouse evergreen shrub. Loam and peat; cuttings of young wood, in sandy loam, in close frame, with bottom-heat. Pot in good loam with some manure and sand.

A. capë'nsis (Cape). 2. Pink. July. Cape of Good Hope. 1777.

AIZO'ON. (From *aei*, always, and *zoos*, alive. The plants are fleshy, and retain their vitality for a long time. Nat. ord. Ficoideæ.)

Greenhouse succulent propagated from cuttings or seeds, and grown fully exposed to the sun. Pot in light loamy soil.

A. canarie'nse. See SESUVIUM PEDUNCULATUM.
„ *sarmento'sum.* Greenish-white. S. Africa. 1862.

AJAR. Used to denote the smallest amount of opening to allow the entrance of air, and usually applied to the front sashes or lights.

A'JUGA. Bugle. (From *a*, not, and *zugon*, a yoke; in reference to the calyx being one-leaved. Nat. ord. *Labiates*, or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia.*)

Hardy plants. Common garden-soil; division, or seeds.

ANNUALS.

A. Chamæ'pitys (ground-pine). 1. Yellow. July. England.
„ *I'va* (Iva). 1. Yellow. May. South of Europe. 1759.

PERENNIALS.

A. austra'lis (southern). 1. Blue. July. N. Holland. 1822.
„ *folio'sa* (leafy). See A. GENEVENSIS.
„ *furca'ta.* See CRAINOTOME VERSICOLOR.
„ *geneve'nsis* (Geneva). 1. Flesh. July. Switzerland. 1656.
„ *integrifo'lia* (entire-leaved). 1. Blue. June. Nepaul. 1821.
„ *Laxma'nni* (Laxmann's). 1. Variegated. July. Siberia. 1800.
„ *orienta'lis* (oriental). 2. Blue. June. Levant. 1752.
„ *pyramida'lis* (pyramidal). ½. Blue. May. Britain. A beautiful plant.
„ *re'ptans* (Eng. Bot., ed. 3, t. 1088). ½ to 1. Blue, purple. Britain.
„ „ *atropurpu'rea.*
„ „ *ru'bra* (red-flowered). 1. Red. May. Britain.
„ „ *ru'bra variega'ta* (variegated-leaved). 1. Blue. April. Britain.
„ *rupe'stris* (rock). See A. PYRAMIDALIS.

AKE'BIA. (The name it bears in Japan. Nat. ord. *Lardizabalads* [Berberideæ]. Linn. 21-*Monœcia*, 6-*Hexandria.*)

The fruit of *Akebia quinata* is used in Japan as an emollient medicine. Greenhouse evergreen twiner. Root division and cuttings; sandy loam and peat.

A. loba'ta (B. M., t. 7485). Japan and N. China.
„ „ *austra'lis* (southern). Leaves with three leaflets. 1907.
„ *quina'ta* (five-leafleted). Lilac-pink. March. Chusan. 1845.

AKEE-TREE. *Bli'ghia sa'pida.*

ALA'NGIUM. (The Malayan name for two trees, bearing fruit not palatable to Europeans. Nat. ord. [Cornaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia.*)

Stove evergreen trees. Loam, mixed with peat; cuttings under glass, with bottom-heat.

A. decape'talum (ten-petaled). See A. LAMARCKII.
„ *hexape'talum* (six-petaled). See A. LAMARCKII.
„ *Lama'rckii.* 10. Pale purple. E. Ind. 1779.

ALATE'RNUS. *Rha'mnus Alate'rnus.*

ALBE'RTA. (In honour of *Albertus Magnus*, a thirteenth-century philosopher. Nat. ord. Rubiaceæ.)

ORNAMENTAL GREENHOUSE OR STOVE SHRUB.

A. ma'gna (Bull. Cat., 1891). Red. Fruit red, winged. Natal. 1891.

ALBI'ZZIA. (In honour of an Italian gentleman. Nat. ord. Leguminosæ; allied to Acacia.)

Greenhouse shrubs or trees. Some are hardy; chiefly useful for their ornamental foliage. *A. lophantha* is extensively used for sub-tropical gardens raised from seeds.

A. Julibri'ssin. Syns. *A. rosea*, *Acacia mollis*, and *A. Nemu.* Asia. 1745.
„ *Le'bbek* (Beed. Fl. Syl., t. 53). Syns. *Acacia Lebbek* and *A. speciosa.*
„ *lopha'ntha* (B. R., t. 361). White. S.W. Australia. 1803. Syn. *Acacia lophantha.*
„ *odorati'ssima.* Syn. *Acacia odoratissima.*
„ *pro'cera.* Tropical Asia and Australia.
„ *stipula'ta.* Syn. *Acacia stipulata.*

ALBU'CA. (From *albicans*, or *albus*, white; referring to the prevalence of white flowers in the genus. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia.*)

Greenhouse bulbs; all from the Cape of Good Hope, except where otherwise named. Sandy loam and peat; suckers from the old bulb, or leaves taken off with a scale. Well adapted for planting out in a border of light loam, in front of a greenhouse; to be covered from frost like Ixias.

A. abyssi'nica (Abyssinian). 2. White. August. 1818.
„ *Alle'næ.* 3. Greenish-white. Zanzibar. 1887.
„ *alti'ssima* (tallest). 4. White. May. 1789.
„ *angole'nsis.* 3. Yellow, green. Angola.
„ *au'rea* (golden). 2. Greenish-yellow. June. 1818.
„ *Buchana'ni* (G. C., 1892, xii. 488). Nyasaland.
„ *cauda'ta* (tailed). 2. Yellow. June. 1791.
„ *coarcta'ta* (compressed). 2. White. June. 1774.
„ *Coope'ri.* ½. Yellowish-green. S. Africa.
„ *corymbo'sa* (G. C., 1886, xxvi. 38). Allied to *A. juncifolia.*
„ *Elwe'sii* (G. C., 1880, xiv. 230). See A. WAKEFIELDII.
„ *exuvia'ta* (adder's skin). See URGINEA.
„ *fastigia'ta* (peaked). 2. White. June. 1774.
„ *fibro'sa.* 1. Yellow, green. S. Africa.
„ *filifo'lia* (thread-leaved). See URGINEA FILIFOLIA.
„ „ *major* (Gard., 1904, lxv.). See URGINEA.
„ *fla'ccida* (weak). 2. Yellow, green. June. 1791.
„ *fra'grans* (fragrant). 1. Yellow, green. July. 1791.
„ *fu'gax* (fleeting). See URGINEA FRAGRANS.
„ *Garde'ni* (Capt. Garden's). See SPEIRANTHA CONVALLARIOIDES.
„ *glandulo'sa.* ½. White, green, yellowish. S. Africa.
„ *juncifo'lia* (G. C., 1876, v. 534). S. Africa.
„ *ma'jor* (greater). 3. Green, yellow. May. 1759.
„ *mi'nor* (smaller). 1. Yellow. May. 1768.
„ *Nelso'ni* (G. C., 1880, xiv. 198, f. 41). Natal.
„ *physo'des* (flatulent). See URGINEA.
„ *polyphy'lla.* ½. White, green. March. S. Africa. 1872.
„ *seto'sa* (bristly). 1. Green. June. 1795.
„ *spira'lis* (spiral-leaved). 1. White. June. 1795.
„ *tenuifo'lia.* ½. Pale yellow, green. S. Africa.
„ *triochophy'lla.* Bright yellow. Natal. 1889.
„ *viridiflo'ra* (green-flowered). 1. Green. June. 1794.
„ *visco'sa* (clammy-leaved). 1. White, green. June. 1779.
„ *vitta'ta* (banded). See ORNITHOGALUM.
„ *Wakefie'ldii* (B. M., t. 6429). Syn. *A. Elwesii.* E. Trop. Africa. 1879.

ALBU'RNUM. The layers of young wood next beneath the bark, in which layers the vessels are situated for conveying the sap from the roots to the leaves.

ALCHEMI'LLA. Lady's Mantle. (From *alkemelyeh*, its Arabic name. Nat. ord. *Sanguisorbs* [Rosaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Herbaceous perennials. Common dry soil; seeds, or divisions. Will succeed in any dry soil. Drainage must be good; suitable for the Rock-garden, except the two greenhouse species.

GREENHOUSE.

A. capé'nsis (Cape). 1. Green. June. Cape of Good Hope. 1818.
„ *sibbaldiæfo'lia* (sibbaldia-leaved). 1. White. June. Mexico. 1823.

HARDY.

A. alpi'na (alpine). 1. Green. June. Britain.
„ *fi'ssa* (cleft-leaved). 1. Green. July. Switzerland. 1826.
„ *pentaphy'llea* (five-leaved). 1. White. July. Switzerland. 1784.
„ *pube'scens* (downy). See A. VULGARIS.
„ *seri'cea* (silky). 1. Green. July. Caucasus. 1813.
„ *vulga'ris*. 1. Green. July. Britain.

ALCHO'RNEA. (Derivation not clear. Nat. ord. Euphorbiaceæ.)

Greenhouse shrub. Cuttings in sand under a bell-glass. Loam, leaf-mould, and sand.

A. ilicifo'lia (holly-leaved). 3. Green. Australia. 1829.

A'LCOVE. A seat in a recess, formed of stone, brick, or other material.

A'LDER. See A'LNUS.

ALECTORU'RUS. (From *alektor*, a cock, and *oura*, a tail; in allusion to the long stamens in one form of the flower. Nat. ord. Liliaceæ.)

Hardy perennial herb, with thick rootstock. Offsets. Well-drained soil.

A. yedoë'nsis (Yedo). 1–2½. Pale rose. Japan. 1910.

ALE'TRIS. (From *aletron*, meal; referring to the powdery appearance of the whole plant. Nat. ord. *Bloodworts* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

A. farino'sa is the most intense of bitters known. Hardy herbaceous perennials. Shady situation. Peat or loam and leaf-soil; offsets.

A. au'rea (golden-tipped). 1. Yellow. July. N. Amer. 1811.
„ *farino'sa* (mealy). 1. White. June. N. Amer. 1768.

ALEURI'TES. (The name is the Greek word for *mealy*; in reference to the mealy appearance of the plants. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Allied to Croton.)

Stove evergreen trees. Loam. Ripe cuttings root readily in sand, under a glass, in heat.

A. corda'ta (heart-leaved). Japan. 1818.
„ *tri'loba* (three-lobed). 10. Apetal. October. Society Islands. 1793. "Candleberry Tree."

ALEXANDERS or **ALISANDER** (*Smy'rnium Olusa'trum*) received its common name from the Greek, which means "a helper of man," because formerly believed to possess powerful medicinal properties. It was also much cultivated for its stems, when blanched, to be eaten as celery, which it slightly resembles in flavour. *Sow* any time from the end of March to the commencement of May, in drills three feet apart. Thin the plants when two inches high to a foot apart, and the seedlings removed may be planted in rows at similar distances. *Earth them up*, to blanch like celery, when about a foot high. The plants will last two years; but the stems are finer and crisper, if raised from seed annually. Grow it on a rich, light *soil*, and give it abundance of water and liquid-manure.

ALEXANDRIAN LAUREL. *Danæa Laurus.*

ALEYRO'DES PROLETELLA. See INSECT PESTS.

ALFALFA, Lucerne (*Medicago sativa*, Linn.). Deep-rooted perennial forage plant. See MEDICAGO SATIVA.

ALGÆ. Name applied to seaweeds.

ALHA'GI. (The Arabic name of the plant. Nat. ord. *Leguminous Plants*. Allied to Hedysarum [Leguminosæ]. Linn. 17-*Diadelphia*, 1-*Decandria*.)

The natural secretion from the leaves and branches of *A. maurorum* is supposed by some to be the manna of Scripture. It is worthy of remark, that this secretion is not now formed in Arabia, Egypt, or India, but only in Persia, where it is highly esteemed as food for cattle. Both require the protection of a greenhouse in winter. Sandy loam and peat; young cuttings and seeds, the first in sand, the latter in a hotbed. Winter temp., 40° to 45°; in summer, 55° to 70°.

A. camelo'rum (camels'). 2. Red. July. Siberia. 1816.
„ *mauro'rum* (Moors'). 2. Red. July. Egypt. 1714.

ALIBE'RTIA. (In honour of *Alibert*, a French chemist. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen tree. Cuttings; sandy peat.

A. edu'lis (eatable). 12. Cream-coloured. Guiana. 1823.

ALIBRE'XIA TOMENTO'SA. See DOLIA.

ALI'SMA. Water Plantain. (From the Celtic word *alis*, water. Nat. ord. *Alismads* [Alismaceæ]. Linn. 6-*Hexandria*, 4-*Polygynia*.)

Hardy aquatics. Seed; sandy peat immersed in water. *A. Plantago* is recommended in hydrophobia.

A. Damaso'nium. See DAMASONIUM.
„ *lanceola'tum* (spear-leaved). See A. PLANTAGO.
„ *na'tans* (floating). See ELISMA.
„ *parvifo'rum* (small-flowered). See A. PLANTAGO.
„ *Planta'go* (plantain). 2. Pure white. July. Britain.
„ *ranunculoi'des* (ranunculus-like). See ECHINODORUS.
„ *trivia'le* (trivial). See A. PLANTAGO.

ALKANE'T. *Alka'nna tincto'ria.*

ALKA'NNA. (The Arabic name. Nat. ord. Boraginaceæ.)

Hardy perennial herbs. Divisions. Ordinary garden soil.

A. lu'tea (yellow). Yellow. Europe.
„ *orienta'lis* (oriental). 2. Yellow. June. Levant. 1713.
„ *tincto'ria* (dyer's). 2. Blue. July. Europe; Orient. 1596.

ALLAMA'NDA. (In honour of *Dr. Allamand*, of Leyden. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

This order is remarkable for handsome flowering plants, with deleterious qualities. An infusion of the leaves of *A. cathartica* is a valuable purgative. Stove evergreen climbers. Rich loam; cuttings root readily in sand, with bottom-heat and moist air. Winter temp., 55° to 65°; summer, 65° to 75°. Keep the plants dry during the autumn and winter; start them early in the spring.

A. Auble'tii (B. M., t. 4411). See A. CATHARTICA.
„ *catha'rtica* (cathartic). 12. Yellow. July. Guiana. 1785.
„ *Chelso'ni*. Garden Hybrid.
„ *grandiflo'ra* (large-flowered). Yellow. June. Brazil. 1844.
„ *neriifo'lia* (B. M., t. 4594). June. 1851.
„ *no'bilis* (B. M., t. 5764). Yellow. July. Brazil. 1867.
„ *parae'nsis* (Para). Yellow. Brazil. 1846.
„ *Scho'ttii* (Schott's). September. Yellow. Brazil. 1847.
„ „ *Henderso'ni* (Gfl., 1887, 554, 560–1, f. 142).
„ *verticilla'ta* (whorl-leaved). June. E. Ind. 1812.
„ „ *magni'fica* (Williams' Cat., 1888, 19).
„ *viola'cea* (G. C., 1889, vi. 304). Purple. Brazil. 1859. Re-introduced 1889.
„ *Willia'msii* (G. C., 1891, x. 111). A variety of *A. cathartica*.
„ *wardlea'na*. Yellow, outside maroon. New Grenada. 1881.

ALLANTO'DIA. (From *allantos*, a sausage; in reference to the cylindrical form of the indusium, or the case which encloses the seeds of Ferns. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Greenhouse Ferns; division of the roots, or sowing spores; equal parts, turfy peat and loam.

A. austra'lis (southern). Brown. Van Diemen's Land. 1820. Syn. of *Asplenium umbrosum.*
,, *axila'ris* (axillary). 2. Brown. Madeira. 1779.
,, *brunonia'na* (Brownian). 2. Himalaya; Java.
,, *strigo'sa* (strigose). 2. Brown. Madeira.
,, *te'nera* (tender). 1. Brown. N. Holland. 1820.
,, *umbro'sa* (shade-loving). 4. Brown. Madeira. 1779. See ASPLENIUM UMBROSUM.

ALLA'RDTIA. See TILLA'NDSIA.

ALLEYS are of two kinds:—1. The narrow walks which divide the compartments of the kitchen-garden; and, 2. Narrow walks in the shrubberies and pleasure-grounds, closely bounded and overshadowed by the shrubs and trees.

ALLIGATOR PEAR. *Perse'a grati'ssima.*

ALLIO'NIA. In honour of *C. Allioni*, an Italian botanist. Nat. ord. *Nyctagos.* Allied to the Marvel of Peru [Nyctaginaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia.*) Hardy annuals. Seeds; sandy loam.

A. incarna'ta (flesh-coloured). 1. Flesh. August. Cumana. 1820.
,, *ova'ta* (egg-leaved). See OXYBAPHUS FLORIBUNDUS.
,, *viola'cea* (violet-coloured). See OXYBAPHUS.

A'LLIUM. (From the Celtic *all*, meaning hot, or burning; referring to the well-known qualities of all the Onionworts, which are now classed in the Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia.*)
The onion, garlic, and leek, according to Dr. Royle, are the plants translated as such in the Bible (*Num.* ch. xi. 5). The genus includes the onion, garlic, &c. Hardy bulbs. Seeds or offsets; rich, light loam.

A. acumina'tum. ¾. Deep rose. July. N.W. Amer. 1840.
,, ,, *ru'brum.* Deep red purple. California.
,, *A'kaka* (B. T. O., 1894, 226). See A. KARATAVIENSE.
,, *albopilo'sum* (G. C., 1903, xxxiv. t. 34).
,, *Alexia'num.* Whitish, striped brownish-purple. Turkestan. 1890.
,, *amblyophy'llum* (Gfl., t. 1190). 2. Purple. Turkestan. 1885.
,, *ammo'philum.* See A. ANGULOSUM.
,, *Ampelopra'sum* (Wild-leek). 2. Purple. May. England.
,, *a'nceps.* ½. Purple. May. California. 1875.
,, *Anderso'nii* (Anderson's). See A. SENESCENS.
,, *angulo'sum* (angulose). 1. Light purple. June. Siberia. 1739.
,, *ascalo'nicum* (askalon, or shallot). 1. Purple. June. Palestine. 1546.
,, ,, *ma'jus* (greater askalon, or scallion). 1. Purple. July. South of Europe.
,, *a'sperum* (rough). See A. CARINATUM.
,, *azu'reum* (blue-coloured). See A. CÆRULEUM.
,, *backhousia'num.* 3. Himalayas. 1885.
,, *baueria'num.* 1. Pale red. Cyprus. 1874.
,, *Bidwi'lliæ.* ¾. Bright rose. July. Sierra Nevada.
,, *brachyste'mon* (short-stamened). See A. SUBHIRSUTUM.
,, *Brewe'ri.* ¾. Deep rose. July. California. 1882.
,, *cabu'licum* (B. M., t. 7294). Afghanistan.
,, *cæru'leum* (sky-blue). Blue. June. Russia. 1840.
,, *carina'tum.* 1. Violet. June. Europe. 1823.
,, *ca'spium.* 3. Green. May. Astrachan.
,, *Ce'pa* (onion). 3. White. June.
,, ,, *aggrega'tum* (aggregated onion). 1. White. June.
,, ,, *pauciflo'rum* (few-flowered onion). 2. White. June.
,, *cepæfo'rme* (onion-form). See A. CEPA.
,, *cine'reum* (grey). 1. Straw. July. Siberia. 1829.
,, *confe'rtum* (crowded). See A. SENESCENS.
,, *conge'stum* (crowded-flowered). See A. STELLERIANUM.
,, *controve'rsum* (contrary-stemmed). See A. SATIVUM.
,, *cya'neum.* Blue. Kansu. N. China. 1890. Syn. *A. cyaneum macrostemon.*
,, *desce'ndens* (down-flowering). See A. SPHÆROCEPHALUM.
,, *Dioscо'ridis.* Purple, green, white. June. Sicily. 1832. Syn. *Nectaroscordum siculum.*
,, *ela'tum* (Gfl., t. 1251). 3. Purple. Central Asia. 1887.

A. Elli'sii (B. M., t. 7875). Khorasan, Persia. Turkestan. 1880.
,, *Erde'lii.* ½. White. Palestine. 1879.
,, *falcifo'lium.* ¾. Pale rose. August. N.W. Amer. 1880.
,, *falcifo'rme.* ½. White. California. 1882.
,, *Fetiso'wii.* Rosy lilac. Turkestan. 1879.
,, *Fische'ri* (Fischer's). 1. Lilac. July. Siberia. 1829.
,, *fistulo'sum* (pipe-leaved). Welsh onion. 2. Green, yellow. April. Siberia. 1629.
,, *fla'vum.* 1. Yellow. Italy. 1759.
,, *fra'grans* (B. R., t. 898). See NOTHOSCORDUM.
,, *giga'nteum* (Gfl., t. 1113). 1½. Rose lilac. 1883. Merv.
,, *glau'cum* (milky-green). See A. SENESCENS.
,, *gra'cile* (Andr. Rep., t. 107). See NORTHOSCORDUM.
,, *gutta'tum.* See A. MARGARITACEUM.
,, *Hieroso'lymæ* (Damm. Cat., 1889, 3). ¾. White. Palestine.
,, *Holtze'ri* (Gfl., t. 1169, f. a.-c.). White, anthers rose. Turkestan. 1880.
,, *illy'ricum* (Illyrian). See A. ROSEUM.
,, *inodo'rum* (B. M., t. 1129). See NOTHOSCORDUM.
,, *interme'dium* (intermediate). See A. PANICULATUM.
,, *kansue'nse* (Regel. Descr., 6). Blue. Kansu, N. China. Syn. *A. cyaneum brachystemon.*
,, *karatavie'nse* (Gfl., t. 941). ½. White. Turkestan. May. 1878.
,, *litto'reum* (sea-side). See A. MONSPESSULANUM.
,, *longifo'lium* (long-leaved). 1. Dark purple. July. Mexico. 1826.
,, *Maclea'nii* (B. M., t. 6707). Mauve, purple. Summer. Cabul. 1882.
,, *macnabia'num.* 1. Deep rose. N. Amer.
,, *macra'nthum* (B. M., t. 6789). Deep purple. E. Himalayas.
,, *ma'gicum.* See A. NIGRUM.
,, *margarita'ceum.* 1½. White. Europe.
,, *me'dium* (middle). See A. TRIQUETRUM.
,, *Mo'ly* (moly). 1. Yellow. June. South of Europe. 1604.
,, *monspessula'num.* 2. Purple. Italy. 1818.
,, *murraya'num.* See A. ACUMINATUM.
,, *muta'bile.* 1 to 2. White or rose. July. N. Amer. 1824.
,, *narcissiflo'rum.* ¾. Deep purple. Italy. 1875.
,, *neapolita'num.* 1½. White. S. Europe. 1823.
,, *nevade'nse.* ½. White or rose. Sierra Nevada. 1882.
,, *ni'grum.* 3. Violet or whitish. June. S. Europe. Syn. *A. magicum.*
,, *odo'rum.* 1. White, pink. July. Siberia.
,, *olera'ceum.* 2. White. August. S. Europe. 1818.
,, *Ophioscо'rodon* (garden rocambole). See A. SATIVUM.
,, *oreo'philum.* 1. Reddish-purple. Turkestan.
,, *orienta'le.* Asia Minor.
,, ,, *rube'llum* (Damm. Cat., 1889, 3).
,, *ostrowskia'num.* 2. Purple. W. Turkestan. 1882.
,, *ovifo'rum* (Gfl., t. 1134). 3. Dark lilac. Tibet and Sikkim.
,, *oxype'talum.* See A. OLERACEUM.
,, *panicula'tum.* 1. White. June. 1827.
,, *parado'xum.* 1. White. Siberia.
,, *parcifo'rum* (G. C., 1888, iv. 236). ¾. Purple. Corsica and Sardinia. 1888.
,, *pedemonta'num.* See A. NARCISSIFLORUM.
,, *Po'rrum* (leek). 2. White. Switzerland. 1562.
,, *proli'ferum* (proliferous). See A. CEPA.
,, *przewalskia'num.* Rosy-lilac. Kansu, China. 1890.
,, *pu'lchrum* (beautiful). See A. NIGRUM.
,, *Pu'rshii* (Pursh's). See A. VINEALE.
,, *ramo'sum* (branchy). 2. Pale yellow. June. Siberia. 1819.
,, *reticula'tum.* 1. Pink or white. Summer. N. W. Amer. 1882.
,, ,, *alternifo'lium.* N. W. Amer.
,, *ro'seum.* 1. Pale rose. Summer. S. Europe. 1752.
,, *rotu'ndum.* 2. June. Hungary. 1826.
,, *sati'vum* (garlic). 2. White. June. Sicily. 1548.
,, *Schæno'prasum* (chives). ½. Flesh. May. Britain.
,, *Scorodo'prasum* (rocambole). 3. Light purple. July. Denmark. 1596.
,, *scorzoneræfo'lium* (scorzonera-leaved). 1. Yellow. June. South of Europe. 1820.
,, *Semeno'vi* (Gfl., t. 1156). Yellow. Central Asia. 1884.

A. semiretschenskia'num (Gfl., t. 971, f. g-k). Turkestan.
,, *sene'scens.* 1. Purple. July. Siberia.
,, *si'culum* (Sicilian). Purple, green, white. June Sicily. 1832.
,, *sphæroce'phalum.* 2. Reddish-purple. S. Europe. 1759.
,, *Sprenge'ri.* Yellowish. Jaffa. 1889.
,, *spu'rium* (spurious). See A. SENESCENS.
,, *stelleria'num* (Stellerian). 1. Purple. May. Siberia. 1818.
,, *stipita'tum.* 6. Purple, violet. Bokhara. 1881.
,, *strami'neum.* 1. Straw-yellow. Manchuria. 1877.
,, *stria'tum* (B. M., tt. 1035, 1524). See NOTHOSCORDUM.
,, *subhirsu'tum.* 2. White.
,, *trique'trum.* 1½. White, green. S. Europe.
,, *unifo'lium.* 1 to 2. Mauve-pink. July. California. 1873.
,, *ursi'num.* 1. White. Summer. Britain.
,, *va'lidum.* 2. White or rose. Summer. California. 1881.
,, *Victoria'lis* (Victor's). 2. Green, yellow. May. Austria. 1739.
,, ,, *angustifo'lium* (Victor's narrow-leaved). 1. Green, yellow. April.
,, *vinea'le.* 1. Pink. June. Britain.
,, *viola'ceum* (violet). See A. CARINATUM.
,, *Waldstei'nii* (Waldstein's). See A. ROTUNDUM.
,, *zebdane'nse* (Gard., 1899, lv. 282). White. Syria and Armenia.

ALLMA'NIA. (A commemorative name. Nat. ord. Amarantaceæ.)
Stove perennial herbs. Seeds. Cuttings in sand in a close frame. Fibrous loam, leaf-mould, and sand.
A. a'lbida (whitish). White. India; Malaya.
,, *nodiflo'ra* (node-flowering). 1. Yellow. July. India; Malaya. 1824.

ALLOPHY'LUS. (From *allos*, diverse, and *phulon*, a race. Nat. ord. Sapindaceæ.)
Stove, white-flowered evergreen. Cuttings in bottom-heat. Loam, peat, and sand.
A. Co'bbe (Cobbe). 12 to 15. Eastern Asia. 1804.

ALLOPLE'CTUS. (From *allos*, diverse, and *plekein*, to plait; in reference to the leaves. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. *Didynamia*, 2-*Angiospermia.*)
Stove evergreens. Light, rich soil; cuttings. Allied to Gesnerias, and require similar treatment.
A. bi'color. Leaves velvety-green, with silvery-grey band. S. Amer. 1869.
,, *capita'tus* (B. M., t. 4452) 3. Red, yellow. March. S. Amer. 1848.
,, *chrysa'nthus.* Yellow. Colombia. 1853.
,, *cocci'neus.* Guiana.
,, *co'ncolor.* See A. DICHROUS.
,, *crista'tus.* W. Ind.
,, *di'chrous* (two-coloured). 2. Purple, yellow. Brazil. 1845.
,, ,, *co'ncolor.* Red. Brazil. 1846.
,, *Forge'tii* (Forget's). Pale yellow. Peru. 1910.
,, *pelta'tus.* 1. Yellow. August. Costa Rica. 1877.
,, *re'pens* (creeping). Yellow, brown. February. St. Martha. 1845. This is a climbing plant.
,, *Schli'mii.* Purple, yellow. New Grenada. 1851.
,, *tigri'nus* (tiger-spotted). 3 to 4. White, pink. Venezuela. 1852.
,, *vitta'tus.* Yellow, calyx crimson. Peru. 1870.
,, *zamore'nsis.* 1. Yellow, calyx orange-red. Colombia. 1875.

ALLOSO'RUS. (From *allos*, diverse, and *soros*, a heap; in reference to the variety of the patches of fructification—*sori*—on the back of the leaf. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.*)
A. acrostichoi'des. See CRYPTOGRAMME CRISPA.
,, *calomela'nos* (deltoid-leaved). See PELLÆA.
,, *corda'tus* (heart-leaved). See PELLÆA.
,, *cri'spus* (curled). See CRYPTOGRAMME.
,, *flexuo'sus* (zigzag). See PELLÆA CORDATA.
,, *imbrica'tus.* See JAMESONIA.
,, *Karwi'nskii.* See LLAVEA CORDIFOLIA.

ALLOTMENT. A space of land divided amongst so many labourers or artisans, and generally at the same price as that which the farmer pays. It may just be such a piece of ground as a man and his family may successfully cultivate in their over-hours, after attending to their usual employment during the day. The term allotment thus becomes synonymous with *garden*; and, if near to the occupier's home, such a piece of ground is of great importance to him, socially and morally. Or, secondly, an allotment may be such a space of ground as will secure the labourer in employment, when otherwise he might be without it. In many districts the local authorities assist, or let ground at reduced rates, and in the suburbs of London and other large towns holders of from five to ten rods of ground find it healthy exercise, and also get the benefit of fresh vegetables.

ALLSEED. *Polyca'rpon.*

ALLSPICE. *Calyca'nthus.*

ALLSPICE-TREE. *Pime'nta.*

ALLUVIAL SOIL is so called from the Latin word *alluere*, to wash down; because the soil so named is that rich deposit of finely-divided earths and decomposing vegetable matters which, forming the land in valleys, and on the banks of rivers, is evidently formed of the richest and finest portions, washed down from higher situated soils. Alluvial soils are usually very fertile, and excellent for pasturage.

ALMOND. *Amy'gdalus.*

A'LNUS. The Alder-tree. (From *al*, near, and *lan*, the bank of a river; in reference to the situation where the Alder delights to grow. Nat. ord. *Birchworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 4-*Tetrandria.*)
Hardy deciduous trees. The flowers have no petals. Layers, or seeds; light loam, in moist situation.
A. barba'ta (bearded). March. Caucasus. 1838.
,, *canade'nsis* (Canadian). See A. SERRULATA.
,, *cordifo'lia* (heart-leaved). June. Naples. 1818.
,, *gla'uca* (milky-green). See A. INCANA.
,, *glutino'sa* (sticky). April. Britain.
,, ,, *emargina'ta* (five-notched-leaved). April. Britain.
,, ,, *fo'liis variega'tis* (variegated-leaved). April. Britain.
,, ,, *imperia'lis* (imperial). Leaves very finely cut.
,, ,, *inci'sa* (cut-leaved). April. Britain.
,, ,, *lacinia'ta* (jagged-leaved). April. Britain.
,, ,, *quercifo'lia* (oak-leaved). April. Britain. 1838.
,, *inca'na* (hoary-leaved). 20. June. Europe. 1780.
,, ,, *angula'ta* (angular-*leaved*). 20.
,, ,, *pinna'ta* (pinnate). See A. INCANA INCISA.
,, ,, *inci'sa.* 26. June. Europe.
,, *jorulle'nsis* (Jorulla). Mexico.
,, *macroca'rpa* (long-fruited). See A. GLUTINOSA.
,, *macrophy'lla* (long-leaved). See A. SERRULATA.
,, *obcorda'ta* (two-lobed). See A. CORDIFOLIA.
,, *oblonga'ta* (oblong-*leaved*). 20. June. South of Europe. 1730.
,, ,, *elli'ptica* (elliptic-lobed). 20. June.
,, *oxyacanthæfo'lia* (oxycanth-leaved). See A. GLUTINOSA INCISA.
,, *pu'mila* (dwarf). 10. June.
,, *ru'bra* (red). 20. June.
,, *rugo'sa* (wrinkled). See A. SERRULATA.
,, *serrula'ta* (saw-*leaved*). 20. June. N. Amer. 1769.
,, *sibi'rica* (Siberian). See A. INCANA.
,, *subrotu'nda* (roundish-*leaved*). 23. April.
,, *undula'ta* (wave-*leaved*). 20. June. N. Amer. 1782.

ALOCA'SIA. (From *a*, without, and *Colocasia.*) Allied to Colocasia. Ord. Araceæ. Handsome stove foliage; plants propagated by offsets or divisions, and some may be raised from seed; should be potted in rough, fibrous loam, peat, and sand; some sphagnum moss may also be used. Heat moisture, and when growing, liquid manure may be given freely. A slight shading is necessary in bright weather.
A. a'lba. 1½. White. Java. 1854.
,, *ama'bilis.* See A. LONGILOBA.
,, *augustia'na* (Ill. Hort., t. 593). Papua.
,, *Chelso'nii.* Hybrid between *A. cuprea* and *A. longiloba.*
,, *cuculla'ta.* 2. Green, whitish. Spring. India. 1826.
,, *cu'prea.* 1 to 1½. Purplish, white. Borneo. 1860.
Syns. *A. metallica*, *Xanthosoma plumbea.*
,, *desmetia'na.* Leaves sinuate. 1908.

A. é'minens. Leaf dark green above, purple, with pale green veins; spathe green. E. Ind. 1887.
„ *Gaulai'nii.* Dark green leaves, with silvery nerves above; light violet, with blackish nerves beneath. 1890.
„ *giga'ntea.* See A. LONGILOBA.
„ *gra'ndis.* 5. Spathes white, striped carmine outside. E. Indian Archipelago.
„ *gutta'ta.* 2½. Spathe white, spotted with purple. Borneo. 1879.
„ *hy'brida.* A cross between *A. Lowii* and *A. cuprea.*
„ *illu'stris.* Leaves rich green, with olive-black patches. India. 1873.
„ *i'ndica.* 2. Whitish, green. India.
„ „ *variega'ta.*
„ *Jenni'ngsii.* Leaves green, with blackish patches between the veins. India. 1867. This is *Colocasia affinis.*
„ *Johnsto'ni.* Leaves red-veined, stalks spiny. Solomon Isles. 1875. See CYRTOSPERMA.
„ *Lierva'lii.* Leaves bright green. Philippines. 1869.
„ *Linde'ni* (Ill. Hort., t. 603). Spathe pale green, spadix white. Papua.
„ *longilo'ba.* 1½. Green, whitish. Leaves green, with silvery veins. Java. 1864. Syns. *A. amabilis* and *A. gigantea.*
„ *Lo'wii.* 1. White; olive-green, with thick white ribs, deep purple beneath. Borneo. 1862.
„ *macrorrhi'za.* 5. Green, whitish. Polynesia. 1818.
„ „ *variega'ta.* Leaves blotched with cream. Ceylon.
„ *Marcha'llii.* Leaves green, with dark blotches, and broad central silvery band. India. 1811. See COLOCASIA MARCHALLI.
„ *meta'llica.* See A. CUPREA.
„ *navicula'ris.* 1. Whitish. May. India. 1855.
„ *odo'ra* (odorous). 3. Green, yellow. May. India; China. 1810.
„ *Po'rtei* (Porte's). New Guinea. 1862.
„ *pri'nceps.* Leaves olive-green, greyish beneath, with chocolate-brown veins. Malay Archipelago. 1888.
„ *pu'mila.* ½. Green. January. Borneo. 1879.
„ *Putze'ysi* (Ill. Hort., t. 439). Leaves dark green above, purple beneath; veins pale green. Sumatra. 1882.
„ *Regi'næ* (Ill. Hort., t. 544). Leaves dark green above, brownish purple beneath; spathe whitish. Borneo. 1884.
„ *Regnie'ri* (Regnier's). Leaves dark green, with whitish ribs. Siam. 1887.
„ *reve'rsa.* 1. Leaves grey-green, veins darker. Philippine Islands. 1890.
„ *Roe'zlii.* See CALADIUM MARMORATUM.
„ *sanderia'na.* Leaves metallic blue, veins white. Indian Archipelago. 1884.
„ *scabriu'scula.* Spathe and spadix white. N. W. Borneo. 1878.
„ *Sede'ni.* A hybrid between *A. Lowii* and *A. cuprea.*
„ *singapore'nsis.* 1½. Penang.
„ *sinua'ta.* Spathe green, spadix white. Philippines. 1886.
„ *thibautia'na.* 2. Leaves dark green, with white venation above, purple beneath. Borneo. 1878.
„ *variega'ta.* See A. INDICA.
„ *Villaneu'vei* (Ill. Hort., xxxiv., t. 21).
„ *watsonia'na* (G. C., 1893. xiii. 442, 569, f. 83). Olive-green, and dark purple on the upper surface and beneath. See A. PUTZEYSI.
„ *zebri'na.* 3. White. June. Philippine Isles. 1862. There are also several garden hybrids.

ALOE. (From *alloeh*, its Arabic name. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia.*)
Greenhouse evergreen succulents, from the Cape of Good Hope. Sandy loam and peat, with a little reduced manure, and full one-third of broken bricks and lime-rubbish, and good drainage. Give very little water in winter. Medium temp. in winter, 40°; in summer, 50° to 70°; water with care in winter. Propagated from suckers or leaves, inserted in gravelly soil. As purgatives, the juice of the tree-aloes are exclusively in use, particularly that of *A. socotrana, vulgaris, purpurascens,* and *spicata.*

A. abyssi'nica (W. G., 1896, 102). 3. Yellow. Abyssinia. 1777.
„ „ *Peaco'ckii* (B. M., t. 6620). Yellow. Abyssinia. 1879.
A. abyssi'nica percra'ssa. Red. Abyssinia. 1873.
„ *acumina'ta* (spike-leaved). See A. HUMILIS.
„ *africa'na.* 1. Yellow. October. Cape of Good Hope. 1823.
„ *agavefo'lia.* Red. green. Autumn. 1879.
„ *albispi'na* (white-spined). Scarlet. June. 1796.
„ *alboci'ncta* (white-banded). See A. STRIATA.
„ *arbore'scens* (tree-like). Red. June. 1731.
„ *arista'ta* (awned). Orange. May. 1801.
„ „ *leiophy'lla.* 1879.
„ *Athersto'nei.* See A. PLURIDENS.
„ *atrovi'rens.* See HAWORTHIA.
„ *auranti'aca* (G. C., 1892, xi. 780). S. Africa.
„ *Bai'nesii.* S. Africa.
„ *Barbe'ræ.* See A. BAINESII.
„ *Bau'mii* (Baum's). 3 to 5. Orange-red. S.W. Africa. 1904.
„ *Bayfie'ldii.* See GASTERIA.
„ *Bedinghau'sii* (M. K., 1896, 24). Garden hybrid.
„ *Begui'nii* (M. K., 1896, 24). Garden hybrid.
„ *Bolu'sii.* See A. AFRICANA.
„ *Bour'ea.* Pale green tinged with red. 1822. Syn. *Bowiea africana.*
„ *brachy'stachys* (B. M., t. 7399). Zanzibar.
„ *brevifo'lia* (short-leaved). Orange. June. 1810.
„ *Buchana'ni* (K. B., 1895, 119). Trop. Africa.
„ *cæ'sia* (grey). 2. Orange. July. 1818.
„ „ *ela'tior* (taller). 9. Red. June. 1821.
„ *chine'nsis* (Chinese). Yellow. June. 1821.
„ *chloroleu'ca* (G. C., 1877, viii. 38). 6 to 10. Pale yellowish. S. Africa. 1877.
„ *Chludow'ii* (M. K., 1896, 24). Garden hybrid.
„ *cilia'ris* (hair-fringed). Red. June. 1821.
„ *Commely'ni* (Commelin's). See A. MITRIFORMIS.
„ *commuta'ta.* 2. Coral-red May. S. Africa. 1877.
„ *consobri'na.* 2. Reddish-yellow. S. Africa. 1845.
„ *Coope'ri.* 1. Orange, greenish. Natal. 1862. Syn. *A. schmidtiana.*
„ *cya'nea* (M. K., 1896, 24). Garden hybrid.
„ *depre'ssa* (depressed). Orange. August. 1831.
„ *Derbe'tzi* (R. H., 1894, 147). Garden hybrid.
„ *dicho'toma* (pair-branched). Red. July. 1781.
„ *di'stans* (distant). 6. Red. July. 1732.
„ „ *prede'ssa* (flat-*leaved*). 6. Red. July. 1820.
„ „ *refle'xa* (reflexed). 4. Red. July. 1820.
„ *drepanophy'lla.* 8 to 10. Whitish, green. S. Africa. 1862.
„ *echina'ta* (hedge-hog). See A. HUMILIS.
„ *flavispi'na* (yellow-spined). See A. MITRIFORMIS.
„ *frute'scens* (shrubby). See A. ARBORESCENS.
„ *gla'uca* (milky-green). Red. April. 1731.
„ „ *rhodaca'ntha* (*lesser* red-spined). 4. Red. May. 1731.
„ *gra'cilis* (graceful). Orange. June. 1822.
„ *Gree'nii* (B. M., t. 6520). 2. Red. S. Africa. 1875.
„ *hanburya'na.* See A. STRIATA.
„ *heteraca'ntha* (B. M., t. 6863). 3. Bright red, whitish.
„ *Hiledbra'ndtii.* ¾. Coral red, yellowish, green. E. Trop. Africa. 1888.
„ *Ho'ltzei* (M. K., 1896, 24). Garden hybrid.
„ *Hoye'ri* (M. K., 1896, 24). Garden hybrid.
„ *hu'milis* (Jacq. H. Schœnb, t. 420). Orange. April. 1731.
„ „ *acumina'ta* (B. M., t. 757). Orange. April. 1795.
„ „ *incu'rva* (B. M., t. 828). Orange. May. 1731.
„ „ *macile'nta.* Leaves tinged with purple.
„ „ *subtubercula'ta.* Orange. June. 1620.
„ *imbrica'ta* (W. G., 1893, 194). Garden hybrid.
„ *incu'rva* (incurved). See A. HUMILIS.
„ *ine'rmis.* Arabia. See A. HETERACANTHA.
„ *insi'gnis* (G. C., 1885, xxiv. 40, 41, f. 8). Garden hybrid.
„ *Kir'kii* (B. M., t. 7386). Orange, tipped with brown. Zanzibar.
„ *Lae'tii* (M. K., 1896, 24). Garden hybrid.
„ *læ'vis* (smooth). 1½. July. 1820.
„ *latifo'lia* (broad-leaved). Scarlet. July. 1795.
„ *linea'ta* (line-marked). Scarlet. 1789.
„ „ *glauce'scens* (milky-green-marked). Scarlet. 1789.
„ *Lapai'xii* (M. K., 1896, 27). Garden hybrid.
„ *Lau'chei* (M. K., 1896, 27). Garden hybrid.
„ *longiarista'ta.* See A. ARISTATA.
„ *longiflo'ra* (G. C., 1888, iv. 756). 1½. Pale yellow, green. 1888.

A. Lun'dii (K. B., 1894, 342). Reddish-green. Arabia.
„ *Ly'nchii* (G. C., 1881, xv. 266). 2½. Pale yellow, greenish. 1881. Garden Hybrid.
„ *macraca'ntha* (B. M., t. 6580). Yellow, red. March. 1862.
„ *macroca'rpa*. 1. Coral-red. April. Abyssinia. 1870.
„ *margina'lis*. See LOMATOPHYLLUM BORBONICUM.
„ *Marlo'thii* (Marloth's). Flower-spikes horizontal. British Bechuanaland. 1909.
„ *mitrifo'rmis* (B. M., t. 1270). Red. August. 1731. Syn. *A. Commelyni*.
„ „ *flavispi'na*.
„ „ *pachyphy'lla*. S. Africa. 1862.
„ *Montei'roi* (G. C., 1889, vi. 523). Dull red. Delagoa Bay. 1889.
„ *myriaca'ntha*. 2. Red, green. May. Cape of Good Hope. 1823.
„ *ni'tens*. S. Africa. 1878.
„ *no'bilis*. Blue. August. 1800.
„ *Nowo'tnyi* (M. K., 1896, 27). Garden hybrid.
„ *palle'scens*. See A. SERRULATA.
„ *pallidiflo'ra* (pale-flowered). Pale flesh. S. Africa (?). 1907.
„ *panicula'ta*. See A. STRIATA.
„ *penduliflo'ra* (G. C., 1888 iv. 178). Pale yellow. Zanzibar.
„ *percra'ssa*. Coral-red. May. Mountains of Abyssinia. 1879. See A. ABYSSINICA.
„ *Pe'rryi* (B. M., t. 6596). ½. Green. Socotra. 1879.
„ *platy'lepis* (G. C., 1877, viii. 38). 10. Coral-red or yellow. S. Africa. 1877.
„ *plica'tilis*. 10. Reddish-yellow. 1731.
„ *plu'ridens*. Red. July. 1823.
„ *prate'nsis* (B. M., t. 6705). 1½. Scarlet. S. Africa. 1862.
„ *proli'fera*. See A. BREVIFOLIA.
„ „ *ma'jor*. Orange. April. 1819.
„ *purpura'scens*. Purple. August. 1789.
„ *Que'khii* (M. K., 1896, 27). Garden hybrid.
„ *rhodaca'ntha*. See A. GLAUCA.
„ *rubrolu'tea* (red-yellow). Red, inner yellow, with brown tips. Trop. S.W. Africa. 1909.
„ *sapona'ria* (soapy). Red. July. 1727.
„ „ *lu'teostria'ta* (yellow-striped, soapy). Red. July. 1821.
„ *Schimpe'ri*. 2. Orange-scarlet. June. Abyssinia. 1876.
„ *schmidti'ana* (Gfl., *t.* 970). See A. COOPERI.
„ *Sermoi'dea*. 4. Kaffraria. 1862.
„ *Se'rra* (saw). Orange. July. 1818.
„ *serrula'ta* (finely-toothed). Red. July. 1789.
„ *simonia'na* (W. G., 1893, 194). Garden hybrid.
„ *spica'ta* (spiked). Red. 1795.
„ *spino'sior* (more spiny). Red. April. 1820.
„ *stria'ta*. Scarlet. July. 1795. Syn. *A. paniculata*.
„ „ *oligospei'la* (G. C. 1894, xv. 588). British Kaffraria
„ *stria'tula* (slight-striped). Red. June. 1821.
„ *subere'cta* (slightly-leaning). See A. HUMILIS.
„ „ *semigutta'ta* (half-spotted). Orange. May. 1819.
„ *subtubercula'ta* (slightly-knobbed). See A. HUMILIS.
„ *succotri'na* (socotrine). Red. March. 1731.
„ *tenuifo'lia* (thin-leaved). Orange. June. 1831.
„ *tenu'ior* (thinned). Orange. June. 1821.
„ *Thra'skii*. 5. S. Africa. 1860.
„ *tri'color* (B. M., 6324). Coral-red, flesh, yellow. Spring. S. Africa. 1875.
„ *tubercula'ta*. Orange. April. 1796.
„ *variega'ta*. Pink. June. 1790.
„ *vi'rens* (B. M., t. 1355). ½. Red. Autumn.
„ „ *macile'nta*. See A. HUMILIS.
„ *xanthaca'ntha*. See A. MITRIFORMIS.
„ *Zeyhe'ri*. See A. BAINESII.

ALO'MIA. (From *a*, not, and *loma*, a fringe. Nat. ord. *Composites*. Allied to Eupatorium [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Half-hardy evergreen. Sandy loam; cuttings; temp. not below 35° in winter.

A. ageratoi'des (ageratum-like). White. July. Mexico. 1824.

ALO'NA. (Letters of the primitive name, *Nolana*, transposed from *Nola*, a little bell; in reference to the form of the flowers. Nat. ord. *Nolanads* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

A small order of pretty Chilian half-shrubby greenhouse evergreens, with large flowers; cuttings root freely in sandy loam; peat and loam.

A. bacca'ta (berry-bearing). Yellow. Coquimbo.
„ *cæle'stis* (sky-blue). 2. Blue. Chili. 1843.
„ *carno'sa* (fleshy). Blue. Coquimbo.
„ *glandulo'sa* (glandulous). Blue. Valparaiso.
„ *longifo'lia* (long-leaved). Blue. Coquimbo.
„ *obtu'sa* (blunt-leaved). Blue. July. Coquimbo.
„ *revolu'ta* (rolled-back-leaved). Blue. Peru.
„ *rostra'ta* (beaked). See OSTEOCARPUS ROSTRATUS.
„ *tomento'sa* (white-downed). White. Valparaiso.

ALONSO'A. (In honour of *Z. Alonzo*, a Spaniard. Nat. ord. *Figworts*. Allied to Hemimeris [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Greenhouse evergreens, except *A. caulialata*, which is a half-hardy herbaceous. Rich mould; cuttings, or seeds, the first in sandy loam in August or March; the seeds in March in gentle heat.

A. acutifo'lia (acute-leaved). 3. Scarlet. June. Peru. 1700.
„ *albiflo'ra*. 2. White, yellow. Mexico. 1877.
„ *caulisla'ta* (wing-stemmed). 3. Scarlet. June. Chili. 1823.
„ *incisifo'lia* (cut-leaved). 2. Scarlet. June. Chili. 1795.
„ *interme'dia* (intermediate). See A. LINEARIS.
„ *linea'ris* (linear-leaved). 2. Scarlet. June. Peru. 1790.
„ *linifo'lia*. 1½. Scarlet. Peru.
„ *Matthe'wsii*. 1. Scarlet. Peru.
„ *myrtifo'lia*. Scarlet.
„ *Warscewi'czii*. 1½. Crimson. July. Peru. 1858.

ALOY'SIA. Sweet-scented Verbena. (In honour of *Maria Louisa*, Queen of Spain. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 3-*Angiospermia*.)

Greenhouse deciduous shrub. Rich mould; cuttings from young shoots in sandy soil, in close frame or hotbed early in spring. Correct name Lippia.

A. citriodo'ra (lemon-scented). 3. Pale purple. August. Chili. 1784. See LIPPIA CITRIODORA.

ALPHO'NSEA. (Commemorative of the French botanist, *Alphonso Decandolle*. Nat. ord. Anonaceæ.)

Stove evergreen shrub. Cuttings in sand in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

A. lu'tea (yellow). 6. Greenish-yellow. India. 1822.

ALPI'NES, strictly speaking, are plants from alpine, that is, mountainous districts, usually requiring the protection of a frame in winter, because we cannot secure to them their natural covering of snow during that season. Gardeners, however, include in their lists of Alpines a great diversity of small plants, difficult of cultivation. They are best grown in pots, and require light sandy loam and lime rubble, with abundant drainage.

ALPI'NIA. (In honour of *Alpini*, an Italian botanist. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Stove herbaceous perennials, except *A. penicillata*, which is a greenhouse plant. Rich sandy soil and peat. They like much moisture and pot-room in the growing season; root division in moist atmosphere. Some are remarkable for their beautiful variegated foliage.

A. ala'ta. 3. Red. May. E. Ind. 1823. Syn. *A. roscoeana*.
„ *a'lbo-linea'ta*. 3. Leaves banded with white. New Guinea. 1880.
„ *Allu'ghas* (Allughas). 2. Red. February. E. Ind. 1796.
„ *Antilla'rum* (Antilles). 4. Flesh. May. W. Ind. 1826.
„ *auricula'ta* (eared). 5. Reddish-yellow. E. Ind. 1814.
„ *bornee'nsis* (B. S. B. F., 1904, 448). 4–6. Borneo.
„ *bractea'ta* (bracted). 3. White. May. E. Ind. 1824.
„ *cæru'lea* (blue). 4. White. Berries blue. Australia. 1820.
„ *calcara'ta* (spur-flowered). 3. White. September. E. Ind. 1800.
„ *Cardamo'mum* (Cardamom). See ELETTARIA.
„ *ce'rnua* (drooping). See A. CALCARATA.

A. chine'nsis (Chinese). 3. White. China. 1825.
„ *como'sa* (tufted-spiked). See COSTUS.
„ *diffi'sa* (two-cleft). 6. Purple-blue, yellow. April. E. Ind. 1818.
„ *exalta'ta* (lofty). See RENEALMIA.
„ *fimbria'ta* (B. S. B. F., 1904, 447). 3–5. Purple.
„ *Gala'nga* (Galanga). 6. White, yellow. October. E. Ind.
„ *linguæfo'rmis* (tongue-formed). See ELETTARIA.
„ *longepe'tiola* (B. S. B. F., liii. 134). 6. White or rose, purple-spotted. W. Trop. Africa. 1906.
„ *magnifica* (magnificent). See AMOMUM.
„ *malacce'nsis* (Malayan). 5. White. April. E. Ind. 1799.
„ *me'dia* (mediate). See AMOMUM COSTATUM.
„ *mu'tica* (spurless). 5. White. August. E. Ind. 1811.
„ *nu'tans* (nodding). 13. Pink. May. E. Ind. 1792.
„ *occidenta'lis* (western). See RENEALMIA OCCIDENTALIS.
„ *officina'rum* (B. M., t. 6995). White. S. China.
„ *penicilla'ta* (pencilled). 3. Pink. May. China.
„ *pu'mila* (B. M., t. 6832). White. S. China.
„ *puni'cea* (scarlet). See ELETTARIA.
„ *racemo'sa* (branchy). See RENEALMIA RACEMOSA.
„ *rafflesia'na*. Leaves. Green, striped white. Polynesia.
„ *roscoea'na* (Roscoe's). See A. ALATA.
„ *Roxbu'rghii*.
„ *spica'ta* (spiked). 2. Sumatra. 1822.
„ *spira'lis*. See COSTUS SPIRALIS.
„ *stria'ta* (streaked). 4. E. Ind. 1818.
„ *tri'color* (G. C., xxxiii. 245). Solomon Isles. See A. BRACTEATA.
„ *tubula'ta* (tubular). 2. Red. July. Demerara. 1820.
„ *vitta'ta*. See A. RAFFLESIANA.
„ *zingiberi'na* (B. M., t. 6944). 5. Greenish-yellow, white, crimson. Siam. 1886.

ALSEUO'SMIA. (From *alsos*, a grove, and *eu-osme*, a perfume. Nat. ord. Caprifoliaceæ.)

A. macrophy'lla (B. M., t. 6951). 10. Creamy-white, red. New Zealand. 1884.

ALSIKE. A common name for *Trifolium hybridum*.

ALSI'NE. Chickweed. (From *alsos*, a grove; in reference to the situation preferred by these plants. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.) Now referred to Arenaria.
Hardy annuals. Seed; common loam.

A. laricifo'lia (larch-leaved). ½. Siberia. 1834. This is perennial; root division.
„ *mollugi'nea* (mollugo-like). ½. White. July. Spain. 1816.
„ *mucrona'ta* (spine-pointed-leaved). 1. White. July. South of Europe. 1777.
„ *pube'scens* (downy). ½. White. July. 1810. See ARENARIA TENUIFOLIA.
„ *segeta'lis* (cornfield). See SPERGULARIA.

ALSODEI'A. (From *alsodes*, leafy. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen shrubs. Loam and peat; cuttings in sand, in warm propagating pit.

A. latifo'lia (broad-leaved). White. Madagascar. 1824.
„ *pauciflo'ra* (few-flowered). White. Madagascar. 1824.

ALSOMI'TRA. (From *alsos*, a grove, and *mitra*, a mitre. Nat. ord. Cucurbitaceæ.)

A. sarcophy'lla. White. Winter. Burmah, Siam. 1870. Syn. *Zanonia sarcophylla*.

ALSO'PHILA. (From *alsos*, a grove, and *phileo*, to love; in reference to the situation best suited for the plants. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Greenhouse tree Ferns. Peat and loam; spores, see FERNS.

A. aculea'ta. See A. FEROX.
„ *a'spera*. W. Ind.
„ *atrovi'rens* (G. and F., 1893, vi. 194). Brazil.
„ „ *keria'na* (G. C., 1887, i. 639).
„ *austra'lis*. Australia. 1833.
„ „ *Willia'msii*. 1874.
„ *Barou'mba* (R. H., 1900, 584). Congo.
„ *congoe'nsis* (Gard., 1903, lxiii. 288). Congo.
A. conta'minans (Ill. Hort., t. 458). S.E. Asia.
„ *fe'rox*. Trop. America.
„ *gla'uca*. Manilla. 1862.
„ *hi'spida*. New Grenada. 1881.
„ *Hostma'nni*. Guiana.
„ *inca'na* (hoary). Petioles black, spiny. Congo. 1906.
„ *lateva'gans*. New Grenada. 1881.
„ *leichardtia'na*. Australia. 1867. Syns. *A. Macarthuri* and *A. Moorei*.
„ *loubetia'na* (R. H., 1900, 583).
„ *lunula'ta* (Williams' Cat., 1880, 12). Polynesia.
„ *marshallia'na* (G. C., 1894, xv. 663). Brazil (?).
„ *Mique'lii*. Java.
„ *moorea'na*. See A. LEICHARDTIANA.
„ *podophy'lla*. Hong-Kong. 1881.
„ *pruina'ta*. 8. Trop. Amer.
„ *ra'dens*. Brazil.
„ *Rebe'ccæ*. 8. Queensland. 1882.
„ *sagittifo'lia*. Trinidad. 1872.
„ *scottia'na*. Sikkim. 1872.
„ *Tæni'tis denticula'ta*. Brazil.

ALSTO'NIA. (In honour of *Dr. Alston*. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
The leaves of Alstonia are slightly astringent, and are used as tea. Stove evergreen shrubs, allied to the Oleander. Sandy loam and peat; cuttings root readily in moist bottom-heat. Winter temp., 50° to 55°; summer, 60° to 75°. Being allied to one of the most virulent poisonous plants we have, it would be dangerous to use them for tea. And in making cuttings care should be taken not to get the juice on any cuts on the hands.

A. schola'ris (oleander-leaved). 8. White. May. E. Ind. 1825. Syn. *Echites scholaris*.
„ *venena'ta* (poisonous). 6. White. June. E. Ind. 1825.

ALSTRÖME'RIA. (In honour of *Baron Alströmer*, a Swedish botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
All the species of this beautiful genus live out of doors with us, with a slight protection from frost, except *A. caryophyllacea*, erroneously called *Ligtu*; and this requires stove heat and absolute rest in winter. All the species, also, have one uniform mode of upright growth, by which they are easily distinguished from Boma'reas, the species of which are all twiners. The golden Alströmer from Chiloe (*A. aurea*) is perfectly hardy in England, and prefers a damp situation and strong loam; the other species are chiefly from the alpine regions of Chili, and require free air and lighter soil—their long fascicled (or bundled) roots are not well adapted for pot cultivation. They succeed in deep, rich, light loam, and sand, and should be planted eight or ten inches deep, and receive abundance of water while they are growing. Alströmers have a strong natural tendency to variation, but will not cross with Boma'reas, as has been asserted. No limits can be assigned between species and varieties in this family; a race of endless variations has been obtained from *A. hookeria'na* by the pollen of *A. hœma'ntha* and its varieties. These are called *Van Houtte's seedlings*. The following are the most distinct forms of the genus in our gardens; but many more are recorded and described, which remain to be introduced:—

A. au'rea (golden). See A. AURANTIACA.
„ *auranti'aca*. Orange. Chili. 1831.
„ *cummingia'na* (Cumming's). See A. VERSICOLOR.
„ *caryophylla'cea*, syn. *Li'gtu* (clove-like *scent*). 1. February. Scarlet. Brazil. 1776.
„ *chile'nsis*. 2. Yellow, red. July. Chili. 1849.
„ *densiflo'ra*. See BOMAREA TOMENTOSA.
„ *hœma'ntha*, var. *barclaya'na* (blood-coloured). 2½. July. Crimson. Chili. 1830.
„ *Hooke'rii* (Dr. Hooker's). See A. LIGTU.
„ *Li'gtu*. Chili.
„ „ *pu'lchra*, syn. *Flos Marti'ni*; syn. *tri'color* (fair). 1½. June. White, purple, and yellow. Chili. 1822.
„ *Nei'llii* (Neil's). See A. SPATHULATA.
„ *ova'ta*. See BOMAREA OVATA.
„ *Pelegri'na* (spot-flowered). 1. July. Striped. Chili. 1754.
„ „ *a'lba*. White, yellow. 1877.

A. peruvia'na. See A. VERSICOLOR.
,, *psittaci'na* (parrot-like). See A. PULCHELLA.
,, *pulche'lla* (B. R., t. 1008). Brazil.
,, *revolu'ta* (G. W., 1904, 700). Chili.
,, *Si'msii* (Sims's). See A. LIGTU.
,, *spathula'ta.* ½ to 1. Reddish. Chili.
,, ,, *Nei'llii* (B. M., t. 3105).
,, *versi'color.* Chili.
,, ,, *ni'veo-margina'ta.* Leaves white margined. 1875.

ALTERNANTHE'RA. (Alluding to the *anthers* being *alternately* barren. Nat. ord. *Amaranths* [Amarantaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Chiefly stove herbaceous perennials propagated from cuttings in stove or on hotbed; *Amabilis*, *ficoidea*, *paronychioides*, and other garden varieties, are extensively used for carpet-bedding, but though they grow well in the open during the summer they require stove treatment in winter, and should be kept on a shelf close to the glass. Also known as Telanthera.

A. Achyra'ntha (chaff-flowered). 1. White. July. Buenos Ayres. 1732.
,, *ama'bilis* (Ill. Hort., 1868, t. 558). See TELANTHERA FICOIDEA.
,, *cane'scens* (hoary). 1. White. July. Cumana. 1825.
,, *caracasa'na* (Caraccas). 1. White. July. Caraccas. 1819.
,, *denticula'ta* (finely-toothed-leaved). See A. SESSILIS.
,, *ficoi'dea.* See TELANTHERA FICOIDEA.
,, ,, *versi'color* (Ill. Hort., 12, t. 440). See TELANTHERA VERSICOLOR.
,, *filifo'rmis* (thread-shaped). White. July. E. Ind.
,, *flave'scens* (yellowish). 1. July. Colombia. 1824.
,, *frute'scens* (shrubby). 1. White. July. Peru. 1820. This will do in a greenhouse.
,, *nodiflo'ra* (knot-flowered). White. May. N. Holland. 1826.
,, *paronychioi'des.* See TELANTHERA BETTZICHIANA.
,, ,, *au'rea.*
,, ,, *magni'fica.*
,, ,, *ma'jor.*
,, *polygonoi'des* (polygonum-like). See TELANTHERA POLYGONOIDES.
,, *procu'mbens* (procumbent). 4. White. July. Brazil. 1818.
,, *pulche'lla* (pretty). 1. June. Trinidad. 1817. Greenhouse herb.
,, *seri'cea* (silky). 2. White. July. Quito. 1820.
,, *se'ssilis* (stalkless). ½. July. Brown. E. Ind. 1778. A biennial.
,, ,, *ame'na* (Ill. Hort., 1865, t. 447). See TELANTHERA AMŒNA.
,, *spathula'ta* (Ill. Hort., 1865, t. 445). See TELANTHERA FICOIDEA.
,, *spino'sa* (spinous). Yellow. June. 1823. Stove annual.
,, *versi'color.* See TELANTHERA VERSICOLOR.

ALTHÆ'A. Mallow. (From *altheo*, to cure; in reference to the medicinal qualities. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

The biennials and annuals sow in spring; the herbaceous dividing the roots, or seeds, which, sown as soon as ripe, produce flowering plants next year. *A. ro'sea* is the Hollyhock. For culture of this and its varieties, see HOLLYHOCK.

HARDY ANNUALS.

A. acau'lis (stemless). 2. Purple. July. Aleppo. 1680.
,, *hirsu'ta* (hairy) 2. White. July. Britain.
,, *Ludwi'gii* (Ludwig's). 2. Pink. July. Sicily. 1791.

HARDY BIENNIAL

A. caribæ'a (Caribbean). See A. ROSEA.
,, *chine'nsis.* See A. ROSEA.
,, *ficifo'lia* (fig-leaved). 6. Orange. July. Siberia. 1597.
,, *frolovia'na* (Frolove's). 3. July. Siberia. 1827.
,, *pa'llida* (pale-flowered). 6. Pale red. July. Hungary. 1805.
,, *ro'sea* (the hollyhock). Red. August. Orient. 1573.
,, ,, *bi'loba* (two-lobed H.). 8. Red. July.
,, *Siebe'ri* (Sieber's). 4. Purple. July. Sicily. 1829.
,, *stria'ta* (streaked). 5. White. July.

HARDY HERBACEOUS.

A. cannabi'na (hemp-leaved). 6. Purple. July. South of Europe. 1597.
,, ,, *narbone'nsis.*
,, *flexuo'sa* (zigzag). 3. Pink. July. E. Ind. 1803.
,, *narbone'nsis* (Narbonne). See A. CANNABINA.
,, *nudiflo'ra* (naked-flowered). 6. White. July. Siberia. 1827.
,, *officina'lis* (officinal, Marsh-mallow). 4. Flesh. July. Britain.
,, *taurine'nsis* (Turin). See A. OFFICINALIS.

ALTI'NGIA. (In honour of *Alting*, a German botanist. Nat. ord. *Conifers* [Coniferæ]. Linn. 22-*Diœcia*, 13-*Monadelphia*.)

Now referred to Araucaria, which see.

A. Cunningha'mi (Cunningham's). 30. Apetal. N. Holland. 1824.
,, *exce'lsa* (tall). 100. Apetal. Norfolk Island. 1796.

ALTITUDE, or elevation above the sea, has a great influence over vegetation. The greater the altitude the greater the reduction of temperature; so much so that every 600 feet of altitude are believed to reduce the annual temperature as much as receding a degree from the equator, either to the north or to the south. But this rule is far from universally applicable; for the limit of perpetual snow at the equator is at the height of 15,000 feet; whereas, in the 35th degree of north latitude, the limit is at 11,000 feet, being an average of about 120 feet of altitude for every degree of recession from the equator. In the 45th degree, the limit is 8400 feet, being an average of 146 feet for every degree; in the 50th degree, 6000 feet, or 180 feet for each degree; in the 60th, 3000 feet, or 200 feet for a degree; and in the 70th, from 1200 to 2000 feet, or about the same for each degree as to the 60th degree of latitude. Now we know of no reason why the temperature of elevations below the snow-line should not follow the same gradations; and if this be so, these may be taken as a rule. All plants growing above 7000 feet under the equator, ought to grow in the open air, in the latitude of London. In general, good vegetation is produced at the same distance from the snow-line in the same latitudes. Many plants have been wrongly treated through taking the latitude, without regard to elevation.

ALUMINOUS, applied to land, means heavy, owing to the presence of clay.

ALY'SSUM. Madwort. (From *a*, not, and *lyssa*, rage; in reference to a fable that the plant allayed anger. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Seeds, cuttings, and root divisions; common soil. Mostly yellow-flowered and hardy. The best plants of the shrubs are from cuttings in April and May, and struck in a hotbed. They flower next year. The *saxatile* is the best yellow, and for scent none surpass the white sweet alyssum of the gardens, which will sow itself in the ground, and may be sowed several times during the summer, by the side of borders, like the Virginia stock. The evergreen shrubs, as they are called, more resemble herbaceous plants, they are so lowly in their growth. They are best propagated by cuttings of the points of the shoots, two or three inches in length, inserted in sandy loam, early in the season, and in a shady place. *Variegatum* is a little tender. Though all grow freely in common soil, yet to have them in perfection they should be used as rock or hillock plants. Even when planted in the border they succeed best when planted in little mounds. The *variegatum* makes a fine edging to any brilliant-coloured bed.

EVERGREEN SHRUBS.

A. atla'nticum (Atlantic). See A. MONTANUM.
,, *cane'scens* (hoary). White. April. Siberia. 1828.
,, *cre'ticum* (Cretan). ½. Yellow. July. Crete. 1739.
,, *gemone'nse* (German). 1. April. Europe. 1820.
,, *obtusifo'lium* (blunt-leaved). See A. ALPESTRE.
,, *orienta'le* (eastern). 1. April. Crete.
,, ,, *variega'tum* (variegated-leaved). April. Gardens.
,, *saxa'tile* (rock). 1. June. Candia. 1710.
,, ,, *lu'teum* (Jard., 1906, 29).
,, ,, *citri'num.* Lemon.
,, ,, *flo're ple'no.* Double.
,, ,, *variega'tum.*

A. serpyllifo'lium (thyme-leaved). See A. ALPESTRE.
„ *spatula'tum* (spatulate). 1. April. Siberia. 1818.
„ *verna'le* (vernal). See A. MONTANUM.

ANNUALS.

A. campe'stre. Britain.
„ *hirsu'tum* (hairy). 1. June. Tauria. 1817.
„ *linifo'lium* (flax-leaved). ½. White. June. Caucasus. 1819.
„ *sinua'tum* (indented). 1. May. Europe. 1596. Biennial.
„ *umbella'tum* (umbellate). 1. July. Tauria. 1821.

HERBACEOUS PERENNIALS.

A. alpe'stre (alpine). 1. June. South of Europe. 1825.
„ *arge'nteum* (silvery). 1. April. Switzerland.
„ *Bertholo'nii* (Bertholoni's). See A. ARGENTEUM.
„ *cuneifo'lium* (wedge-leaved). See A. MONTANUM.
„ *dasyca'rpum.* ½. Yellow. July. Siberia. 1819. Syn. *Anodontea dasycarpa.*
„ *diffu'sum* (spreading). See A. MONTANUM.
„ *ede'ntulum.* 1. Yellow. July. Hungary. 1820. Syn. *Anodontea edentulum.* See A. GEMONENSE.
„ *macroca'rpum.* ½. White. June. France. 1823. Syn. *Anodontea macrocarpa.*
„ *mari'timum.* White. S. Europe. 1722. Syns. *A. halimifolium* and *Anodontea halimifolia.* See also KŒNIGA.
„ *marschallia'num* (Marschall's). 1. April. Caucasus. 1820.
„ *micra'nthum* (small-flowered). See A. CAMPESTRE.
„ *monta'num* (mountain). 1. June. Germany. 1713.
„ *mura'le* (wall). See A. ARGENTEUM.
„ *obova'tum.* ½. Yellow. June. France. 1830. Syn. *Anodontea obovata.* See A. SIBIRICUM.
„ *oly'mpicum.* 1. June. 1700.
„ *podo'licum* (Podollan). ½. White. June. Europe, &c. 1821. "Russian Madwort."
„ *procu'mbens* (trailing).
„ *rupe'stre.* ½. White. June. Naples. 1825. Syn. *Anodontea rupestre.*
„ *sibi'ricum.* Siberia.
„ *spino'sum.* ½. White. June. S. of Europe. 1683.
„ *tortuo'sum* (twisted). See A. ALPESTRE.
„ *umbella'tum.* 1. July. Tauria. 1821.
„ *utricula'tum* (B. M., t. 130). See VESICARIA.
„ *Warscha'llii* (Warschall's). June. Yellow. South of Europe. 1847.
„ *Wierzbi'ckii.* 1½. Deep yellow. Summer. Asia Minor.
„ *wulfenia'num* (Wulfen's). 1. April. Carinthia. 1819.

ALY'XIA. (From *aluxis*, grief; in reference to the deep, dull green of several species. Nat. ord. Apocynaceæ.)
Shrubby stove plants, propagated from half-ripened shoots in close frame, with bottom-heat, sand, peat, and loam for cuttings; for potting, loam, leaf-mould, and manure with sand added.

A. bracteolo'sa. Climber. Pale yellow. Fiji. 1887.
„ *daphnoi'des.* A low shrub. White, tube yellowish. Norfolk Island. 1830.
„ *ruscifo'lia* (B. M., t. 3313). A low shrub. Flesh colour. New South Wales. Syn. *A. Richardsonii.*

ALZATE'A. (In honour of a Spanish naturalist, named *Alzaty.* Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)
Greenhouse evergreen tree. Cuttings in hotbed; sandy peat.

A. verticilla'ta (verticillate). 20. Peru. 1824.

AMANI'TA. See MUSHROOM.

AMARABO'YA. Allied to Pleroma, which see.

AMARA'NTUS. Amaranth. (From *a*, not, and *mairaino*, to wither; in reference to the durability or "everlasting" quality of the flowers of some species Nat. ord. *Amaranths* [Amarantaceæ]. Linn. 21-*Monœcia*, 5-*Pentandria.*)
Hardy or half-hardy annuals. Rich loam; seeds sown in open ground in March and April.

A. atropurpu'reus (dark purple). 3. Purple. September. E. Ind. 1820.
A. bi'color (two-coloured). See A. MELANCHOLICUS.
„ *cauda'tus* (love-lies-bleeding). 4. Red. August. E. Ind. 1596.
„ „ *ma'ximus* (true-love-lies-bleeding). 6. Red. August. 1820.
„ *crue'ntus* (dark-bloody). See A. PANICULATUS.
„ *fascia'tus* (banded). See A. VIRIDIS.
„ *fla'vus* (yellow). 4. Light yellow. August. India. 1759.
„ *gange'ticus.* 3. Red. July. Trop. Regions. 1816.
„ *Hende'ri.* 3. Orange, carmine, golden-yellow. &c.
„ *hypochondri'acus.* 2. Purple or green. N. America.
„ *interru'ptus* (interrupted). 3. Red. July. E. Ind. 1816.
„ *lancefo'lius* (lance-leaved). See A. GANGETICUS.
„ *Margari'tæ.* Garden variety. 1887.
„ *melancho'licus ru'ber.* Leaves crimson purple. Japan. Half-hardy.
„ *olera'ceus* (pot-herb). 6. Pale red. July. E. Ind. 1764.
„ *panicula'tus.* 5. Red, green, or yellow.
„ *salicifo'lius* (Fl. Ser., t. 1929). 2½. Leaves green, bronzy, or orange-red. Philippines. 1871.
„ *sangui'neus* (bloody). 3. Red. August. Bahama. 1775.
„ *specio'sus* (showy). (B. M., t. 2227). 6. Red. July. Nepaul. 1819.
„ *tri'color* (three-coloured). See A. GANGETICUS.
„ *vi'ridis.* Trop. Regions.

AMARY'LLIS. (A classical name, after Virgil's Amaryllis. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia.*)
Half-hardy deciduous bulbs. Ever since the day the great Linnæus instituted this genus, "with a playful reason assigned," until the whole order was arranged by the late Dean of Manchester, it has been loaded in books with all kinds of allied plants in an interminable confusion. Every hybrid usually arranged in this genus is a Hippeastrum; and all which we think necessary to mention will be found under that genus. Plant in light, rich soil, in a sheltered place, well drained, and the bulbs placed at least six inches deep.

A. Bellado'nna (Belladonna lily). 2. Pale pink. Cape of Good Hope. 1712.
„ „ *bla'nda* (charming). 1½. June. Whitish. Cape of Good Hope. 1754.
„ „ *pa'llida* (pale-flowered). 2. Flesh. August. Cape of Good Hope. 1712.
„ „ *stria'ta* (striped). Striped with crimson. 1904.
„ *Parke'ri* (Parker's). Rosy pink and white. (*A. Belladonna blanda* × *Brunsvigia Josephinæ.*) 1889. "Kew Belladonna."

These are all that we can arrange in this genus, although we think that *Brunsvigia Josephine* and *B. grandiflora* are true Amaryllises, having crossed, or produced fertile seeds, with *Amaryllis blanda;* but, as they are very distinct in the appearance of their leaves and bulbs, no author but Dr. Herbert has yet ventured to unite them with *Amaryllis.* Without aiming at a reform of our botanical classification, we think it desirable to keep *Hippeastrum* apart from *Amaryllis*, on account of the opposite habits of the bulbs of the two genera, those of the *Amaryllis* growing *only* late in the autumn, and through the winter in Europe; while those of *Hippeastrum* are under the gardener's control, and may be managed to grow at different periods. Our great aim should be to get crosses between *Amaryllis* and *Valotta.* Thus reduced, *Amaryllis* would turn evergreen, or at least produce leaves and flowers simultaneously. In many gardens the *Hippeastrums* are still found under the name of *Amaryllis*; having become very popular under the latter name many old growers do not like to discard it.

AMASO'NIA. (In honour of an American traveller, named *Amason.* Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia.*)
Stove herbaceous perennials. Sandy loam; suckers.

A. calyci'na (large-calyxed). 2. Yellow. September. Trinidad. 1825.
„ *ere'cta* (upright). 2. Yellow. September. Maranhao. 1823.
„ *puni'cea* (scarlet). See A. CALYCINA.

AMATE'UR. As the true qualification of an amateur sometimes is questioned at local horticultural shows,

we give our definition. We consider that person is an amateur who has a taste for a pursuit (floriculture, or horticulture, for instance), but who neither follows it as a profession nor for pecuniary advantage, or does not employ professional aid.

AMATUNGU'LA. *Cari'ssa grandiflo'ra.*

AMBER, SWEET. See HYPERICUM ANDROSÆMUM.

AMBER TREE. See ANTHOSPERMUM.

AMBLOSTO'MA. (From *amblos*, blunt, and *stoma*, a mouth. Nat. ord. Orchideæ; Tribe, Epidendreæ; subtribe, Stenoglosseæ.)

A. ce'rnuum. 1. Yellowish-green. Brazil. Syn. *A. tridactylum.*

AMBROSI'NIA. (Named after *Prof. Giacinti Ambrosini*, of Bologna.) Ord. *Aroideæ* (Araceæ).

A. Ba'ssii. 4 inches. Corsica, Sardinia. 1879.
,, *cilia'ta.* See CRYPTOCORYNE.

AMBURY (*Plasmodiophora brassicæ*) is a disease peculiar to the Cabbageworts, and is known by the various names of *Hanbury, Anbury,* and *Club Root. Fingers and Toes,* a name applied to it in some parts, alludes to the swollen state of the small roots of the affected plants.

Cabbage-plants are frequently infected with ambury in the seed-bed, which infection appears in the form of a gall or wart on the stem near the roots. If this swelling is short and thick it will probably contain a grub of the Cabbage Gall Weevil (*Ceutorhynchus sulcicollis*), but if elongated it is certain that the spores of the ambury disease have gained an entrance, and if on the main root the swelling soon attains the size of the fist. All the smaller roots get attacked more or less, producing the state known as Fingers and Toes. Very soon the principal roots and base of the stem are more or less completely permeated by the fungus, thus preventing the ascent of water and food constituents, and the first bright day causes the leaves to wilt or flag for want of moisture, owing to the obstruction caused by the fungus. Spores are produced in myriads, forming dark masses in the interior of the clubbed roots, and later on the latter rot. All the cabbage tribe, as well as turnips, wallflower and other crucifers are liable to attack by this destructive fungus, the spores of which remain in the roots and the ground till a favourable period arrives, when they recommence growth. Being one of the slime fungi, its spores leave their cells and swarm over the ground ready to attack the roots of this class of plants again.

Remedies.—All diseased plants should be carefully dug up, and every bit of swollen root burned in order to destroy the spores in them. The ground should be trenched in autumn, and the top soil placed in the bottom of the trench. A good dressing of gas lime should be placed over this. Before placing the bottom spit on the top give another dressing of gas lime on the top of the second spit. Nothing should be planted for two months after using gas lime. Select fresh ground every year for raising seedlings, and also for planting them upon.

AMELA'NCHIER. (Savoy name of the Medlar, to which this genus is closely allied. Nat. ord. *Appleworts* [Rosaceæ]. Linn. 12-*Icosandria.* 2-*Di-pentagynia.*)

Hardy deciduous shrubs, closely allied to the Medlar. Layers; common rich loam. Small trees cultivated for their showy white flowers, which are produced early in the season. They are also propagated by grafting on the hawthorn, or on the quince.

A. alnifo'lia. 6. Dark purple. N.W. Amer. 1888.
,, *asia'tica.* White. 1879. Japan.
,, *Botrya'pium* (grape-pear). See A. CANADENSIS.
,, *canade'nsis.* White. 12. N. Amer. 1746.
,, *flo'rida* (flowery). See A. ALNIFOLIA.
,, ,, *parvifo'lia* (small-leaved). See A. ALNIFOLIA.
,, *oligoca'rpa* (G. and F., 1888, i. 245, 247, f. 44). Eastern United States.
,, *ova'lis* (oval-leaved). See A. CANADENSIS.
,, ,, *se'mi-integrifo'lia* (half-entire-leaved). See A. ALNIFOLIA.
,, ,, *subcorda'ta* (subcordate-leaved). N. Amer.
,, *oxy'odon* (Gfl., 1902, 609, f. 126 B.). N.W. Amer.
A. sangui'nea (bloody). See A. CANADENSIS.
,, *utahe'nsis* (Utah). 3. White. Utah, U.S. Amer. 1909.
,, *vulga'ris* (common). 6. South of Europe. 1596.

AME'LLUS. (A name employed by Virgil for a blue aster-looking plant growing on the banks of the river *Mella.* Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia,* 2-*Superflua.*)

Allied to Aster. The first is a greenhouse evergreen shrub, and the other two hardy herbaceous perennials. Loamy soil; cuttings.

A. Lychni'tis (lychnitis). 1. Violet. July. Cape of Good Hope. 1768.
,, *spinulo'sus* (spinulose). 2. Yellow. August. Missouri. 1811.
,, *villo'sus* (long-haired). 1. Yellow. August. Missouri. 1811. See CHRYSOPSIS.

AMERICAN ALMOND. See BRABEJUM.

AMERICAN ALOE. *Aga've america'na.*

AMERICAN BLIGHT. The insect attacking our apple-trees, and known by this name, is the *Eriosoma lanigera* of some entomologists, and *E. mali* and *Aphis lanigera* of others. Later authors give it as *Schizoneura lanigera.* Its generic characters are, having an abdomen (belly) without tubercles, antennæ, or horns, short and thread form, and the whole body more or less cottony or tomentose. The presence of these insects is shown by the white cottony matter in the cracks and excrescences of apple-tree branches in the spring. When crushed they extrude a reddish fluid. These insects are injurious by piercing the sap-vessels of the tree, sucking the juice, and causing wounds which ulcerate, and finally destroy, the branch attacked, by corroding through all the sap-vessels. The cottony matter is abundant; and, wafted to other trees, conveys to them infection by bearing with it the eggs or embryo insects. Such, however, is not the exclusive mode of diffusing the disease; for, although the females are usually wingless, yet many are produced with wings at the season propitious to colonisation: the males are uniformly winged. In the winter these insects retire underground, and prey upon the roots of the apple-tree. A tree thus ravaged at all seasons will soon be killed, if prompt and vigorous remedies are not adopted. The affected roots may be bared and left exposed for a few days to the cold, and the earth, before being returned, be saturated with ammoniacal liquor from the gas-works. In early March the branches should be scraped and scrubbed with the same ammoniacal liquid, or a strong brine of common salt; but, whatever liquid is employed, the scraping and hard bristles of the brush should penetrate every crack in the bark. We have found spirit of turpentine, applied thoroughly to every patch of the insect by means of an old tooth-brush, the most effective destroyer of these insects. The spirit must be applied carefully, because it kills every leaf on which it falls. There are many special preparations which are very effective in destroying this pest. An emulsion of paraffin is one of the most effective remedies. The codlin and June-eating apple-trees are particularly liable to be infected; but we never observed it upon any one of the russet apples; and the Crofton pippin is also said to be exempted. Our woodcut represents the insect of its natural size as well as magnified. The head, antennæ, and proboscis, by which it wounds the sap-vessels, are still further magnified.

AMERICAN COWSLIP. *Dodeca'theon.*

AMERICAN CRANBERRY. *Oxyco'ccus macroca'rpus.* Grown extensively for the berries, which are bottled or exported in barrels or cases. It has become a favourite fruit for tarts, &c., and may be used fresh or kept in bottles for winter use. The English species, *O. palustris,* is also grown for its berries, and usually proves very prolific. Both species succeed on moist, boggy ground or by the edge of a stream where there is a fairly deep deposit of decayed leaves and other decayed vegetable matter. The North American species is perhaps the easiest to cultivate. They may be propagated from suckers or cuttings in the autumn, or raised from seed; once planted they require very little attention.

AMERICAN CRESS. *Barbare'a præ'cox. Soil and Situation:* For the winter standing crops, a light, dry soil, in an open but warm situation; and, for the summer,

a rather moister and shady border—in neither instance rich. *Sow* every six weeks from March to August, for summer and autumn; and one sowing, either at the end of August or beginning of September, for a supply during winter and spring. Sow in drills nine inches apart. *Culture:* Water occasionally during dry weather, both before and after the appearance of the plants. Thin to three inches apart. In winter, shelter with a little litter or other light covering, supported by some twigs bent over the bed, or some bushy branches laid among the plants; keep clear of weeds. In gathering, strip off the outside leaves, which enables successional crops to become rapidly fit for use. When the plants begin to run, their centres must be cut away, which causes them to shoot afresh. *To obtain Seed*, a few of the strongest plants, raised from the first spring sowing, are left ungathered from. They flower in June or July, and perfect their seed before the commencement of autumn. Since we have had the better salads forced and procurable all the year through, the American or winter cress is not appreciated, and is rarely found under cultivation.

AMERICAN PLANTS. These comprise many very different species, which, resembling each other in requiring a well-drained, peaty soil and abundance of water, are usually cultivated in a separate department, where the garden-establishment is extensive; and, wherever grown, should have a compartment to themselves, a very acutely sloping bank, facing the north or east; and some of them—as the Rhododendron, Andromeda, and Azaleas—do not object to being overshadowed by trees. The soil, as already stated, should, if possible, be peaty; and the best annual dressings that can be applied are such matters as decayed leaves and the bottom of old wood-stacks, or any other mixture of decayed woody fibre; and, in fact, these tribes in general have been well grown in an artificially compounded soil, such as rotten leaves, and ordinary light soil, with some sand, using twice as much of the vegetable matter as of the others.

AMERI'MNUM. (From *a*, not, and *merimna*, care; in reference to the little care needed by the Houseleek, to which this name was applied by the Greeks. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 9-*Decandria*. Now referred to Dalbergia.)

Stove evergreen shrubs. Cuttings of the young shoots in sand and gentle heat; rich loam.

A. Bro'wnii (Brown's). 10. White. W. Ind. 1793.
,, *strigulo'sum* (strigulose). 20. White. Trinidad. 1817.

AMETHY'STEA. (From *amethu'stos*, the amethyst; in reference to the blue colour of the flower. Nat. ord. *Labiates*, or *Lipworts* [Labiatæ]. Linn. *Didynamia*, 1-*Gymnospermia*.

Hardy annual. Seed; peat and sandy loam.

A. cæru'lea (blue-flowering). 2. Blue. July. Siberia. 1759.

AMHE'RSTIA. (In honour of the *Countess Amherst*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 1-*Decandria*.)

Allied to Jonesia. This splendid flowering tree, "the cream of the Indian Flora," was first flowered in England, by Mrs. Lawrence, in 1849. The individual flowers sustain the praise lavished on this tree; but they are so ephemeral, lasting hardly three days, as to render its cultivation less desirable. Stove evergreen tree. Rich, strong loam; cuttings of half-ripened wood, in sand, in stove propagating pit.

A. no'bilis (noble). 40. Rich vermilion. E. Ind. 1837.

AMIA'NTHIUM. See ZYGADENUS.

AMI'CIA. (In honour of *B. Amici*, physician. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Monadelphia*, 1-*Decandria*.)

Stove evergreen climber. Rough sandy loam; cuttings sand and peat, to which good loam may be added, and put in close stove propagating pit.

A. Zygo'meris (two-jointed-podded). 8. Yellow. June. Mexico. 1826.

AMMO'BIUM. (From *ammos*, sand, and *bio*, to live; in reference to the sandy soil in which it thrives. Nat. ord. *Composites* [Compositæ]. Linn. 10-*Syngenesia*, 1-*Æqualis*.)

Half-hardy annuals or biennials. Cuttings and seed sown in the autumn flower the next year; common soil.

A. ala'tum (winged). 2. White. June. N. Holland. 1822.
,, ,, *grandiflo'rum*. Pure white.
,, *plantagi'neum* (plantain-leaved). 1. White. August. N. Holland. 1827.

AMMO'CHARIS. (From *ammos*, sand, and *charis*, delight; the plant grows in sand. Nat. ord. Amaryllidaceæ.)

Greenhouse bulbs. Offsets. Loam, a little leaf-mould, and plenty of sand.

A. falca'ta (sickle-shaped). 1. Red. May. S. Africa. 1774.
,, ,, *pa'llida* (pale). 1. Pink. September. S. Africa. 1826.

AMMODE'NDRON. (From *ammos*, sand, and *dendron*, a tree; in reference to the situation it grows in. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

A hardy evergreen tree. Allied to Sophora. Propagated from seeds or layers. Light sandy soil.

A. Sieve'rsii (Siever's). 4. Purple. June. Siberia. 1837.

AMMOGE'TON. (From *ammos*, sand, and *geton*, near; the situation it likes. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous perennial. Root division; sandy loam.

A. scorzonerifo'lium (scorzonera-leaved). Yellow. May. N. Amer. 1834. See TROXIMON GLAUCUM.

AMMO'PHILA. (Greek, sand-loving. Gramineæ.)

A. arundina'cea (*A. arenaria*). Grown on coast to bind sand.

AMMY'RSINE. (From *ammos*, sand, and *myrsine*, myrtle. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Hardy evergreen shrubs, allied to Ledum, but requiring slight protection in winter. Peat; layers. This genus should be united to Leiophyllum, which see.

A. buxifo'lia (box-leaved). 1. White. May. N. Amer. 1736.
,, ,, *prostra'ta* (flat-lying). White. June. N. Amer.

AMOMOPHY'LLUM. See SPATHIPHYLLUM.

AMO'MUM. (From *a*, not, and *momos*, impurity; in reference to the quality of counteracting poison. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Grains of paradise, acrid seeds used to give pungent flavour to liquors, belong to different species of Amomum. Being aromatic herbs, they were used in embalming; whence the word *mummy*. Stove herbaceous perennials. Root division; rich, light loam; require, when growing, a high, moist heat.

A. aculea'tum (prickly). 10. Orange. May. E. Ind. 1819.
,, *Afze'lii* (Afzelius's). 3. Pink. May. Sierra Leone. 1795.
,, *angustifo'lium* (narrow-leaved). 8. Red. June. Madagascar.
,, *aroma'ticum* (aromatic). 3. Purplish-yellow. June. E. Ind. 1823.
,, *Cardamo'mum* (small cardamom). See A. CARDAMON.
,, *Ca'rdamon*. 4. Pale brown. June. E. Ind. 1823.
,, *Clu'sii* (B. M., t. 5250). See A. DANIELLI.
,, ,, *purpu'reum*. See A. DANIELLI.
,, *costa'tum*. 6. Red. July. E. Indies. 1815.
,, *Danie'lli* (bastard melegueta). 2½. Red. W. Africa.
,, *dealba'tum* (whitened). 3. White. April. Bengal. 1819.
,, *grandiflo'rum* (large-flowered). See A. GRANUM-PARADISI.
,; *Gra'num-paradi'si* (grain of paradise). 3. Red. March. Madagascar.
,, *hemisphæ'ricum* (B. M., t. 7592). Java.

A. latifo'lium (broad-leaved). 4. Purplish-yellow. June. Sierra Leone. 1824.
„ *magni'ficum.* 10. Red. July. Mauritius. 1830.
„ *ma'ximum* (greatest). 5. White. June. E. Ind.
„ *Melegue'ta mi'nor* (B. M., t. 5987). Pale pink. May. Sierra Leone. 1869.
„ *platya'ndrum* (B. S. B. F., 1904, 451).
„ *Sce'ptrum* (B. M., t. 5761). 5. Rose-purple. January. Old Calabar. 1863.
„ *seri'ceum* (silky). See A. DEALBATUM.
„ *subula'tum* (awl-shaped). 3. Yellow. April. Bengal. 1822.
„ *sylve'stre* (wood). See RENEALMIA.
„ *tri'lobum* (B. S. B. F., 1904, 453). French Indo-China.
„ *unifo'lium* (B. S. B. F., 1907, 403). Indo-China.
„ *vitelli'num.* 2. Yellow. May. Ceylon.
„ *Zi'ngiber.* See ZINGIBER OFFICINALE.

AMOO'RA. (Nat. ord. *Meliads* [Meliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)
Stove evergreen shrub. Cuttings in sand and loam in close frame with bottom-heat, in a hotbed; soil, light, rich loam.

A. cuculla'ta (cowl-leaved). Yellow. May. E. Ind. 1834.

AMO'RPHA. Bastard Indigo. (From *a*, not, and *morphe*, form; in reference to the irregularity of the flowers. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)
Hardy deciduous shrubs. Common soil; layers, or cuttings of the ripe wood in autumn.

A. cane'scens (hoary). See A. FRUTICOSA.
„ *cro'ceo-lana'ta* (yellow-woolled). See A. FRUTICOSA.
„ *fra'grans* (fragrant). See A. FRUTICOSA.
„ *frutico'sa* (shrubby). 6. Purple. July. Carolina. 1724.
„ „ *angustifo'lia* (narrow-leaved). 9. Purple. June. S. Carolina. 1812.
„ „ *au'reo-variega'ta* (golden-variegated). Leaves blotched with golden-yellow. 1907.
„ „ *cæru'lea* (blue). 9. Blue. June. S. Carolina.
„ „ *emargina'ta* (emarginate-leaved). 6. Purple. July. Carolina. 1724.
„ „ *microphy'lla* (small-leaved). See A. NANA.
„ *gla'bra* (smooth). See A. FRUTICOSA.
„ *herba'cea* (herbaceous). 3. Blue. July. Carolina. 1803.
„ *Lewi'sii* (Lewis's). See A. FRUTICOSA.
„ *microphy'lla* (small-leaved). See A. NANA.
„ *na'na* (dwarf). 2. Blue. August. Missouri. 1811. These last four require a little protection in winter.

AMORPHOPHA'LLUS. (From *amorphos*, deformed, and *phallos*, a mace; alluding to the inflorescence. Syn. *Pythion*, including *Proteinophallus*. Ord. *Aroides* [Araceæ]).
A remarkably distinct class of Aroids. In some species the flowers are extremely fœtid. They are produced before the foliage, which consists of a single leaf with a long stalk, with a flat, nearly circular branching leaf. *A. Rivieri* is one of the most attractive. They succeed best in good loam, leaf-mould, and manure. The leaves ripen off in the autumn, and the tuber should be stored in sand in a fairly dry, warm position. They rarely produce offsets, and it is only from imported tubers or seeds that they can be increased.

A. campanula'tus. Syn. *Arum campanulatum.* See A. VIROSUS.
„ *Cha'tty.* 3. India. 1872.
„ *du'bius* (B. M., t. 5187). 2. Purple. June. E. Ind. 1857.
„ *Eichle'ri* (B. M., t. 7091). 1½. Purple, white; spadix brown. Congo.
„ *Ellio'ttii* (B. M., t. 7349). Sierra Leone.
„ *Ga'lbra* (G. C., 1895, xvii. 484). Allied to *A. variabilis*.
„ *gra'ndis.* 3. Spathe green, white inside; spadix purplish. Java. 1865.
„ *Lacou'rii* (Ill. Hort., 1878, t. 316). Cochin-China. 1879.
„ *leone'nsis.* Spathe and spadix purplish-brown. Sierra Leone. 1845.
„ *nivo'sus.* See DRACONTIUM ASPERUM.
A. no'bilis. Spathe livid purple, spotted with white. Java. 1867.
„ *oncophy'llus* (B. M., t. 7327). Andaman Islands.
„ *papillo'sus.* Greenish and dark brown.
„ *pi'ctus.* Java. 1865.
„ *Rivie'ri.* Syns. *Proteinophallus Rivieri* and *A. Konjac*.
„ *Schweinfu'rthii* (Schweinfurth's). Dark purple, with pale zone. Brit. and Germ. E. Africa. 1910.
„ *specio'sus.* Java. 1865.
„ *Tita'num* (B. M., tt. 7153–7155). A remarkable plant, of large proportions. 10. W. Sumatra. 1878.
„ *viro'sus* (G. C., 1885, xxiii. 759). Siam.
„ *Walli'sii.* See DRACONTIUM ASPERUM.
„ *zebri'nus.* Java. 1865.

AMPELO'PSIS. (From *ampelos*, a vine, and *opsis*, resemblance; in reference to its resemblance to the grape-vine. Nat. ord. *Vineworts* [Ampelidaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.) Now united with Vitis which see.
The Ampelopsis are so nearly allied to Vitis, which causes some confusion. The common Virginian Creeper (*Ampelopsis quinquefolia* or *A. hederacea*) is one of the most popular climbers we have, especially for town gardens. *A. Veitchii*, which is perhaps even more popular, and of which we have some distinct varieties, has been variously named *Vitis inconstans* and *Ampelopsis tricuspidata*, but *A. Veitchiis* is likely to remain the popular name for all garden purposes. *A. henryana* is also included with Vitis; this is a newer introduction, which may become as popular as those named above, and though included with Vitis, is more generally known as Ampelopsis.
Loudon said *A. hederacea* is " the most vigorous-growing climber in Europe. It thrives in almost every soil and situation, from Warsaw to Naples." Hardy deciduous climbers; all their flowers purple and green. Common soil; layers or cuttings.

A. aconitifo'lia. China. 1868. Syns. *A. lu'cida*, *A. tri'loba*, *A. tripartita*, and *Vitis disse'cta.* See VITIS SERIANÆFOLIA.
„ *bipinna'ta* (double-winged). 15. August. N. Amer. 1700. See VITIS ARBOREA.
„ *citrulloi'des* (Rev. Hort., 1868, p. 10). 16. Greenish.
„ *corda'ta* (heart-leaved). 20. May. N. Amer. 1803. See VITIS INDIVISA.
„ *hedera'cea* (Virginian creeper). 60. July. N. Amer. Syn. *A. quinquefo'lia.* See VITIS QUINQUEFOLIA.
„ *hirsu'ta* (hairy). 60. May. N. Amer. 1806. See V. QUINQUEFOLIA.
„ *Low'ii* (G. C., 1907, xlii. 253). Raised from seed of *A. Veitchii*.
„ *napifo'rmis.* Greenish. China. 1870.
„ *quinquefo'lia.* See A. HEDERACEA.
„ *Saint-Pau'lii* (R. H., 1907, 567). Probably native of N. Amer.
„ *sempervi'rens.* An evergreen species. 1881. See VITIS STRIATA.
„ *serjanifo'lia* (Gfl., 1867, p. 451). Syns. *A. tubero'sa*, *A. lissus*, and *A. viticifo'lia.* Japan. 1867. See VITIS SERIANÆFOLIA.
„ *tricuspida'ta.* Syns. *A. Vei'tchii* and *Vitis japo'nica.* See VITIS INCONSTANS.
„ *tri'loba.* Syn. *A. aconitifo'lia.* See VITIS SERIANÆFOLIA.
„ *tripari'ta.* Syn. *A. aconitifo'lia.* See VITIS SERIANÆFOLIA.
„ *tubero'sa.* Syn. *A. serjanæfo'lia.* See VITIS SERIANÆFOLIA.
„ *Vei'tchii.* Syn. *A. tricuspida'ta.* See VITIS INCONSTANS.

AMPELOVI'TIS. (Nat. ord. Ampelidaceæ.)
Climbers allied to Vitis may be propagated from cuttings or layers; hardy in sheltered positions.

A. Davi'di (R. H., 1889, 204, t.). N. China.
„ *interme'dia* (R. H., 1891, 334).
„ *Romane'ti* (R. H., 1892, 94). China (?).

AMPELOSI'CYOS. A synonym of *Telfai'ria.*

AMPELY'GONUM. (From *ampelos*, a vine, and *gonu*, a joint; referring to its stems. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 8-*Octandria*, 3-*Trigynia*.)

Greenhouse herbaceous perennial. Sandy loam and a little peat; seeds.

A. chine'nse (Chinese). Yellowish-white. July. E. Ind. 1837. See POLYGONUM.

AMPHA'LIS. (From *amphalos*, surrounded by the sea. Nat. ord. Urticaceæ.)

Stove evergreen tree. Cuttings in sand, in bottom-heat. Loam, a little peat and sand.

A. madagascarie'nsis (Madagascar). 20. Mascarene Islands. 1823.

AMPHERE'PHIS. (From *ampherephes*, well-covered; alluding to the double involucre. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy annuals, with purple flowers. Sandy loam; seeds. Now referred to Centrantherum.

A. arista'ta (awned). See CENTRANTHERUM PUNCTATUM.
,, *interme'dia* (intermediate). See CENTRANTHERUM INTERMEDIUM.
,, *mu'tica* (awnless). See CENTRANTHERUM MUTICUM.

AMPHIBLE'MMA. (From *amphi*, on both sides, and *blemma*, a face. Nat. ord. Melastomaceæ.)

Stove evergreen shrubs. Cuttings in sandy peat, in a close frame, with bottom-heat. Fibrous peat and loam, with sand.

A. cymo'sum (cymed). 2. Purple. June. Trop. Africa. 1792.

AMPHI'BLESTRA. See PTERIS.

AMPHICARPÆ'A. (From *amphi*, around, or on either side, and *karpos*, fruit; in reference to the plant bearing pods on the stem and on the shoots. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Ornamental twining, hardy annual plants; allied to Wistaria; readily increased by seeds, in common soil.

A. monoi'ca (monoicus). 4. September. N. Amer. 1781.
,, *sarmento'sa* (twiggy). See A. MONOICA.

AMPHI'COME. (From *amphi*, around, and *kome*, hair; in reference to the winged seed. Nat. ord. *Bignoniads* (Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Pretty half-hardy evergreens, not unlike a Pentstemon. It may be increased by seeds, or by cuttings, which root readily in sandy peat, in July, if placed under glass.

A. argu'ta (finely-cut). 1. Lilac. August. Himalaya Mountains.
,, *Emo'di* (B. M., t. 4890). 1½. Rose, orange. October. Himalaya. 1852.

AMPHILO'BIUM. (From *amphi*, round, and *lobos*, a pod; in reference to the shape of the seed-vessel. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Now referred to Amphilophium.)

AMPHILO'PHIUM. (From *amphi*, round, and *lophos*, a crest. Nat. ord. Bignoniaceæ.)

A handsome evergreen climber, requiring the same treatment as Bignonia. Cuttings root readily under glass, on bottom-heat, in the spring months. Soil, loam and leaf-mould.

A. panicula'tum (panicled). 20. Purple. W. Ind. 1738.

AMPHISCO'PIA POHLIA'NA. See PORPHYROCOMA LANCEOLATA.

AMPHITE'CNA. (From *amphi*, both, and *teknon*, child, or seed. Nat. ord. Bignoniaceæ.)

Stove climber. Cuttings in bottom-heat. Loam, peat, sand.

A. macrophy'lla (large-leaved). Yellow. Central Amer. 1882.

AMPHITHA'LEA. (Nat. ord. Leguminosæ.)

Greenhouse evergreen shrubs from Cape of Good Hope. Cuttings in sand and peat, in close frame.

A. de'nsa (dense). 3. Yellow. June. 1822.
,, *ericæfo'lia*. 3. Yellow. June. 1812. Syn. *Borbonia ericæfolia*.

AMSO'NIA. (In honour of *Charles Amson*, a scientific traveller in America. Nat. ord. *Dogbanes* [Apocynaceæ —Plumiereæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Allied to Plumieria. These are handsome herbaceous perennials, with blue flowers, and will grow in any garden-soil; rooting readily from cuttings during the summer months, or they may be divided at the root at any season.

A. angustifo'lia (narrow-leaved). 2. N. Amer. 1774.
,, *latifo'lia* (broad-leaved). See A. TABERNÆMONTANA.
,, *salicifo'lia* (willow-leaved). See A. TABERNÆMONTANA.
,, *Tabernæmonta'na*. 2. N. Amer. 1759.

AMY'GDALO'PSIS. See PRUNUS.

AMY'GDALUS. (From *amysso*, to lacerate, in reference to the fissured channels in the stone of the fruit; but some suppose from a Hebrew word signifying *vigilant*, as its early flowers announce the return of spring. Nat. ord. *Almondworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Now referred to Prunus, which see.)

These are very ornamental plants; the tall tree kinds are very pretty in the middle or back ground of shrubberies; the dwarf kinds, also, as front plants to the same. The varieties are increased by budding them upon seedling plum-stocks. In the south of France, Italy, Spain, and different parts of the Levant, they are cultivated for their fruit. Almost any soil suits them. For early forcing they are very effective; established in pots a year previous very little heat is required to have them in flower early.

A. Boissie'ri (R. H., 1879, 229, f. 62–64). Pale rose. Asia Minor. 1879.
,, *cochinchine'nsis* (Cochin-China). Pink. March. Cochin-China. 1825.
,, *commu'nis* (common or sweet). 15. Red. April. Barbary. 1548.
,, ,, *ama'ra* (bitter). 1. Red. April. Barbary. 1548.
,, ,, *du'lcis* (sweet). 15. Red. March. 1548.
,, ,, *flo're-ple'no* (double-blossomed). 15. Red. March 1548.
,, ,, *fo'liis variega'tis* (variegated-leaved). 15. Red. March. 1548.
,, ,, *fra'gilis* (brittle). 15. Red. April. Barbary. 1548.
,, ,, *grandiflo'ra ro'sea* (great-rosy-flowered). 15. Rose. March. 1548.
,, ,, *macroca'rpa* (long-fruited). 15. Red. April. Barbary. 1548.
,, ,, *pe'ndula* (drooping). 15. White. March. 1548.
,, ,, *persicoi'des* (peach-like). 15. Red. April. Barbary. 1548.
,, ,, *salicifo'lia* (willow-leaved). 15. White. March. 1548.
,, *fenzlia'na* (Späth Cat., No. 104, 75).
,, *inca'na* (hoary). 2. Red. April. Caucasus.
,, ,, *campe'stris* (field). 2. Red. April. Podolia. 1818.
,, ,, *geo'rgica* (Georgian). 3. Red. April. Georgia. 1818.
,, *orienta'lis* (eastern). 10. Red. April. Levant. 1756.
,, *peduncula'ta* (flower-stalked). 10. Red. April. Siberia. 1833.
,, *Pe'rsica*. See PRUNUS PERSICA.
,, ,, *ru'bra*. Leaves deep red in spring. White. 1874.
,, *prostra'ta* (prostrate-growing). 2. Red. April. Crete. 1802.
,, *pu'mila* (double-dwarf). 4. Red. April. China. 1683. See PRUNUS JAPONICA FLORE ROSEO PLENO.
,, *sibi'rica* (Siberian). 5. Red. April. Siberia. 1820.

A'MYRIS. (From *a*, intensive, and *myrrha*, myrrh; in reference to its powerful perfume. Nat. ord. *Amyrids* [Burseraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

This genus is famed for its resinous gum. The species are all ornamental, white-flowered, evergreen stove trees, growing well in loam and peat, and readily increased by cuttings in sand and peat, on bottom-heat, under glass, in the spring months.

A. acumina'ta (acuminated). 20. E. Ind. 1823.
,, *brasilie'nsis* (Brazilian). 20. August. Brazil. 1823.
,, *heptaphy'lla* (seven-leaved). 16. E. Ind. 1820.
,, *Luna'ni* (Lunan's). 12. July. Jamaica. 1820.
,, *mari'tima* (sea). 12. S. Amer. 1810.
,, *na'na* (dwarf). 5. E. Ind. 1822.

A. Plumie'ri (Plumier's). 20. W. Ind. 1820.
,, *sylva'tica* (wood). 16. July. Carthage. 1793.
,, *Tecoma'ca* (Tecomaca). 20. Mexico. 1827.
,, *toxi'fera* (poison-bearing). 10. W. Ind. 1818.
,, *zeyla'nica*. See BALSAMODENDRON.

ANA'BASIS. (From the Greek, alluding to its upright habit. Nat. ord. Chenopodiaceæ.)

Half-hardy shrubby evergreen, from cuttings in sandy soil.

A. Ammode'ndron (W. G., 1888, 37). See HALOXYLON AMMODENDRON.

ANACA'MPSEROS. (From *anakampto*, to cause to return, and *eros*, love; an ancient name for a plant fabled to possess the virtue of restoring the soft passion. Nat. ord. *Purslane* [Portulaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

These are very pretty little greenhouse plants; do well in sand and loam, mixed with a little lime-rubbish, and are increased either from seeds sown in spring, or from cuttings at any time; even a single leaf will make a plant. The cuttings should be laid to dry a day or two before planting.

A. angustifo'lia (narrow-leaved). 1. Pink. July. Cape of Good Hope. 1820.
,, *arachnoi'des* (cobwebbed). 1½. Pink. August. Cape of Good Hope. 1790.
,, *filamento'sa* (thready). 1. Pink. September. Cape of Good Hope. 1795.
,, *interme'dia* (intermediate). See A. TELEPHIASTRUM.
,, *lanceola'ta* (spear-leaved). 1. Pink. September. Cape of Good Hope. 1796.
,, *polyphy'lla* (many-leaved). 1. Pink. August. Cape of Good Hope. 1818.
,, *rotundifo'lia* (round-leaved). 1. Pink. August. Cape of Good Hope. 1732.
,, *ru'bens* (reddish-leaved). See A. ARACHNOIDES.
,, *rufe'scens* (rusty-coloured). See A. ARACHNOIDES.
,, *Telephia'strum*. Pink. August. Cape of Good Hope. 1813.
,, *va'rians* (varying). See A. TELEPHIASTRUM.

ANACA'RDIUM. (From *ana*, like, and *kardia*, the heart; in reference to the form of the nut. Nat. ord. *Anacards*, or *Terebinths* [Anacardiaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*.)

A. occidenta'le produces the Cashew-nut. These are stove evergreen trees, ornamental, producing panicled corymbs of sweet-smelling flowers. Soil, rich loam; ripe cuttings root readily, with their leaves on, in a pot of sand, under a glass, in heat.

A. occidenta'le (western). 20. Green, red. W. Ind. 1699.
,, ,, *i'ndicum* (Indian). 20. Green, red. E. Ind. 1699.

ANACY'CLUS. (From *ana*, like, and *kyklos*, a circle; in reference to the rows of ovaries in circles round the disc. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Common hardy annuals of no great beauty, allied to Chamomile. They should be sown in the open ground in April.

A. alexandri'nus (Alexandrian). Yellow. June. Egypt. 1828.
,, *au'reus* (golden-flowered). See ANTHEMIS AUREA.
,, *clava'tus* (clubbed). 2. White. August. Barbary. 1810.
,, *Pyre'thrum* (pyrethrum-like). 2. White. August. Barbary. 1837.
,, *radia'tus* (rayed). 2. Yellow. August. South of Europe. 1596.
,, ,, *purpura'scens* (Gfl., t. 1074). Spain.
,, *tomento'sus*. Syn. *Anthemis pubescens*. See A. CLAVATUS.

ANADE'NIA. (From *a*, not, and *aden*, a gland; in reference to the absence of a honey-gland. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Pretty greenhouse plants, referred to Grevillea. Grown in peat, with a little loam; can be propagated by cuttings in sand and loam, in close frame with bottom-heat.

A. Mangle'sii (Mangle's). See GREVILLEA GLABRATA.
,, *pulche'lla* (neat). See GREVILLEA PULCHELLA.

ANAGA'LLIS. Pimpernel. (From *anagelao*, to laugh; fabled to possess a virtue to remove sadness. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

A favourite genus with gardeners. They are very interesting plants, of easy culture; many of the perennial kinds require greenhouse protection during winter, and are readily increased by cuttings, in spring, in the hotbeds. The whole of them make excellent rock and border plants for the summer.

A. alternifo'lia (alternate-leaved). Yellow, pink. April. Chili. 1839. Herbaceous perennial.
,, *arve'nsis*. Scarlet. Britain. Syn. *A. phœnicea*.
,, ,, *cæru'lea*. Blue. June. England.
,, ,, *ca'rnea* (fleshy). 1. Flesh. August. Britain. 1819. Hardy annual.
,, *colli'na* (Andr. Bot. Rep., t. 367). 3. Vermilion. August. Morocco. 1803. Syn. *A. grandiflora*.
,, ,, *a'lba compa'cta* (Gfl., t. 1125). White. 1883. Both are varieties of *linifolia*.
,, *frutico'sa* (shrubby). See A. LINIFOLIA.
,, *i'ndica* (Indian). See A. ARVENSIS CÆRULEA.
,, *latifo'lia* (broad-leaved). See A. ARVENSIS.
,, *linifo'lia* (flax-leaved). Blue. August. Portugal. 1796. Greenhouse biennial.
,, ,, *Brewe'ri* (Brewer's). ¾. Red. June. Gardens. 1648. This and the next five are greenhouse herbaceous trailers.
,, ,, *lilaci'na* (lilac-flowered). 1. Lilac. May. 1836.
,, ,, *Mone'lli* (Monelli's). 1. Blue. July. Italy. 1648.
,, ,, *phœni'cea* (Phœnician). Scarlet. May. Morocco. 1803.
,, ,, *Phili'psii* (Philips's). ¾. Brown. June. Gardens. 1803.
,, ,, *willmorea'na*. ½. Purple. August. Madeira. 1834.
,, *Marrya'ttæ* (Mrs. Marryatt's). 1. Copper. July. Hybrid. 1828. Half-hardy evergreen trailer.
,, *tene'lla* (Eng. Bot., ed. 3, t. 1148). ½. Rose colour. July. Britain. A creeper.
,, *webbia'na* (P. B. Webb's). 1. Blue. July. Gardens. 1828. Half-hardy trailer.
,, *wellsia'na* (Wells's). 1. Copper. August. English hybrid. 1830. Half-hardy trailer.

ANA'GYRIS. (From *ana*, like, and *gyros*, a spiral, or turning in a circle; in reference to its curved pods. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Small ornamental trees, allied to Podalyria; require the protection of the greenhouse; soil, loam and peat; young cuttings root readily in sand and peat, under glass, planted in July.

A. fœ'tida (fœtid). 9. Yellow. April. Spain. 1750.
,, *glau'ca* (galucous). See A. FŒTIDA.
,, *inodo'ra* (scentless). White. April. China. 1821.
,, *latifo'lia* (broad-leaved). 19. Yellow. April. Teneriffe. 1815.
,, *sine'nsis* (Chinese). 6. Yellow. April. China. 1820.

ANAMI'RTA. (A native name. Nat. ord. Menispermaceæ.)

Stove, evergreen twiner. Seeds; cuttings in sand in bottom-heat. Loam, peat, and sand.

A. Co'culus (Cocculus). 20. White, green. India; Malaya. 1800. "Cocculus Indicus."
,, *panicula'ta* (panicled). See A. COCCULUS.

ANA'NAS. (From *nanas*, the local name for the pine-apple in South America. Nat. ord. *Bromelworts* (Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

For culture, see PINE-APPLE.

A. bracamore'nsis (Lind. Cat., 1879, 6). See A. SATIVUS.
,, *bractea'tus* (bracted). 3. Crimson. April. Brazil. 1820.
,, *de'bilis* (weak). See A. SATIVUS.
,, *lu'cidus* (shining). See A. SATIVUS LUCIDUS.
,, *macrodo'ntes* (Belg. Hort., 1878, t. 5). Syn. *Bromelia undulata*.
,, *Mordilo'na* (B. H., 1879, 302). See A. SATIVUS LUCIDUS.
,, *mensdorfia'nus*. Syn. *Æchmea Fernandæ*.
,, *portea'nus* (R. H., 1878, 140). See A. SATIVUS.

A. sati'vus (cultivated. The pine-apple). 3. Purple. April. S. Amer. 1690.
,, ,, *bracamore'nsis*. Fruit large.
,, ,, *lu'cidus*.
,, ,, *portea'nus*.
,, ,, *variega'tus*. A handsome variegated plant for vases.

ANANA'SSA. See ANANAS.

ANA'NTHERIX. (From *a*, not, and *antherix*, an awn; fn reference to the want of awns, or filiform appendages to the pollen masses. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 6-*Pentandria*, 2-*Digynia*.)
A hardy herbaceous plant, increased by root division; at any season, any soil suits it in an open situation.

A. vi'ridis (green). ½. Green, yellow. September. N. Amer. 1812. See ASCLEPIODORA VIRIDIS.

ANAPHA'LIS. (Altered from *Gnaphalium*. Nat. ord. Compositæ; Tribe Inuloideæ.)

A. conto'rta (contorted). 2. White. July. Himalaya. 1821.
,, *margarita'cea* (Benth. and Hooker). Keeping well in a dried state.
,, *roylea'na*. White, yellow. September. India. 1882.
,, *tripline'rvis* (triple-nerved). 1. White. August. Himalaya. 1823.

ANARRHI'NUM. (From *a*, not, and *rhin*, nose. The snout-like form of the allied genus Antirrhinum is wanting in this. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Allied to Snapdragon. These plants are hardy biennials, and very pretty. Seeds may be sown in the open borders in spring, or the plants may be perpetuated by cuttings. See ANTIRRHI'NUM MA'JUS.

A. bellidifo'lium (daisy-leaved). 2. Blue. July. France. 1629.
,, *Durimi'nium*. 1½. Whitish. Portugal. 1818.
,, *frutico'sum* (shrubby). 2. White. August. South of Europe. 1826.
,, *hirsu'tum*. See A. DURIMINIUM.
,, *pube'scens* (downy). See A. DURIMINIUM.

ANASCE'TUM CRASSIFO'LIUM. See POLYPODIUM (DRYNARIA).

ANASTA'TICA. (From *anastasis*, resurrection; in reference to its hygrometrical property. Nat. ord. *Cruciferæ* [Cruciferæ]. Linn. 15-*Tetradynamia*.)
An annual plant, indigenous to the Egyptian deserts, and called the *Rose of Jericho*. When full grown it contracts its rigid branches into a round ball, and is then tossed about by the wind. When it alights in water, or on damp ground, the branches relax and open out, as if its life was renewed; hence its name of *Resurrection Plant*. Among the superstitious tales told of it is, that "it first bloomed on Christmas Eve, to salute the birth of the Redeemer, and paid homage to His resurrection by remaining expanded till Easter." This curious annual requires frame-protection during the colder months; increased by seeds in any common soil.

A. hierochu'ntica (Rose of Jericho). 1. White. July. Levant. 1597.

ANA'XETON. (Name unexplained. Nat. ord. Compositæ.)
Greenhouse evergreen shrub. Cuttings in sand, under a bell-glass. Loam, peat, and sand.

A. arbo'reum (tree-like). 1 to 1½. White. May. S. Africa. 1770.

ANCHIE'TEA. (In honour of a Brazilian writer on plants of that name. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
An ornamental evergreen stove climber. Loam and peat; increased most readily by seeds.

A. pyrifo'lia (pear-leaved). 3. White. July. Brazil. 1822.

ANCHOMA'NES. (Nat. ord. Aroideæ. Allied to Amorphophallus.)
A. Hookeri is a pretty stove perennial Aroid. Like the Amorphophallus, the flowers open before the foliage appears, the leaves die away in the autumn, and during the dormant period the cornus should be kept dry and in a warm position, but not where they will get dried too much. When started in spring pot in a good fibrous loam, with leaf-mould, manure, and sand added, and give liquid manure when they are well rooted.

A. diffo'rmis (two-formed). See A. HOOKERI.
,, *du'bius* (G. C., 1885, xiii. 669). Spathe purplish outside, cream-coloured within.
,, *Hooke'ri*. Syn. *Caladium petiolatum*.
,, ,, *pa'llida* (B. M., t. 5394). 1862.

AN'CHOVY-PEAR. See GRI'AS.

ANCHU'SA. (From *anchousa*, a cosmetic paint, formerly made from *A. tincto'ria*, for staining the skin. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
A reddish-brown substance, thought to be a peculiar chemical principle, used by dyers, is obtained from the roots of *A. tincto'ria*, or alkanet, and from other plants of this order. The whole of this genus, but two, are hardy perennial, biennial, or annual ornamental plants of the easiest culture, either by seeds or root division at any season. *A. cape'nsis* and *pulche'lla* require a little frame-protection during the winter months.

ANNUALS.

A. ægypti'aca (Egyptian). 2. Blue. July. S. Europe. 1821.
,, *aggrega'ta* (cluster-flowered). ½. Blue. June. Levant. 1827.
,, *ame'na* (pleasing). See A. ITALICA.
,, *hy'brida* (hybrid). 2. White, blue. July. Italy. 1820.
,, *Mille'ri* (Miller's). 1½. Blue. May. 1824.
,, *parviflo'ra* (small-flowered). 1. Blue. June. Levant. 1827.
,, *stylo'sa* (stylose). 1. Blue. May. Siberia. 1802.
,, *tene'lla* (delicate). See BOTHRIOSPERMUM TENELLUM.
,, *verruco'sa* (warty). See A. ÆGYPTIACA.

BIENNIALS.

A. aspe'rrima (very rough). See ARNEBIA HISPIDISSIMA.
,, *cape'nsis* (Cape). 1. Blue. June. Cape of Good Hope. 1830.
,, ,, *a'lba* (white). White. 1908.
,, *Gmeli'ni* (Gmelin's). See A. OCHROLEUCA.
,, *latifo'lia* (broad-leaved). See NONNEA ROSEA.

PERENNIALS.

A. affi'nis (B. T. O., 1896, 220, f. 12). Abyssinia.
,, *Aga'rdhii* (Agardh's). 1. Blue. August. Siberia. 1820.
,, *angustifo'lia* (narrow-leaved). 2. Purple. May. South of Europe. 1640.
,, *Barrelie'ri* (Barrelier's). 2. Blue. July. South of Europe. 1820.
,, *cæspito'sa* (tufted). ½. Blue. June. Levant. 1838.
,, *cri'spa* (curled). 1. Blue. June. Corsica. 1835.
,, *hi'spida* (bristly). 2. Blue. July. Egypt. 1817.
,, *ita'lica* (Italian). 2. Bright blue. August. South Europe. 1810.
,, *lana'ta*. See SOLENANTHUS LANATUS.
,, *leptophy'lla* (slender-leaved). See A. OFFICINALIS.
,, *longifo'lia* (long-leaved). 3. Blue. July. Italy. 1819.
,, *macula'ta* (spotted-leaved). 2. Blue. May. Russia. 1824.
,, *myosotidiflo'ra* (myosotis-flowered). 1. Pink. August. Levant. 1713.
,, *officina'lis* (officinal). 2. Blue. August. Tauria 1825.
,, ,, *incarna'ta* (flesh-coloured). 2. Flesh. August. South of Europe. 1816.
,, *ochroleu'ca* (yellowish-white). 2. Purple. July. Orient.
,, *panicula'ta* (panicled). See A. ITALICA.
,, *petiola'ta* (petiolated). See CYNOGLOSSUM PETIOLATUM.
,, *proce'ra* (tail). See A. OCHROLEUCA.
,, *rupe'stris* (rock). See ERITRICHIUM RUPESTRE.
,, *sempervi'rens*. 1½. Blue. Britain.
,, *seri'cea* (silky). See ERITRICHIUM SERICEUM.
,, *tincto'ria* (dyer's). See ALKANNA TINCTORIA.
,, *undula'ta* (wave-leaved). 2. Purple. July. Spain. 1752.
,, *zeyla'nica*. See BOTHRIOSPERMUM TENELLUM.

ANCISTROCHI'LUS. (From *aghistron*, a fish-hook, and *cheilos*, a lip; the lip is hooked at the tip. Nat. ord. Orchidaceæ.)

Stove epiphytal Orchid that may be grown in pots, pans, or baskets. Divisions. Fibre of peat, sphagnum, and crocks.

A. thompsonia'nus (Thompsonian). ½. White; lip purple, striped with brown. Trop. Africa. 1879.
„ „ *Genti'lii* (Gentil's). ½. Violet, with broader segments. Congo Free State. 1904.
„ „ *punctula'tum* (finely-dotted). Sepals and petals finely dotted with red. 1898.

ANCISTROPHY'LLUM. (From *aghistron*, a fish-hook, and *phullon*, a leaf; the leaves are furnished with hooks. Nat. ord. Palmaceæ.)

Stove Palm. Seeds. Loam, fibrous peat, and sand.

A. læ've (smooth). Trop. Africa.

ANCYLO'CLADUS. A synonym of *Willughbeia*.

ANCYLO'GYNE. (From *ankylos*, curved, and *gyne*, a female; the pistil is curved. Nat. ord. Acanthaceæ. Syn. *Sanchezia*.)

Handsome stove shrubs; *nobilis* has large oval, variegated leaves, and makes a fine specimen for culture. See SANCHEZIA.

A. longiflo'ra (B. M., t. 5588). Purple. April. Guayaquil. 1866.
„ *no'bilis* (B. M., t. 5594). Yellow, bracts red. June. Ecuador. 1863.

ANDERSO'NIA. (In honour of *Messrs. Anderson*, patrons of botany. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Very pretty greenhouse shrubs. Sandy peat; cuttings root readily, in spring, in common hotbed.

A. cæru'lea (Gfl., t. 1180, fig. 2). 2. Calyx pink, corolla blue. King George's Sound. W. Australia.
„ *depre'ssa* (Gfl., t. 1180, f. 1). ½. Blue and white. W. Australia.
„ *homalo'stoma* (Gfl., t. 1180, fig. 3). Calyx pink, corolla blue. King George's Sound. W. Australia.
„ *sprengelioi'des* (sprengelia-like). 2. Pink. June. N. Holland. 1803.

ANDI'RA. (Its local name in the Brazils. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Alliance obscure. Large ornamental stove trees. Soil, loam and peat; cuttings root readily under a glass, in heat.

A. excе'lsa. 20. Purple. Trinidad. 1818.
„ *iné'rmis* (unarmed). 20. Purple. W. Ind. 1773.
„ *racemo'sa* (branchy). See A. EXCELSA.

ANDRA'CHNE. (From *andrachne*, the herb purslane. Nat. ord. Euphorbiaceæ.)

Greenhouse evergreen shrub. Cuttings in sand, in bottom-heat. Loam, peat, and sand.

A. frutico'sa (shrubby). 2. Green, yellow. July, August. China. 1820.

ANDROCY'MBIUM. (From *aner*, anther, and *kymbion* a saucer; in reference to the peculiar form of the anthers Nat. ord. *Melanths* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)

Few plants are more generally poisonous than this order of Melanths. Interesting bulbous-rooted plants, requiring the protection of frame or greenhouse; increased readily by offsets and seed. Loam and leaf-mould, sand, and good drainage; grown fully exposed to the sun, and rested after a season's growth is developed.

A. eucomoi'des (eucomis-like). 1. Green. April. Cape of Good Hope. 1794.
„ *leuca'nthum* (Swt. Fl. Gard., t. 165).
„ *melanthioi'des* (melanthium-like). 1. White. July. Cape of Good Hope. 1823.
„ *puncta'tum*. See A. LEUCANTHUM.
„ *voluta're* (rolled-leaved). 1. White. April. Cape of Good Hope. 1816.

ANDROGRA'PHIS. (From *aner*, *andros*, a stamen, and *grapho*, to write. Nat. ord. Acanthaceæ.)

Stove perennial herbs. Cuttings in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

A. echioi'des (Echium-like). 1. Red. April. E. Ind. 1820.
„ *elonga'ta* (elongated). 2. Red. May. E. Ind. 1812.

ANDROLE'PIS. (From *aner*, a man, and *lepis*, a scale; alluding to the scaly stamens. Ord. Bromeliaceæ.)

Allied to Billbergias. Propagated from offsets, which are produced after flowering. Pot in good sandy loam and leaf-mould. Now referred to Æchmea.

A. Skinne'ri. 1½. Gautemala. 1850. Syn. *Billbergia Skinneri*.

ANDROMA'CHIA. (Nat. ord. Compositæ.)

Greenhouse herbaceous plant; propagate from cuttings; good loamy soil. Now referred to Liabum.

A. Maro'ni (R. H., 1887, 496). 2. Pale yellow. Brazil. 1887.

ANDRO'MEDA. (A classical name, after the daughter of Cepheus and Cassiope, King and Queen of Æthiopia. Nat. ord. *Heathworts* [Ericaceæ]. 10-*Decandria*, 1-*Monogynia*.)

An extensive family of beautiful shrubs, all evergreen and all hardy, except those otherwise specified; delight in a peaty soil, although some of them will do well in any soil; generally increased by layers, put down about the month of September, to remain till that time twelvemonth; also by seeds, which should be sown as soon as ripe in large pans or pots, and covered thinly with earth in a cold frame, but plenty of air given. Very useful for the rock-garden and for sloping banks.

HARDY.

A. acumina'ta (acuminate). 3. White. August. N. Amer. 1765. See LEUCOTHOË ACUMINATA
„ *angustifo'lia* (narrow-leaved). 1. White. August. N. Amer. 1748. See CASSANDRA CALYCULATA.
„ *arbo'rea* (sorrel-tree). 40. White. August. N. Amer. 1752. See OXYDENDRON ARBOREUM.
„ *axilla'ris* (axil-flowering). 1. White. June. N. Amer. 1765. See LEUCOTHOË AXILLARIS.
„ „ *longifo'lia* (long-leaved). 1. White. July. N. Amer. 1765.
„ *calycula'ta* (small-calyxed). 2. White. March. N. Amer. 1748. See CASSANDRA CALYCULATA.
„ „ *latifo'lia* (broad-leaved). 2. White. March. Newfoundland. 1748.
„ „ *na'na* (dwarf). 1. White. March. Newfoundland. 1748.
„ „ *ventrico'sa* (inflated). 2. White. March. Russia. 1748.
„ *campanula'ta*. Greenish-white, tinted with red.
„ *cane'scens* (hoary). 3. White. June. N. Amer. 1748.
„ *Catesbæ'i* (Catesby's). 2. White. June. N. Amer. 1793. See LEUCOTHOË CATESBÆI.
„ *coria'cea* (thick-leaved). 3. Pink. July. N. Amer. 1765. See PIERIS NITIDA.
„ „ *ru'bra* (red-flowered). 3. Red. July. N. Amer. 1765.
„ *cri'spa* (curled). 3. White. July. N. Amer. 1824. See CASSANDRA CALYCULATA.
„ *dealba'ta* (whitened). 2. Pink. April. N. Amer. 1824. See ZENOBIA SPECIOSA.
„ *fastigia'ta* (pyramidal). 2. White. May. Himalaya. 1855. See CASSIOPE FASTIGIATA.
„ *floribu'nda* (many-flowered). 3. White. May. N. Amer. 1812. See PIERIS FLORIBUNDA.
„ *glaucophy'lla* (glaucous-leaved). 1. Pink. July. N. Amer. 1812. See A. POLIFOLIA.
„ *hypnoi'des* (moss-like). 1. White, red. June. Lapland. 1798. Half-hardy deciduous creeper. See CASSIOPE HYPNOIDES.
„ *maria'na* (Maryland). 2. White. June. N. Amer. 1763. See PIERIS MARIANA.
„ „ *oblo'nga* (oblong-leaved). 2. White. June. N. Amer. 1736.
„ „ *ova'lis* (oval-leaved). 2. White. June. N. Amer. 1736.
„ *pilulifera* (pellet-bearing). 3. White. June. W. Florida. 1842. See LYONIA PANICULATA.
„ *Polifo'lia* (polium-leaved). 1. Pink. May. Britain.
„ „ *grandiflo'ra* (large-flowered). 1. Pink. April. Ingria. 1790.

A. Polifo'lia latifo'lia (broad-leaved). 3. Pink. July. N. Amer. 1790.
,, ,, *me'dia* (wild rosemary). 1. White. July. Britain. 1790.
,, ,, *mi'nima* (smallest). 1. Pink. April. Britain. 1790.
,, ,, *oleifo'lia* (olive-leaved). 1. Pink. April. Britain. 1790.
,, ,, *revolu'ta* (rolled-back-leaved). 1. Pink. April. North of Europe. 1783.
,, ,, *rosmarinifo'lia* (rosemary-leaved). 2. Pink. July. N. Amer. 1736.
,, ,, *subula'ta* (awl-leaved). 1. Pink. July. North of Europe. 1783.
,, *racemo'sa* (branchy). 3. White. June. N. Amer. 1736. See LEUCOTHOË RACEMOSA.
,, ,, *latifo'lia* (broad-leaved). 3. White. July. Cuba. 1736.
,, ,, *stric'ta* (upright). 4. White. July. N. Amer. 1736.

STOVE.

A. buxifo'lia (box-leaved). 2. Pink. July. Mauritius. 1822. See AGAURIA BUXIFOLIA.
,, *fascicula'ta* (bundled). 20. White. April. Jamaica. 1824. See LYONIA FASCICULATA.
,, *jamaice'nsis* (Jamaica). 6. White. June. Jamaica. 1793. See LYONIA JAMAICENSIS.
,, *rubigino'sa* (ruddy). 10. White. July. W. Ind. 1736. See LYONIA RUBIGINOSA.

GREENHOUSE.

A. eleganti'ssima (very elegant). See A. JAPONICA ELEGANTISSIMA.
,, ,, *formo'sa* (beautiful). See PIERIS FORMOSA.
,, *japo'nica* (Japan). 3. White. June. Japan. 1806. See PIERIS JAPONICA.
,, ,, *eleganti'ssima* (R. H., 1887, 83).
,, *neriifo'lia* (oleander-leaved). 3. Crimson. June. Brazil. 1851. See LEUCOTHOË NERIIFOLIA.
,, *ovalifo'lia* (oval-leaved). 20. White. June. N. Amer. 1825. See PIERIS OVALIFOLIA.
,, *phillyreæfo'lia* (phillyrea-leaved). 1. White. January. W. Florida. 1842. See PIERIS PHILLYREÆFOLIA.
,, *salicifo'lia* (willow-leaved). 4. Pale green. June. Mauritius. 1825. See AGAURIA SALICIFOLIA.
,, *sine'nsis* (Chinese). 2. Blush. June. China. 1826. See VACCINIUM BRACTEATUM.
,, *specio'sa* (showy). 3, White. August. Carolina. 1800. See ZENOBIA SPECIOSA.
,, ,, *glau'ca* (milky-green). 2. Pink. August. Carolina. 1800. See ZENOBIA SPECIOSA PULVERULENTA.
,, ,, *ni'tida* (shining-leaved). 3. White. August. Carolina. 1800. See ZENOBIA SPECIOSA.
,, ,, *pulverule'nta* (dusty-leaved). 3. White. August. Carolina. 1800. See ZENOBIA SPECIOSA PULVERULENTA.
,, *spica'ta* (spiked). 2. White. June. N. Amer. 1800. See LEUCOTHOË RACEMOSA.
,, *tetrago'na* (four-angled). 1. White. April. Lapland. 1810. Half-hardy. See CASSIOPE TETRAGONA.

ANDROMY'CIA. See XANTHOSOMA.

ANDROPO'GON. (From *aner*, a man, and *pogon*, a beard. Nat. ord. Gramineæ.)

A genus of grasses. Propagated by seeds, and also by division of the roots. The European kind succeed in the open air, if planted in a warm, dry border.

A. argen'teus. Silver beard glass. Probably a form of *A. saccharoides*, Swartz, of Trop. Amer.
,, *formo'sus.* March. 1882.
,, *furca'tus.* N. Amer.
,, *halepe'nsis.* Tropics.
,, *murica'tus.* See A. SQUARROSUS.
,, *pube'scens.* Dalmatia.
,, *Schœna'nthus.* 2. India. 1786. Syn. *A. citratus.*
,, *squarro'sus.* Tropics.
,, *siria'tus.* Malabar. See ISCHÆMUM LAXUM.

ANDRO'SACE. (From *aner*, a man, and *sakos*, buckler; in reference to the resemblance of the anther to an ancient buckler. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

A favourite family of small alpine plants. All do best, though hardy, grown in pots, in peat and sandy loam, and carefully watered; increased by seeds; and the perennials by cuttings, or root division. All are interesting plants for the rock-work in summer, and in winter protected in frame.

ANNUALS.

A. elonga'ta (elongated). 1. White. April. Austria. 1776.
,, ,, *na'na* (dwarf). 1. White. April. Denmark. 1803.
,, *filifo'rmis* (thread-like). 1. White. May. Siberia. 1820.
,, *macra'ntha* (Gard., 1897, lii. 434). See A. ALBANA.
,, *macroca'rpa* (large-capsuled). 1. White. July. Siberia. 1827.
,, *ma'xima* (greatest). 1. White. April. Austria. 1797.
,, *obtusifo'lia* (blunt-leaved). 1. Pink. April. Italy. 1817.
,, *septentriona'lis* (northern). 1. White. May. Russia. 1755.

BIENNIALS.

A. acau'lis (stalkless). 1. White. July. Siberia. 1825.
,, *alismoi'des* (alisma-like). See A. LACTIFLORA.
,, *brevifo'lia* (short-leaved). See A. SEPTENTRIONALIS.
,, *bulleya'na* (Bulleyan). See A. COCCINEA.
,, *cocci'nea* (scarlet). ½. Cinnabar-red. S.W. China. 1908.
,, *lactiflo'ra* (milk-flowered). 1. White. August. Siberia. 1806.

PERENNIALS.

A. alba'na (G. C., 1892, xii. 399). E. Caucasus.
,, *alpi'na.* ½. Rose, with yellow throat. June. Switzerland. 1775.
,, *arge'ntea.* See A. IMBRICATA.
,, *brita'nnica* (W. G., 1890, 34). ½. White. March to May.
,, *ca'rnea.* 1. Flesh. July. Switzerland. 1768.
,, *carina'ta.* See A. CHAMÆJASME.
,, *cauca'sica* (G. C., 1892, xii. 399). Caucasus.
,, *Chamæja'sme.* 1. Pink. July. Austria. 1768.
,, *cyli'ndrica* (W. G., 1890, 34).
,, *folio'sa* (B. M., t. 6661).
,, *glacia'lis.* ½. Pink. June. Europe. 1775.
,, *hedrea'ntha* (Gard., 1904, lxv., 307). Pale purple. Thrace.
,, *helve'tica.* White, yellow. May. Switzerland. 1775.
,, *Henry'i* (Gard., 1906, lxix., Suppl., June 2 [4]). White. Central China.
,, *imbrica'ta.* ½. White. June. Europe. 1826.
,, *la'ctea.* 1. White. July. Austria. 1752.
,, *Lagge'ri* (Gfl., t. 969). Pyrenees. 1879.
,, *lanugino'sa.* ½. Rose, yellow. August. Himalaya. 1842.
,, ,, *Leichtli'ni.* White, with red eye.
,, *linea'ris.* See A. SEPTENTRIONALIS.
,, *pube'scens* (B. M., t. 5808). June. Central Tyrolese Alps. 1869.
,, *pyrena'ica.* White, with yellow eye. Summer. Pyrenees.
,, *raddia'na* (Jard., 1897, 378). Caucasus.
,, *rotundifo'lia* (B. M., t. 6617). Himalaya.
,, *sarmento'sa* (B. M., t. 6210). Himalaya.
,, *sempervivoi'des* (Gard., 1893, xliv. 466). W. Tibet.
,, *spinuli'fera* (spine-bearing). ⅛ to 1. Rose-pink. China. 1910.
,, *villo'sa* (B. M., t. 743). Syn. *A. penicillata.*
,, *vitalia'na.* ¼. Yellow. Alps. 1787. Syn. *Gregoria vitaliana.* See DOUGLASIA VITALIANA.
,, *wulfenia'na* (W. G., 1890, 35). Hardy form of *A. alpina.*

ANDROSÆ'MUM. (From *aner*, man, and *haima*, blood; in reference to the juice of the plant. Nat. ord. *Tutsans* [Hypericaceæ]. Linn. 16-*Polyadelphia*, 8-*Polyandria*.)

A hardy, herbaceous, pretty perennial, readily increased by seeds or root division. Does well under the drip of large trees. Now referred to Hypericum.

A. officina'le (officinal). 2. Yellow. August. Britain.

ANDROSTE'PHIUM. (From *aner*, a man, and *stephos*, a crown. Nat. ord. Liliaceæ.)

A pretty little hardy bulbous plant, allied to Brodiæa; propagated by offsets; rich sandy loam and leaf-mould, plant rather deep.

A. viola'ceum. ½. Violet-blue. Spring. Texas. 1874.

ANDRY'ALA. (Of unknown meaning. Nat. ord. *Compositæ* [Compositæ]. Linn. 10-*Syngenesia*, 1-*Æqualis*. Allied to Hieracium.)

Both the greenhouse and hardy species are rather pretty, and will grow in any common soil; they are increased by seeds and root division. All are hardy, except those otherwise described. Few of the species are now in cultivation.

A. argen'tea (silvery). 1. Yellow. August. Pyrenees. 1817. Biennial.
„ *chieranthifo'lia* (stock-leaved). See A. VARIA.
„ *crithmifo'lia* (samphire-leaved). 1. Yellow. August. Madeira. 1778. Greenhouse biennial.
„ *inca'na* (hoary). See A. RAGUSINA.
„ *integrifo'lia* (entire-leaved). 1. Yellow. August. South of Europe. 1711. Biennial.
„ *lana'ta.* See HIERACIUM PANNOSUM.
„ *mogadore'nsis.* 2. Yellow. April. Morocco. 1871.
„ *ni'gricans* (blackish-flowered). 1. Yellow. August. Barbary. 1804. Annual.
„ *pinnati'fida* (pinnatifid-leaved). 1. Yellow. July. Madeira. 1778. Greenhouse biennial.
„ *ragusi'na* (Ragusan). 1. Yellow. August. Archipelago. 1753. Greenhouse perennial.
„ *runcina'ta* (runcinate). See A. INTEGRIFOLIA.
„ *va'ria.* 1 to 3. Yellow. June. Madeira. 1777. Greenhouse perennial.

ANEILE'MA. (From *a*, not, and *eilema*, involucrum; in reference to the absence of the involucrum. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

All perennials and pretty little trailing-plants, except *A. giganteum* and *A. sinicum*. They are increased by seed and root division; soil, loam, manure, leaf-mould, and sand.

GREENHOUSE.

A. affi'ne (similar). 1. Blue. August. N. Holland. 1820. Evergreen. See A. GRAMINEUM.
„ *biflo'rum* (two-flowered). 1. Blue. August. N. Holland. 1820. Evergreen.
„ *grami'nuem affi'ne.* 1. Blue. August. Australia. 1820.
„ *nudiflo'rum* (naked-flowered). 1. Blue. July. E. Ind. 1776. Biennial.
„ *si'nicum* (Chinese). 1. Purple-blue. May. China. 1820. Herbaceous perennial.
„ *spira'tum* (spiral). 1. Blue. July. E. Ind. 1783. Evergreen.

STOVE.

A. acumina'tum (pointed). 1 Blue. August. N. Holland. 1822. Evergreen.
„ *æquinoctia'le* (equinoctial). 1. Blue. July. Guinea. 1820. Evergreen.
„ *ambi'guum* (ambiguous). 3. Blue. July. Sierra Leone. 1822. Herbaceous.
„ *crispa'tum* (curled-leaved). See POLLIA CRISPATA.
„ *giganteum.* 1. Blue. July. Mozambique. 1825. Syns. *A. ensifolium* and *A. longifolium*.
„ *longifo'lium* (long-leaved). See A. GIGANTEUM.
„ *nudicau'le* (naked-stemmed). See A. NUDIFLORUM.
„ *serrula'tum* (saw-edged). 1. Blue. July. Trinidad. 1824. Evergreen.

ANE'MIA. (From *aneimon*, naked; in reference to the naked inflorescence. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove herbaceous perennials, allied to Schizæa; soil, loam and peat; readily increased from spores. For culture, see FERNS.

A. adiantifo'lia (maiden-hair-leaved). 3. Brown. August. W. Ind. 1793.
„ *cauda'ta* (tailed). Brazil. 1831.
„ *cocci'nea* (scarlet). 1. Brown. August. W. Ind. 1830.
„ *colli'na* (hill). 1. Brown. August. Brazil. 1829.
A. flexuo'sa (zigzag). See A. TOMENTOSA.
„ *fraxinifo'lia* (ash-leaved). See A. PHYLLITIDIS.
„ *hi'rta* (hairy). See A. PHYLLITIDIS.
„ *hirsu'ta* (soft-haired). 3. Brown. June. Jamaica. 1704.
„ „ *tene'lla* (slender). 1. Brown. May. W. Ind. 1843.
„ *hu'milis* (dwarf). See A. OBLONGIFOLIA.
„ *lacinia'ta* (jagged). See A. PHYLLITIDIS.
„ *lanceola'ta* (lanceolate). See A. PHYLLITIDIS.
„ *longifo'lia* (long-leaved). See A. PHYLLITIDIS.
„ *mandiocca'na.* 1. Mandiocca district, Rio Janeiro.
„ *oblongifo'lia.* Mexico to Brazil.
„ „ *hu'milis.* Smaller.
„ *radi'cans.* See A. CAUDATA.
„ *re'pens.* See A. HIRSUTA.
„ *Phylli'tidis* (Phyllitis-like). 1. Brown. June. Trinidad. 1830.
„ „ *fraxinifo'lia.* 1. June. Brazil. 1828.
„ „ *hirta* (hairy).
„ „ *lacinia'ta.* 1. August. W. Ind. 1794.
„ „ *lanceola'ta.* 2. August. W. Ind. 1820.
„ „ *linea'ta.* S. Amer. 1868.
„ „ *longifo'lia.* 1. August. Brazil. 1831.
„ „ *tessella'ta.* Pinnæ dark green, with bright green centre, and dull grey border. Brazil. 1875. Syn. *A. Phyllitidis plumbea*.
„ *tomento'sa.* 1. Trop. Amer. Syns. *A. deltoidea*, *A. flexuosa*, and *A. villosa*.

ANEMIDI'CTYON. See ANEMIA.

ANEMIO'PSIS. (From *aneimon*, naked, and *opsis*, like; stems almost leafless. Nat. ord. Piperaceæ.)

Hardy sub-aquatic perennial. See WATER GARDEN.

A. califo'rnica (B. M., t. 5292). White. California. 1862. See HOUTTUYNIA CALIFORNICA.

ANE'MONE. Wind-flower. (From *anemos*, the wind; inhabiting exposed places. Nat. ord. *Crowfoots* [Ranunculaceæ]. 13-*Polyandria*, 6-*Polygynia*.)

These consist of herbaceous and tuberous rooted plants, most of which are hardy, but some of the small growing species do better in a cold frame during the winter. Many of them flower early in the spring and are among the prettiest things we have for the Rockery. Numerous garden varieties exist, among the most popular being the St. Brigid varieties of *corona'ria* for early spring; and the varieties of *japo'nica* for late summer and autumn.

TUBEROUS ROOTED.

A. apenni'na (Apennine). ½. Blue. April. England.
„ „ *ple'na* (G. M., 1906, 301). Mauve or lilac.
„ „ *purpu'rea* (G. M., 1906, 265). Purple.
„ *balde'nsis* (Mount Baldo). ½. White. May. Switzerland. 1792.
„ *bla'nda.* ½. Deep blue. Winter. Eastern Europe.
„ „ *scythi'nica* (Gard., 1895, xlvii. 279). Pale blue and white. N. Kurdistan.
„ *cæru'lea* (blue). 1½. Blue. May. Siberia. 1826.
„ *carolinia'na* (Carolina). See A. DECAPETALA.
„ *ce'rnua* (Gard., 1900, lvii. 356). Japan.
„ *corona'ria* (garland or poppy A.). ½. Striped. June. Levant. 1596.
„ „ *ple'na* (double-*flowered*). ½. Striped. April.
„ *decape'tala.* 1. White. May. Carolina. 1824.
„ *Eunre'nia* (B. T. O., 1894, 226). Persia.
„ *fischeria'na* (Fischer's). ½. White. April. Siberia. 1827.
„ *horte'nsis* (garden). ½. Striped. April. Italy. 1597.
„ „ *flor'e-ple'no* (double-flowered). 1. Red. May. Europe.
„ „ *fu'lgens* (shining). 1. Red. May. South of Europe. 1818.
„ „ *minia'ta* (red-leaved-flowered). ½. Red. May. Gardens.
„ „ *pavoni'na* (peacock-*eye*). 1. Red. April. France.
„ „ *purpu'rea.* ½. Purple. April. Italy. 1597.
„ *inter'media* (G. C., 1903, xxxiii. 243). Silesia.
„ *lancifo'lia* (lance-leaved). See A. NEMOROSA.
„ *nemoro'sa* (grove). ½. White, red. April. Britain.
„ „ *Alle'nii* (Allen's). Lavender-mauve, large. 1910.
„ „ *cæru'lea* (blue-*flowered*). ½. Light blue. May. Gardens.
„ „ *flo're-ple'no* (double-flowered). ½. White. April. Britain.

A. nemoro'sa lancifo'lia. White. N. Amer. 1822.
,, ,, *robinsonia'na* (Gfl., t. 945). Pale blue.
,, *palma'ta* (palmated). ½. Yellow. May. Portugal. 1597.
,, ,, *flo're-a'lbido* (whitish-flowered). ½. Whitish. May.
,, ,, *flo're-fla'vo* (yellow-flowered). ½. Yellow. May. Portugal. 1597.
,, ,, *flo're-ple'no* (double-flowered). ½. Yellow. May.
,, *parviflo'ra* (small-flowered). ½. White. May. N. Amer. 1824.
,, *quinqueflo'lia* (five-leaved. *American wood*). ½. White. April. N. Amer. 1817. See A. NEMOROSA.
,, *ranunculoi'des* (ranunculus-like). ½. Yellow. April. England.
,, *refle'xa* (bent-back). ½. Yellow. April. Siberia. 1818.
,, *stella'ta purpu'rea* (purple-star-*leaved*). See A. HORTENSIS.
,, *umbella'ta* (umbelled). See A. NARCISSIFLORA.

HERBACEOUS.

A. acutipe'tala (pointed-petaled). See A. PULSATILLA.
,, *a'lba* (white). See A. SYLVESTRIS.
,, *alba'na* (Albana). ½. White. May. Caucasus. 1821.
,, *alpi'na* (alpine). ½. White. Austria. 1658.
,, *angulo'sa.* ½. Blue. March. E. Europe.
,, ,, *a'lba.*
,, ,, *lilaci'na grandiflo'ra.*
,, ,, *ro'sea.*
,, *bungea'na* (Gard., 1907, lxxi. 214). Golden yellow. Siberia.
,, *ca'ffra* (G. C., 1890, vii. 389). White. S. Africa.
,, *cape'nsis* (Cape). 1. Purple. April. Cape of Good Hope. 1795. Greenhouse.
,, *ce'rnua* (drooping). ½. Red, white. May. Japan. 1806.
,, *dahu'rica* (Dahurian). ½. Flesh. May. Dahuria. 1819.
,, *deltoi'dea* (triangular). White. May. Columbia. 1827.
,, *dicho'toma* (forked). 1. Red, white. May. N. Amer. 1768.
,, *elonga'ta* (G. C., 1907, xlii. 127). Himalaya.
,, *Fanni'nii* (G. C., 1886, xxv. 432, f. 84). White. Natal.
,, *gavania'na* (Gavan's). Nepaul. 1844.
,, *Halle'ri* (Haller's). ½. Purple. April. Switzerland. 1816.
,, *Hepa'tica.* ½. February to April. Purple. Europe. 1573. Syn. *Hepatica triloba.*
,, ,, *a'lba.* White, red anthers.
,, ,, *a'lbo-ple'na.* Double white. 1903.
,, ,, *cæru'lea.* Blue.
,, ,, *cæru'leo-ple'na.* Double blue.
,, ,, *ni'vea.* Wholly white.
,, ,, *ru'bra.* Red.
,, ,, *ru'bro-ple'na.* Double red.
,, *hudsonia'na* (Hudson's). See A. MULTIFIDA.
,, *hupehe'nsis* (Hupeh). 3. Mauve, carmine base. China. 1910.
,, *japo'nica* (Japan). 2. Rose. September. Japan. 1844.
,, ,, *a'lba.* White.
,, ,, *hy'brida.* Pale rose.
,, *longisca'pa* (long-stalked). See A. POLYANTHES.
,, *magella'nica* (Gard., 1907, lxxi. 77). Yellow. Straits of Magellan.
,, *micra'ntha* (small-flowered). See A. ALPINA.
,, *monta'na* (mountain). 1. Purple. June. Switzerland. 1830.
,, *multi'fida* (many-cleft). 1. White. June. Magellan. 1824.
,, *narcissiflo'ra* (narcissus-flowered). 1. White. May. Siberia. 1773.
,, *nuttallia'na* (Nuttall's). See A. PATENS.
,, *obsole'ta* (obsolete). See A. PRATENSIS.
,, *obtusifo'lia* (blunt-leaved). White. June. Himalaya. 1844.
,, *obtusilo'ba* (blunt-lobed-*leaved*). ½. White. June. Himalaya. 1843.
,, *pa'tens* (spreading). 1. Light yellow. June. Siberia. 1752.
A. pa'tens nuttallia'na. ½. July. N. Amer. 1827.
,, ,, *ochroleu'ca* (yellowish-white). 1. Cream. April. Siberia. 1752.
,, *pennsylva'nica* (Pennsylvanian). 1. White. May. N. Amer. 1756.
,, *polya'nthes.* White. Himalayas. 1839.
,, *prate'nsis* (meadow). ½. Dark purple. May. Germany. 1731.
,, *Pulsati'lla* (common pulsatilla). ½. Violet. May. England.
,, ,, *a'lba.* White.
,, ,, *a'lbida* (whitish-*flowered*). ½. Whitish. April. Germany. 1834.
,, ,, *ru'bra* (red-*flowered*). Reddish-purple. May. Germany. 1834.
,, *regelia'na* (Regelian). 1. Violet. Central Asia. 1904.
,, *Richardso'ni* (Richardson's). ½. Yellow. June. N. Amer. 1827.
,, *rivula'ris* (river). 1½. White. June. N. Ind. 1840.
,, *sibi'rica* (Siberian). ½. White. June. Siberia. 1804.
,, *sulphu'rea* (sulphur-*coloured*). 1. Sulphur. May. Europe. 1816.
,, *sylve'stris* (wood-*snowdrop*). ½. White. May. Germany. 1596.
,, *trifo'lia* (three-leaved). ½. White. April. France. 1597.
,, *tri'loba a'lbo-ple'na* (G. M., 1903, 219, 238 f.). White. See A. HEPATICA.
,, *urale'nsis* (Ural). See A. BALDENSIS.
,, *verna'lis* (spring). ½. White. April. Switzerland. 1752.
,, ,, *flo're-lu'teo* (yellow-flowered). ½. Yellow. April. South of Europe.
,, *virginia'na* (Virginian). ½. White. May. N. Amer. 1772.
,, ,, *grandiflo'ra* (large-flowered). 2. White. June. Gardens. Greenhouse.
,, *vitifo'lia* (vine-leaved). 3. White. September. Nepaul. 1829. Half-hardy.

The anemone, the florist's flower of our gardens, is the offspring of the *A. corona'ria* (poppy anemone), and *A. horte'nsis.* Sprung from these there are annually increased varieties. A variety lasts about twelve years.

Characteristics of a good Single Anemone.—The stem strong, elastic, and erect, not less than nine inches high; the flower at least two inches and a half in diameter, consisting of large, substantial, well-rounded petals, at first horizontally extended, and then turning a little upwards, so as to form a broad, shallow cup; the colour clear and distinct when diversified in the same flower, or brilliant and striking if it consists only of one colour, as blue, crimson, or scarlet, &c.

A double anemone should have the outer petals quite flat, the second series a little shorter, the third shorter still, and so on till the centre is quite full, when the whole should form a rather flat hemisphere. Every double flower should be of one full colour.

Propagation.—Offsets from the root, and new varieties from seed.

By offsets, all the best kinds should be taken up annually at the decay of the leaf, and the root divided, at the time of taking up, to allow the wound to heal, into as many pieces or knobs as are furnished with an eye or bud, observing, however, that if they are divided very small, they flower very weak the first year.

The time for taking up the roots is June and August, when the leaf and stalk are withered; for then the roots cease to grow for a month or six weeks.

Take them up in dry weather, spread in an airy place out of the sun for about a week, then clear from earth, and store in bags or boxes.

The Seed.—Sow from the best single or semi-double flowers. Double flowers produce none.

Sowing.—Make the beds in a sheltered part of your garden, facing the south; remove the old soil from the beds to the depth of sixteen or eighteen inches. If it is low and swampy, with a wet, clay bottom, drain well, and do not dig so deep; if high and dry, or with a sandy or gravelly subsoil, you may go a little deeper. Then put in from four to six inches of unmixed cowdung, such as might be gathered up where these animals feed. Upon this layer of dung place as much good fresh loam as will raise the beds to their former level, or a little higher. Make the surface very fine, and then sow. Anemone-

seed requires to be well rubbed with the hand, either amongst some sharp sand or finely-sifted coal ashes, to separate the seeds. When the seed is sown, cover it immediately with some sifted, light, sandy soil, half an inch. It will soon come up, and should be frequently watered in dry weather. Beds so made will flower the same year; mark the best, and preserve them for planting the next year.

Time for planting is October, or early in November, and the plants will come into flower in April and beginning of May; but if some are planted in the middle of September, and a second parcel towards the middle or after end of October, they will afford a succession of bloom from the beginning of April until the middle of May; and if a third plantation is made in February or beginning of March, they will come into flower about the middle of May, and continue until the middle of June.

Soil and Site.—The situation should be thoroughly drained, and open to the south. Any common, moderately light earth suits the anemone; overmoist and stiff soils rot the roots in winter. If necessary to make a soil, proceed as described for the seed-bed. Take maiden loam from the surface of a pasture, the top spit, turf and all; to every load of this add one of cowdung, and half a load of sea or drift-sand; blend the whole together, and form it into a ridge, in which let it remain a year, at least, turning it over once in two or three months. But, in default of pasture-earth, a good compost may be formed of common, light garden-soil and rotted cowdung, adding, to every load of the former, half a load of the latter, and about a quarter of that of drift or sea-sand; and of either of which composts the bed is to be formed. Make it about twelve or fifteen inches in depth, and three feet and a half broad.

Planting in Borders.—Plant five roots together, in a patch of five or six inches in breadth, two or three inches deep.

Beds should be three feet and a half broad, with alleys eighteen inches wide between bed and bed, and fifteen or eighteen inches deep; break the earth small, but do not sift it; elevate the beds three inches above the general surface; but if there is danger of moisture standing in winter, double or treble that height is proper, working the whole a little rounded, and after planting, rake the surface smooth.

Plant six rows lengthwise, the roots at six inches distance in each row, and two inches deep.

The autumn plantation comes in leaf in November; but, as the plants are hardy, nothing is needful to be done till the bloom begins to appear, and then arch the beds with hoops, to support mats, to protect them from frost.

Forcing.—Double anemones, potted in September or in October, in some compost, as above particularised, may be placed in a cold frame or pit, and watered but sparingly until the following spring, when they may be put into a warmer place. They will not stand much forcing. A second blooming may be obtained by planting more roots, in a similar way, in December.

Mildew.—This disease first appears as pale spots on the under sides of the leaves. These spots gradually rise into tubercles, and a minute fungus bursts through. This parasite is *Æci'dium quadri'fidum*. Sea-sand, or a little salt mixed with the compost of the bed, is a good preventive; and sprinkling with sulphur is the best remedy. Anemones are liable to have *distorted, swollen leaves*, the cure for which is to render the soil more free from stagnant moisture.

ANEMONO'PSIS. (From *anemone*, and *opsis*, resemblance; flowers similar to those of the Anemone. Nat. ord. Ranunculaceæ. A monotypic genus from Japan.)

A handsome herbaceous plant resembling *Anemone japonica* in habit, with purple-blue flowers, propagated from divisions or seeds; rich, deep loam. A great favourite in America.

A. macrophy'lla (B. M., t. 6413). 2 to 3. Pale lilac. Japan.

ANEMOPÆ'GMA. (From *anemos*, the wind, and *paigma*, sport.) Nat. ord. Bignoniaceæ. Attractive stove climbing shrubs. For culture, see BIGNONIA.

A. carrere'nse (Journal of Botany, 1898, 188). Pale citron-yellow. Trinidad.

A. clemati'deum. See PITHECOCTENIUM CLEMATIDEUM.
„ *racemo'sum*. Buff. September. Brazil. 1879.

ANE'THUM. (From *ano*, upwards, and *theo*, to run; in reference to its quick growth. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

A genus of useful plants, succeeding well in any common garden-soil; all hardy, readily increased by seed or root division. Now referred to Peucedanum.

ANNUAL.

A. So'wa (Sowa). 1. Yellow. July. E. Ind. 1810. See PEUCEDANUM GRAVEOLENS.

BIENNIALS.

A. grave'olens (strong-smelling, or dill). 3. Yellow. July. Spain. 1570.
„ *piperi'tum* (peppered). 6. Yellow. July. Italy. 1824. See FŒNICULUM PIPERITUM.

PERENNIALS.

A. fœni'culum (fennel). 6. Yellow. August. England. See FŒNICULUM VULGARE.
„ „ *du'lce* (sweet). 4. Yellow. August. Italy. See DILL and FENNEL.

ANGADE'NIA. (From *aggos*, a vessel, and *aden*, a gland. Nat. ord. Apocynaceæ.)

Evergreen climbing stove shrub. Cuttings in sand in a close case, with bottom-heat. Loam, peat, and sand.

A. ni'tida (shining). 15. Yellow, with vermilion band on tube. Trop. S. Amer. 1909.

ANGE'LICA. (In reference to its fabled angelic virtues in medicine. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Common water-side perennials, of not much beauty as garden-plants. The only species requiring notice here is the common *Ange'lica*.

A. Archange'lica (archangel). 4. July. Green. England. See ARCHANGELICA OFFICINALIS.
„ *sonnorica*. White. Central Asia. 1879.

The stalks of this are cut in May for candying. Formerly, the stalks were blanched for eating, like celery. *Soil and Situation:* Grows best in moist situations, such as the banks of ponds and ditches. *Sowing:* Sow soon after the seed is ripe, about September, being almost useless if preserved until the spring. *Cultivation:* Sow thin, in drills a foot asunder, and half an inch deep. When five or six inches high, the plants must be thinned to a distance of at least two feet and a half from each other. In May, or early in June of the second year, they flower, when they must be cut down, which causes them to sprout again; and if this is carefully attended to, they will continue for three or four years; but, if permitted to run to seed, they perish soon after.

ANGE'LICA-TREE. *Ara'lia spino'sa*.

ANGELO'NIA. (From *angelon*, its local name in South America. Nat. ord. *Figworts* [Scrophuariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Hemimeris.)

Pretty stove herbaceous plants; seed in heat, sown in February; division of the roots of several kinds, and cuttings of young shoots in April, inserted in sand and loam in close frame; must not be kept too damp; loam and peat. Summer temp., from 60° to 70°; winter, 55° to 60°.

A. angustifo'lia (narrow-leaved). 1½. Deep violet. June. Mexico. 1846.
„ *corni'gera* (horn-bearing). 1. Purple. August. Brazil. 1839.
„ *floribu'nda* (many-flowered). 1. Purple. August. Brazil. 1839.
„ *Gardne'ri* (Mr. Gardner's). 1. Purplish-white. May. Pernambuco. 1838.
„ *grandiflo'ra* (large-flowered). 1. Purplish-white. May. Pernambuco. 1838.
„ *minia'ta* (crimson). 1. Purplish-white. May. Pernambuco. 1838.
„ *salicariæfo'lia* (willow-leaved). 1. Light blue. August. S. Amer. 1818.

ANGLA'NTHUS. (From *aggos*, vessel, and *anthos*, a flower. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 5-*Segregata*.)

Pretty greenhouse herbaceous plants; division of the root; seed, and cuttings in close frame. Summer temp., 50° to 70°; winter, 40° to 50°.

A. au'reus (golden). See A. TOMENTOSUS.
„ *pusi'llus*. Dark straw-coloured. July. Australia. 1858. Syn. *Chrysocoryne angianthoides*.
„ *tomento'sus*. 1. Yellow. July. N. Holland. 1803.

ANGIO'PTERIS. (From *aggeion*, a vessel, and *pteris*, a wing. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia* 1-*Filices*.)

A stove Fern, cultivated like Acropteris.

A. eve'cta (tall). June. Brown. Island of Luzon.
„ *pruino'sa*. Java.
„ *teysmannia'na*. Java.

ANGO'PHORA. (From *aggos*, a vessel, and *phoreo*, to bear; in reference to the shape of the fruit. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

This is the most natural order of plants, and no blue flower has yet been found to belong to it. Greenhouse evergreen shrubs; propagate from cuttings in loam, sand, and peat in close frame; may be grown in the open during summer.

A. cordifo'lia (heart-leaved). 6. Yellow. August. N. Holland. 1789.
„ *lanceola'ta* (lanceolate-*leaved*). 6. Yellow. August. N. Holland. 1816.

ANGRÆ'CUM. (From *angurek*, the Malayan term for air-plants. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

By offsets in spring, sphagnum moss, and broken pot-sherds, and pieces of wood; kept moist and hot when growing in summer; cool in winter; hot and dry when coming into bloom. Summer temp., 70° to 85°; winter, 55° to 60°.

A. apicula'tum (small-pointed). ½. White. Sierra Leone. 1844.
„ „ *dormania'num* (G. C., 1886, xxiv. 456).
„ *arcua'tum*. ½. White. Natal. Syn. *Listrostachys arcuata*.
„ *armeni'acum* (apricot-coloured-*flowered*). Yellowish-pink. Sierra Leone. 1838.
„ *articula'tum*. White. Madagascar. 1872.
„ *ashante'nse* (Ashantee). ½. Cinnamon. June. Ashantee. 1843.
„ *Augu'sti* (August's). Pure white. N.E. Rhodesia. 1908.
„ *avicula'rium*. ½. White. 1887.
„ *bi'lobum* (two-lobed). ½. White. September. Cape Coast. 1841.
„ „ *Ki'rkii* (G. C., 1882, xviii. 488). Zanzibar.
„ *bisto'rtum* (K. B., 1893, 65). Allied to *A. arcuatum*.
„ *Buysso'ni* (G. M., 1907, 885). White. Madagascar.
„ *calli'gerum* (G. C., 1887, ii. 552).
„ *cauda'tum* (tail-*lipped*). 1½. White, green. August. Sierra Leone. 1834.
„ *caule'scens* (stemmed). See MYSTACIDIUM CAULESCENS.
„ *cephalo'tes*. White. Trop. Africa. 1873. Syn. *Listrostachys cephalotes*.
„ *chaillua'num*. White. Gaboon. W. Africa. 1866.
„ *christya'num* (G. C., 1880, xiii. 806). Whitish.
„ *citra'tum* (B. M., t. 5624). Cream. Madagascar.
„ *clandesti'num* (concealed-*flowered*). ½. Green, white. September. Sierra Leone. 1835.
„ *cry'ptodon* (G. C., 1883, xix. 307). White. Madagascar.
„ *desce'ndens* (G. C., 1882, xvii. 558).
„ *di'stichum* (two-rowed-*leaved*). ½. White. September. Sierra Leone. 1834.
„ *ebu'rneum* (ivory-*lipped*). 1½. White. January. Madagascar. 1826.
„ „ *vi'rens* (lip green in centre).
„ *eichleria'num* (W. G., 1882, 434, f. 102). Light green, lip white. Loango. W. Africa.
„ *Elli'sii*. 1. White, buff. Madagascar. 1870.
„ *expa'nsum* (expanded). White. Mascarene Islands. 1909.
A. falca'tum (B. M., t. 2097). Pure white. Japan. 1815. Syn. *Limodorum falcatum*.
„ *fastuo'sum* (G. C., 1881, xvi. 748, 844). White. Madagascar.
„ *florule'ntum* (G. C., 1885, xxiii. 787). Comoro Islands.
„ *Fournie'ræ* (R. H., 1896, 256 f.).
„ *fournieria'num* (G. C., 1894, xv. 808; xvi. 43, f. 7). Allied to *A. eichlerianum*. Madagascar.
„ *fra'grans* (B. M., t. 7161). Pure white. Bourbon and Mauritius.
„ *funa'le* (B. M., t. 4295). See DENDROPHYLAX FUNALIS.
„ *fusca'tum* (G. C., 1882, xviii. 488). Ochre, white. Madagascar. 1881.
„ *germinya'num* (B. M., t. 7061). Madagascar.
„ *gladiifo'lium* (B. R., 1840, t. 68). White. February. Bourbon.
„ *glomera'tum* (G. C., 1886, xxiv. 678). White. Sierra Leone. 1884.
„ *grandidieria'num* (R. H., 1887, 42, f. 9). Ivory-white. Comoro Islands. See AËRANTHUS GRANDIDIERIANUS.
„ *henriquesia'num* (G. C., 1878, ix. 725). St. Thomas' Island, W. Africa.
„ *Hildebra'ndtii* (G. C., 1878, ix. 725). Yellow-orange. Comoro Islands.
„ *Humblo'tii* (Humblot's). ¾. Ivory-white. Comoro Islands. 1885.
„ *hyaloi'des* (G. C., 1880, xiii. 264). Whitish. Madagascar. 1880.
„ *ichneumo'neum* (G. C., 1887, ii. 681). Ochreous-white. W. Trop. Africa.
„ *imbrica'tum* (G. C., 1887, i. 15). Creamy-white, lip orange and yellow. W. Trop. Africa.
„ *infundibula're* (funnel-shaped). Greenish-white. W. Trop. Africa. 1904.
„ *kimballia'num*. See A. POLYSTACHYS.
„ *Ko'tschyi* (Veitch Cat., 1881, 5, 14). Ivory-white. E. Trop. Africa.
„ *micra'nthum* (small-*flowered*). ½. White. Sierra Leone. 1834.
„ *mode'stum* (B. M., t. 6693). White. April. Madagascar.
„ *moorea'num* (G. C., 1897, xxi. 210). Salwin.
„ *obrienia'num* (G. C., 1892, xi. 816).
„ *odorati'ssimum* (very sweet-*scented*). White. Sierra Leone. 1832.
„ *ophiople'ctron* (G. C., 1888, iv. 91). Greenish-yellow, with white lip and reddish ochre spur. Allied to *A. curnowianum*.
„ *ornithorhy'nchum* (bird's-beak). White. Brazil. 1840.
„ *pa'llidum* (G. and F., 1890, 78). White. W. Africa.
„ *pellu'cidum* (transparent). ½. White. November. Sierra Leone. 1842.
„ *pertu'sum* (broken). ½. White. October. Sierra Leone. 1836.
„ *pescatorea'num*. White. Bourbon.
„ *polysta'chys*. Whitish-green. 1889. Syn. *A. Kimballianum*.
„ *polysta'chyum* (many-spiked). Peru. 1840.
„ *primuli'num* (G. C., 1890, vii. 388). Madagascar.
„ *ri'ngens*. Yellowish-white. Cameroons. 1878. Syn. *Listrostachys*.
„ *rostella're* (G. C., 1885, xxiii. 726). Comoro Islands.
„ *rothschildia'num* (G. C., 1903, xxxiv. 131, f. 51). White. Uganda.
„ *sanderia'num* (G. C., 1888, iii. 168, 395). White. Comoro Islands. 1888.
„ *Scheffle'ri*. Reddish-brown.
„ „ *vi'rens* (Orch., i. 70). German E. Africa.
„ *scottia'num* (G. C., 1879, x. 556). White. Comoro Islands. 1878.
„ *Sede'ni*. E. Trop. Africa. 1878. Syn. *Listrostachys Sedeni*.
„ *sesquipeda'le* (B. M., t. 5113). 2. White. Madagascar. 1857.
„ *Smith'ii* (K. B., 1895, 37). Brownish. Kilimanjaro, E. Trop. Africa.
„ *stylo'sum* (K. B., 1895, 194). Allied to *A. apiculatum*. Madagascar.
„ *subula'tum*. White. Sierra Leone. 1832.
„ *supe'rbum*. Green; lip white. Madagascar.
„ *te'nue* (G. C., 1852, p. 390). Syn. *A. purpurascens*.
„ *teretifo'lium*. White. Sierra Leone.
„ *tridactyli'tes* (G. C., 1888, iv. 34). Buff. Sierra Leone. 1888.

ANGUILLA'RIA. (From *anguilla*, an eel; in reference to the twisted seeds. Nat. ord. *Melanths* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Veratrum.)

Herbaceous plants, requiring a little protection in winter; division of roots, and cuttings, under a hand-light; peat and loam.

A. biglandulo'sa (two-glanded). See A. DIOICA.
,, *dioi'ca* (dioecious). 1. Purple. May. New South Wales. 1826.
,, *i'ndica* (Indian). See IPHIGENIA INDICA.

ANGULO'A. In honour of *Angulo*, a Spanish naturalist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Stove orchids, requiring the same culture as Angræcum.

A. Clifto'ni (Clifton's). Lemon-yellow, purple. Colombia. 1910.
,, *Clowe'sii* (Clowes'). 1½. May. Yellow and white. Colombia. 1842.
,, ,, *flo'ribus fla'vis* (Clowes' straw-coloured). 1½. May. Pale yellow. 1845.
,, *du'bia*. White, blotched with purple. Columbia. 1882.
,, *ebu'rnea*. White, lip spotted with pink. New Grenada.
,, *grandiflo'ra* (large-flowered). See STANHOPEA BUCEPHALUS.
,, *interme'dia*. Garden hybrid. 1888.
,, *Ruckе'ri* (Rucker's). 1½. May. Yellow and crimson. 1845.
,, ,, *a'lba*. White. 1888.
,, ,, *me'dia*. Yellow, spotted crimson, lip crimson. Colombia. 1887.
,, ,, *retu'sa*. Lemon, blotched purple. 1883.
,, ,, *sangui'nea*. Red. May.
,, *supe'rba* (superb). See ACINETA HUMBOLDTII.
,, *unifio'ra* (one-flowered). May. Cream-coloured. Peru. 1843. There is a variety of this with pink flowers.

ANGU'RIA. One of the Greek names for the cucumber. Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 21-*Monœcia*, 2-*Diandria*.)

Tropical evergreen climbers; seed and cuttings; peat and loam. Summer temp., low, or may be grown in the open; winter, 55° to 60°.

A. makoya'na (Makoy's). See GURANIA.
,, *peda'ta* (pedate). 20. Yellow. July. S. Amer. 1820.
,, *triloba'ta* (three-lobed). 20. Pink. July. Carthage. 1793.
,, *trifolia'ta* (three-leafleted). 10. Yellow. July. St. Domingo. 1793.
,, *umbro'sa* (shady). 10. Yellow. July. S. Amer. 1827.
,, *Warscewi'czii* (B. M., t. 5304).

ANHALO'NIUM. (From *an*, without, and *helos*, a nail or spine. Nat. ord. Cactaceæ.)

A. Englema'nni (Ill. Hort., 1869, t. 605 A). Mexico.
,, *fissura'tum*. See A. ENGLEMANNI.
,, *Kotchube'yi*. Mexico.
,, *Lewi'nii*. See A. WILLIAMSII LEWINII.
,, *prisma'ticum*. ½. Mexico.
,, *Willia'msii* (Gfl., 1888, p. 411). Mexico.
,, ,, *Lewi'nii* (Gfl., 1888, 410–11). Mexico.

A'NIA. (After a Roman beautiful widow. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Now referred to Tainia.)

A. bico'rnis (two-horned). ½. March. Yellow, green. Ceylon. 1841. Cultivated like Anguloa. See TAINIA BICORNIS.

ANIGOZA'NTHOS. (From *anoigo*, to expand, and *anthos*, a flower; in reference to the branching expansion of the flower-stalks. Nat. ord. *Bloodworts* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Greenhouse herbaceous plants; division of the roots in spring; loam, one part to three of peat. Grow in cool greenhouse in summer, and a temperature of 40° to 45° in winter.

A. bi'color (two-coloured-*flowered*). 3. Scarlet, green. May. Swan River. 1837.
,, *cocci'nea* (scarlet). See A. FLAVIDA.
,, *fla'vida* (yellowish-green-*flowered*). 3. Yellow. July. N. Holland. 1808.
,, *fuligino'sa* (sooty). See MACROPODIA FUMOSA.
,, *hu'milis* (dwarf). Brown. Swan River.
,, *Mangle'sii* (Mr. Mangle's). 3. Green. May. Swan River. 1833.
,, ,, *angustifo'lia* (narrow-leaved). 3. Green, red. July. N. Holland. 1836.
,, *pulche'rrima* (beautiful). 2½. Yellow, white. Swan River. 1840.
,, *ru'fa* (rusty). 2. Yellow, red. June. N. Holland. 1824.
,, *tyria'nthina*. See A. RUFA.

ANIMAL MATTERS, without any exception, are beneficial as manures; for they all yield, during putrefaction, gases and soluble substances, that are imbibed greedily by the roots of plants. That this is the case, affords no cause for wonder, because animal matters and vegetable matters are alike compounded of carbon, hydrogen, oxygen, and nitrogen, with a small addition of saline matters. The general consideration of MANURES will be found under that title, and other relative information under the heads DUNG and VEGETABLE MATTERS; and in this place, we shall confine our attention to some of the most available of strictly animal matters. See also the article BONES.

Blubber, or fat of the whale, contains train-oil, composed of—

Carbon	68.87
Hydrogen	16.10
Oxygen	15.03

with a little animal skin and muscle. 40 gallons of train-oil, mixed with 120 bushels of screened soil, grew 23 tons of turnips per acre, on a soil where 40 bushels of bones broken small, and 80 bushels of burnt earth, produced only 21 tons.

Fish, generally, such as sprats, herrings, pilchards, five-fingers, and shell-fish, owe their powerful fertilising qualities not only to the oil they contain, but also to the phosphate of lime in their bones. From 25 to 45 bushels per acre are the extreme quantities to be applied broadcast; but if in the drills, with the crop, 16 bushels are ample. They are beneficial to all the gardener's crops, but especially to asparagus, parsnips, carrots, beets, onions, and beans. Shell-fish should be smashed before being applied.

Blood is a very rich manure, and has been applied with especial benefit to vines and other fruit-trees. The blood of the ox contains about 80 per cent. of water, and 20 per cent. solid matter. The latter contains, in 100 parts, when dried—

Carbon	51.950
Hydrogen	7.165
Azote	17.172
Oxygen	19.295
Ashes	4.418

The ashes contain various salts, as chloride of sodium (common salt), phosphate of lime, with a little oxide of iron. *Sugar-baker's skimmings* owe their chief fertilising qualities to the blood used in clarifying the sugar, and which is combined with vegetable albumen, and extractive.

Woollen Rags, cut into very small pieces, are a good manure, decomposing slowly, and benefiting the second as much as the first crop. Hops and turnips have been the crops to which they have been chiefly applied. Half a ton per acre is a fair dressing. Wool is composed of—

Carbon	50.653
Hydrogen	7.029
Azote	17.710
Oxygen } Sulphur }	24.608

It leaves a very slight ash, containing minute quantities of muriate of potash, lime, and probably phosphate of

lime. *Feathers and hair* closely resemble it in their components. *Horns* are composed of—

Carbon	51.578
Hydrogen	6.712
Azote	17.284
Oxygen, Sulphur	24.426

besides minute proportions of sulphate, muriate and phosphate of potash, phosphate of lime, and other less important matters.

Shells.—Those of the following are thus composed:—

	Phosphate of Lime.	Carbonate of Lime.	Animal Matter.
Oyster	1.2	98.3	0.5
Lobster	7.0	63.0	30.0
Hen's eggs	5.7	89.6	4.7

They have all been found good, in a pounded form, as manures for turnips, and must be for all other plants, and on all soils where calcareous matters are deficient.

ANISACA'NTHA. (From *anisos*, unequal, and *akantha*, a spine. Nat. ord. *Chenopods* [Chenopodiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Evergreen under-shrub; cuttings of young shoots, a little hard at bottom, in April; sandy loam. Greenhouse temperature.

A. divarica'ta (straggling). 2. N. Holland. 1824.

ANISACA'NTHUS. (From *anisos*, unequal, and *aca'ntha*, a spine; but more probably refers to the genus *Acanthus*. Nat. ord. Acanthaceæ.)

Evergreen stove shrub. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, leaf-mould, and sand.

A. pu'milus (dwarf). ½. April. Mexico. 1820.

ANISA'NTHUS. (From *anisos*, unequal, and *anthos*, a flower. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

This is now a synonym of Antholyza. Greenhouse or frame bulbs, requiring protection in winter; offsets; peat and loam. Summer temp., 60° to 70°; winter, 40° to 45°.

A. Cuno'nia (Cunon's). 2. Scarlet. June. Cape of Good Hope. 1756.

„ *quadrangula'ris* (quadrangular). 2. Yellow. April. Cape of Good Hope. 1700.

„ *sple'ndens* (splendid). 2. Scarlet. June. Cape of Good Hope. 1828. See ANTHOLYZA CAFFRA.

A'NISE. *Pimpine'lla Ani'sum.*

Half-hardy annual, used for garnishing or seasoning. Sow during April, in pots, plunged in a hotbed; remove to a warm, light border in May. Thin the plants to six inches apart. The seed is ripe in August or September. It does not bear transplanting.

A'NISEED-TREE. *Illi'cium anisa'tum.*

ANISOCHI'LUS. (From *anisos*, unequal, and *cheilos*, lip. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Stove biennial; seeds in heat, or cuttings in sandy soil, in close frame, moderate stove temperature.

A. carno'sus (fleshy). 2. Lilac. August. E. Ind. 1778.

ANISO'MELES. (From *anisos*, unequal, and *melos*, a member. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Chiefly evergreen under-sbrubs; cuttings of stove species in April, in close frame with bottom-heat. Greenhouse species, under glass, without heat. Sow the annual in March, in heat; loam and peat. Temperature same for stove plants, 55° to 75°; winter, 50° to 60°. Greenhouse, winter, 45°.

A. furca'ta (forked). See CRANIOTOME VERSICOLOR.

„ *malaba'rica* (Malabar). 2. Violet. August. E. Ind. 1823.

„ *moscha'ta* (musk). 2. Purple. August. N. Holland. 1824.

„ *ova'ta* (ovate-*leaved*). 2. Pink. August. E. Ind. 1823. Stove annual.

ANISOPE'TALUM CAREYA'NUM. See BULBOPHYLLUM.

ANISO'PIA HORTI'COLA is a beetle which often attacks the rose-flowers about June. Its maggots live under turf, and feed on its roots.

ANISO'TES. (From *anisotes*, inequality; leaves unequal in size. Nat. ord. Acanthaceæ.)

Greenhouse evergreen shrub. Cuttings in sand, under a bell-glass, in a warm greenhouse. Fibrous loam, peat, and sand.

A. diversifo'lius (diverse-leaved). Flame-coloured or yellow. Socotra. 1908.

ANNUALS are plants which live but one year, and consequently have to be raised from seed every season. It is rather difficult to make quite a clear definition, for there are some which, though naturally annuals, may be perpetuated by propagation from cuttings—Mignonette is an example; and in addition to this the same plants will flower for two or three years if not allowed to ripen the seed. Then we have many biennials and perennials which may be treated as annuals, and it is in consequence of this that trouble occurs at flower-shows in the judging. The question is often asked, What is an annual, biennial, or perennial? Prizes being offered for so many varieties of either class, both exhibitors and judges are liable to fall into errors. Taking the Calliopsis (or Coreopsis) and Gaillardias in each case we have annuals, biennials, and perennials, but the perennials will flower the first year if sown early and raised under glass. Annuals may be divided into three classes—viz. hardy, half-hardy, and greenhouse. Hardy annuals may be sown in the open ground, where they are to flower. In some instances, as with Sweet Peas, Iberis, Saponaria calabrica, Centaureas, &c., may be sown in the autumn, but with most annuals February or March is quite early enough, and for succession they may be sown as late as May, or for autumn flowering sowings may be made up to the middle of June. The former system of growing annuals in rows, except when required for an edging, is not appreciated. Grown in circular patches with colours well divided they are much more effective. In sowing annuals the depth varies considerably. The larger seeds require to be well covered, especially those sown in the autumn. For small seeds sown in spring the ground may be worked down level and the seeds sown on the surface, then raked in. This should be done when the ground is in good condition—that is, not too wet or too dry. In most instances the seedlings will require thinning out, and it is essential that this should be done before the seedlings get drawn up thin through being crowded up together. Each patch or row should be clearly marked with a label or something to indicate where the seeds are sown. Birds are often troublesome. Some twigs stuck in round the patches or along the rows and dark thread twined about is a useful protection, and a good dusting of soot or lime will keep off slugs and other vermin.

Half-hardy Annuals are those which require to be raised under glass and well established before planting in the open ground. The time of sowing seeds is given under the various subjects, but the chief conditions are plenty of light without being fully exposed to bright sunshine, and careful attention to watering. Avoid sowing too thickly, and prick off as soon as large enough to handle, and in all cases put the seedlings down, allowing the seed leaves to just clear the soil, and do not use cold soil. In all cases where the seedlings have been kept too close and warm they will suffer when exposed; full exposure will secure short, sturdy growth, and when planting out time comes they will not suffer from the change.

Greenhouse Annuals. Of these the *Celosias*, *Gomphrenas*, and *Torenia Fournieri* may be given as examples. Sown in February in heat and grown on, they flower through the summer in the greenhouse, and though formerly given more heat the Celosias may be used for bedding in warm situations, and many other subjects which at one time were grown in heat are found to do well in the open during the summer.

ANNE'SLIA (*grandiflo'ra*). Syns. of *Calliandra grandiflora* and *A. spinosa* of *Euryale ferox*.

ANO'DA. (From *anodas*, impervious; cells more united than in Sida. Nat. ord. Malvaceæ.)

Half-hardy shrubs from cuttings during the summer in close frame, and annuals from seeds in a cold frame.

A. crenatiflo'ra. Mexico. Syn. *A. parviflora.*
„ *crista'ta* (crested). 3. Purple. July. Mexico. 1725.
„ *dillenia'na* (Dillenian). See A. CRISTATA.
„ *lavateroi'des* (Lavatera-like). 3. Purple. Mexico.
„ *puni'cea* (purple). 3 to 5. Purple. Mexico.
„ *Ochse'nii.* See ABUTILON OCHSENII.
„ *hasta'ta.* White or purple. Annual. Mexico. 1799.
„ *Wri'ghtii.* Purple. Annual. New Mexico.

ANODO'NTEA. (From *a*, not, and *odontos*, a tooth; in reference to the stamens. Nat. ord. *Cruciferæ* [Cruciferæ]. Linn. 15-*Tetradynamia.* Allied to Alyssum, to which they are now referred.)

For general management, see ALYSSUM.

A. dasyca'rpa (thick-fruited). ½. Yellow. July. Siberia. 1819.
„ *ede'ntula* (toothless). 1. Yellow. July. Hungary. 1820. See ALYSSUM GEMONENSE.
„ *halimifo'lia* (purslane-leaved). ½. White. June. South of Europe. 1820.
„ *macroca'rpa* (long-fruited). ½. White. June. France. 1823.
„ *obova'ta* (obovate). ½. Yellow. June. France. 1830.
„ *rupe'stris* (rock). ½. White. June. Naples. 1825.
„ *spino'sa* (thorny). ½. White. June. South of Europe. 1683.

ANŒCTOCHI'LUS. (From *anoikios*, open, and *cheilos*, a lip; in reference to the spreading apex of the lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria.*)

Stove terrestrial orchids, and a great contrast to most of the order, being more remarkable for their beautiful foliage rather than showy flowers. The ovate leaves are beautifully reticulated and the colours very bright. They are rather difficult to cultivate, requiring a close, moist atmosphere potted in sand, sphagnum, peat, powdered charcoal, and a little good fibrous loam may be added, drainage should consist of broken crocks and lumps of charcoal; few of them grow more than about six inches high, and having spreading rhizomes require to be regulated and pegged to the surface. Propagated from the spreading stems, which should be cut off quite close below a joint. They are usually grown in glass cases over a bed of sphagnum moss or under large bell-glasses. The temperature may vary from 55° to 66° in winter, and in the spring or growing season may rise to 80°. In Ceylon they grow in the hedgerows, and the natives call *regalis* "The King of the Woods."

A. arge'nteus pi'ctus. See PHYSURUS PICTUS.
„ *argyræ'us.* Brazil. Physurus (?).
„ *argyroneu'rus.* Java.
„ *Boy'lei.* Olive-green, with golden veins. India.
„ *Bulle'nii.* Leaves coppery-red striped. Borneo. 1861.
„ *chryso'prasus.* Coppery and green veined. Java.
„ *conci'nnus.* Dark olive-green, with coppery-red stripes. Assam.
„ *dawsonia'nus.* See HÆMARIA DAWSONIANA.
„ *Day'i.* Syn. *Dossinia marmorata Dayi.*
„ *Domi'nii.* Hybrid between *Goodyera discolor* and *A. Frederici-Augusti.*
„ *Eldora'do.* Dark green, with lighter veins. Central America.
„ *Frederi'ci-Augu'sti.* Dark green, with broad orange and green stripes.
„ *Herio'tii.* Dark mahogany colour with shadowy network. India. 1881.
„ *hierogly'phicus.* Dark green, with silvery-grey blotches. Assam.
„ *inscri'ptus* (Bull. Cat., 1878, 154). Olive-green, with reddish-golden veins. Assam.
„ *interme'dius.* Dark olive-veined with gold.
java'nicus. Dark olive-green, with lighter blotches. Java.
„ *Lansbe'rgiæ* (Ill. Hort., 1887. t. 1). Dark green, lighter green central nerves. Malaya.
A. latimacula'tus. See A. ROXBURGHII.
„ *lobbia'nus* (Fl. Ser., t. 519). See A. ROXBURGHII.
„ *Lo'wii.* See DOSSINIA MARMORATA.
„ *magni'ficus.* Gold stripe down centre, and veined with gold. Borneo.
„ *Meine'rti.* See DOSSINIA MEINERTI.
„ *Næ'vi* (J. H. F., 1899, 665). Light green, with blotches of light yellowish-green.
„ *nevillea'na.* Green, with orange-yellow veins.
„ *ordia'nus.* Vivid green, lined with golden veins. Java. 1869.
„ *orna'tus* (Bull. Cat., 1878, 154). Velvety olive-green, with reddish golden veins.
„ *Ortgie'sii.* See PHYSURUS ORTGIESII.
„ *pi'ctus.* See PHYSURUS PICTUS.
„ *querceti'colus.* See PHYSURUS QUERCETICOLUS.
„ *rega'lis.* Velvety green, with a network of gold. Ceylon. 1836. Syn. *A. setaceus.*
„ „ *a'lba-margina'tus.* Leaves with white edges.
„ „ *corda'tus.* Leaves with broad gold markings.
„ „ *grandifo'lius.* Light green, with a golden network.
„ „ *inorna'tus* (B. M., t. 5208). Dark, rich velvety, with slight markings.
„ „ *pi'ctus.* Leaves with central golden stripe. N. India.
„ *Reinwa'rdtii.* Velvety bronze, with golden lines. Java.
„ *Roxbu'rghii.* Dark velvety green, striated with lines of silver. India.
„ *Rucke'ri.* Bronzy green, with six rows of distinct spots. Borneo. 1861.
„ *sanderia'nus* (G. C., 1895, xviii. 484). See MACODES SANDERIANA.
„ *Schœlle'ri.* Silver-striped leaves. Costa Rica. 1862.
„ *seta'ceus.* See A. REGALIS.
„ *Siesma'yeri* (Jard., 1899, 190). Brownish velvety, self-coloured leaves.
„ *specio'sus.* Dark green, mottled white or pale green. Central America.
„ *specta'bilis.* Netted with gold. Borneo.
„ *stria'tus.* See ZEUXINE REGIA.
„ *Turne'ri.* Rich bronze, golden reticulated.
„ *Vei'tchii.* See MACODES VEITCHII.
„ *Woga'ni* (J. H. F., 1899, 665). Dark green, with brown shading and silvery-white lines.
„ *xanthophy'llus.* See A. FREDERICI-AUGUSTI.
„ *zebri'nus.* Deep olive-green, with copper-coloured veins. India. 1863.

ANOIGA'NTHUS. (From *anigo*, to expand, and *anthos*, flower. Nat. ord. Amaryllideæ.) Greenhouse bulb.

A. breviflo'rus. 1. Bright yellow. Natal. 1888. Syns. *A. luteus* and *Cyrtanthus lutescens.*

ANOMATHE'CA. (From *anomos*, singular, and *theca*, a capsule, or seed-pod. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia.*) By some authors referred to Lapeyrousia.

Very neat, Ixia-like, dwarf, bulbous plants, which flower in the open borders all summer, in any light, garden-soil; ripen seeds freely, and require the protection of a frame in winter. Propagated from seeds and offsets; light, sandy loam and common soil; bulbs require, in most places, to be kept in a frame, or in stored bags, during winter. *A. crue'nta*, especially, is well fitted for a flower-bed, or for the window-sill.

A. crue'nta (bloody). 1. Crimson. July. Cape of Good Hope. 1830.
„ *ju'ncea* (rushy). 1. Lilac. May. Cape of Good Hope. 1791. Syns. *Gladiolus polystachus.* Andr. Rep., t. 66. *G. excisus.* Jacq. H. Schœn., t. 491.

ANOMOCHLO'A. (From *anomos*, lawless, and *chloa*, grass, referring to its differing from other grasses in having four stamens instead of three, which is the usual number.)

Perennial grass requiring stove treatment; may be raised from seeds or increased by divisions. Pot in rich loam.

A. marantoi'dea (B. M., t. 5331). 1. Green. Brazil. 1862.

ANO'NA. (From *menona*, its local name in Banda. Nat. ord. *Anonads* [Anonaceæ]. Linn. 13-*Polyandria*, 6-*Polygamia*.)

Tropical evergreen trees and shrubs; cuttings of ripened wood, in strong heat, under a glass, in April; rich loam. Summer temp., moderate; winter, 55° to 65°.

A. amplexicau'lis (stem-clasping). 12. Yellow, green. Mauritius. 1824.
„ *asia'tica* (Asiatic). 12. Yellow, green. Asia. 1816.
„ *Cherimo'lia* (Cherimoyer). 18. Brown. August. S. Amer. 1739.
„ *cine'rea* (grey). 15. Yellow, green. W. Ind. 1818.
„ *gla'bra* (smooth-fruited). 16. Brown. August. Carolina. 1774.
„ *laurifo'lia* (laurel-leaved). 15. Brown. W. Ind. 1773.
„ *longifo'lia* (long-leaved). See DUGUETIA LONGIFOLIA.
„ *mexica'na* (Mexican). 12. Yellow, green. Mexico. 1823.
„ *muco'sa* (mucous). See ROLLINIA SIEBERI.
„ *murica'ta* (muricated. The sour sop). 10. Green, yellow. W. Ind. 1656.
„ *obtusifo'lia* (blunt-leaved). See ROLLINIA SIEBERI.
„ *paludo'sa* (marsh). 4. Green. Guiana. 1830.
„ *palu'stris* (marsh. The cork-wood). 15. Yellow. W. Ind. 1731.
„ *puncta'ta* (spotted). 12. Yellow, green. Trinidad. 1818.
„ *reticula'ta* (netted). 20. White, green. S. Amer. 1690.
„ *rhiza'ntha*. 15. Red. Brazil. 1882.
„ *senegale'nsis* (Senegal). 10. Yellow, green. Guinea. 1824.
„ *squamo'sa* (scaly. The sweet sop). 20. White, green. S. Amer. 1731.

ANO'NYMOS BRACTEA'TA. See ZORNIA BRACTEATA.

ANOPLA'NTHUS. Syn. of *Phelypæa*.

ANOPLOPHY'TUM. See SCHLUMBERGERIA and TILLANDSIA.

ANO'PTERUS. (From *ano*, upwards, and *pteris*, a fern; alluding to the semblance of the leaves. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

A greenhouse evergreen shrub; cuttings in close frame with bottom-heat; sandy loam and peat. Usually in a cold pit or greenhouse, but should be tried on a wall, with slight winter protection.

A. glandulo'sus (gland-leaved). 3. December. White and pink. Van Diemen's Land. 1846.

ANRE'DERA. (Nat. ord. Chenopodiaceæ.)

Greenhouse climber, fleshy, light green leaves and long racemes of white flowers, from cuttings in spring or summer.

A. sca'ndens. See A. SPICATA.
„ *spica'ta*. White. Texas. 1889.

ANSE'LLIA. (In honour of *Mr. Ansell*, the botanical collector who accompanied the ill-fated Niger Expedition. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Aganisia.)

Stove orchids. Divisions; turfy loam, peat, and good drainage. Temp. in summer, 60° to 85°, with plenty of moisture at root and top; winter, 55° to 60°, and kept dry.

A. africa'na (African). 3. Brown, green, and yellow. February. Fernando Po. 1844.
„ *confu'sa* (Lind. 2, t. 36). Syn. *A. africana*.
„ *congoe'nsis* (Lind. 2, t. 64). Congo.
„ *gigante'a*. Yellow, brown. Natal. 1847.
„ „ *citri'na*. Lip orange-citron.
„ „ *lu'tea*. Light yellow. Natal.
„ *hu'milis* (Bull. Cat., 1891, 3). Zambesi.
„ *nilo'tica*. Dwarfer than *A. africana*, with brighter flowers. E. Trop. Africa.

ANT. (*Formi'ca*). To drive this insect away, dig up its nests and haunts, and mix the earth with gas-lime. To kill it, pour over the nest, at night, a strong decoction of elder-leaves. To trap it, smear the inside of a garden-pot with honey, invert it over the nest, and when crowded with them, hold it over the steam of boiling water; or turn a flower-pot, with its hole stopped, over the nest. The ants build up into it, and the whole colony may be taken away in a shovel. They may be kept from ascending standard and espalier trees, by tying a piece of wool round the stems and the supporters. If fed with arsenic and treacle they will feed freely, and not killed will emigrate. With early forced peaches they are very destructive, as they bite out the stamens and pistils before the fruit is set, but a good feed of arsenic will effectually drive them away. Those not killed will be driven away.

ANTENNA'RIA. (From *antennæ*, feelers; in reference to the downy heads of the seeds. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Root division and seeds; common, light soil. In most places the Nepaul species require the protection of a cold pit in winter.

A. alpi'na (alpine). 1. Pink. June. Alpine. Europe. 1775.
„ *carpa'thica* (Carpathian). 1. Pink. June. Carpathian Mountains. 1775.
„ *conto'rta* (twisted-leaved). See ANAPHALIS CONTORTA.
„ *dioi'ca* (dicœcious). 1. Pink. June. Britain. 1821.
„ „ *hyperbo'rea* (northern). 1. Whitish. June. Isle of Skye. 1821.
„ „ *tomento'sa*. Summer. Silvery-leaved. Syn. *A. candida*.
„ *margarita'cea* (pearly). See ANAPHALIS MARGARITACEA.
„ *plantagi'nea* (plantain-leaved). 1. White. July. Virginia. 1759.
„ *tripline'rvis* (three-nerved). 1. White. August. Nepaul. 1823. See ANAPHALIS TRIPLINERVIS.

ANTHACA'NTHUS. (From *anthos*, a flower, and *Acanthus*. Nat. ord. Acanthaceæ.)

Stove evergreens. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

A. acicula'ris (needle-shaped). 2. Red. July. Jamaica. 1821.
„ *spino'sus* (spiny). 3. July. S. Amer. 1733.

A'NTHEMIS. Chamomile. (From *Anthemon*, a flower; in reference to the great number of flowers produced. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

With a few exceptions, they are hardy plants. Division of plant, and seeds; common soil. The single-flowering *A. no'bilis* is superior to the double for medicinal properties.

HERBACEOUS PERENNIALS.

A. alpi'na (alpine). 1. White. July. Austria. 1824.
„ *apiifo'lia* (parsley-leaved). See A. PARTHENIOIDES.
„ *Barrelie'ri* (Barrelier's). 1. White. August. Italy. 1825. See ACHILLEA BARRELIERI.
„ *biebersteinia'na* (Gfl., t. 936). Yellow.
„ „ *marschallia'na*. 1 to 2. Yellow. Caucasus. 1816.
„ „ *rudolphia'na*. 1. Yellow. July. Caucasus. 1824.
„ *carpa'thica* (Carpathian). 1. White. June. Carpathia. 1820.
„ *Chamomi'lla* (chamomile). 1. White. July. South of Europe. 1807.
„ *coronopifo'lia* (buck-horn-leaved). 1. White. May. Spain. 1818.
„ *floribu'nda* (free-flowering). 1. Pure white. 1908.
„ *fruticulo'sa* (shrubby). 2. White. August. Caucasus. 1820.
„ *globo'sa* (globose). See ZALUZANIA GLOBOSA.
„ *grandiflo'ra* (great-flowered). 1. White. July. South of Europe. 1825.
„ *ibe'rica* (Iberian). 1. White. August. Iberia. 1820.
„ *incrassa'ta* (thick-peduncled). See ANACYCLUS CLAVATUS.
„ *Kitaibe'llii* (Kitaibel's). See A. MONTANA.
„ *macedo'nica* (Gard., 1894, xlv. 519).
„ *marshallia'na* (Marshall's). See A. BIEBERSTEINIANA.
„ *melampo'dina* (black-footed). 1. White. August. Egypt. 1819.
„ *monta'na* (mountain). 1. Purple. July. Italy. 1759.
„ *parthenioi'des*. Syn. *A. apiifo'lia*.
„ *petræ'a* (rock). See A. CARPATHICA.

A. pube'scens (soft-haired). See ANACYCLUS CLAVATUS.
„ *Pyre'thrum* (pellitory of Spain). See ANACYCLUS PYRETHRUM.
„ *rige'scens* (rigescent). 2. White. August. Caucasus. 1805.
„ *rudolphia'na* (Rudolph's). See A. BIEBERSTEINIANA.
„ *saxa'tilis* (rock). See A. MONTANA.
„ *tincto'ria* (dyer's). 2. Yellow. June. Britain.
„ *tomento'sa* (downy). 1. White. July. Levant. 1795.

ANNUALS.

A. Aizo'on. See ACHILLEA AGERATIFOLIA.
„ *alti'ssima* (tallest). 4. White. July. South of Europe. 1731.
„ *au'rea.* 1. Yellow. August. Levant. 1570.
„ *austri'aca* (Austrian). 1. White. August. Austria. 1759.
„ *chi'a* (Chian). 2. White. June. Chio. 1731.
„ *Co'ta* (cota). 1. White. April. Italy. 1714.
„ *discoi'dea* (discoid). See A. TINCTORIA.
„ *fa'llax* (uncertain). See A. FUSCATA.
„ *fusca'ta* (brown-scaled). 1. White. July. Portugal. 1805.
„ *mari'tima* (sea). 1. White. July. Mediterranean. 1800.
„ *mi'xta* (mixed). 1. White. August. France. 1731.
„ *mucronula'ta* (hard-pointed). See ANACYCLUS CLAVATUS.
„ *ruthe'nica* (Russian). 2. White. June. Taurida. 1823.
„ *Triumfe'tti* (Triumfetti's). 1. Pale yellow. August. Switzerland. 1819.

EVERGREENS.

A. cre'tica (Cretan). ½. August. Mediterranean region. 1729.
„ *cupania'na.* 1. White. August. Barbary. 1818. Biennial.
„ *no'bilis* (noble. Common chamomile). 1. White. August. Britain.
„ „ *flo're-ple'no* (double). 1. White. August. Britain.
„ *puncta'ta* (dotted). See A. CUPANIANA.

See CHAMOMILE.

ANTHE'PHORA. (From *anthos*, a flower, and *phoreo*, to bear. Nat. ord. *Grasses* [Gramineæ]. Linn. 3-*Triandria*, 2-*Digynia*.)

Seed in March or April. Peat and loam. They are pretty, and with the exception of requiring a greenhouse in winter, as easily managed as any other grass.

A. e'legans (elegant). Apetal. August. Mexico. 1776.
„ *villo'sa* (soft-haired). See A. ELEGANS.

ANTHE'RICUM. (From *anthos*, a flower, and *kerkos*, a hedge; in reference to the tall flower-stems. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Few orders of plants are less ably arranged by men of science, and still less understood by the gardener, than the "beautiful" Order of Lilies. Some are hardy, others are mostly low, greenhouse, herbaceous plants, with tuberous and fleshy-bundled roots. Propagated by suckers, offsets, and seeds. Sandy loam, with abundance of drainage, and requiring the frame or greenhouse in winter.

A. albucoi'des (albuca-like). See ORNITHOGALUM SUAVEOLENS.
„ *Biche'ti* (Jard., 1902, 609, f. 126 B.).
„ *bipeäuncula'tum* (two-peduncled). See A. TRIFLORUM.
„ *canalicula'tum* (channelled-leaved). 1. White and green. May. Cape of Good Hope. 1774.
„ „ *ru'fum* (rusty). 1. Copper. June. Cape of Good Hope.
„ *cæru'leum* (bluish). See PASITHEA CÆRULEA.
„ *cilia'tum* (eye-lashed). 2. Yellow. May. S. Africa. 1823.
„ *cro'ceum* (saffron). 1. White. June. Georgia. 1800.
„ *echeandioi'des* (B. M., t. 6809). Bright yellow. Mexico.
„ *ela'tum* and *ela'tum variega'tum.* See CHLOROPHYTUM ELATUM.
A. falca'tum (sickle-shaped). 1. White. July. Cape of Good Hope. 1825.
„ *filifo'lium* (thread-leaved). See URGINEA FILIFOLIA.
„ *filifo'rme* (thread-form). See BULBINELLA TRIQUETRA.
„ *flexifo'lium* (zigzag-leaved). 1. White. June. Cape of Good Hope. 1795.
„ *floribu'ndum* (many-flowered). See BULBINELLA LATIFOLIA.
„ *fra'grans* (sweet-scented). See URGINEA FRAGRANS.
„ *frute'scens.* See BULBINE CAULESCENS.
„ *Gerra'rdi.* ¾. White, green. Natal. 1876.
„ *graci'llimum.* 4. White. 1879.
„ *graminifo'lium* (grass-leaved). See A. UNDULATUM.
„ *graptophy'llum.* ½. White. Summer. Socotra. 1882.
„ *hirsu'tum* (hairy). 1. White. July. Cape of Good Hope. 1820.
„ *hi'spidum.* 1. White. May. S. Africa. 1774.
„ *Hoffma'nnii* (Gartenwelt, viii. 501). E. Africa.
„ *Hooke'ri.* See BULBINELLA HOOKERI.
„ *Lilia'go.* Syns. *Phalangium* and *Watsonia Liliago.*
„ *Lilia'strum* and var. *ma'jus.* See PARADISEA LILIASTRUM.
„ *longifo'lium* (long-leaved). 1. White. July. Cape of Good Hope. 1824.
„ *makoya'num* (Gfl., t. 1007). 2 to 3. White. Leaves striped and margined with white.
„ *pilo'sum* (long-haired). See ORNITHOGALUM HISPIDUM.
„ *plumo'sum* (feather-petaled). See BOTTIONEA THYSANOTHOIDES.
„ *pomeridia'num* (afternoon). See CHLOROGALUM POMERIDIANUM.
„ *ramo'sum.* White. Europe.
„ *revolu'tum* (rolled-back). 2. White. October. Cape of Good Hope. 1731.
„ *sca'brum* (rough). 1. Yellow. June. S. Africa. 1825.
„ *sero'tinum* (late-flowering). See LLOYDIA ALPINA.
„ *spira'le* (spiral). See ERIOSPERMUM SPIRALE.
„ *squa'meum* (scaly). See A. HISPIDUM.
„ *sulphu'reum* (sulphur). See ORNITHOGALUM PYRENAICUM.
„ *trifo'rum* (three-flowered). 1. White. September. Cape of Good Hope. 1782.
„ *undula'tum* (waved). 1. White. June. Cape of Good Hope. 1825.
„ *variega'tum.* Syns. *A. Williamsii* and *Phalangium argenteolineare.* See CHLOROPHYTUM ELATUM.
„ *vesperti'num* (evening). See A. FALCATUM.
„ *villo'sum* (long-haired). See GAGEA BOHEMICA.

ANTHOCE'PHALUS. (From *anthos*, a flower, and *kephale*, a head; the flowers are in compact heads. Nat. ord. Rubiaceæ.)

Evergreen stove tree. Cuttings of half-ripe wood in sandy soil in bottom-heat. Loam, peat, and sand.

A. morindæfo'lius (Morinda-leaved). 20. Orange. E. Ind.

ANTHOCE'RCIS. (From *anthos*, a flower, and *kirkis*, a ray. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Cuttings of ripened wood in April, placed in sandy soil under a glass, set at first in a cool place, and afterwards placed in a mild bottom-heat. Sandy loam and peat, well drained. Intermediate temperature.

A. a'lbicans (whitish-leaved). 3. White. June. N. Holland. 1825.
„ *floribu'nda.* 3. White. N. S. Wales.
„ *ilicifo'lia* (holly-leaved). See A. VISCOSA.
„ *litto'rea* (shore). 3. White. June. N. Holland. 1803.
„ *visco'sa* (clammy). 6. White. May. N. Holland. 1822.

ANTHOCLEI'STA. (From *anthos*, a flower, and *cleistos*, shut up. Nat. ord. *Loganiads* [Loganiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cuttings in heat; peat and loam. Summer temp., 65° to 80°; winter, 55° to 66°.

A. insi'gnis (K. B., 1895, 150, 158). Yellow. Swaziland.
„ *macrophy'lla* (long-leaved). 20. White. Sierra Leone. 1820.

A'NTHODON. (From *anthos*, a flower, and *odon*, a tooth. Nat. ord. Celastraceæ. Linn. 3-*Triandria*, 1-*Monogynia*.)

Tropical evergreen shrubs; cuttings of half-ripened wood, in close frame with bottom-heat; sandy loam and peat. Temperature as for preceding genus. Now referred to Salacia.

A. elli'pticum (elliptic). 12. Yellow, green. Rio Janeiro. 1818.

,, *panicula'tum* (panicled). 12. Yellow, green. Rio Janeiro. 1818.

ANTHOLO'MA. (From *anthos*, a flower, and *loma*, a fringe. Nat. ord. Tiliaceæ. Linn. 13-*Polyandria*, 1-*Monogynia*.)

A stove evergreen shrub; cuttings of ripe wood, under glass, in sand and in heat; light, rich loam. Temperature as for preceding.

A. monta'na (mountain). N. Caledonia. 1810.

ANTHOLY'ZA. (From *anthos*, a flower, and *lyssa*, rage; in reference to the opening of the flower like the mouth of an enraged animal. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Bulbs requiring the assistance of a frame or greenhouse in winter, or to be planted deep enough beyond the reach of frost in a dry, sheltered situation; light, sandy soil; offsets. Syn. *Anisa'nthus*.

A. æthio'pica (Ethiopian). 3. Scarlet and green. June. Cape of Good Hope. 1759.

,, ,, *bi'color*. 2. Flowers nodding, upper half scarlet, lower yellowish-green. May. Cape of Good Hope. Syn. *A. æthiopica minor*.

,, ,, *ri'ngens*. Red, yellow. November. Cape of Good Hope. Syn. *A. vittigera*.

,, *ca'fra*. Syn. *Anisanthus splendens*.

,, *Cuno'nia*. Syn. *Anisanthus Cunonia*.

,, *fuca'ta*. 2 to 2½. Bright red-yellow. S. Africa. 1818.

,, *monta'na*. See GLADIOLUS MONTANUS.

,, *panicu'lata ma'jor* (Gard., 1904, lxvi. 348).

,, *quadrangula'ris*. 2. Yellow-red. April. Cape of Good Hope. 1760.

,, *Schweinfu'rthii* (G. C., 1894, xv. 588). Bright red and yellow. Abyssinia.

,, *spica'ta*. See GLADIOLUS MILLERI.

,, *tubulo'sa* (Andr. Rep., t. 174). See WATSONIA ALETROIDES.

ANTHOMY'IA, a genus of fly very injurious to the gardener. The principal species are the following:—

A. cepa'rum (onion-fly).

In light soils, especially, the onion is liable to suffer from the grub or larva of this fly (*Anthomy'ia cepa'rum*, or *Scato'phaga cepa'rum* of some writers). The gardener who sees his young onions, when about the thickness of a straw, turning yellow, and the leaves sunk down upon the ground, may at once know that they are the victims of this insect. Even when of larger growth the onion is still liable to suffer from its attacks, and even up to the time of the bulb's full growth. If the outer coats of a young onion thus destroyed are stripped off, the grub is at once detected; but if the onion is older, the grubs are often numerous. In both cases they will be found feeding on the very heart of the onion. The grub varies from about a quarter to half an inch long, is fleshy, shining, whitish, cylindrical, tapering from the head to the tail, and divided into twelve segments. The pores through which it breathes are yellow, and in the first segment. In about three weeks from the time of being hatched it changes into a chestnut-coloured, oval puparium, or case, within which is the real pupa. From this, in about a fortnight, the perfect fly comes forth. of the size of the cross lines, and appearing as magnified in our drawing. This is the female, and is entirely of a pale, ashy colour, covered with black bristles. The male has a black line down the middle of the abdomen. The antennæ and legs are black; the wings are transparent, almost colourless, but iridescent pink and green. The female inserts her eggs within the leaf-sheaths of the onion, close to the ground. She continues to lay her eggs from May to September, producing several broods during that period. The latest brood remains in the pupa state through the winter, so that all old, decaying store-onions should be burnt up as spring advances. The best preventive of this grub is to sprinkle gas-lime between the rows of seeding-onions, its fumes being offensive to the fly. It may be well, also, to try spreading powdered charcoal among them in a similar way, for the fly is said to deposit her eggs in this powder as readily as in the onion-plants.

A. bra'ssicæ, cabbage-fly, says Mr. Curtis, is found through the summer, and is the parent of a maggot which has been known to lay waste whole fields of cabbages, by diseasing the roots on which they feed, as well as at the base of the stalk. Successive generations are feeding until November; the latter families lying in the pupa state through the winter, and most probably some of the flies survive that season, secreted in holes and crevices. When the cabbage-leaves assume a lead or yellow colour, and droop in midday from the effect of the sun, such plants, being diseased, should be taken up, carried away, and burnt, and brine or lime put into the holes. Gardeners, in some instances, have collected large quantities of the pupæ from the roots by drawing away the earth.

The male of *A. bra'ssicæ* is dark, bright grey, with black bristles; there is a black stripe half-way down the middle of the thorax, and a curved one on each side; the body has a more decided black stripe down the centre, and the segments are marked by a line of the same colour: legs and antennæ blackish; wings a little smoky. The female is pale, ashy-grey; the eyes remote, with a dark chestnut-coloured stripe on the crown; the wings are similar in tint to those of the foregoing species, but the insects are considerably smaller.—*Gardeners' Chronicle*.

A. lactu'cæ, lettuce-fly. Mr. Curtis says the larvæ make their appearance in August, but are abundant in September; they closely resemble those from the cabbage and turnips, being of a yellowish-white colour, tapering towards the head, which is pointed, and armed with two short, black claws at the nose. These maggots live in the involucra of different varieties of lettuce, feeding upon the seeds and receptacle; and when these are consumed, they wriggle themselves out backward, either to enter another seed-vessel or fall to the ground and become pupæ.

When the seed-stems are gathered and dying, the larvæ change to pupæ, called *shucks*, in Surrey, being bright chestnut-coloured, oval cases, which are rough, when examined under a lens, with two minute tubercles at the head, and two hooks, and a few other tubercles at the tail. In the course of May a few of the pupæ hatch; they have, however, been observed as early as April, and as late as July. The male is intense black, clothed with short hair and bristles; the eyes reddish-brown, and meeting above; face inclining to chestnut-colour, with a bright spot of the same on the crown; the fore part of the trunk bears four varying whitish stripes; the body is ashy-grey, the segments blackish, at the base a deep black; wings two, stained with black, and beautifully iridescent; the base and poisers ochreous, the nervures of the wings pitchy.

The female is entirely ashy-grey, and less bristly; the eyes not meeting on the crown, with a bright chestnut-coloured stripe between them; body oval, the apex cone-shaped; horns and legs blackish; wings and nervures lighter than in the male, which it equals in size.—*Ibid.*

ANTHO'NOMUS POMO'RUM. Apple Weevil. This insect shelters itself beneath the scurfy bark during the winter, awaiting the return of spring to renew its attacks upon the blossom-buds. "This insect," says Mr. Curtis, "commits great devastation in apple-orchards, by destroying the stamens, pistil, and receptacle of the flower. As soon as the blossom-buds swell, the female beetle begins to deposit her eggs. In calm weather, she selects a good bud, and makes a hole in it with her rostrum (long beak); she fixes herself at the hole, lays one egg, and goes on till she has deposited a considerable number of eggs in separate buds. The bud continues to swell, and the petals (flower-leaves) nearly expand, when suddenly the growth ceases and the petals wither, and assume a shrivelled appearance. If one of these flower-buds be examined when nearly expanded, a small, white grub, with a black head, will be found in the centre, which begins to assume a yellowish colour; a few days later the grub will be found either wholly or partially changed to a beetle, and, should there be a small hole on the side of the receptacle, the beetle will have escaped, the transformation from the egg to the perfect state not having

occupied more than a month. When this beetle, or weevil, leaves the receptacle, it feeds during the summer on the leaves of the trees, and is seldom to be seen. In the autumn, the weevils leave the trees and search for convenient hiding-places, under stones about the trees or under the rough bark, in which they pass the winter. Consequently, as they commence their operations early in the spring, care should be taken to remove all stones, dead leaves, and other litter from under the trees, as well as to scrape off the rough, dead bark from them in the winter season. The apple-weevil is also very injurious to pear-trees. This beetle, or weevil, is scarcely one line and a half long; its wing-cases are dark brown, with whitish-grey stripes; its antennæ (horns or feelers) spring from the middle of its beak, and all these parts, as well as its eyes and the under part of the body, are black."

There are several nearly-allied species of predatory weevils, which will be found under the name of CURCU'LIO.

ANTHOSPE'RMUM. (From *anthos*, a flower, and *sperma*, seeds. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 22-*Diœcia*, 4-*Tetrandria*.)

Cuttings in sand, in close frame; peat and loam; summer temp., intermediate temperature.

A. æthio'picum (Ethiopian). 2. Green and white. June. Cape of Good Hope. 1692.

ANTHOXA'NTHUM. (Yellow-flower, from the Greek.) Gramineæ. *A. odoratum*. Linn. One of the sweet grasses, useful in pastures.

ANTHU'RIUM. (From *anthos*, a flower, and *oura*, a tail; referring to the spadix, or Arum, flower-spike. Nat. ord. *Aroids* [Aroideæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Pothos.)

In the old edition there are only two species recorded, but it has since become a most important genus, and there are many garden hybrids of those with showy flowers. They are chiefly hybrids of *andrea'num* and *scherzeria'num*. Many of the varieties are named, but seedlings are now so numerous that they are grown under colours only, in some instances. In *andrea'num* we have various colours from pure white, pink, and various shades up to deep blood-red or crimson. They may be raised from seeds, but it is a slow process, it being nearly a year after flowering before seeds are ripened, and then they are slow to germinate. The seeds should be sown as soon as ripe, the seed pots well drained and filled up with sphagnum moss, rough peat, and sand, and some powdered charcoal may be added. They may also be propagated by divisions, and should be grown in a compost of rough, fibrous loam, peat, sphagnum moss, sand, and charcoal, with good drainage, and in potting the crowns of the plants should be kept well above the rims of the pots. They delight in a moist atmosphere and a high temperature, but may be kept cooler while in flower. Those grown for their foliage require similar treatment. While growing, liquid manure may be used freely, but it should not be very strong.

A. acau'le. 3. Green or violet. Spring. W. Ind. 1853.
,, *acu'tum*. 1. Dark green. Brazil. 1887.
,, *æra'nthe*. 3. Spathe green, spadix red-brown. Trop. Amer.
,, *affi'ne*. Yellowish-green. 1855.
,, *Allendo'rfii* (Gfl., 1889, 121, t. 1293). Hybrid between *A. andreanum* and *A. Lindigii*.
,, *amœ'num*. Spathe green. Venezuela. 1848.
,, *andi'cola*. 1½. Spathe olive-green, spadix brownish-purple. Mexico. 1855. Syn. *A. cucullatum*.
,, *andrea'num* (Ill. Hort., 1877, t. 271). Spathe scarlet, spadix yellowish, whitish. Columbia. 1876.
,, ,, *a'lba* (Veitch Cat., 1895, 2). Pure white.
,, ,, *amœ'num* (G. C., 1893, xiii. 415). Spathe rose-carmine and white spadix tipped with yellow.
,, ,, *atropurpu'reum* (R. H. B., 1889, 169 t.). Garden hybrid between *A. andreanum* and *A. Chantrieri*.
,, ,, *atrosangui'neum* (G. C., 1893, xiii. 415). Dark crimson spathes.
,, ,, *flo're a'lbo* (R. H., 1887, 171). Garden variety.
,, ,, *Game'ri* (R. H., 1907, 30).
,, ,, *Laure'nciæ* (G. C., 1900, xxvii. 370). White.
,, ,, *rhodochlo'rum* (R. H., 1901, 452 t.).
,, ,, *wambekea'num* (Ill. Hort., 1892, 109, t. 163). White spathes.
,, *angusta'tum* (narrow). ½. May. Venezuela. 1823.
A. appunia'num. Spathe green, spadix violet. Venezuela. 1860.
,, *Auble'tii*. See A. PENTAPHYLLUM.
,, *augusti'num*. See A. TRINERVIUM.
,, *Bake'ri*. Spathe green, the spadix being of a pleasing combination of pink and bright scarlet. July. Costa Rica. 1872.
,, *be'llum*. 3. Green, red-brown. Brazil. 1860.
,, *Bino'ti*. 1. Olive-green. Autumn. Brazil.
,, *bogote'nse* (Sand. Cat., 1897, 3, f.).
,, *bouchea'num*. Spathe green, spadix violet. Venezuela. 1855.
,, *brachygona'tum*. Mexico. 1860.
,, *brevi'lobum* (C. G., 1887, i. 380). Spathe purplish, spadix dark purple-brown.
,, *Bro'wnii* (G. C., 1877, vi. 744). Spathe greenish tinged with red, purplish spadix. Columbia.
,, *burfordie'nse* (G. C., 1889, vi. 700). Garden hybrid similar to *A. leodiense*, *A. carneum*, &c.
,, *ca'ndidum*. See SPATHIPHYLLUM.
,, *ca'rneum* (R. H., 1884, 101). Garden hybrid between *A. lindenia'num* and *andrea'num*. There is also a garden variety under the same name, a hybrid between *A. andrea'num* and *A. nymphæifo'lium*.
,, *Chamberlai'ni* (G. C., 1888, iii. 462, 464–5, f. 66, 67). Spathe pale, dull, puce-coloured outside, shining crimson inside. Spadix dull red. Venezuela (?).
,, *chantinia'num* (R. H., 1889, 157). Garden hybrid between *A. houlletianum* and *A. andreanum*.
,, *Chantrie'ri* (R. H., 1884, 101). Garden hybrid between *A. subsignatum* and *A. ornatum*.
,, *chelseie'nse* (G. C., 1886, xxiv. 650). Garden hybrid between *A. Veitchii* and *A. andreanum*.
,, *colocasiæfo'lium* (R. H., 1879, 452, f. 90). Trop. Amer.
,, *corda'tum*. Whitish-green. Trop. Amer. 1854.
,, *cordifo'lium*. 2½. Green. W. Ind.
,, *coria'ceum*. 3. Green. Brazil.
,, *costa'tum* (ribbed). Spathe greenish, spadix violet. Venezuela. 1854.
,, *crassifo'lium* (G. C., 1883, xix. 10). Spathe light green, spadix dull green.
,, *crassine'rvium*. Green. Panama. 1796.
,, *crombezia'num* (R. H., 1894, 552 t.). Garden hybid, of which *A. scherzeria'num* is one of the parents.
,, *crue'ntum* (R. H., 1886, 50). Garden hybrid between *A. andreanum* and *A. Veitchii*.
,, *crystalli'num*. 2. Greenish. Leaves velvety green, with frosted veins. Columbia.
,, ,, *illus'tre* (G. C., 1898, xxiv. 293). Apparently the same as *variegatum*.
,, ,, *variega'tum* (G. C., 1893, xiii. 641). Leaves with large blotches of creamy-white.
,, *crystalli'no-Edua'rdi* (R. H., 1903, 253).
,, *cymbifo'rme* (G. C., 1889, vi. 67). Spathe white, with salmon-pink spadix. Colombia (?).
,, *Decha'rdi* (Ill. Hort., 1877, t. 269). See SPATHIPHYLLUM CANNÆFOLIUM.
,, *denta'tum* (R. H., 1884, 293, f. 71). Garden hybrid between *A. fi'ssum* and *A. leuconeu'rum*.
,, *desmetia'num* (Ill. Hort., 1888, 47, t. 52). Garden hybrid.
,, *devansaya'num*. Hybrid between *A. magni'ficum* and *A. galeo'ttianum*.
,, *digita'tum*. 1. Spathe green, spadix violet. Colombia.
,, *dominice'nse*. 1. Dominica. 1860.
,, *Edua'rdi* (R. H., 1884, 102). Garden hybrid between *A. crystalli'num* and *A. subsigna'tum*.
,, *egre'gium*. See A. ELLIPTICUM.
,, *e'legans* (Gfl., t. 1112). Spathe green and spadix green or dark purple.
,, *elli'pticum*. Caracas. 1853.
,, *emargina'tum*. 1. Green, brownish. Trop. Amer.
,, *exce'lsius* (W. G., 1890, 307 t.). A hybrid between *A. Veitchii* and *A. orna'tum*.
,, *ferrie're'nse* (Fl. and P., 1883, 10). Garden hybrid between *A. andrea'num* and *A. orna'tum*.
,, *fi'ssum*. 2. Green. Colombia. 1868.
,, *fla'vidum* (G. C., 1886, xxiv. 651). Spathe pale yellowish or yellowish-green, spadix pale violet pink. Colombia.
,, *floribu'ndum*. See SPATHIPHYLLUM.
,, *fraxine'nse* (G. C., 1899, xxvi. 58).

A. Frœbe'lii (Gfl., 1886, 52). Garden hybrid between *A. andrea'num* and *A. orna'tum*.
,, *Forge'ti* (G. C., 1906, xxxix. 161). Colombia.
,, *Galeo'tti*. Brazil. 1858.
,, *gandave'nse* (G. C., 1893, xiii. 415). Garden hybrid between *A. andrea'num* and *A. Chantrie'ri*.
,, *gaudichaudia'num*. 2½. Green. S. Brazil.
,, *geitneria'num*. 2. Green. Trop. Amer. 1867.
,, *gladiifo'lium*. 1½. Spathe green, spadix red-brown. Brazil. 1860.
,, *glauce'scens*. Green. Trop. Amer.
,, *Glazio'vii* (B. M., t. 6833). Spathe green outside, deep purple within; spadix violet-purple. Brazil.
,, *Goldri'ngi* (G. and F., 1893, 269). Garden hybrid between *A. andrea'num* and *A. scherzeri'anum*.
,, *gra'cile*. Green. Guiana. 1833.
,, *grandifo'rum perfec'tum* (R. H. B., 1904, 72). Spathe red.
,, *grandifo'lium*. Caraccas and Colombia.
,, *greya'num* (G. and F., v. 526). Garden hybrid between *A. arna'tum* and *A. andrea'num*.
,, *Gusta'vi* (Gfl., t. 1076). Green. Colombia.
,, *hanburya'num* (W. G., 1897, 256). Garden hybrid.
,, *hardya'num* (R. H., 1889, 157). Garden hybrid between *A. andrea'num* and *A. Edua'rdi*.
,, *Harri'sii*. Spathe greenish, spadix violet-brown. Brazil. 1826.
,, ,, *pu'lchrum* (G. C., 1880, xiv. 358). Whitish spathe, spadix brownish-crimson. Brazil.
,, *He'ro*. Hybrid between *A. Vei'tchii* and *A. orna'tum*.
,, *Holla'ndi* (G. and F., 1893, 269). Garden hybrid between *A. gra'nde* and *A. ferriere'nse*.
,, *Hooke'ri*. 3. Spathe green, spadix green or violet. Trop. Amer. 1840.
,, *houllettia'num* (R. H., 1884, 101). Garden hybrid between *A. magnifi'cum* and *A. andrea'num*.
,, *Huege'lii*. W. Ind.
,, *humboldtia'num*. See A. RUBRINERVIUM.
,, *inconspi'cuum* (G. C., 1885, xxiii. 787). Spathe green, spadix dark violet-brown.
,, *interme'dium* (Bull. Cat., 1884, 11). Garden hybrid between *A. hybri'dum* and *A. crystalli'num*.
,, *isare'nse* (R. H., 1888, 423). Garden hybrid.
,, *Kalbreye'ri* (G. C., 1881, xvi. 116). Colombia.
,, *Kellerma'nni* (Jard., 1893, 43., f. 15). There is also a garden hybrid (see H. G., 1888, 49).
,, *Kol'bii* (Gfl., 1889, 121, t. 1293). Hybrid of *A. andrea'num* and *A. lindenia'num*.
,, *Lai'ngi* (W. G., 1888, 383). Garden variety.
,, *lanceola'tum*. Certain varieties of *A. Harrisii* are grown under this name.
,, *lauchea'num*. 2. Brownish-purple. 1857.
,, *lawrencea'num* (R. H., 1888, t. 12). Garden hybrid.
,, *Lawre'nciæ* (G. C., 1892, xi. 731). Garden hybrid.
,, *leptosta'chyum*. See A. OLFERSIANUM.
,, *leuconeu'ron*. Green. Mexico. 1862.
,, *lhotzkya'num*. 2. Red-brown, blackish-violet. Brazil. 1860.
,, *libonia'num*. See A. GAUDICHAUDIANUM.
,, *lindenia'num*. 3. Spathe white, spadix white or purplish. Colombia. 1866. Syns. *A. Lindeni* and *A. Lindigi*.
,, *longifo'lium*. 1. Mexico. 1829.
,, *lo'ngipes* (G. C., 1882, xviii. 297). Spathe green, spadix yellowish. Brazil.
,, *longispa'thum* (R. H., 1888, 498). Guadeloupe.
,, *lu'cidum*. 4 to 5. Reddish-brown, purplish. Brazil.
,, *macro'lobum* (Bull. Cat., 1883, 11). Garden hybrid between *A. leuconeu'ron* and *A. peda'to-radia'tum*.
,, *macrophy'llum*. See POTHOS MACROPHYLLA.
,, *macrospa'dix*. Guiana. 1862.
,, *magni'ficum*. Colombia.
,, *Ma'lyi*. 1. Reddish-violet, blackish-violet. Brazil. 1860.
,, *margarita'ceum*. See A. HOFFMANNI.
,, *maximilia'num*. 3. Spathe green, spadix red-brown. Brazil. 1860.
,, *meta'llicum*. Green. 1860.
,, *miquelia'num*. 5. Green, purplish. Brazil. 1869. Syn. *A. Fendleri* of gardens.
,, *moorea'num* (G. C., 1886, xxvi. 230, 497). A garden hybrid between *A. crystalli'num* and *A. subsigna'tum*.
,, *mortfontane'nse* (R. H., 1885, 282). Garden hybrid between *A. andrea'num* and *A. Vei'tchii*.

A. nymphæfo'lium. Spathe white, spadix purplish. Venezuela. 1854.
,, *ochra'nthum*. 2. Spathe greenish-yellow, spadix yellow. Costa Rica. 1853.
,, *olfersia'num*. 4. Green-purplish. Brazil.
,, *orna'tum*. 2½. Spathe white, spadix purplish. Spring. Venezuela.
,, *Ortgie'sii* (Gfl., 1889, 121, t. 1293). Hybrid of *A. andrea'num* and *A. lindenia'num*.
,, *ottonia'num*. Spathe green, spadix bluish-green, becoming purplish. Brazil.
,, *panduræfo'rme*. Costa Rica. 1860.
,, *Paradi'sæ* (Williams' Cat., 1891, 24). Garden hybrid between *A. andrea'num* and *A. orna'tum*.
,, *pa'rvum* (G. C., 1881, xiv. 588). Purple-brown. Rio de Janeiro.
,, *Pa'tini*. See SPATHIPHYLLUM.
,, *pedati'fidum*. See A. PEDATO-RADIATUM.
,, *peda'to-radia'tum*. 2. Green. Mexico. 1859.
,, *pentaphy'llum*. 1859.
,, *podophy'llum*. 3. Green. Mexico. 1859.
,, *polyto'mum*. See A. PODOPHYLLUM.
,, *pu'milum* (G. C., 1896, xix. 401). Garden seedling or hybrid; parentage not stated.
,, *puncta'tum* (G. C., 1886, xxvi. 809). Greenish. Ecuador.
,, *purpu'reum* (G. C. 1887, i. 575). Purple. Brazil.
,, *radi'cans*. ½. Green. Brazil (?).
,, *recusa'tum*. Trop. Amer. 1860.
,, *refle'xum*. Trop. Amer. 1867.
,, *rega'le*. Green, pale veined. Brazil. 1866.
,, *ricasolia'num* (W. G., 1897, 258). Garden hybrid.
,, *ridolfia'num* (W. G., 1897, 258). Garden hybrid.
,, *ridolfia'num a'lbum* (B. T. O., 1891, 244, t. 8). Garden hybrid.
,, *Rigou'tsi* (S. H., 1899, 57). Garden hybrid.
,, *Roe'zlii*. 3. White. Andes of Santa Martha.
,, *rosæfo'rum* (G. C., 1892, xi. 731). No description available.
,, *ro'seum* (B. T. O., 1888, 99). Garden hybrid.
,, *rothschildia'num*. Garden hybrid. 1884.
,, *rotundispa'thum* (Ill. Hort., 1891, t. 119). Garden hybrid between *A. andrea'num* and *A. lindenia'num*.
,, *rube'scens*. Reddish. September. Brazil. 1828.
,, *rubrine'rvium*. Spathe yellow-green, spadix rosy-violet. Venezuela. 1820.
,, *rugo'sum*. 2. Spadix violet-brown. Caraccas. 1858.
,, *Sagitta'ria*. See A. PANDURÆFORME.
,, *sagitta'tum*. See A. RUBRINERVIUM.
,, *salmo'neum* (Ill. Hort., 1895, t. 42). Garden hybrid between *A. lindenia'num* and *A. andrea'num*.
,, *Sande'ri* (Sander's). Leaves sinuate, banded with silvery-white. Colombia. 1908.
,, *sanderia'num* (G. C., 1895, xvii. 594). Seedling variety, related to *A. andrea'num*.
,, *Saunde'rsii* (B. M., t. 6218). Spathe pale green, spadix greyish-green, becoming purplish.
,, *scherzeria'num*. 1. Spathe and spadix scarlet. Costa Rica.
,, ,, *Adria'ni* (Ill. Hort., 1878, t. 351). Richly coloured.
,, ,, *a'bolinea'tum* (W. G., 1888, 278).
,, ,, *andegave'nse* (R. H., 1881, 272). Resembling *A. rothschildia'num*.
,, ,, *a'tro-sangui'neum* (W. G., 1889, 113).
,, ,, *bispatha'ceum* (Ill. Hort., 1890, 67, t. 107). With two red spathes placed opposite to each other.
,, ,, *bruxelle'nse* (Ill. Hort., 1887, 51, t. 18).
,, ,, *compa'ctum* (G. C., 1895, xvii. 467). White, thickly covered with blotches of coral-red.
,, ,, *gigante'um*. Blood-red. 1884.
,, ,, *Henderso'ni* (F. M., t. 468). Crimson-coloured.
,, ,, *imperia'le* (R. H., 1903, 227).
,, ,, *la'cteum* (Ill. Hort., 1886, t. 607). White.
,, ,, *ma'ximum* (Bull. Cat., 1881, 7, 15). Scarlet.
,, ,, ,, *a'lbum* (Ill. Hort., 1890, 29, t. 100). White.
,, ,, *muta'bilis*. Spathe white, gradually becoming scarlet. 1883.
,, ,, *nebulo'sum* (R. H., 1888, 146). Garden variety, with double white spathes, dusted with red.
,, ,, *ni'gricans* (W. G., 1889, 113).
,, ,, *parisie'nse* (R. H., 1887, 144).
,, ,, *pygmæ'um*. Spathe small, spadix stalked. 1880.
,, ,, *ro'seum* (Bull. Cat., 1893, 9). Salmon-rose.

A. scherzeria'num rothschildia'num. Spathe creamy red-spotted, spadix creamy. 1880.
„ „ *ro'seum* (Bull. Cat., 1893, 9). Salmon-rose coloured spathes.
„ „ *rotundiflo'rum* (W. G., 1889. 113).
„ „ *rotundispa'thum* (round-spathed). Spathe rounded, white above. 1908.
„ „ *sanguin'eum* (W. G., 1889, 113).
„ „ *vervæ'nea'num.* Spathe white, with red tip. 1884.
„ „ *Wa'rdii* (Veitch Cat., 1879, 28). Broad foliage, and spathes 6 in. long by 4 in. broad.
„ „ *warocquea'num* (Ill. Hort., 1888, 43, t. 51). White, spathes spotted with red.
„ „ *Willia'msii.* 1. Spathe white, spadix yellowish. Costa Rica. 1874. Syn. *A. scherzerianum album.*
„ *Sello'um* (Sello's). 3. May. Isle of St. Juan. 1794.
„ *sellowia'num.* Brazil. 1841.
„ *signa'tum.* 1½. Green. 1858.
„ *sinua'tum.* 2½. Purplish. Brazil. 1860.
„ *smilacifo'rme.* See A. UNDATUM.
„ *spathiphy'llum* (G. C., 1877, vii. 652). 1½. Spathe white, spadix yellowish. Trop. Amer. 1875.
„ *sple'ndidum* (G. C., 1883, xix. 381, f. 58). Leaves of a beautiful sea-green colour. Colombia.
„ *stri'ctum.* 1. Bluish-green. Brazil. Syn. *A. dombeyanum* of gardens.
„ *subsagitta'tum.* Venezuela. 1860.
„ *subsigna'tum.* 1½. Yellow. Central Amer. 1861.
„ *subula'tum* (G. C., 1886, xxvi. 230). Spadix purple-red, and white spathe.
„ *tetrago'num.* Green. 1860.
„ *torrigia'num* (W. G., 1897, 258). Garden hybrid.
„ *tri'lobum* (Ill. Hort., 1878, t. 283). Syn. *A. trifidum.* Colombia.
„ *trine'rve* (three-nerved). ½ to 1. Green. Berries lilac. Brazil and Guiana.
„ *trine'rvium.* 2. Green. Brazil.
„ *triu'mphans* (Bull. Cat., 1883, 11). Spathe green, spadix greenish-white. There is also a garden hybrid with pink spathe and yellow spadix.
„ *unda'tum.* Purplish. Brazil. 1860.
„ *undula'tum.* See A. HARRISII.
„ *Valvasso'rii* (W. G., 1897, 256). Garden hybrid.
„ *varia'bile.* Spathe green, spadix violet. Brazil. 1832.
„ *Ve'itchii* (G. C., 1877, vi. 772, f. 142, 143). Spadix whitish or pink. Colombia.
„ „ *acumina'tum* (G. C., 1885, xxiv. 650). Colombia.
„ *vellozia'num.* See A. OLFERSIANUM.
„ *verva'neum* (R. H., 1884, 204 t.). White spathed variety of *A. scherzeria'num.*
„ *viola'ceum.* Trop. Amer. 1859.
„ „ *leucoca'rpum.* Mexico. 1859.
„ *viola'scens.* See A. COSTATUM.
„ *virgo'sum.* Spathe green, spadix reddish. Brazil. 1860.
„ *vi'ride.* Trop. Amer. 1855.
„ *wageneria'num.* Caraccas. 1853.
„ *Walli'sii.* 2½. Green. Colombia.
„ *Walu'jewi* (Gfl., t. 1004). Allied to *A. magni'ficum.*
„ *wambekea'num* (Ill. Hort., 1895, 185). Garden hybrid between *A. lindenia'num* and *A. andrea'num.*
„ *warocquea'num* (Fl. and P., 1878, 101). Foliage plant similar to *A. Veitchii.* Colombia.
„ *Warscewi'czii.* See A. SINUATUM.
„ *Willdeno'vii.* 1. Brazil. 1860.
„ *Wittma'ckii* (Gfl., 1889, 121, t. 1293). Hybrid of *A. andrea'num* and *A. lindenia'num.*

ANTHY'LLIS. (From *anthos*, a flower, and *ioulos*, down; literally, downy flower. Nat. ord. *Leguminous Plants* [Leguminosæ]. Allied to Trefoil. Linn. 16-*Monadelphia*, 6-*Decandria.*)

Seeds, division of roots, cuttings; the hardy perennial and annual species like a light, well-drained soil; the greenhouse varieties should have fibrous loam, leaf-mould, and if loam is heavy some peat added.

HARDY ANNUALS.

A. cornici'na (crow). 1. White. July. Spain. 1759.
„ *hamo'sa* (hooked). 1. Pale yellow. July. Barbary. 1821.
„ *loti'des* (lotus-like). 1. Yellow. July. Spain. 1739.
„ *tetraphy'lla* (four-leaved). 1. Yellow. July. South of Europe. 1640.

GREENHOUSE EVERGREENS.

A. Aspala'thi (aspalathus-like). See A. HERMANNIÆ.
„ *Ba'rba-Jo'vis* (Jupiter's beard). 3. Pale yellow. April. South of Europe. 1640.
„ *cytisoi'des* (cytisus-like). 2. White. June. Spain. 1731.
„ *echina'ta* (hedgehog). 1. Purple. June. South of Europe.
„ *Erina'cea* (prickly). See ERINACEA PUNGENS.
„ *Herma'nniæ* (Hermann's). 2. Yellow. July. Levant. 1739.
„ *heterophy'lla* (various-leaved). 1. Pink. July. South of Europe. 1768.
„ *tenuifo'lia* (fine-leaved). 2. Yellow. July. Cape of Good Hope. 1818.

HERBACEOUS PERENNIALS.

A. alpi'na (hairy-alpine). See A. VULNERARIA.
„ *cre'tica* (B. M., t. 1092). See EBENUS CRETICA.
„ *cunea'ta.* See LESPEDEZA ERIOCARPA.
„ *Dille'nii* (Dillenius's). See A. VULNERARIA DILLENII.
„ *Gera'rdi* (Gerard's). 1. White. August. Provence. 1806.
„ *monta'na* (mountain). 1. Purple. July. South of Europe. 1759.
„ „ *a'lba* (white). 1. White. July. South of Europe. 1818.
„ *onobrychoi'des* (Sainfoin-like). 1. Yellow. July. Spain. 1817.
„ *polyce'phala* (many-headed). 1. Yellow. July. Barbary. 1829.
„ *polyphy'lla* (many-leaved). See A. VULNERARIA.
„ *Vulnera'ria* (*common* woundwort). 1. Yellow. July. Britain.
„ „ *albiflo'ra* (white-flowered). 1. White. July. Britain.
„ „ *Dille'nii.* Red.
„ „ *hirsuti'ssima* (very hairy). ½. Red. July. Europe. 1816.
„ „ *ru'bra* (red-flowered). 1. Red. July. Britain.
„ „ *rubriflo'ra.* See A. V. DILLENII.
„ *webbia'na* (Webb's). See A. VULNERARIA.

ANTIA'RIS. (From *antja*, its Java name. Nat. ord. *Artocarpads* [Urticaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria.* Allied to Brosimum.)

This is the fabled upas-tree of Java, which furnishes the deadly poison known as "Antjar poison," and said to be used as a poison for "arrows." It has been said that cattle could not live near this tree, but this has been proved to be wrong. Evergreen requiring stove treatment, cuttings of ripened wood in close frame; loam, peat, and sand.

A. toxica'ria (poisonous). 40. Green. Java. 1844.

ANTICLE'A. Included under ZYGADENUS.

ANTIDE'SMA. (Greek *anti*, for, and *desma*, bond; the bark of *A. Bunius* being used for cordage. Euphorbiaceæ. Tropical trees or shrubs.)

A. Bu'nius (Spreng). Dark green foliage; small berries. Malaya.

ANTI'GONON. (From *anti*, against or opposite, and *gonia*, an angle. Ord. Polygonaceæ.)

Stove climbers with showy flowers, but do not flower freely; require similar treatment as the Bougainvilleas; should be well exposed to the sun.

A. ama'bile. Bright rose.
„ *guatemale'nse.* Rose-pink. Guatemala. 1876. Syn. *A. insi'gne.*
„ *insi'gne.* See A. GUATEMALENSE.
„ *le'ptopus.* Rose. Mexico. 1868.
„ „ *albiflo'ra.* White. 1888.

ANTIGRA'MME. (From *anti*, like, and *gramma*, writing; in reference to the appearance of the sporecases, or seed-vessels. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.* Allied to Scolopendrium.)

A greenhouse Fern. Divisions; peat and loam. Temp. in summer, 55° to 75°; winter, 45° to 50°.

A. rhyzophy'lla (rooting-leaved). Brown. May. Now referred to *Scolopendrium rhizophyllum.*

ANTIRRHI'NUM. (From *anti*, like, and *rhin*, a snout, or nose; flowers like the snout of an animal. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Tetradynamia*, 2-*Angiospermia*.)

Common soil, if not retentive of moisture. All hardy herbaceous perennials, except when otherwise specified. Excellent for banks and under trees, but above either for the tops of walls. The varieties are endless. The different types—*major*, *nana*, and *intermedia*—are now grown under colours only, and though there may be some variations they come fairly true from seeds. Sow in June for flowering the following season.

A. alpi'num. See LINARIA ALPINA.
,, *angustifo'lium* (narrow-leaved). See A. SICULUM.
,, *Asari'na* (asarina). 1. White. July. Italy. 1699. Half-hardy evergreen trailer.
,, *calyci'num* (large-calyxed). 1. Red. July. Syria. 1810. Hardy annual.
,, *fru'ticans.* See NEMESIA.
,, *glandulo'sum* (glandular-haired). 2. Roan, yellow. September. California. 1834. Hardy annual.
,, *hispa'nicum.* 1. Rose, yellow. Spain. 1878. Syn. *A. latifo'lium* of Bourg.
,, *latifo'lium.* Miller's Gard. Dict., ed. viii. Europe.
,, *lani'gerum.* See LINARIA LANIGERA.
,, *Lina'ria.* See LINARIA VULGARIS.
,, *linarioi'des.* See LINARIA VULGARIS.
,, *macroca'rpum.* See NEMESIA CHAMÆDRIFOLIA.
,, *ma'jus* (greater). 2. Pink. July. England.
,, ,, *bi'color* (two-coloured). 2. White. July. England.
,, ,, *cocci'neus* (scarlet-flowered). 2. Scarlet. July. England.
,, ,, *flo're-ple'no* (double-flowered). 2. Flesh. July. England.
,, ,, *Pelo'ria* (G. W., 1903, 21). Flowers regular.
,, ,, *variega'tum* (variegated-leaved). 2. Red. July. England.
,, *maurandioi'des* (Maurandya-like). 10. Purple. July. Mexico. 1844.
,, *me'dium* (intermediate). See A. STRIATUM.
,, *meona'nthum* (smaller-flowered). See A. SEMPERVIRENS.
,, *mo'lle* (soft-leaved). 1. White. August. Spain. 1752. Half-hardy evergreen trailer.
,, *montevide'nse* (Monte Videan). See A. MAJUS.
,, *nuttallia'num* (Gfl., t. 1275, f. 3). 1 to 2. California. 1888.
,, *ochroleu'cum* (pale yellow). See LINARIA VULGARIS.
,, *odo'rum.* See LINARIA ODORA.
,, *Oro'ntium* (orontium). 1. Flesh. August. Britain. Hardy annual.
,, ,, *grandiflo'rum.* 1. Red. July. Spain. 1810. Syn. *A. calycinum* of Vent.
,, *sempervi'rens* (evergreen). 2. Pink. August. Pyrenees. 1821.
,, *si'culum* (Sicilian). 1. White. July. 1804.
,, *spu'rium.* See LINARIA SPURIA.
,, *stria'tum* (striped). 2. Pink. August. Europe. 1821.
,, *stri'ctum.* See LINARIA SIBTHORPIANA.
,, *tortuo'sum* (twisted). Purple. June. Italy.

ANTIRRHŒ'A. (From *anti*, against, and *rheo*, to flow. Nat. ord. Rubiaceæ.)

Stove evergreen shrubs. Cuttings of half-ripe shoots in sand, in a close frame, with bottom-heat. Loam, peat, and sand.

A. lu'cida (shining). 20. White. May. W. Ind. 1818.

ANTLER MOTH. See CHARÆ'AS.

ANTO'NIA. A synonym of *Rhynchoglossum*.

ANTROPHYUM. (From *antron*, a cavern, and *phio*, to grow; referring to its place of growth. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns. Division of the roots; sandy loam, in a shady situation.

A. cayenne'nse (Cayenne). Brown. Cayenne.
,, *coria'ceum* (leathery). Brown.
,, *lanceola'tum* (lance-leaved). Brown. August. W. Ind. 1793.
,, *latifo'lium* (broad-leaved). Brown. Island of Luzon.
,, *obtu'sum* (blunt-leaved). Brown. Island of Luzon.
,, *reticula'tum* (netted). Brown.
,, *semicosta'tum* (half-ribbed). Brown. Island of Luzon.

ANTS. See INSECT PESTS.

ANTWERP HOLLYHOCK. *Althæ'a ficifo'lia.*

ANU'BIAS. (Nat. ord. Aroideæ.)

A. heterophy'lla (G. C., 1889, vi. 67). 1. Leaves bright green, blotched dull yellow. Congo. 1889.
,, *na'na* (N. B., 1899, 281). Cameroons.

AO'PLA RENIFO'RMIS. See HABENA'RIA RENIFO'RMIS.

AO'TUS. (From *a*, not, and *ous*, ear; the ear-like appendages to the calyx are wanting. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse small evergreen shrubs. Seeds sown in heat. Cuttings of half-ripened wood in April, in sand, in close frame. Sandy loam and peat, with a little charcoal.

A. gra'cilis (slender). See A. GRACILLIMA.
,, *graci'llima* (most slender). 3. Yellow, crimson. May. N. Holland. 1844.
,, *inca'na* (hoary). 2. Yellow. June. N. Holland. 1824.
,, *lani'gera* (woolly). Crimson, yellow. April. Moreton Bay. 1838.
,, *villo'sa* (soft-haired). 2. Yellow. June. N. Holland. 1790.
,, ,, *ericoi'des* (heath-like). 2. Yellow. June. N. Holland. 1810.
,, ,, *ferrugi'nea* (rusty). 2. Yellow. June. N. Holland. 1820.
,, *virga'ta* (twiggy). 2. Yellow. June. N. Holland. 1824.

APA'RGIA. (A Greek name of a plant now unknown. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Allied to Succory. Common treatment in border. Division of roots.

A. auranti'aca (orange-coloured). 1. Orange. June. Hungary. 1816.

The above hardy herbaceous perennial is the only one worth cultivating, though there are many other species. Now referred to Leontodon.

APEI'BA. (The local name of one of the species in Brazil. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Tropical evergreen trees and shrubs. Cuttings of ripe wood, under a glass, in strong heat; peat and loam. Should be curbed in the Chinese fashion, by pruning their roots, &c.

A. a'spera (rough-capsuled). 30. Yellow. Cayenne. 1792.
,, *læ'vis* (smooth-leaved). 10. Green. Cayenne. 1817.
,, *Petou'mo* (Petoumo). 40. Yellow. S. Amer. 1817.
,, *Tibou'rbou* (Tibourbou). 7. Yellow. S. Amer. 1756.

APEN'ULA. Syn. of *Specularia*.

APE'RA ARUNDINA'CEA. An ornamental grass, the panicle of which has slender, drooping branches. 1882.

A. Spi'ca-ve'nti (wind-spike). 1 to 2½. July. Europe; Orient.

APHANA'NTHE. (Greek, *aphanes*, inconspicuous, and *anthe*, flower.) Urticaceæ. Trees or shrubs.

A. a'spera (Planch). A slender-growing shrub, not much known.

APHELA'NDRA. (From *apheles*, simple, and *aner*, a male; the anthers being one-celled. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreen shrubs. Allied to Justicia. A showy class of plants with terminal spikes of flowers chiefly bright colours, with yellow bracts which last for some time after the flowers have fallen; propagate early in the spring from side-shoots; use plenty of sand at base of cuttings, and a light sandy compost, in stove propagating pit; pot in rich, open soil, and grow under stove treatment.

A. acutifo'lia. Vermilion-red. October. Colombia. 1868.
,, *amœ'na.* See A. BLANCHETIANA.
,, *atrovi'rens* (Ill. Hort., vol. 31, t. 527). Yellow. Bahia. 1884.

A. aurantiʹaca. 3. Deep orange-scarlet. Mexico. 1844.
,, ,, *Roeʹzlii.* Orange-scarlet. Mexico. 1867. Syn. *A. Roeʹzlii.*
,, *blanchetiaʹna.* Leaves green, silvery veins. Brazil. 1888.
,, *chamissoniaʹna* (B. M., t. 6627). Syn. *A. punctata.*
,, *chryʹsops* (Bull. Cat., 1887, 7–9). 1887. See A. SQUARROSA LEOPOLDII.
,, *cristaʹta.* 3. Brilliant orange-scarlet. W. Ind. 1733. Syn. *Justicia pulcherrima.*
,, *cristaʹta* (crested) of Lindley. See A. TETRAGONA.
,, *duʹbia* (Ill. Hort., 1894, 233, t. 15). Garden hybrid.
,, *Fascinaʹtor* (Ill. Hort., 1874, t. 164). 1½. Scarlet. Autumn. New Grenada. 1874.
,, *fuʹlgens.* 1½. Orange. Autumn. 1847.
,, *glabraʹta.* 1½. Yellow. Autumn. S. Amer. 1848.
,, *Hydromeʹstus* (Hydromestus). 2. Yellow. May. Mexico. 1842.
,, *Leopoʹldi.* See A. SQUARROSA.
,, *liboniaʹna* (B. M., t. 5463). Crimson.
,, *macedoniaʹna* (Ill. Hort., vol. 33, t. 583). Dark green leaves, lighter nerves, with violet-purple beneath. Brazil. 1886.
,, *Macleaʹyi* (Macleay's). Orange-scarlet. 1908.
,, *maculaʹta* (B. M., t. 4556). 1. Yellow. Mexico.
,, *Margariʹtæ* (Belg. Hort., 1883, t. 19). Orange. Leaves dark green, with lighter green nerves, under surface rose.
,, *meʹdio-auraʹta.* Leaves bright green, with yellow central band. Syn. *Graptophyllum medio-auratum.*
,, *niʹtens.* 2 to 3. Vermilion-scarlet. Colombia. 1867.
,, ,, *Sinitziʹni.* Scarlet. E. Peru. 1876.
,, *ornaʹta* (Belg. Hort., 1865, t. 3). Yellow, purple. Brazil. 1864.
,, *porteaʹna.* 2. Bright orange. Brazil. 1854.
,, *prismaʹtica* (prismatic). Yellow. Central Amer. 1852.
,, *pulcheʹrrima* (fairest). Colombia.
,, *puʹmila.* Orange coloured. Brazil. 1878.
,, ,, *splɛʹndens* (Gfl., t. 1104). Brazil.
,, *punctaʹta.* See A. CHAMISSONIANA.
,, *Roeʹzlii.* A syn. of *A. aurantiaca Rœzlii.*
,, *squarroʹsa.* Brazil.
,, *squarroʹsa citriʹna* (Fl. Ser., t. 809). Yellow. Brazil. 1851.
,, ,, *Leopoʹldii.* Syn. *A. chrysops.*
,, *sulphuʹrea* (B. M., t. 5951). Yellow. Guayaquil. 1872.
,, *tetragoʹna.* 2. Autumn. 1846.
,, ,, *graʹndis.* September. Merida, Venezuela.
,, ,, *imperiaʹlis* (Gfl., 1891, 449, t. 1354). Central Amer.
,, *variegaʹta* (B. M., 4899). 1½. Yellow. Brazil.

APHELEXIS. (From *apheles*, simple, and *exis*, habit. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Greenhouse evergreen shrubs. Referred to Helichrysum. Cuttings in spring or summer; small side-shoots are best, ripened, but not hard, inserted in sand, under a bell-glass, or in close frame. A very distinct class of plants from the Cape of Good Hope. They are, by some authors, included with the Helichrysums by some authorities, but have so long been known to the trade under the above name, and are so totally distinct in every respect from the ordinary plants known as Helichrysums, that it seems difficult to associate them together, and the above name may well be retained as a separate genus. They require similar treatment to the Cape Ericas. Formerly they were among the plants grown into large specimens for exhibition. Summer temp., 55° to 65°; winter, 40° to 47°.

A. ericoiʹdes (heath-like). 1. White. June. Cape of Good Hope. 1796.
,, *fasciculaʹta* (fascicled). 2. Purple, yellow. June. Cape of Good Hope. 1799. See HELICHRYSUM SESAMOIDES.
,, ,, *aʹlba* (white-flowered). 2. White. July. Cape of Good Hope. 1799.
,, ,, *ruʹbra* (red-flowered). 2. Red. July. Cape of Good Hope. 1799.
,, ,, *versiʹcolor* (parti-coloured). 2. Variegated. July. Cape of Good Hope. 1799.
,, *huʹmilis* (dwarf). 2. Pink. May. Cape of Good Hope. 1810.
,, ,, *macraʹntha* (large-flowered-dwarf). 2. Purple. N. Holland. 1840.
A. huʹmilis roʹsea (rose-large-flowered-dwarf). 2. Rose. Gardens. 1845.
,, ,, *purpuʹrea* (purple-large-flowered-dwarf). 2. Purple. N. Holland. 1840.
,, *sesamoiʹdes* (sesamun-like). 2. Purple, white. May. Cape of Good Hope. 1739. See HELICHRYSUM SESAMOIDES.

APHIS. The plant-louse, or green fly; called sometimes the *puceron*, or vine-fretter. It is usual to consider that every plant liable to be attacked by this insect is the victim of some especial species; but we think that further examination will reduce the number of species very considerably. Difference in colour certainly does not constitute a specific difference; for the rose-louse is green when the shoots of the rose are green, but red when the shoots are of this colour. The amount of injury they cause to a plant, by robbing it of its sap or blood, is proportioned to their number, and the time they are allowed to infest the subject of their attack.

Aphis humuli (the Hop aphis) often proves very destructive to the hop crops. The green fly on our roses (*Aphis rosæ*) is that of which we will now offer a few particulars. It is curious that these always are most abundant after the prevalence of easterly winds; and Mr. Jenyns observed in Cambridgeshire, during October, and Mr. White, at Selborne, in August, myriads of aphides, in both instances, after the wind had been for some time easterly. So fast do they multiply, twenty generations being producible in one year, and the young in the autumn being born alive, and not from an egg. Reaumur has shown that one female may be the ancestor of nearly six millions in five generations. It is needless to describe minutely the rose aphis. It is usually light green, with green wood; and red, with red wood, with brown antennæ and legs, and transparent iridescent wings. They frequently change their skins; and these may be seen hanging about the leaves and shoots of the rose. The males may be known by a double row of black dots on each of their sides. There are many effectual insecticides for the destruction of this troublesome pest if used as soon as they appear, but when the leaves get curled through the moisture being extracted it is difficult to cleanse the trees.

Aphis pyrimali is of a grass-green colour, attacking the apple and pear. To prevent its appearance, the following treatment is said to be very effectual. The application must be made *every other* if not *every year*; but once in two years may be sufficient, *if thoroughly* well done. Take 1 lb. sulphur vivum, 1 lb. Scotch snuff, 1 lb. quicklime, ½ lb. lampblack, 1 lb. soft soap, and of water sufficient to make it into the consistence of paint. Unnail your trees about February, before the bloom-buds begin to swell, and with a common paint-brush paint every branch from the ground upwards.

A. persicæ is dark green, and is peculiar to the peach and nectarine.

A. pruni ravages the plum tribes, and is a very light green.

A. rumicis, known popularly as the *Black Dolphin* and *Elephant*, is black, and attacks the common bean. The tops of beans attacked by the black dolphin should be forthwith removed; and smaller plants may be syringed with tobacco-water, or water in which elder-leaves have been boiled; which applications are all fatal to the aphis; syringing with soap-suds, on two or three following days, is also effectual.

A. pisi is green, and affects the pea.

A. lonicera, woodbine louse. Dingy green.

A. cerasi, Morello cherry louse. Appears black. Infests the under sides of the leaves, especially on wet soils.

A. coryli, nut louse. Pale green.

A. dahliæ, dahlia louse. Amber-coloured.

A. ribis, red-currant louse. Blackish.

A. ligustri, privet louse. Dark brown.

A. ribis-nigri, black-currant louse. Transparent green.

A. lathyri, sweet-pea louse. Dark purple.

A. (*Cinara*) *raphani*, radish louse. Females, green; males, lightish-red.

The aphides on the peach appear the earliest, being, as are all the others, the produce of eggs deposited during the previous autumn. During the spring and summer they are viviparous, and breed with extraordinary rapidity. The gardener does well, therefore, to scrub the branches of his wall-trees, and to boil or change the

shreds every winter, for he thus destroys the pest in embryo. So soon as they appear in spring over each wall-tree a mat should be fastened, and tobacco in some mode, burnt beneath it. Peas, whilst the dew is upon them, may be dusted with Scotch snuff. Over the apple, plum, and other standards, the only available remedy is a repeated application of quicklime, at the same early period of the day, by the means of Curtis's lime-duster.

The larvæ of the *Coccinella* or Lady-bird, especially *C. punctata* the *Syrphus*, or bee-like fly, the *Hemerobius perla*, or golden-eyed fly, the ant, some caterpillars, and many of the *Ichneumonidæ*, are great destroyers of the aphis, and should be encouraged rather than removed. See AMERICAN BLIGHT.

The following directions are applicable to the destruction of every kind of aphis. When you intend to fumigate your plants, in a house, pit, or frame, choose a still evening, and let your plants be quite dry. Place them closer together, and in the clear space thus obtained put either an iron pan, or, if you have not such a thing, use a hard-burnt garden-pot; put in it a few red-hot cinders that do not smoke; upon those cinders put your tobacco, or tobacco-paper, rather damp. A cloud of smoke will immediately rise, and will soon fill the frame. There are several useful fumigators offered by those who supply the tobacco preparations for fumigating, and there are also some most effective liquid fumigants used in the form of vapour, with small spirit-lamps to heat them.

And for plants in the open, which cannot be fumigated, there are some good liquid preparations, which may be applied with a sprayer or ordinary syringe. As soon as you judge it to be well filled with smoke, remove the pan, or pot, and carry it to the next frame, if you have more than one that requires smoking. Be extremely careful that the tobacco does not break out into a flame, as it is that which does the mischief. If you perceive a likelihood of blazing out, prevent it with a sprinkling of water, very gently applied. Cover up the frames with mats to keep in the smoke as long as possible. The next morning examine the aphides, or green flies, and if you find any alive repeat the smoking the following evening. This second application will most effectually destroy all your enemies. You may now syringe the plants pretty severely, to wash away the dead bodies of the slain, and the plants will again thrive and flourish in perfect health and beauty.

APHYLLA'NTHES. (From *aphyllos*, leafless, and *anthos*, a flower; the flowers on rush-like branches. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Half-hardy herbaceous perennial. Division of the roots and seeds; sandy loam and leaf-mould; requires a warm situation, or a cold pit in winter.

A. monspelie'nsis (Montpelier). Blue. S. of France. 1791.

API'CRA. (From *apicros*, not bitter. Nat. ord. Liliaceæ.)

Greenhouse succulents, allied to the genus Aloe; suckers and cuttings; sandy loam. Summer temp., cool greenhouse; winter, 35° to 45°; kept rather dry.

A. a'spera (rough). 1. Grey. June. Cape of Good Hope. 1795.
,, *aspe'rula* (roughish). See HAWORTHIA ASPERULA.
,, *bicarina'ta* (double-keeled). 1. Grey. June. Cape of Good Hope. 1820.
,, *bullula'ta* (little-blistered). See A. PENTAGONA.
,, *conge'sta*. 1. Whitish. 1843.
,, *deltoi'dea*. 1. Whitish. May. S. Africa. 1865.
,, *foliolo'sa* (small-leafy). 1. Grey. July. Cape of Good Hope. 1795.
,, *imbrica'ta* (imbricated). See A. SPIRALIS.
,, *ma'jor*. More robust.
,, *ni'gra* (rough black). See HAWORTHIA NIGRA.
,, *pentago'na* (five-angled). 1¼. Grey. June. Cape of Good Hope. 1731.
,, ,, *bullula'ta*. 1¼. Yellow. May. Cape of Good Hope. 1795. Syn. *Aloe bullulata*.
,, ,, *spire'lla*. 1½. Grey. June. Cape of Good Hope. 1790.
,, ,, *Willdeno'vii*. ½. Greenish. Syn. *A. spiralis, Willdenow*, not *Linnæus*.
,, ,, *to'rta* (twisted). 1. Grey. June. Cape of Good Hope. 1800.
A. ri'gida (rigid). See HAWORTHIA SUBRIGIDA.
,, *spira'lis* (great spiral). 1. Grey. June. Cape of Good Hope. 1790.
,, *spire'lla* (small spiral). See A. PENTAGONA SPIRELLA.

A'PIOS. (From *apion*, a pear; in reference to the form of the roots. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Hardy tuberous-rooted plant, allied to Glycine. Division of roots; sandy loam, leaf-mould, and manure.

A. frute'scens. See WISTARIA FRUTESCENS.
,, *tubero'sa* (tuberous-rooted). 6. Brown, pink. August. N. Amer. 1640.

APIOSPE'RMUM. Syn. of *Pistia*.

A'PIUM. (From *apon*, Celtic word for water; water-plant. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Allied to Parsley. Seeds, spring, and superior, rich soil, for the culinary kinds; common soil for others. See CELERY.

A. chile'nse (Chilian). 1. White. Chili. 1836.
,, *grave'olens* (strong-smelling Celery). 4. White. July. Britain. CELERY, which see.

APLE'CTRUM. (From *a*, not, and *plektron*, a spur; the flower spurless. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Hardy orchid; offsets; sandy peat.

A. hyema'le (wintry). 1. Brown. N. Amer. 1827.

APLOTA'XIS. See SAUSSUREA.

APOCYNA'CEÆ. A numerous family of trees, shrubs, or rarely herbs, generally having a milky, poisonous sap. Flowers regular, solitary, or corymbose; corolla salver shaped or campanulate. Leaves simple, opposite; sometimes alternate or whorled. Genera included in this order are: Allamanda, Nerium, Tabernæmontana, and Vinca.

APO'CYNUM. (From *apo*, from, and *kyon*, a dog; poisonous to dogs. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy herbaceous perennials. Suckers, division, and seeds; common garden-soil.

A. androsæmifo'lium (tutsan-leaved). 2. Striped. August. N. Amer. 1688.
,, *cannabi'num* (hemp-like). 3. Yellow. August. N. Amer. 1699.
,, *frute'scens*. See ICHNOCARPUS.
,, *hypericifo'lium* (hypericum-leaved). See A. CANNABINUM.
,, *vene'tum* (Venetian). 2. White. June. Adriatic Islands. 1690.

APODOLI'RION. (From *a*, privative, *pous*, a foot, and *lirion*, a lily; the stems are short and hidden in the bulb-neck. Nat. ord. Amaryllidaceæ.)

Greenhouse bulb. Offsets. Loam, peat, and sand.

A. lanceola'tum (lance-shaped) ½. White. July. S. Africa. 1790.

APONOGE'TON. (From *apon*, Celtic for water, and *geiton*, neighbour; indicating its places of growth. Nat. ord. *Arrowgrasses* [Naiadaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)

Aquatics, kept in a vessel of water, in stove or greenhouse, according to their native localities, but all thriving in the stove; offsets, loam and peat.

A. angustifo'lium (narrow-leaved). 1. White. July. Cape of Good Hope. 1788. Greenhouse.
,, *cape'nse* (G. C., 1906, xxxix. 306). White. S. Africa.
,, *cri'spum* (curled-leaved). 1. White. August. Ceylon. 1820. Stove.
,, *dista'chyum* (two-spiked). 1. White. June. Cape of Good Hope. 1788. Greenhouse.
,, ,, *ro'seum*. Rosy tinted. 1885.
,, *juncifo'lium* (rush-leaved). White. 1747. Stove.
,, *Lagran'gei* (R. H., 1895, t. 380). A form of *A. distachyum*.
,, *monosta'chyon* (simple-spiked). 1. Pink. September. E. Ind. 1803. Stove.
,, (*Ouviran'dra*) *henkelia'num* (G. C., 1906, xl. 270, ff. 108, 109). Described as a new species; it has

a larger rhizome than *A. fenestrale*, covered at the growing point with a few small scales. Madagascar.

,, *ro'seum*. See A. DISTACHYUM ROSEUM.

,, *spatha'ceum ju'nceum* (B. M., t. 6399). ½. Pinkish. Autumn. S. Africa. 1879. Half-hardy.

APORE'TICA. A synonym of *Schmidelia*.

APO'RUM. See DENDROBIUM.

APPLE (*Pyrus Malus*). It is hardly necessary to record that the Apple is most extensively grown and the most useful of all hardy fruits. Varieties are very numerous. It is recorded in the 1868 edition of this book that there were 1496 varieties, and since that time many more have been added. The Apple in its wild state exists in most countries of Europe, and is generally known as the Crab. The English Crab is supposed to be one of the original parents of the fine varieties we now have; yet it appears that we are indebted to Normandy for some of the Cider apples, and to Holland and France for some of the dessert and kitchen varieties. From the immense number of varieties now cultivated it is difficult to make a selection. Many of those given in the old edition remain favourites, but many fine varieties have been added since; except where they have been fully tested it will be better to keep to old standard sorts. The following is a selection from those recommended by the leading authorities on fruit culture, most of which the writer is also acquainted with, but it must be remembered that sorts which succeed well in one locality fail in another, and before planting extensively local authorities should be consulted. In the list the time of ripening is given as near as possible, but some allowance must be made for position; seasons also have a great influence. And the various authorities differ in the times given for ripening. Apples are ready to gather when the pips (seeds) are of a dark brown or blackish colour, but some require to be kept for a time after they are gathered; while others are of better flavour if eaten as soon as gathered from the trees.

VARIETIES FOR DESSERT. *July–August.*—Beauty of Bath, Juneating (sometimes written "Joaneting") white, Juneating red (syn. Margaret), Irish Peach, Mr. Gladstone, Early Harvest; *August–September.*—Devonshire Quarrenden; Kerry Pippin, Miller's Seedling; Lady Dudeley, Yellow Ingestrie; Worcester Pearmain; Red Astrachan; and Langley Pippin. *September–October.*—James Grieve, Pine Golden Pippin; September Beauty, Golden Reinette, Washington, Cornish Aromatic, and King's Acre Pippin. *October–November.*—American Mother, King of the Pippins; Scarlet Nonpareil; Ribston Pippin; Margil; Blenheim Orange, and Wealthy. *November–December–January.*—Adam's Pearmain; Cox's Orange Pippin; Charles Ross; Mabbott's Pearmain, Christmas Pearmain, Allington Pippin, and Gravenstein. *January–February–March.*—Boston Russett, Court Pendu Plat, Lord Hindlip; Mannington Pearmain, Reinette du Canada, Claygate Pearmain. *March–April–May.*—Allen's Everlasting, Brownlee's Russett; Cockle's Pippin, Duke of Devonshire, Fearn's Pippin, Lord Burghley, and Reinette du Canada.

VARIETEIS FOR KITCHEN (*cooking purposes*). *August–September.*—Lord Suffield, Keswick Codlin, Duchess of Oldenburgh, Lord Grosvenor, Stirling Castle, Frogmore Prolific, and Pott's Seedling. *October–November.*—Beauty of Kent, Cellini, Cox's Pomona, Ecklinville, Emperor Alexander, Hambling's Seedling, Peasgood's Nonsuch, Golden Noble, The Queen, Worcestershire Pearmain, and Grenadier. *November–December–January.*—Bismarck, Blenheim Orange, Lady Henniker, Lane's Prince Albert, Gascoigne's Seedling, Tower of Glammis, Newton Wonder, Jubilee, Sandringham, Norfolk Beauty, and Dr. Harvey. *February–March–April.*—Alfriston, Bramley's Seedling, Wellington, King of Tomkins County, Annie Elizabeth, Northern Greening, Warner's King, Lord Derby, and Mere de Ménage.

APPLES FOR SMALL GARDEN. *Dessert.*—James Grieve, Juneating, Red Quarrenden, Cox's Orange Pippin, Miller's Seedling, Braddick's Nonpareil.

FOR KITCHEN USE.—Cellini, Lord Suffield, Cox's Pomona, Lane's Prince Albert, Newton Wonder, Stirling Castle, The Queen, Bismarck, and the old favourite, Keswick Codlin, may be added. For cottage gardens, if limited to a few sorts, James Grieve, Cellini, Lord Suffield, and Cox's Pomona should be included. Where only a few trees are grown it will be found more satisfactory to plant early varieties. And for market purposes a limited number of sorts which follow in succession will be found more profitable than growing a large collection.

CULTURE.—In a dictionary it is not necessary to go fully into cultural details, except to give a brief summary of the various methods of propagating, and the different modes of training, pruning, &c. The increasing of stock is the first thing to be considered. From seeds, of course, appears to be the most natural means, but since we have such a great number of varieties of garden origin, there is no reliance to be placed on getting any sort true from seeds. Yet those who have the space and time may find it interesting to raise seedlings, and by cross fertilisation some improved varieties may be raised. Fertilising should be done systematically. Taking two dessert varieties, one may be of good growth and a fair cropper, but wanting in quality. Fertilise from one of better quality which may not be so robust, but keep to sorts which come in at about the same time and which appear to have some affinity to each other. The same remarks apply to kitchen varieties. After a selection has been made keep persistently to the same varieties, and if on fruiting they show cross fertilisation has been effected, but not quite satisfactory results are obtained, work again on the seedlings, or raise more seedlings from the first without re-crossing. Seedlings may fruit earlier if grafted on the Paradise stock, and it will do no harm to cut back the young trees to provide the grafts (or scions). The time of bringing seedling Apples into fruiting trees varies considerably, but from three to four years is the earliest that they can be expected to bear fruit. The seedlings should be transplanted when about a year old, and this may be done as soon as the leaves are off in the autumn. Pruning will depend upon growth, but generally the terminal shoot may be shortened back, and if the trees are given plenty of room the laterals will make flower-buds much earlier than where the trees are crowded together. And more satisfactory results will be obtained by growing on a few carefully selected crosses than growing a larger number which have not been properly cross-fertilised. Propagation may be affected from cuttings, but this is rarely done except to provide stocks of the Codlings and Paradise for grafting on; these may also be obtained from layers. Most of the stocks grown for grafting or budding on are raised from seeds of the Crab. For standards the seedlings may be encouraged to grow freely, removing all side branches until the stem has reached from 6 to 8 feet high; they may then be budded with the desired sorts. This should be done in July or August. Great care should be taken that the wood used does not get withered during the process. A wet cloth should be used to wrap the wood, from which the buds are to be taken, up in. Where large quantities are done, it would not be advisable to wait for the weather, but where possible the budding should be done on a dull, damp day. It may be added that younger stocks may be budded and the stems formed from the variety to be grown. The bush and pyramid trees may be grown from budding on young seedlings. In the choice of stocks much depends upon varieties to be grown, and for what purpose. For fruiting early the Paradise is the best; there are several varieties of this, which originate from *Pyrus præcox*; the broad-leaved Paradise is recommended as one of the best. The Crab or native *Pyrus Malus* is the best for producing strong-growing trees as standards. Seedlings raised from the Cider Apples, and other hardy sorts, are also used.

GRAFTING.—This method of propagating is not so general as it was in years gone by; but where it is desirable to increase a variety as rapidly as possible no wood must be wasted. The stocks must be well established. There are many different methods of grafting—for Apples, whip or "tongue grafting" is perhaps the best method (see notes on GRAFTING). The scions (or grafts) should be taken in December, cut in suitable lengths, tied in small bundles, and buried in the ground under a north wall or other cool and shady position—this will retard them. The grafting should be done in March and April; the sap in the stocks will then be rising and ready to give support to the scions. Success depends greatly on having a very sharp knife and making quite clean cuts both on the stock and on the scion. Formerly

a band of wet clay was used, but moss is equally good and much less trouble. This tied round so as to fully cover the union and kept moist in dry weather will generally lead to success in grafting, but we have seen many failures, owing to the neglect of small details. A most important point is to keep the scions quite fresh, and in dry weather they should be covered with a wet cloth.

Methods of Growing, Training, &c.—Apple trees are adaptable to various forms of culture. For large orchards standards were most favoured, with small bush fruits such as Gooseberries and Currants growing between them, but modern growers find that the bush and pyramid trees are the most profitable. Messrs. Rivers and Sons suggest that the pyramids or bush-trees, if worked on the Paradise stocks, may be planted 9 feet apart each way, and this will require 537 trees to plant an acre. Bush fruits (Currants and Gooseberries) may be planted between the rows at a distance 6 feet between each plant. Apples on the Crab stock require more room, and should have at least 12 feet each way between the trees, and this will take 300 trees per acre.

Standards.—As stated above, these are not planted so extensively as formerly; yet in some positions they are very useful, if only for decorative effect. Here it may be noted that many hardy deciduous flowering trees are planted for effect, yet as a rule fruit trees which are equally beautiful when in flower, and more attractive when they have a crop of bright, rosy-tinted fruit, rarely find a place except in the orchard or kitchen garden.

Espaliers.—This is a term applied to trees trained with horizontal growths running from a main upright stem. They may be planted from 18 to 24 feet apart. The foundation or first horizontal laterals are formed before planting in a permanent position, after which the main upright central growth should be cut back to secure further side laterals; the ultimate numbers usually being four to six on either side of the main stem. And after the trees are properly furnished all erect shoots should be stopped back; this will throw the vigour into the horizontal branches. It is well known that sap, like hot water, will rise to the highest point, but stop the erect growths and the sap will flow horizontally. Espaliers form useful divisions in various parts of the kitchen-garden. Usually they are planted from 3 to 4 feet from the walks, leaving a border for flowers grown for cutting from, and vegetables are grown behind.

Cordons.—This term is applied to the trees trained horizontally with a single stem, or they may be grown obliquely or upright, but are confined to one or two stems. Trees of this kind make a nice edging for borders; and for walls where there are buttresses, cordons can be utilised with effect and profit. A cordon taken up each buttress will cover the space which the ordinary trained trees cannot be taken over.

Planting.—The earlier the trees can be planted after the leaves are off in the autumn the better, yet planting may be done up to the end of March. The first thing is to have the ground properly prepared by trenching and manuring; much will depend upon the nature of the soil. In some instances very little manure, if any, will be required, while some ground may have a liberal dressing. It will depend entirely on the quality of the ground, and also, to some extent, the sorts to be planted. The vigorous growing sorts crop best on poor ground. It is not necessary to trench the whole of the ground when planting, but a good space—say, 3 feet each way from the stem—should be well prepared. The trees if of any size will require to have some of the strong roots shortened back, and any roots that have been broken in digging up the trees should be cut off clean. It is as necessary to make clean cuts on the roots as it is when pruning the tops. In planting, the hole should be made wide, with a flat bottom. Spread the roots out evenly, and work the soil well among them. Press it firmly and cover all the roots, but do not plant too deeply. Standards require stakes, and these should be driven down deeply, so that they hold the trees firmly; for if the trees are not held in position the winds will twist them about and loosen the roots before they are established. Success depends greatly on a proper start. The liberal use of lime on the surface will be beneficial and go a great way towards eradicating vermin. It should be added that in the process of planting care should be taken to prevent the roots getting dry. The fibrous or most useful roots soon perish if exposed.

Pruning.—This is an important operation, especially in the formation of young trees. Clean cuts close above the wood bud is one great point. A shoot should be cut from the back of the bud, a little below the level, bringing the knife up to come out just above the bud. Canker may often be traced to injudicious pruning. If cut as above a callus will soon be formed, but when cut a little distance above a wood bud, the portion of stem above the bud will die back, and frequently leave a bad joint, which will cause canker later on. In regard to the time of pruning, winter pruning should be done as early as possible after the leaves are off the trees, but it is often left later. The advantage of early pruning is that the buds plump up from the base of the shoots, and the trees start more evenly. Methods of pruning depend upon the growth of the trees and the form of training. In the formation of bush trees the growths should be thinned out from the centre. Thick, bunchy trees are never satisfactory. Pyramids require to be headed back until the lower lateral branches are well developed. A pyramid may be grown to from 10 to 12 feet high, but this must be accomplished by yearly growths. After the trees are well built up it will only remain to cut back all young shoots from year to year, or leaving any to fill up vacancies, and it may occur that some of the main branches require to be cut away where the trees get too thick. The Espaliers and Cordons require what is termed spur pruning—that is, all growths cut back nearly close to the main stems, except leaving the main lateral shoot for extension where necessary. It is not advisable to cut in too close. If a few buds are left the terminal bud will grow and the lower ones form short flowering spurs for the following year, and perhaps part of the old wood may be cut back when pruning the following year.

Summer Pruning is sometimes recommended, but this requires to be done with care, and should not be done late in the season. Some of the surplus growths may be cut away about July or earlier, and shoots shortened back may form flowering spurs. When done too late only soft, unripened growths are made, and this will be of no use either for fruiting or for making the trees. Careful observation is the best means of ascertaining how to use the knife either for summer or winter pruning.

Insect Pests and Fungoid Diseases.—Apples are subject to numerous insect pests, and also to fungoid diseases—these will be more fully dealt with under Insect Pests and Diseases; but it may here be remarked that a thorough spraying in the winter, and again soon after the fruits are set, also a good dressing of lime on the ground, will go a great way towards keeping off troublesome pests.

Gathering Apples.—The question often arises, When should Apples be gathered? Outside appearances are rather deceiving. One of the best guides is to examine the seeds. Colour varies a little, but when they are dark brown or nearly black the Apples will be ripe enough to gather. Yet it may not always be desirable to gather as soon as the seeds have changed colour. If the Apples are not falling off the trees it may be better to leave them for a time, especially those that are to be kept for some time after they are gathered. If gathered before they are fully ripe they are liable to shrivel. Keeping also makes some difference. In large establishments a properly constructed fruit room is available. Small growers may store them in a cellar if there is not too much moisture, or any cool cupboard where the change of outside temperature does not affect them. Nothing should come in contact with the Apples that is likely to affect the flavour. Dry, clean straw may be used, or perfectly dry, clean boxes lined with clean paper; no printed paper should be employed. The time of keeping much depends upon how the Apples are handled. A very slight bruise will produce decay, and one left among sound fruit will cause the rot to spread.

APPLE BERRY. See Billardiera.

APPLE-BLOSSOM WEEVIL (*Anthonomus pomorum*). Apple Mussel Scale (*Aspidiotus conchiformis*). Apple or Codlin Grub (*Carpocapsa pomonana*). See Insect Pests.

APRICOT. *Pru'nus Armeni'aca.*

Varieties: 1. *Early Masculine.*—End of July. The best of the *very early* Apricots. Fruit rather small

round, and of a yellowish colour, tinted with red on one side.

2. *Large Early*, or *Precoce.*—Ripens next in order. An oblong fruit, of a palish-orange colour, with a very agreeable juice.

3. *Blenheim*, or *Shipley's.*—One of the most *useful* Apricots in the kingdom; for, although inferior in flavour to the Moorpark, it is a much greater bearer, and a sure ripener. An oval fruit, middle-sized, and of a palish-lemon colour. This kind is allied to the Moorpark; possibly a seedling from it.

4. *Hemskerk.*—Another of the Moorpark section; somewhat earlier. This also ripens safer than the Moorpark, and such is a weighty consideration with northern horticulturists. A roundish fruit, somewhat flattened at the crown; colour, orange and red.

5. *Breda.*—A well-known preserving fruit, and most eligible for growing, as an ordinary standard, in our southern counties, or on any trellis device. Called "*Brussels*" by some. A small fruit, generally of a cramped or angled appearance; of an orange colour, and richly flavoured.

6. *Royal.*—A good fruit, of very rich flavour, ripening just a little before the Moorpark. Of a large size, oval, and of an orange complexion.

7. *Moorpark.*—The first Apricot in the kingdom, taken altogether. A full-sized, roundish fruit, ripening about middle season; flavour first rate. No garden of any pretensions is complete without a Moorpark or two.

These are all that are truly essential either to the amateur or the cottager. For the amateur who, in a small garden, has room for three only, and those distinct kinds, we recommend Nos. 3, 5, and 7. If four, then take Nos. 1, 3, 5, 7. If five, then Nos. 1, 3, 5, 6, 7. For cottagers, we say, Nos. 3 and 7. Above all, we would recommend the "Shipley's" to the cottager, as being a hardier and a larger tree, and a much surer bearer. Besides the above, there are the Black, the Almond, Musch-Musch, very sweet, of the Breda section; the Orange, fitter for preserving than dessert, a good bearer; the Roman, another good bearer; the Turkey, a useful late variety; the Kaisha, a Syrian kind, delicious, and possessing a sweet kernel.

Choice of Trees.—Those who have to select, whether from stock of their own or from the nursery, should first see that the junction between the stock and the scion is complete, and thoroughly healed. If any gum or other exudation appear on any stem, by all means reject the tree as to present use.

Two or three years' trained trees are the most eligible, and such should possess at least two branches on either side, and a central one if possible. Care should be taken to select those in which the side-branches are of about equal thickness.

Propagation is best done by budding. Some choose the Apricot stock, or those from the kernels; others prefer the Plum stock: the latter, however, has been much complained of in late years. Our nurserymen have what is called a "commoner" stock, which appears to be a sort of wild Plum, and which, in general, answers pretty well.

For dwarfs, bud at 8 inches from the soil; for half-standards, at 3 feet; and for standards, at 5 feet.

Period of Planting.—Those who wish to gain time may plant successfully in the first or second week of October: any time, however, from that period until the early part of March will do.

Soil.—A good, sound, and rather unctuous loam is best, using a little ordinary vegetable matter, but no manure, unless on the surface. See MULCHING. Do not make the soil deeper than 18 inches. See article STATIONS.

Aspect.—A south aspect is best in the northern parts of the kingdom; but the east and west frequently produce superior fruit in the southern counties, where very warm aspects are apt to produce mealy fruit in hot seasons. Standards can only be grown in our southern districts, where they are sometimes very prolific and high-flavoured. As standards, they are several years in coming into bearing.

Training.—The branches should be on an average from 6 to 8 inches apart, and kept as horizontal as possible. The espalier is a very good form; but the ordinary fan-training is very well adapted, if care be taken to pinch over-luxuriant shoots in time.

Pruning must be regulated by the knowledge that, with the exception of such as the Moorpark, many varieties bear chiefly on the shoots of the previous year; the Moorpark mostly on spurs two and three years' old.

Summer Pruning.—Take off all fore-right shoots, and others that are irregular and misplaced, reserving those that are not too vigorous, and that will train in well for next year's bearing. If done early in May, the finger and thumb will supersede the necessity for the knife. Continue to nail the shoots to the wall, as necessary, during the summer, tying down or nailing in all short-jointed, weak-looking spray. Over-vigorous shoots may be stopped early in June, and be thus induced to put forth more fertile laterals.

Winter Pruning had best be done as soon as the leaves have fallen, though it may be carried on until the buds begin to swell, in March. Cut out any naked-looking shoots not more than four or five years old, avoiding amputations in the larger limbs, and get their places reoccupied by younger and better branches. Keep a leading shoot at the end of each branch. Vigorous shoots of the last year shorten as far as the points seem ill-ripened—weaker shoots about one-third. This promotes the production of laterals for next year's fruiting, and gives a fuller supply of sap to the blossom-buds. Cut off gross, fore-right spurs; but lateral spurs may be retained, as they sometimes produce blossom-buds, as they nearly always do in the Moorpark. Let also all decaying or imperfect points be pruned off.

Espaliers are to be formed as those on walls; standards only requiring dead, crowded, or chafing branches to be removed.

When an Apricot gets diseased, it is much more profitable to replace it by a younger, than to attempt its renovation.

Gathering should take place before the fruit is dead ripe, or it will be mealy.

Thinning should commence as soon as the fruit is large enough for tarts, in May, or early in June; no fruit being left nearer, finally, than about 5 inches to another. The thinning may be done, however, at twice.

Insects.—Wasps and flies are best kept off by a net, at least a foot from the wall. See EARWIG, SEMASIA, and APHIS.

Mildew is often the most formidable assailant of the Apricot, as it usually arises from excess of moisture to the root. Draining the border, and mixing lime with the soil, has, in such case, been found efficacious as a preventive; and, at the same time, sulphur, as a well-known and powerful antagonist of the mildew, may be carefully dusted over the tree.

Protection of Blossom.—We know of no fruit that more requires or deserves the fostering care of the gardener than this. Blossoming, as it frequently does, in the end of February or beginning of March, it must expect to be rocked by not only the "rude, imperious gale," but, what is much worse, to be subjected occasionally to a temperature of some ten or fifteen degrees of frost. We have ever found it the best policy to protect carefully, using a rather thick covering, and taking care to remove it on every possible occasion. Nothing can be better than a stout canvas. Some, however, use bunting; some, ordinary garden-mats; and not a few, the fronds of fern, spruce-branches, and even wisps of straw.

General Maxims of Culture.—First of all, a sound, loamy soil, with very little manure, is most suitable. It is well, nevertheless, in order to gain time, to use a little generous soil, to start the plant into free growth; second, to persist in summer stopping, in order to equalise growths; and, thirdly, after careful summer training, to remove all superfluous spray which shades the embryo fruit buds in the end of August. In addition to this, top-dressings in May, and the application of liquid-manure, when the fruit commences the last swelling, will be found useful adjuncts of high culture. Apricot-branches, especially the Moorpark, are apt to decay of a sudden, without apparent reasons. By persisting in the tying-down system, however, a succession is ever ready for any gap.

AQUA'RIUM is the place devoted to the cultivation of aquatic or water-plants. The majority of those cultivated are exotic, and require the protection of glass. If there are only a few of these, they may be successfully grown in cisterns, placed in a stove; but if the collection be extensive, it requires a separate edifice. The

tank-system of heating by hot-water offers a very superior mode of keeping the water at a fitting temperature. The leaden cistern in which the plants are submerged may rest readily upon the slates forming the cover of the tank. The handsomest form for this purpose would be a circular building, devoted entirely to the aquatics, because they do not thrive satisfactorily in parts or corners of a house in which other plants are cultivated. The size will depend upon the will or the means of the owner. If the cultivation of the imperial *Victoria regia* is intended, it ought not to be less than 26 feet diameter. This will allow a tank of 20 feet diameter, and a walk 3 feet wide round it. To make it hold water, the sides should be made of thick slates, fitted so as to be water-tight; or it may be built with bricks set in cement, and lined with the same. It should be at least 3 feet deep, for the *Victoria* loves deep water. The water should be heated with 4½-inch hot-water pipes, coiled three times round the tank, and two pipes should be carried round the house, near to the outer wall, to give heat to the air of the house. The roof should be formed with wrought iron bars, and should be flat, as far as possible, to allow the rain-water to run off freely. The *Victoria* should be planted on a mound of strong earth, the base of which should be, at the least, 5 feet in diameter, and the top 2 feet, and it should be brought up within a foot of the surface of the water. This should have a motion given to it by means of a vertical wheel, with narrow boards affixed to it at right angles, at 6 or 8 inches apart. This vertical wheel should dip into the water a few inches, and should play upon an axis, being set in motion by a small stream of water falling constantly upon the boards. This wheel will give a gentle motion to the whole surface of the water, which motion will be a faint imitation of a stream, and will be very beneficial to the plants. The heat of the water should be never lower than 70°. Air will be necessary in the hot days of summer, and may be given by means of shutters in the walls, 8 or 9 feet apart, and a circular opening in the roof, at the centre, 2 feet or 3 feet in diameter. This part may be easily contrived, by any mechanic, to lift up and fall down by a simple machinery. This will cause a circulation of air, necessary in all habitations of plants. If the *Victoria* is not intended to be grown, the house need not be more than half the size.

The *Victoria* house at Chatsworth is a noble structure for the purpose. It is, however, the opposite to our *beau ideal* of an aquarium, being square, with a circular tank in the centre, and the corners filled up with eight small tanks, in which are grown one plant of a kind of other fine, stove aquatics. A walk runs round the central tank, and that walk is entered by a short one from each side of the square. A walk, too, is formed into each corner; and a walk runs close along the front, thus forming the small tanks alluded to above. The diameter of the central tank is 33 feet, which will give us some idea of this truly noble aquarium; but very few cultivators will choose to go to the expense of erecting such a house.

The following are aquatic stove plants:—

Aponogeton angustifolium.
„ distachyum.
„ monostachyon.
Cyperus alternifolius.
„ Papyrus.
Damasonium alismoides.
Eichornia speciosa.
Euryale ferox.
Hydrocleis Commersonii.
Limnanthemum indicum.
Limnophyton obtusifolium.
Monochoria hastæfolia.
Nelumbium speciosum.
Nymphæa Lotus.
„ „ pubescens.
„ „ rubra.
„ stellata.
„ „ cærulea.
„ „ zanzibarensis.
„ tetragona.
Philydrum lanuginosum.
Pistia Stratiotes.
Pontederia cordata.
Sagittaria lancifolia.
Sauromatum guttatum.
Thalia dealbata.
Victoria regia.
Villarsia ovata.

Propagation and Culture.—Being all herbaceous plants, they are to be propagated as these generally are. Some are raised from seeds, which, in general, should be sown as soon as ripe, and the pots plunged in shallow water. When the plants come up, they may be transplanted into other pots, and shifted as they advance in growth, till in a pot of sufficient size to admit their flowering, which will generally take place the same season. Instead of being kept in pots, the plants may be inserted in a bed of earth, on the bottom of the aquarium. Keep the water warm, say from 70° to 75° in summer, and leave them nearly dry in winter. *Nelu'mbium specio'sum* requires a water heat of 84°.

Cyperus Papyrus, Nelumbium, Nymphæa, Hydrocleis, Hydrocharis, Sagittaria, and Pontederia, will furnish variety enough.

Aquarium for Hardy Aquatics.—For this choose the lowest part of your garden; dig out the soil or clay to a moderate depth; it may either be of a regular form, as a circle or oval, or irregular, which latter we prefer, with a bay in one part, a jutting promontory in another, a shelving shore here, and a steep bank, covered with shrubs, at another point. However small the piece of water may be, a little good taste and judicious management will have the best effect. Having formed the shape by digging out the soil to the required depth, from 2 to 3 feet, the next point is to make it hold water. There is nothing better than clay for this purpose: it will require preparing to make it retentive of water. Take a small portion, say a barrow-load, and chop it into small pieces with a sharp spade. If it be dry, add a little water to it; then, with a wooden hammer having a long handle, beat it well till every part is of a uniform consistency, having the appearance of clay dough. Spread this on the bottom of the pond, about 6 inches thick. Proceed with mixing up and beating barrow-load after barrow-load till the bottom is entirely covered; then either put on a pair of wooden-soled shoes, or go on it with naked feet; the last is the best way. Tread the prepared clay firmly, closely, and evenly down. Do this well and properly, and the bottom will never leak. As soon as that part is finished, mix and beat more clay for the sides. With the spade, as soon as it or a portion of it is ready, dab it against the sloping bank, commencing at and joining it to the clay bottom. As soon as this is done, beat it with the wooden hammer firmly against the bank. If you have plenty of clay, 8 inches will not be too thick for the sides. Remember, the more firmly the clay is beaten to the sides, the better it will hold water. The clay must be quite pure—that is, have no stones or other matter left amongst it. If there are any such left, they will serve as conduits for the water to escape by, and all your labour will be in vain. Proceed with adding layers of clay upward, until you reach the level you intend the water to be. Carry the clay-puddle 2 or 3 inches higher, level the natural soil down to it, and let this soil be 2 inches or more higher than the clay. This will prevent it cracking away from the bank. Your aquarium is now ready for the water. Previously to filling it, however, cover the bottom, upon the clay, with a coating of loam, 4 inches thick. This is intended to encourage the water-plants to root in, and to cause them to grow finely. If you can procure a sufficient quantity of rough stones or pebbles, place them against the banks. These will prevent the water from washing away the clay-puddle. All being now ready, let in the water.

Planting.—As soon as the aquarium is full of water you may plant the aquatics. The best mode is to have some wicker baskets of various sizes, to suit the size of each plant. Fill one with soil, inserting the plant intended for it at the same time; cover the top of the soil with some twisted hay-bands, coiling them round the plant; then lace them firmly down with some strong three-cord twine, passing it under the rim of the wicker basket, so as to keep in it the soil and the plant. Throw either a plank or a long ladder across the water. On this you can walk, carrying the plant with you. Drop it into the place you intend it for, and so treat all the other

water plants. Some of them—the *water-lily*, for instance—have their leaves floating on the surface; but this is not needful at first. They (the leaves) will soon rise to the surface, and assume their natural position. The *water-violet* has both its roots and leaves floating; all that is required, then, is to cast it into the water, and let it flourish as it pleases.

Some of our readers may wish to have aquatics cultivated in tanks formed with masonry, the water to be used for watering plants in pots, &c. This can be easily accomplished by puddling the bottom with clay, as mentioned above, and building upon it sloping walls, using Roman cement for mortar. These, if well executed, are very ornamental, and of a neat appearance. If the tank walls are carried up 3 or 4 feet above the level, the plants are then brought nearer to the eye. An example of this may be seen in the royal gardens at Kew. Single plants of this kind may be cultivated in vases, or even in troughs, the only thing they will require being a portion of mud at the bottom for the plants to root in. The after-culture the aquatics will require is, if possible, to change the water frequently, and keep the surface clear from water-mosses. A few ducks soon clear off the latter; otherwise the mosses must be skimmed, or flooded off with water, if there is supply enough.

The following are some of the best hardy aquatics:—

Stratio'tes aloi'des (water-soldier), native of Britain.

Aponoge'ton dista'chyum (two-spiked Aponogeton), a very pretty, floating aquatic, from the Cape of Good Hope; yet, although from a warm country, it is sufficiently hardy to survive an ordinary winter. It has white flowers.

Bu'tomus umbella'tus (Umbel-flowering Rush), one of the best of our native aquatics, found in ditches. It has beautiful heads of pink flowers, and does not require deep water; consequently, may be planted near the edge of the water. Cattle are very fond of its leaves.

Ca'lla palu'stris (Marsh Calla). a native of North America, and

Richa'rdia africa'na (African Calla), both plants of great beauty. The latter is, on that account, cultivated as a greenhouse and window plant, and is commonly called the "arum plant." This species is rather tender, but will survive our winter if planted in deep water.

Hotto'nia palu'stris (Marsh Hottonia), flesh-coloured flowers: a native of Britain.

Menya'nthes trifolia'ta (three-leaved Buckbean), with white flowers. This is another native species, growing in shallow waters. It is very pretty, and worth cultivation.

Nu'phar lu'teum (Yellow-flowered Nuphar), a fine water-plant, native of Britain.

Nu'phar a'dvena (Stranger Nuphar), yellow and red; a fine species, from North America.

Nymphæ'a a'lba (White Water-Lily). This is, without doubt, the finest of our hardy water-plants. It loves deep water, with plenty of room, and a muddy bottom to root in. It then will produce numbers of its beautiful, large, milk-white flowers.

Ty'pha latifo'lia (Broad-leaved Cat's-tail). Though not so showy as some species, this plant is worth growing, producing its large spikes of flowers abundantly in shallow waters.

Besides these there are—*Alisma Plantago; Echinodorus ranunculoides; Lobelia Dortmanna; Myriophyllum spicatum* and *verticillatum; Polygonum amphibium; Sagittaria sagittifolia; Teucrium Scordium; Trapa natans* and *bispinosa;* and *Limnanthemum peltatum* and *lacunosum.*

AQUIFOLIA'CEÆ. See ILEX.

AQUILA'RIA. (From *aquila*, an eagle, locally called Eagle-wood in Malacca. Nat. ord. *Aquilariads* [Thymeleaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

The Eagle-wood is the inside of the trunk of *Aquila'ria malacce'nsis* and *A. Aga'llocha*—esteemed a cordial in Asia. Cuttings in heat, in sand, and under a bell-glass. Sandy loam, with a little peat. Summer temp., 65° to 75°; winter, 55° to 60°.

A. malacce'nsis (Malacca). 6. Whitish-green. Malacca. 1823. A stove evergreen shrub.

AQUILE'GIA. Columbine. (From *aquila*, an eagle; in reference to the form of the petals. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia*.)

Seeds in March; common soil. Seedlings flower sometimes the first, but generally the second season. All hardy herbaceous perennials.

A. alpi'na (alpine). 1. Blue. June. Switzerland. 1731.
„ *anemonoi'des* (anemone-like). See ISOPYRUM GRANDIFLORUM.
„ *a'rctica* (arctic). See A. FORMOSA.
„ *atropurpu'rea* (dark purple). See A. VIRIDIFLORA.
„ „ *fischeria'na* (Fischer's). See A. VIRIDIFLORA.
„ *au'rea*. See A. CHRYSANTHA.
„ *baikale'nsis* (G. C., 1900, xxvii. 407). Flowers a combination of blue, white, and green.
„ *Bertolo'nii*. 1. Blue, violet. June. Syn. *A. Reuteri*.
„ *bi'color*. See A. SIBIRICA.
„ *brachy'ceras* (short-spurred). See A. LEPTOCERAS.
„ *cæru'lea*. 2. Blue and white. Rocky Mountains. 1864.
„ *cæru'leo-chrysa'ntha*. Garden hybrid. 1889.
„ „ *hy'brida*. Blue, white. Of garden origin.
„ *califor'nica hy'brida* (F. M., t. 278).
„ *canade'nsis* (Canadian). 2. Reddish-orange. June. N. Amer. 1640.
„ „ *au'rea*. See A. FLAVESCENS.
„ „ *lu'tea* (yellow-flowered). 1. Pale yellow. May. N. Amer. 1835.
„ *chrysa'ntha*. 2 to 4. Yellow. California. 1873. Syn. *A. leptoceras chrysantha*.
„ „ *flave'scens*. See A. FLAVESCENS.
„ *dahu'rica* (Dahurian). See A. VIRIDIFLORA.
„ *ecalcara'ta* (Gfl., 1903, 576). Japan.
„ *flabella'ta* (Rev. Hort., 1887, p. 548, f. 110).
„ „ *na'na flo're albo*. Garden variety.
„ *flave'scens*. Yellow. California. 1872.
„ *formo'sa* (beautiful). 2. Red, orange. June. N. Amer. 1822.
„ *fra'grans* (fragrant). ½. Yellow-striped. May. Himalayas. 1839.
„ *garnieria'na* (Miss Garnier's). See A. SIBIRICA.
„ *glandulo'sa* (glandular). 2. Whitish-blue. June. Siberia. 1822.
„ „ *co'ncolor* (one-coloured). 2. Violet. July. Altaia. 1822.
„ „ *di'scolor* (two-coloured). Bluish-white. June. Siberia. 1789.
„ „ *jucu'nda* (B. R., 1847, t. 19). 1½. Blue. June. Siberia. 1844.
„ *glau'ca* (milky-green). 2. Whitish-yellow. June. Himalayas. 1839.
„ *grandiflo'ra* (large-flowered). See A. GLANDULOSA.
„ *Hele'næ* (W. G., 1902, 104). Garden hybrid between *A. flabellata nana alba* and *A. cærulea*.
„ *Hooke'ri*. (Figured in B. M., t. 6552, as *A. formosa*.)
„ *hy'brida* (hybrid). See A. VULGARIS.
„ *jucu'nda* (joyous-looking). See A. GLANDULOSA JUCUNDA.
„ *kanaorie'nsis* (B. M., 4693). See A. MOORCROFTIANA.
„ *Kitaibe'lii*. 2. Purple. June. Asia Minor.
„ *lepto'ceras* (slender-horned). 1. Blue. June. Russia. 1833.
„ *longi'ssima*. Yellow, straw, or reddish. Texas and Mexico. 1888.
„ *macra'ntha* (Fl. Ser., t. 531). See A. CÆRULEA.
„ *moorcroftia'na*. 1. White, blue. June. Himalayas.
„ *ni'gricans* (Belg. Hort., vol. 4, t. 1). See A. VULGARIS.
„ *oly'mpica*. 1½. Mauve-blue, white. 1880.
„ *oxyse'pala*. Siberia. 1890.
„ *parvifo'ra* (small-flowered). 1. Purple. June. Siberia. 1819.
„ *pubifo'ra* (woolly-flowered). Pale purple. June. India. 1839.
„ *pyrena'ica* (Pyrenean). 1. Blue. July. Pyrenees. 1818.
„ *Reute'ri*. See BERTOLONII.
„ *sibi'rica* (Siberian). 2. Blue, white. June. Siberia. 1806.
„ *Skinne'ri* (Mr. Skinner's). ½. Red, green. May. Mexico. 1841.
„ *specio'sa*. See A. SIBIRICA.
„ *specta'bilis*. See A. SIBIRICA.
„ *Stua'rtii*. Garden hybrid. 1888.
„ *thalictrifo'lia* (Gfl., t. 961, f. 1). 2. Blue. Summer. Tyrol. 1879.

A. transsilva'nica (G. C., 1892, xi. 650). See A. VULGARIS TRANSSILVANICA.
,, *viridiflo'ra* (green-flowered). 2. Green, yellow. June. Siberia. 1780.
,, *visco'sa* (clammy). See A. KITAIBELII.
,, *vulga'ris* (common). 2. Blue. June. Britain.
,, ,, *a'lba*. Pure white.
,, ,, *atra'ta*. Dark violet. Germany. 1890.
,, ,, *cornicula'ta* (small-horn-double). 2. Blue, white. June. Europe.
,, ,, *de'gener* (degenerate-double). 2. Blue, white. June. Europe.
,, ,, *ecalcara'ta* (spurless).
,, ,, *e'legans* (elegant). 1. Purple. June. Europe.
,, ,, *hy'brida*. Lilac-purple, white.
,, ,, *inve'rsa* (inverted-double). 2. Blue, white. June. Europe.
,, ,, *stella'ta* (starred-double). 2. Blue, white. June. Europe.
,, ,, *transsilva'nica*. Bright purplish-blue. Transylvania. 1892.
,, ,, *verve'na'na*. Leaves variegated.
,, ,, *wittmanni'ana*. Lilac-purple, white.

AR'ABIS. Wall-cress. (From *Arabia*, probably in reference to the dry situations where many of the species grow. Nat. ord. *Crossworts* or *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Pretty rock-work ornaments; seeds in March or August; cuttings under hand-lights; common soil. Hardy perennial trailers, except where otherwise specified.

A. a'lbida (whitish). 1. White. July. Caucasus. 1798.
,, ,, *flo're ple'no* (double).
,, ,, *flo're ple'no variega'ta*. Double and variegated.
,, ,, *variega'ta* (variegated-leaved). ¾. White. February. Gardens.
,, *Allio'nii*. 1. White. May. Piedmont. 1658.
,, *alpe'stris* (rocky). 1. White. July. Switzerland. 1819. Hardy biennial.
,, *alpi'na* (alpine). 1. White, yellow. May. Switzerland. 1596.
,, ,, *clusia'na* (Clusius's). 1. White. May. Pyrenees. 1596.
,, ,, *na'na* (dwarf). 1. White. May. Switzerland. 1819.
,, *ambi'gua* (doubtful). See A. PETRÆA.
,, *areno'sa* (sand). 1. Pink. July. Germany. 1798. Hardy annual.
,, *auricula'ta*. 1. White. June. Podolia. 1827.
,, *bellidifo'lia* (daisy-leaved). 1. White, yellow. June. Switzerland. 1773.
,, *blepharophy'lla* (B. M., t. 6087). Rosy purple. Spring. California. 1874.
,, *cæru'lea* (blue). 1. Pale blue. June. Switzerland. 1793.
,, *cilia'ta* (eye-lashed). 1. White. June. Ireland. Hardy biennial.
,, *colli'na* (B. M., t. 3021). White or pale purple. Naples.
,, *crispa'ta* (curled). See A. ALPINA.
,, *curtisi'liqua* (short-podded). See A. HIRSUTA.
,, *dasyca'rpa* (thick-podded). See A. AURICULATA.
,, *flexuo'sa* (zigzag). See A. SERPYLLIFOLIA.
,, *Halle'ri*. 1. Pale red. June. Europe. 1824.
,, *hirsu'ta*. 1. White. June. Britain.
,, *Holbœ'llii*. 1. Lilac. August. N. Amer. 1836.
,, *lasiolo'ba* (jagged-lobed). 2. White. June. Mexico. 1820. Hardy biennial.
,, *lilaci'na* (lilac-flowered). See A. HOLBŒLLII.
,, *longifo'lia* (long-leaved). See A. ALBIDA.
,, *lu'cida* (shining-*leaved*). 1. White. June. Hungary. 1790.
,, ,, *variega'ta* (variegated-*leaved*). 1. White. June. Gardens.
,, *mo'llis* (soft). 1. White. June. Caucasus. 1817.
,, *mura'lis*. Spring and summer. Italy.
,, ,, *ro'sea* (B. M., t. 3246). Rose. 1832.
,, *nu'tans* (nodding). See A. ALLIONII.
,, *ovirie'nsis* (ovirian). See A. HALLERI.
,, *pe'ndula* (Jacq. Vind., vol. 3, t. 34). White. May to June. Siberia.
,, *petræ'a* (rock). 1. White. June. Britain.
,, ,, *ambi'gua*. White. June. Britain.
,, ,, *hastula'ta* (halbert-*leaved*). 1. Purple. June. Britain.
A. petræ'a hi'spida (bristly). 1. White. June. Scotland.
,, *præ'cox* (early). See A. PROCURRENS.
,, *procu'rrens* (procurrent). 1. White. June. Hungary. 1818.
,, ,, *variega'ta*. White. Graceful rock trailer.
,, *pu'mila* (dwarf). 1. White. June. Austria. 1816.
,, *retrofra'cta* (bent-back). See A. HOLBŒLLII.
,, *ro'sea* (rosy-*flowered*). See A. MURALIS ROSEA.
,, *schivereckia'na* (Shivereck's). 1. White. June. Austria. 1826.
,, *serpyllifo'lia*. White.
,, *stellula'ta* (little-starred). See A. PUMILA.
,, *stenope'tala* (narrow-petaled). 1. White. June. 1818. Hardy biennial.
,, *stolonife'ra* (shoot-bearing). 1. White. June. Carniola. 1818.
,, *stri'cta* (upright). Cream. May. England.
,, *Todaro'i*. May. 1881.
,, *toxophy'lla* (bow-leaved). See SISYMBRIUM TOXOPHYLLUM.
,, *undula'ta* (waved-*leaved*). See A. ALPINA.
,, *ve'rna* (spring). 1. Purple. May. France. 1710. Hardy annual.

ARA'CEÆ or **AROIDEÆ.** A considerable order of herbaceous plants, with tuberous rhizomes. Flowers on a spadix, unisexual, or hermaphrodite, protected by a spathe; large radical leaves. The genera attached to this order include: Alocasia, Arum, Caladium, Colocasia, and Dieffenbachia.

A'RACHIS. Earth-nut. (From *a*, not, and *rachis*, a branch; a branchless plant. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Seed; sandy loam; summer temp., 60° to 75°; winter, 55° to 65°; but may be treated as an annual.

A. hypoga'a (underground). 2. Yellow. June. Africa. 1812.

ARACHNA'NTHE. (From *arachne*, a spider, and *anthos*, flower. Nat. ord. Orchideæ; tribe Vandeæ-Sarcantheæ.) Stove orchids. For treatment, see VANDA.

A. annamе'nsis. 1½. Yellow and red-brown. Annam. 1905.
,, *be'lla*. Pale ochre, cinnamon; lip white, purplish-brown. Malaya. 1888. Syn. *Esmeralda bella*.
,, *bili'nguis*. Khasia and Burma.
,, *Cathca'rtii*. Yellow, red, white. India. 1864. Syn. *Vanda Cathcartii*.
,, *Cla'rkei* (B. M., t. 7077). Yellow, red. September. E. Himalayas. 1885. Syns. *Esmeralda Clarkei* and *Vanda Clarkei*.
,, *Lo'wii*. Yellow, brown. February. Borneo. 1846. Syns. *Renanthera Lowii* and *Vanda Lowii*.
,, ,, *rohdenia'na* (Veitch Man. Orch. Phalæn., 10). Dwarf form, with brighter coloured flowers. Borneo.
,, *moschife'ra*. Creamy-white or yellowish. Java. 1793. Syns. *Epidendrum Flos-aëris*, *Renanthera arachnites*, and *R. Flos-aëris*.

ARACHNIMO'RPHA. A synonym of *Rondeletia*.

ARA'LIA. (Meaning unknown. Nat. ord. *Ivyworts* [Araliaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*.)

Aromatic gum-resin is produced from the root of *A. racemo'sa*, *spino'sa*, and *hi'spida*. The young shoots of *A. edu'lis* are used in China as a delicate vegetable; and in North America the shoots of *A. nudicau'lis* are used like sarsaparilla. Hardy species, division of the plants, and also division of the roots. Greenhouse and stove species; cuttings of the ripe wood, in a gentle heat, strike quickly. Sandy loam and peat; common treatment. All stove evergreens, except where otherwise specified.

A. acule'ata (prickly). See BRASSAIOPSIS.
,, *amboine'nsis* (Gartenwelt, viii., 139 f.).
,, *arbo'rea* (tree). See DENDROPANAX.
,, *balfouria'na* (G. C., 1898, xxiii. 250).
,, *cachemi'rica* (G. and F., 1888, 320). Cashmere.
,, *capita'ta* (capitate). See OREOPANAX.
,, *Chabri'rii*. See ELÆODENDRON ORIENTALE.
,, *chine'nsis*. 5. White. 1838.
,, ,, *ela'ta*. Tall.
,, ,, *fo'liis aureo-varie'gatis* (M. G. Z., 1896, 323). Golden variegated leaves.
,, *cochlea'ta* (shell-leaved). See PANAX.

A. corda'ta. Japan. 1843.
„ *crassifo'lia* (thick-leaved). See PSEUDOPANAX.
„ „ *pi'cta.* See PANAX LONGISSIMUM.
„ *deleaua'na.* See PANAX FRUTICOSUM DELEAUANUM.
„ *digita'ta* (finger-*leaved*). See OREOPANAX XALAPENSE.
„ *edu'lis* (eatable). See A. CORDATA.
„ *elegantí'ssima.* Polynesia. 1873.
„ *excé'lsa.* See LEEA COCCINEA.
„ *Farge'sii* (Farge's). Small hardy tree. Central China. 1910.
„ *ferrugi'nea.* See SCIADOPHYLLUM.
„ *filicifo'lia.* Leaves green, with purplish midribs. Polynesia. 1876.
„ *fra'grans.* See HETEROPANAX.
„ *ge'mma* (Ill. Hort., vol. 30, t. 477). New Caledonia. 1875.
„ *Ghiesbre'chtii.* See OREOPANAX XALAPENSE.
„ *glomerula'ta.* See BRASSAIOPSIS SPECIOSA.
„ *graci'llima.* See A. VEITCHII GRACILLIMA.
„ *granaté'nsis.* Colombia. 1874.
„ *Guilfo'ylei.* See PANAX FRUTICOSUM.
„ *handsworthé'nsis* (Gard., 1901, lix. 401). See A. VEITCHII GRACILLIMA.
„ *He'nryi* (Dr. Henry's). 5. Leaves with 4–5 leaflets. Central China. 1910.
„ *hi'spida.* 8. White. July. N. Amer. 1799. Hardy, deciduous.
„ *japo'nica.* See FATSIA JAPONICA.
„ *kerchovea'na.* South Sea Islands. 1883.
„ *leptophy'lla.* See DIZYGOTHECA.
„ *lo'ngipes* (Bull. Cat., 1883, 12). N. Australia.
„ *Low'æ* (G. C., 1899, xxvi. 366). Stiff habit, with pinnate dark green leaves.
„ *macrophy'lla* (large-leaved). See MERYTA LATIFOLIA.
„ *macula'ta.* Leaves green, petioles blackish-purple, dotted with green. Polynesia.
„ *mandschur'ica* fol. *au'reo-variega'ta* (Veitch Cat., 1905, 36). See A. CHINENSIS FOLIIS AUREO-VARIEGATIS.
„ *Maximowi'czii.* Japan. 1874. See ACANTHOPANAX RICINIFOLIUM.
„ *mi'cans.* See PANAX SPLENDENS.
„ *monstro'sa.* Leaflets white-margined, grey blotched. Polynesia. 1880.
„ *muehlenbergia'na* (Muhlenberg's). See A. HISPIDA.
„ *no'bilis* (Williams' Cat., 1882, 24). Light green, marbled with darker green.
„ *osya'na.* Resembling *A. leptophylla.* South Sea Islands. 1870.
„ *palma'ta.* See TREVESIA SUNDAICA.
„ *papyrí'fera.* See FATSIA.
„ *pelta'ta.* Trop. Amer. 1869.
„ *pentaphy'lla.* See ACANTHOPANAX SPINOSUM.
„ „ *variega'ta.* Leaves broadly edged with creamy-white. Japan. 1874. See ACANTHOPANAX SPINOSUM.
„ *pube'scens.* 6. White. W. Ind. 1818.
„ *quercifo'lia* (Williams' Cat., 1881, 21, 30). Leaflets light shining green. New Britain.
„ *quinquefo'lia.* "Ginseng." Hardy. N. Amer.
„ „ *gra'cilis* (G. C., 1882, xvii. 217). Seedling variety, of slender habit.
„ *racemo'sa* (raceme-*flowering*). 4. White. July. N. Amer. 1658. Hardy herbaceous.
„ *Regí'næ* (Ill. Hort., 1879, t. 337). See DIZYGOTHECA.
„ *reticula'ta.* See OREOPANAX.
„ *rotu'nda* (Bull. Cat., 1883, 12). Polynesia.
„ *sambucifo'lia* (elder-leaved). 5. White. August. N. Holland. 1823. Greenhouse evergreen.
„ *Scheffle'ra.* See SCHEFFLERA DIGITATA.
„ *sciadophy'llum.* See SCIADOPHYLLUM BROWNII.
„ *Shephe'rdii* (Shepherd's). Green. New Zealand. 1842.
„ *sonchifo'lia* (Lind. Cat., 1878, 3). See MERYTA SONCHIFOLIA.
„ *specta'bilis.* See A. FILICIFOLIA.
„ *spino'sa* (thorny). 8. White. Virginia. 1688. Hardy deciduous.
„ *spinulo'sa* (Williams' Cat., 1881, 18, 30). Dark green, margined with reddish-crimson spines. 1881.
„ *terna'ta.* New Britain. 1879.
„ *Thibau'tii.* See OREOPANAX.
„ *trifo'lia* (three-leaved). See PSEUDOPANAX CRASSIFOLIUM TRIFOLIUM.
„ *tri'loba* (Bull. Cat., 1905). Dark green. New Caledonia. 1896.
A. umbraculi'fera (shade-giving). See POLYSCIAS NODOSA.
„ *Vei'tchii* (Ill. Hort., 1875, t. 225). Leaves brownish. New Caledonia. 1867.
„ „ *graci'llima.* Leaves with white midribs. Polynesia. 1876. Syn. *A. gracillima.*

ARALIA'CEÆ. An order of trees, shrubs, or (rarely) herbaceous plants, often pubescent, and sometimes spiny. The flowers are variously disposed, hermaphrodite or unisexual, with valvate petals, usually five. The family is closely akin to Umbelliferæ, whilst the genera include Aralia and Hedera.

ARAR-TREE. A common name for *Callitris quadrivalvis.*

ARAUCA'RIA. (From *Araucanos*, the name of the people in whose country *Arauca'ria imbrica'ta* grows in Chili. Nat. ord. *Conifers* [Coniferæ]. Linn. *22-Dicœcia, 13-Polyandria.*)

The most popular species of this genus are *A. excelsa* and *A. imbricata.* The first named is not quite hardy, but is one of the most symmetrical greenhouse foliage plants we have, and there are several distinct varieties. It is generally known as the Norfolk Island Pine. Seeds being very perishable they rarely reach this country in good condition, but seedling plants from the west coast of Africa packed in selaginella reach here in a healthy state, and if the tops are taken off and rooted they make better plants than seedlings, the latter being deficient in branches at the base. The same plants when well established will give more cuttings, but it is only the terminal growths that are of any use. Seeds to arrive in good condition must be packed in moist soil and stored where there is no great change in temperature. We have received seeds of *A. Cunninghami* from Australia packed in loam, and germination has started on the voyage, but dry seeds have always failed. *A. imbricata*, though having such large seeds, are equally perishable, and should be packed in moist sand or loam. Seeds of this are said to be good food when roasted. All require good loamy compost, and for cuttings plenty of sand.

A. Bala'nsæ. 130 to 160. New Caledonia. 1875.
„ *Bidwi'llii* (Mr. Bidwill's). 150. Apetal. Moreton Bay.
„ *brasilia'na* (Brazilian araucaria, or pine). 100. Apetal. Brazil. 1819.
„ „ *gra'cilis.*
„ „ *ridolfia'na.*
„ *columna'ris.* Synonym of *A. Cookii.*
„ *Coo'kii* (B. M., t. 4635). 200. New Caledonia. 1851. Syn. *A. columnaris.*
„ „ *au'rea.* Foliage golden-yellow.
„ *Cunningha'mii.* 100 feet. Moreton Bay. Syn. *Altingia Cunninghamii.*
„ „ *glau'ca.* With silvery glaucous leaves.
„ „ *longifo'lia.*
„ *e'legans.* See A. BRASILIANA.
„ *excé'lsa.* 150 feet. Norfolk Island Pine. Syn. *Altingia excelsa.*
„ „ *a'lbo-spi'ca.*
„ „ *glau'ca*, with lighter green and very glaucous foliage.
„ „ *goldiea'na.* New Caledonia.
„ „ *Muelle'ri.* New Caledonia.
„ „ *robu'sta.* Larger in all its parts.
„ „ *Silver Star* (G. C., 1909, xlv. 386).
„ „ *virga'ta* (M. D. G., 1906, 193).
„ *goldiea'na.* See A. EXCELSA.
„ *imbrica'ta.* 50 to 100. The Monkey puzzle. Chili. 1796.
„ „ *au'rea.*
„ „ *platifo'lia* (G. C., 1895, xvii. 468). With broader leaves.
„ „ *variega'ta.*
„ *Muelle'ri* (Ill. Hort., 1882, t. 449). See A. EXCELSA.
„ *Ru'lei.* 50. Papuan Archipelago.
„ „ *e'legans.* With smaller leaves, and branchlets more slender.

ARAU'JIA. (Native name. Nat. ord. Asclepiadaceæ.) Intermediate greenhouse climbers, from seeds sown early in spring or cuttings from short side-shoots, in close frame, with bottom-heat. Grows freely in fibrous loam, leaf-mould and manure added.

A. angustifo'lia. Green, white, purple. Uruguay. 1865.
„ *grandifio'ra.* White. October. Brazil. Syns. *Physianthus auricomus* (B. M., t. 3891), *Schubertia graveolens* (B. R., 1846, t. 21), *Schubertia grandiflora* of gardens.
„ *grave'olens.* See A. GRANDIFLORA.
„ *serici'fera.* White; pale rose in bud. August. Buenos Ayres. 1830. Syns. *Physianthus albens* (B. M., t. 3201; B. R., t. 1759).

ARBORE'TUM is a collection of trees and shrubs capable of enduring exposure to our climate. These are sometimes arranged in genera, according to their precedence in the alphabet; but best in groups, conformably to the natural system; and, whichever is adopted, it is quite compatible with an attention to facility of access by means of walks, as well as to picturesque effect.

A'RBOR VI'TÆ. *Thu'ya.*

ARBOUR is a seat shaded by trees. Sometimes these are trained over a wooden or iron trellis-work, mingled with the everlasting sweet-pea, clematis, and other climbing, sweet-scented plants. When the trellis-work is complicated, and the structure more elaborate, with a preponderance of the climbers already named, together with the honeysuckle, &c., they are described as *French* or *Italian arbours.*

A'RBUTUS. Strawberry-tree. (From *arboise*, a Celtic word for rough fruit. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia.*)
Seeds, budding, and inarching. Common soil for the hardy species; sandy loam and peat for those which require the protection of a greenhouse in winter. All those are hardy evergreens which are not otherwise described.

A. alpi'na. See ARCTOSTAPHYLOS ALPINA.
„ *Andra'chne* (andrachne). 10. White. April. Levant. 1724.
„ „ *serratifo'lia* (B. C., t. 580). Syn. *A. serratifolia.* See A. HYBRIDA.
„ *andrachnoi'des* (andrachne-like). See A. HYBRIDA.
„ *canarie'nsis* (Canary). 8. Whitish-green. June. Canaries. 1796. Greenhouse evergreen.
„ *densifio'ra* (thickly-flowered). 20. White. Mexico. 1826. Greenhouse evergreen.
„ *hy'brida* (hybrid). Whitish-yellow. Garden origin.
„ *laurifo'lia* (laurel-leaved). See A. XALAPENSIS.
„ *Menzie'sii* (Menzies'). White. N. Amer. 1827.
„ *Mille'ri* (Miller's). 10. White. September. Hybrid. Orient.
„ *mo'llis* (B. M., t. 4595). 6. Rose. June. Mexico.
„ *mucrona'ta* (sharp-pointed leaved). See PERNETTYA.
„ *phillyreæfo'lia* (phillyrea-leaved). See PERNETTYA.
„ *pilo'sa* (hairy-branched). See PERNETTYA.
„ *proce'ra* (tall). See A. MENZIESII.
„ *pu'mila* (dwarf). See PERNETTYA EMPETRIFOLIA.
„ *serratifo'lia* (saw-edged-leaved). See A. HYBRIDA.
„ *speciо'sa* (showy). Mexico. 1837.
„ *tomento'sa* (woolly-*branched*). See ARCTOSTAPHYLOS PUNGENS.
„ „ *nu'da* (smooth-*branched*).
„ *U'nedo* (unedo). 10. White. October. Ireland.
„ „ *cri'spa* (curled). 8. White. October.
„ „ *Croo'mii.* See var. A. RUBRA.
„ „ *integ'rrima* (entire-leaved). 6. Pink. October.
„ „ *ple'na* (double-flowered). 5. White. October.
„ „ *ru'bra* (red-flowered). 10. Pink. October.
„ „ *salicifo'lia* (willow-leaved). 6. White. October.
„ „ *schizope'tala* (cut-petaled). 7. White. October.
„ *U'va-u'rsi.* See ARCTOSTAPHYLOS UVA-URSI.
„ *va'rians* (Paxt. Fl. Gard., 11, p. 118, f. 197).
„ *xalape'nsis* (Journ. Hort. Soc., vol. 5, p. 193). 6 to 9. Reddish-white. April. Mexico.

ARCADE is a walk arched over with trellis-work, and this covered with climbers.

ARCHANGEL, or **WHITE DEAD NETTLE.** *La'mium a'lbum.*

ARCHANGE'LICA. (From *arche*, chief, and *angelica*, from its supposed virtues. Nat. ord. *Umbelliferæ* [Umbelliferæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

A. hirsu'ta (hairy). 1. White. July. N. Amer. 1824.
„ *officinia'lis* (officinal). 4. Green. July. England.

This is the same as *Ange'lica Archange'lica.* There are two other species, but worthless. Seeds in April; common soil.

ARCHO'NTOPHŒ'NIX. (Greek *majestic phœnix.*) Palmaceæ; tribe Arecеæ. For culture, see PALMS.

A. Alexa'ndræ (H. Wendl. and Drude). 70. Also known as *Ptychosperma Alexandreæ.* Queensland. 1870.
„ *cunninghamia'na* (H. Wendl. and Drude). 60. Also known as *Seaforthia elegans.* Queensland.

ARCTIUM. (From Greek word for bear, probably alluding to the shaggy root.)
Cultivated in Japan for the roots as a vegetable.

ARCTO'GERON. (From *arktos*, a bear, and *geron*, an old man. Nat. ord. Compositæ.)
Hardy perennial herb. Seeds; divisions. Ordinary garden soil.

A. grami'neum (grassy). ½. Purple. July. Siberia. 1824.

ARCTOSTA'PHYLOS. (From *arktos*, a bear, and *staphyle*, a berry. Bears eat the fruit of some species. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia.*)
Hardy plants, requiring treatment similar to Arbutus.

A. alpi'na (alpine *blackberried*). 1. Flesh. April. Scotland. Deciduous trailer.
„ *arbutoi'des* (Arbutus-like). 6. White. May. Guatemala. 1842.
„ *argu'ta.* Calyx red, corolla white. Mexico. 1836.
„ *califo'rnica.* A variety of *A. Uva-ursi.*
„ *cordifo'lia.* See A. TOMENTOSA.
„ *di'scolor.* See A. ARGUTA.
„ *glau'ca.* 8 to 24. Fruit red. California.
„ *longifo'lia* (long-leaved). Mexico. 1847. Half-hardy evergreen under-shrub.
„ *Manza'nita* (B. M., t. 8128). California.
„ *nevade'nsis* (M. D. G., 1896, 18). California.
„ *ni'tida* (shining). See A. ARGUTA.
„ *polifo'lia* (Polium-leaved). Crimson. May. Mexico. 1840.
„ *pu'ngens* (stinging). 1. White. February. Mexico. 1839. Half-hardy evergreen shrub.
„ *tomento'sa* (downy). White. N. Amer. 1826. Evergreen shrub. Syn. *A. cordifolia* and *Arbutus tomentosa.*
„ „ *hi'spida* (B. M., t. 3320). White. December. Mouth of Columbia River.
„ „ *nu'da.* With glabrous branches.
„ *U'va-u'rsi* (bear's-grape). 1. White. April. Britain. Evergreen trailer.
„ „ *califo'rnica.*

ARCTOTHE'CA. (From *arktos*, a bear, and *theke*, a capsule; seed-pod, or capsule, as rough as a bear. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea.* Allied to Arctotis.)
Greenhouse herbaceous perennials. Division of the plant; peat and loam. Summer temp., 55° to 65°; winter, 40° to 45°.

A. grandifio'ra (great-flowered). See A. REPENS.
„ *hi'rta* (hairy). 1. Yellow. July. Cape of Good Hope. 1820.
„ *re'pens* (creeping). 1. Yellow. July. Cape of Good Hope. 1793.

ARCTO'TIS. (From *arktos*, a bear, and *ous*, an ear. Shaggy fruit. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria.*)
General treatment same as for Arctotheca. Many are easily propagated by cuttings in sand, under a bell-glass, in a shady, cool place, and a few by seeds. All greenhouse evergreens, except where otherwise specified.

A. acau'lis (stemless). 1. Yellow, red. May. Cape of Good Hope. 1759. Greenhouse herbaceous perennial.
„ *angustifo'lia* (narrow-leaved). 2. Purple. August. Cape of Good Hope. 1739.
„ *arbore'scens* (tree-like). See A. ASPERA ARBORESCENS.
„ *arge'ntea* (silver-*leaved*). 1. Orange. August. Cape of Good Hope. 1774. Greenhouse biennial.
„ *a'spera* (*broad*-rough-*leaved*). 3. Yellow. August. Cape of Good Hope. 1710.

A. a'spera arbore'scens. 2. White, pink. 1818.
„ „ *cichora'cea.* 1. White, red. July. Cape of Good Hope. 1812. Syn. *A. bicolor.*
„ „ *inci'sa* (Jacq. H. Schœn., t. 169). Syn. *A. auriculata.*
„ „ *sca'bra.* Syn. *A. maculata.*
„ „ *undula'ta.* Syn. *A. aureola.*
„ *aure'ola* (golden). See A. ASPERA UNDULATA.
„ *auricula'ta* (ear-*leaved*). See A. ASPERA INCISA.
„ *bellidifo'lia.* Syn. *A. paniculata.*
„ *bi'color* (two-coloured). See A. ASPERA CICHORIACEA.
„ *ca'ndida.* Syn. *A. glaucophylla.*
„ *Cinera'ria* (cineraria). 2. Yellow, orange. July. Cape of Good Hope. 1824. Greenhouse herbaceous perennial.
„ *cu'prea* (copper-coloured). See A. ASPERA UNDULATA.
„ *decu'mbens* (decumbent). See A. STŒCHADIFOLIA.
„ *decu'rrens* (decurrent). See A. ANGUSTIFOLIA.
„ *ela'tior* (taller). 2. Yellow, purple. July. Cape of Good Hope. 1820.
„ *fastuo'sa* (disdainful). 2. Orange, red. June. Cape of Good Hope. 1795. Greenhouse biennial.
„ „ *spinulo'sa.* Syn. *A. spinulosa.*
„ *fla'ccida* (flagging-*stalked*). 1. White, red. June. Cape of Good Hope. 1794. Greenhouse annual.
„ *glabra'ta* (smoothish). See A. LÆVIS.
„ *glaucophy'lla* (milky-green-leaved). See A. CANDIDA.
„ *grandiflo'ra* (great-flowered). See A. LÆVIS.
„ *gra'ndis.* See A. STŒCHADIFOLIA.
„ *Gumbleto'ni.* 1. Orange-red. Namaqualand. 1901.
„ *læ'vis.* Syns. *A. glabrata, A. grandiflora,* and *A. squarrosa.*
„ *leichtlinia'na.* Probably the same as *A. revoluta.*
„ *leptorhi'za.* Orange-yellow, coppery outside. Cape of Good Hope. Annual.
„ „ *brevisca'pa.* Short flower-stalk.
„ „ *longisca'pa.* Long flower-stalk.
„ *macula'ta* (spotted). See A. ASPERA SCABRA.
„ *melanocy'cla* (dark-circled). See A. ASPERA.
„ *panicula'ta* (panicled). See A. BELLIDIFOLIA.
„ *plantagi'nea* (plantain-leaved). See VENIDIUM SEMIPAPPOSUM.
„ *re'ptans* (creeping). 1. White, red. August. Cape of Good Hope. 1795. Greenhouse herbaceous perennial.
„ *revolu'ta* (revolute). 1. Yellow. June. Cape of Good Hope. 1820. Greenhouse herbaceous perennial.
„ *ro'sea* (rosy). See A. STŒCHADIFOLIA.
„ *Schrade'ri* (Schrader's). Pink. May. Cape of Good Hope. 1832. Greenhouse annual.
„ *specio'sa* (showy). See A. ACAULIS.
„ *spinulo'sa* (small-thorny-leaved). See A. FASTUOSA SPINULOSA.
„ *squarro'sa* (squarrose). See A. LÆVIS.
„ *stœchadifo'lia.* 2. White, lilac outside. S.W. Africa. 1790. Syns. *A. grandis, A. decumbens,* and *A. rosea.*
„ *tri'color* (three-coloured). See A. ACAULIS.
„ *undula'ta* (wave-*leaved*) of Jacquin. See A. ACAULIS.
„ *virga'ta* (twiggy). 1. Yellow. July. Cape of Good Hope. 1816. Hardy annual.

ARCUATION. The same as LAYERING.

ARDI'SIA. (From *ardis,* a spear-head; in reference to the sharp-pointed divisions of the flower. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.*)

Half-ripened cuttings from the stem, or pieces of the roots inserted in light soil, and placed in strong heat, soon root; also by seeds, which require a rather long period to vegetate; peat and loam. Summer temp., medium; winter, 48° to 55°. Stove evergreens, except where otherwise specified.

A. acumina'ta (long-pointed). 7. July. Guiana. 1803.
„ *canalicula'ta* (channelled). 6. July. 1821.
„ *canarie'nsis* (Canary). 10. Red. July. Canaries. 1820. Greenhouse.
„ *capita'ta.* Greenish-white. Berries bright red. Fiji.
„ *chine'nsis.* 6. Salmon-red. China. 1834.
„ *colora'ta* (coloured). 10. Red. July. E. Ind. 1816.
„ *complana'ta* (levelled). See A. COLORATA.
„ *coria'cea* (leathery). 7. Scarlet. Antilles. 1824.
„ *crena'ta* (round-notched-*leaved*). 10. White. July. China. 1809. Syns. *A. crispa, A. crenulata* (Lodd.), and *A. lentiginosa.*
A. crenula'ta. See A. CRENATA.
„ *e'legans* (elegant). See A. CRENATA.
„ *exce'lsa* (tall). 30. Red. July. Madeira. 1784. Greenhouse.
„ *gigantifo'lia* (K. B., 1906, 74). Rose-coloured. S. China.
„ *horto'rum* (Gfl., 1865, t. 491). White. Japan. 1866. Berries red.
„ *Hymena'ndra* (membrane-anthered). See HYMENANDRA WALLICHII.
„ *hu'milis* (humble). 3. Red. July. Ceylon. 1820.
„ *japo'nica.* 1. White. June. Japan. 1884.
„ *lanceola'ta* (lanceolate). 6. Red. July. E. Ind. 1809.
„ *lateriflo'ra* (side-flowering). 6. White. W. Ind. 1793.
„ *lentigino'sa* (speckled). See A. CRENATA.
„ *littora'lis* (sea-side). See A. HUMILIS.
„ *macroca'rpa* (long-fruited). 5. Flesh. Nepaul. 1824. Greenhouse.
„ *mamilla'ta.* Dwarf. White, tinged rose; berries rose-red. China. 1887.
„ *meta'llica* (Ill. Hort., vol. 28, t. 421). Rose. Sumatra. 1881.
„ *neriifo'lia.* Pink. Himalayas. 1824.
„ *odontophy'lla* (tooth-leaved). See A. CHINENSIS.
„ *Olive'ri* (B. M., t. 6357). Rose-purple, white eye. July. Costa Rica. 1876.
„ *paniculata* (panicled). 12. Red. July. E. Ind. 1818.
„ *pi'cta* (Bull. Cat., 1885). 1885. Brazil.
„ *pube'scens* (hoary-haired). 6. July. 1820. Greenhouse.
„ *puncta'ta* (dotted). See A. CRENATA.
„ *pyramida'lis* (pyramidal). 25. Red. July. Santa Cruz. 1818.
„ *serrula'ta* (saw-leaved). 3. Red. July. W. Ind. 1821.
„ *solana'cea* (nightshade-like). See A. HUMILIS.
„ *thyrsiflo'ra* (thyrse-flowered). See A. NERIIFOLIA.
„ *tinifo'lia* (tinus-leaved). 10. Red. July. W. Ind. 1820.
„ *villo'sa.* Whitish. October. China.
„ „ *mo'llis.* With good red berries.
„ *Walli'chii.* 2. Red. July. India.

ARDUI'NA. (In honour of *P. Arduini,* curator of the economical garden of Padua, in the time of Linnæus. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.*)

Cuttings in sand, under a glass; peat and loam. Summer temp., medium; winter, 40° to 45°. A greenhouse evergreen. Now referred to Carissa.

A. bispino'sa (two-spined). See CARISSA ARDUINA.

ARE'CA. The Cabbage Palm. (Called *areec,* in Malabar, when an old tree. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia,* 10-*Monadelphia.*)

The Catechu yields a most powerful and astringent medicine, and its berry is the Betel-nut, chewed by the natives of Hindostan, and its charcoal as a dentifrice. Seeds; light, sandy soil. Summer temp., 75° to 80°; winter, 55° to 65°. All stove Palms.

A. a'lba. See DICTYOSPERMA ALBUM.
„ *Ali'ciæ.* N. Australia.
„ *au'rea.* See DICTYOSPERMA AUREUM.
„ *Baue'ri* (B. M., t. 5935). See RHOPALOSTYLIS BAUERI.
„ *Ca'techu* (*medicinal* catechu). 30. White. E. Ind. 1690.
„ *conci'nna.* 8 to 12. Ceylon.
„ *crini'ta* (hair-*coated*). See ACANTHOPHŒNIX CRINITA.
„ *exi'lis* (slender). 30. W. Ind. 1823.
„ *fla'va.* Stem and petioles yellow. Madagascar. 1877.
„ *gigante'a.* See PINANGA TERNATENSIS.
„ *glandifo'rmis.* 30. Moluccas.
„ *hu'milis* (humble). See PINANGA DISTICHA.
„ *lute'scens* (yellowish). See CHRYSALIDOCARPUS LUTESCENS.
„ *ma'micot* (mamicot). 30. S. Amer. 1822.
„ *Micholi'tzii* (Sand. Cat., 1895, 46). New Guinea.
„ *monosta'chya.* See BACULARIA MONOSTACHYA.
„ *monta'na* (mountain). See PRESTŒA MONTANA.
„ *no'bilis.* See NEPHROSPERMA VAN. HOUTTEANUM.
„ *Norma'nbyi.* 60. Australia.
„ *olera'cea* (potherb). See OREODOXA OLERACEA.

A. purpu'rea (Ill. Hort., 1877, t. 298). Mauritius.
„ *ru'bra* (red). See ACANTHOPHŒNIX.
„ *sa'pida*. See RHOPALOSTYLIS SAPIDA.
„ *seychella'rum*. See STEVENSONIA GRANDIFOLIA.
„ *specio'sa*. See HYOPHORBE AMARICAULIS.
„ *tria'ndra*. 20. E. Ind. 1825.
„ „ *pu'mila* (B. M., t. 6025). 10. Java.
„ *Verschaffe'ltii*. See HYOPHORBE.

ARENA'RIA. (From *arena*, sand; in reference to the sandy soil in which the plant grows. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*. Now includes Alsine.)

All hardy herbaceous perennials, except when otherwise described. Seeds; division of the plant; sandy soil.

A. austri'aca (Austrian). ½. White. July. Austria. 1793.
„ *balea'rica* (Balearic). ½. White. July. Majorca. 1787. Hardy evergreen trailer.
„ *biflo'ra* (two-flowered). ½. White. March. Switzerland. 1818.
„ *brevicau'lis* (short-stemmed). See A. LANCEOLATA.
„ *cæspito'sa* (turfy). ½. White. July. Switzerland. 1826.
„ *calyci'na* (*large*-calyxed). ½. White. July. Barbary. 1816. Hardy annual.
„ *calycula'ta* (calyculate). ½. White. July. Hungary. 1817.
„ *canade'nsis* (Canada). ½. Red. July. N. Amer. 1812. Hardy annual. See SPERGULARIA RUBRA.
„ *cane'scens* (hoary). ½. White. July. 1817.
„ *capilla'cea* (hair-like). See A. CAPILLARIS.
„ *capilla'ris* (capillary). ½. White. July. Siberia. 1820.
„ *cherlerioi'des* (cherleria-like). See A. LANCEOLATA.
„ *cilia'ta* (eye-lashed). ½. White. June. Ireland.
„ „ *norve'gica*. White. July. Scotland.
„ *conimbrice'nsis* (Conimbra). ½. White. July. Portugal. 1817. Hardy annual.
„ *controve'rsa*. Spain, France. Syn. *A. conimbrice'nsis* of J. Gay.
„ *dahu'rica* (Dahurian). See A. JUNCEA.
„ *de'nsa* (dense). See A. GRACILIS.
„ *fascicula'ta* (fascicled). ½. White. July. Europe. Hardy annual.
„ *filifo'lia* (thread-leaved). See A. SETACEA.
„ *formo'sa* (handsome). See A. CAPILLARIS.
„ *Gera'rdi* (Gerard's). See A. VERNA GERARDI.
„ *glabe'rrima* (smoothest). ½. White. July. Caucasus. 1816.
„ *glandulo'sa* (glandular). ½. Purple. June. S. Africa. 1820. Hardy annual.
„ *glomera'ta* (round-headed). ½. White. July. Tauria. 1818. Hardy annual.
„ *gra'cilis*. White. July. Hungary. 1824. Syn. *A. densa*.
„ *graminifo'lia* (grass-leaved). ½. White. July. Siberia. 1817.
„ *grandiflo'ra* (great-flowered). ½. White. July. Switzerland. 1783.
„ *grave'olens*. White. July. Greece. 1820. Syn. *A. pubescens*.
„ *gypsophyloi'des*. ½. White. Asia Minor.
„ *He'lmii* (Helm's). ½. White. July. Siberia. 1826.
„ *hirsu'ta* (hairy). See A. RECURVA.
„ *Hu'teri* (Journ. of Hort., 1894, xxix. 369, f. 57). Pure white. Tyrol.
„ *imbrica'ta* (imbricated). ½. White. July. Caucasus. 1820.
„ *ju'ncea*. 1. White. July. Siberia. 1824.
„ *juniperi'na* (juniper-leaved). ½. White. July. Siberia. 1800.
„ *lanceola'ta* (lanceolate). ½. White. June. Switzerland. 1823.
„ *lanugino'sa*. White. S. Amer. 1832.
„ *laricifo'lia* (larch-leaved). ½. White. August. Europe.
„ *longifo'lia* (long-leaved). See A. GRAMINIFOLIA.
„ *macroca'rpa* (long-fruited). ½. White. July. N. Amer. 1810.
„ *margina'ta* (margined). ½. White. July. Caucasus. 1818. Hardy deciduous trailer.
„ *mari'na* (marine). July. Germany. 1793. See SPERGULARIA SALINA.
„ *mediterra'nea* (Mediterranean). See A. MUCRONATA.
A. mollugi'nea. Syn. *Alsine molluginea*.
„ *monta'na* (mountain). ½. White. June. France. 1800.
„ *mucrona'ta*. Syns. *A. mediterranea*, *A. triandra*, and *Alsine mucronata*.
„ *multicau'lis* (many-stemmed). See A. CILIATA.
„ *nardifo'lia* (nardus-leaved). See A. CAPILLARIS.
„ *nemoro'sa* (grove). See A. LANUGINOSA.
„ *norve'gica* (Norwegian). See A. CILIATA NORVEGICA.
„ *otitoi'des* (otites-like). White. July. Siberia. 1820.
„ *pe'ndula* (pendulous). White. July. Hungary. 1816.
„ *peploi'des* (peplis-like). White. June. Britain. Evergreen creeper.
„ *pinifo'lia* (pine-leaved). White. July. Caucasus. 1823.
„ *polygonoi'des* (knotgrass-like). Red. July. Switzerland. 1822.
„ *proce'ra* (tall). See A. GRAMINIFOLIA.
„ *procu'mbens* (procumbent). Purple. July. Egypt. 1801. Half-hardy deciduous trailer.
„ *pube'scens* (downy). See A. GRAVEOLENS.
„ *purpu'rea* (purple). White. July. Spain. 1823. Hardy annual.
„ *ramosi'ssima* (branchiest). White. July. Hungary. 1816. Hardy biennial.
„ *recu'rva* (recurved). White. July. Alps. 1822.
„ *ri'gida* (stiff). ½. White. July. Siberia. 1823.
„ *rostra'ta* (beaked). ½. White. August. Hungary. 1816.
„ *rotundifo'lia*. ½. White. July. Asia Minor.
„ *rube'lla* (reddish-*flowered*). ½. Red. July. Scotland.
„ *ru'bra* (red). See SPERGULARIA RUBRA.
„ *sali'na* (saline). See SPERGULARIA SALINA.
„ *saxa'tilis* (rock). ½. White. July. Germany. 1732.
„ *sca'bra* (rough). ½. White. July. Alps, Europe. 1822.
„ *segeta'lis*. See SPERGULARIA SEGETALIS.
„ *seta'cea* (bristle-leaved). ½. White. July. France.
„ *stria'ta* (striated). ½. White. July. Switzerland. 1683.
„ *stri'cta* (upright). ½. White. July. N. Amer. 1812.
„ *subula'ta* (awl-shaped). ½. White. June. Caucasus. 1822.
„ *tenuifo'lia* (fine-leaved). ½. White. July. England. Hardy annual.
„ „ *Barrelie'ri* (Barrelier's). ½. White. July. South of France. 1820.
„ „ *hy'brida* (hybrid). ½. White. July. South of France. 1827.
„ „ *visci'dula* (viscidish). ½. White. July. France. 1818.
„ *tetraque'tra* (square-*stalked*). ½. White. August. Pyrenees. 1731.
„ *tria'ndra* (three-stamened). See A. MUCRONATA.
„ *triflo'ra* (three-flowered). See A. GRANDIFLORA.
„ *uligino'sa* (marsh). ½. White. July. Switzerland. 1817.
„ *ve'rna* (spring). ½. White. May. Britain.
„ „ *Gera'rdi*. White. June. Britain.
„ *verticilla'ta* (whorled). See ACANTHOPHYLLUM VERTICILLATUM.

ARE'NGA. (Name of uncertain origin. Syn. *Saguerus*. Nat. ord. Palmæ.)

Tropical Palms, requiring heat and moisture, but not too much pot room; not effective when small; large plants are showy from seeds in heat.

A. Engle'ri (K. B., 1895, 19). 5. Formosa.
„ *sacchari'fera*. 40. Flowers striped. June. Moluccas. 1829.
„ *Wi'ghtii* (Bull. Cat., 1882, 13). S. India.

ARETHU'SA. (A classical name, after one of Diana's nymphs. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Division, peat and loam, with charcoal. Summer temp., 65° to 80°; winter, 55° to 65°.

A. bulbo'sa (bulbous). ½. Whitish-red. June. Carolina. Greenhouse.
„ *cilia'ris*. See BARTHOLINA PECTINATA.
„ *plica'ta* (plaited). See POGONIA.
„ *ro'sea*. Syn. *Crybe rosea*.
„ *sine'nsis* (B. M., t. 7935). White and red. W. China. 1896.

ARE'TIA. (Named in honour of a Swiss professor, *Aretius*. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Division of the roots in spring or autumn; sand, loam, and peat. They cannot bear stagnant water; are good for rock-work; all, but one, hardy herbaceous perennials.

A. alpi'na (alpine). See ANDROSACE GLACIALIS.
„ *argе'ntea* (silvery). See ANDROSACE IMBRICATA.
„ *helve'tica* (Swiss). See ANDROSACE HELVETICA.
„ *pube'scens* (downy). See ANDROSACE ALPINA.
„ *vitalia'na* (Vital's). See DOUGLASIA VITALIANA.

ARGA'NIA. (From *argam*, its aboriginal name. Nat. ord. *Sapotads* [Sapotaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Fine stove, hard-wooded, evergreen timber-tree; layers and cuttings in autumn or spring; the latter in close frame. Summer temp., 60° to 70°; winter, 45° to 55°. The specific gravity of the wood is so great that it sinks in water.

A. Sidero'xylon (iron-wood). 14. Green, yellow. July. Morocco. 1711.

ARGEMO'NE. (From *argema*, a cataract of the eye; in reference to its medicinal qualities. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
The seed of *A. mexica'na* is the *Fico del inferno* (infernal fig) of the Spaniards; a purgative and powerful narcotic, especially if smoked with tobacco. In the West Indies they are used as a substitute for ipecacuanha. Hardy annuals except where otherwise specified; seeds, suckers, and divisions in March; common soil.

A. albiflo'ra (white-flowered). See A. MEXICANA.
„ *barclaya'na* (Mr. Barclay's). 5. Cream. June. Mexico. 1827. Half-hardy herbaceous perennial.
„ *grandiflo'ra* (great-flowered). See A. MEXICANA.
„ *hi'spida* (B. M., t. 6402). 2. White. California. 1879.
„ *mexica'na* (Mexican). 2. Yellow. July. Mexico. 1592.
„ *ochroleu'ca* (yellowish-white). 2. Sulphur. July. Mexico. 1827.

ARGOLA'SIA. (From *argos*, white, and *lasios*, woolly; the perianth being velvety-white. Nat. ord. *Bloodroots* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
A small greenhouse plant, of easy culture, but must not get dry; division of the roots; sandy loam and peat. Summer temp., moderate; winter, 40° to 45°.

A. plumo'sa (feathery). See LANARIA PLUMOSA.

ARGY'LIA CANES'CENS. (B. M., t. 7414.) Bignoniaceæ. Stem fleshy, 9 in. long and 3 in. wide, producing annually flowering stems 18 in. high, bearing alternate leaves resembling those of the carrot, and a terminal cluster of tubular flowers 1 in. long and 1½ in. across; colour bright yellow, with red streaks in the throat.

ARGYREI'A. Silver-weed. (From *argyreios*, silvery; in reference to the silvery hue of the leaves. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
All stove evergreen twiners. Cuttings, half-ripened wood, in sand, under a bell-glass, in April, and in nice bottom-heat; rich loam and peat. Summer temp., 60° to 75°; winter, 50° to 60°.

A. acu'ta. China.
„ *bo'na-no'x* (night-flowering). See RIVEA HYPOCRATERIFORMIS.
„ *capita'ta* (headed). Purple. July. E. Ind. 1823.
„ *cunea'ta* (wedge-leaved). 10. Purple. August. E. Ind. 1822.
„ *cymo'sa* (cyme-flowered). 10. Pink. E. Ind. 1823.
„ *festi'va* (festive). White. July. India. 1838.
„ *hirsu'ta* (B. M., t. 4940). 10. Lilac. June. E. Ind. 1850.
„ *malaba'rica* (Malabar). Cream. July. E. Ind. 1823.
„ *orna'ta* (adorned). 10. White. E. Ind. 1824.
„ *pierrea'na* (R. H., 1906, 506, ff. 208, 209). White, tinted with rose. Tonquin.
„ *poma'cea* (apple-fruited). Pink. E. Ind. 1818.
„ *populifo'lia* (poplar-leaved). Rose, crimson eye. Ceylon. 1869.
A. Roxbu'rghii (Roxburgh's). White. July. E. Ind. 1826.
„ *specio'sa* (showy). 10. Red. July. E. Ind. 1818.
„ *sple'ndens* (shining). 1. Pink. E. Ind. 1820. Syns. *Ipomœa splendens* and *Lettsomia splendens*.
„ *tiliæfo'lia* (Tilia-leaved). White. June. E. Ind. 1812.
„ *unifio'ra* (one-flowered). See RIVEA HYPOCRATERIFORMIS.
„ *zeyla'nica*. Rosy, crimson eye. Ceylon. 1869. Syns. *Calonyction sanguineum* and *Rivea zeylanica*.

ARGYROCHÆ'TA. A synonym of Parthenium.

ARGYROLO'BIUM. (From *arguros*, silver, and *lobos*, a pod; the pods are silvery. Nat. ord. Leguminosæ.)
Hardy and greenhouse perennial herbs or sub-shrubs. Divisions of the hardy species, cuttings of the greenhouse ones, under a hand-light. Loam, peat, and sand for the greenhouse ones.

A. andrewsia'num (Andrewsian). 2. Yellow. June. S. Africa. Greenhouse. 1790.
„ *calyci'num* (large-calyxed). 2. Yellow. August. Dalmatia; Caucasus; Persia. 1820.
„ *filifo'rme* (thread-formed). Red. July. S. Africa. 1824.
„ *linnæa'num* (Linnean). 3. Yellow. August. Mediterranean region. 1739.
„ *petiola're* (long-stalked). Yellow. S. Africa. Greenhouse.

ARGYROPHY'TON DOUGLA'SII. See ARGYROXI'PHIUM SANDWICE'NSE.

ARGROXI'PHIUM. (From *arguros*, silver, and *Xiphion*, a corn-flag; in allusion to the leaves. Ord. Compositæ.)

A. sandwice'nse (Ic. PL, t. 75). Sandwich Islands. 1872. Syn. *Argyrophyton Douglassi*.

A'RIA. For culture, see PY'RUS. Refer also to SORBUS.

A. Ho'stii (R. H., 1877, 210). Flowers in large terminal corymbs, rosy-pink. Syns. *Pyrus Chamæme'spilus Hostii* and *Cratægus Hostii*. See PYRUS HOSTII.

ARISÆ'MA. (From *aron*, an arum, and *sana*, a standard; in reference to the close affinity to Arum. Nat. ord. *Arads* [Aroideæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)
Tuberous-rooted perennials. Division of its tubers; loam and peat.

A. ano'malum. ¾. Greenish and brown. Perak. 1890.
„ *atroru'bens* (B. M., t. 950). N. Amer. 1758. Syn. *Arum triphyllum zebrinum*.
„ *bakeria'na* (G. C., 1897, xxi. 352).
„ *conci'nnum* (B. M., t. 5914). 2. Spathe striped white and green, or white and purple; spadix, green or purple.
„ *curva'tum* (B. M., t. 5931). See A. TORTUOSUM.
„ *curva'tum* (B. M., t. 5931). 2 to 4. Spathe green and purple-brown; spadix green. Spring. Himalayas. 1871. Syn. *A. helleborifolium*.
„ *Draco'ntium* (dragon). 2. June. Green. N. Amer. 1759. Hardy.
„ *enneaphy'llum* (Gfl., 1891, 578. f. 103). Arabia.
„ *fimbria'tum* (G. C., 1884, vol. 22, p. 680). Spathe brownish-purple, with whitish bands; spadix whip-like, covered with purplish threads. Philippine Islands.
„ *fla'vum* (B. M., t. 7700). Himalaya.
„ *galea'tum*. Spathe green, with white ribs; spadix white. May. Sikkim. 1879.
„ *Gira'ldii* (B. T. O., 1893, t. 12).
„ *Griffi'thii*. 1 to 1½. Spathe brown-violet, with green veins; spadix brown-violet. Sikkim. Spring. 1879.
„ *japo'nicum* (B. M., t. 7910). China; Japan.
„ *Lackne'ri* (N. B., 1898, 186). Burma.
„ *Leschenaul'tii*. Green, white. Ceylon. 1864.
„ *macrospa'thum* (large-spathed). Pink. July. Mexico. 1839. Greenhouse.
„ *Murra'yi* (Murray's). 1½. Apetal. March. Bombay. 1847. Stove.
„ *negle'ctum*. Green. Ceylon. 1864.

A. nepenthoi'des (B. M., t. 6446). Spathe ochre, brown and green; spadix yellowish. E. Himalayas. 1879.
,, *papillo'sum.* See A. LESCHENAULTII.
,, *pentaphy'llum* (five-leaved). India; China.
,, *pi'ctum* (painted). Purple-brown and silvery-white. W. China. 1910.
,, *pu'lchrum.* 1½. Spathe green and white; spadix green. Spring. India. 1879.
,, *ri'ngens* (gaping). ½. May. Japan. 1800. Half-hardy.
,, ,, *præ'cox.* Green, white, purple. Japan.
,, ,, *Siebo'ldii.* Japan. 1857.
,, *specio'sum* (G. C., 1879, vol. 12, p. 585).
,, *terna'tum* (three-leafleted). ½. Purple. May. Japan. 1774. Half-hardy.
,, *tortuo'sum* (twisted). Himalaya.
,, *triphy'llum* (three-leaved). ½. Brown. May. N. Amer. 1664. Hardy.
,, *u'tile* (B. M., t. 6474). 1 to 1½. Spathe purple-brown, with green ribs; spadix purple-brown. Sikkim. 1879.
,, *Wi'ghtii.* See A. NEGLECTUM.
,, *Wra'yi.* 1½. Green, white. Perak. 1889.
,, *zebri'num.* See A. TRIPHYLLUM.

ARISA'RUM. (Name of Greek origin. Nat. ord. *Aroids* [Araceæ].)
A genus of half-hardy, herbaceous plants, allied to Arisæma. Unisexual flowers, the spadix having no rudimentary flowers; heart-shaped or spear-shaped leaves on long stalks. Raised by seed or division of the root in spring; sand, loam, and peat compost.

A. proboscide'um (B. M., t. 6634). Spathe greyish below, olive-green above. February. S. Italy. 1818.
,, *vulga're* (B. M., t. 6023). 1. May. S. Europe. 1596.

ARIS'TEA. (From *arista*, a point or beard; in reference to the rigid points of the leaves. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)
The least conspicuous plants of this order. Their leaves form the chief herbage for cattle at the Cape of Good Hope. Greenhouse plants. Seed and divisions in March or April; sandy loam and peat. Winter temp., 40° to 45°.

A. capita'ta (headed). 3. Blue. July. Cape of Good Hope. 1790.
,, *corymbo'sa* (corymbose). 1 to 3. Blue. June. S. Africa. 1803.
,, *cya'nea* (bright blue). ½. Blue. June. Cape of Good Hope. 1759.
,, *dicho'toma* (forked). S. Africa.
,, *Ecklo'ni* (Ecklon's). S. Africa.
,, *melaleu'ca* (black and white). 1. Pale blue. June. Cape of Good Hope. 1796.
,, *platycau'lis* (G. C., 1887, i. 732). 1. Blue. Pondoland. 1887.
,, *pusi'lla* (little). ½. Blue. July. Cape of Good Hope. 1806.
,, *spira'lis* (spiral-flowered). 1. Pale blue. May. Cape of Good Hope. 1795.

ARISTOLO'CHIA. Birthwort. (From *aristos*, best, and *locheia*, parturition; its supposed medicinal character. Nat. ord. *Birthworts* [Aristolochiaceæ]. Linn. 20-*Gynandria*, 6-*Hexandria*.)
Herbaceous and climbing plants, the first by division of the roots; hardy climbing ones by division of the roots, and layers in spring or autumn. Stove plants; cuttings of fine wood, in sand, in heat, in close frame. Sandy loam for the hardy; peat and loam for the tender kinds. Temp. for the latter, summer, 65° to 80°; winter, 55° to 60°.

HARDY.

A. arkansa'na (Arkansas). 20. Purple. July. Arkansas. 1824. Deciduous climber.
,, *bæ'tica* (Bætic). 6. Purple. June. Spain. 1596. Deciduous climber.
,, *chile'nsis* (Chilian). 6. Purple, green. September. W. Ind. 1832. Deciduous half-hardy.
Clemati'tis (clematis-like). 2. Yellow. July. Britain. Herbaceous perennial.
A. glandulo'sa. Green, brown. May. Cuba. 1846.
,, *lo'nga* (long-rooted). 2. Purple. July. South of Europe. 1548. Deciduous trailer.
,, *macrade'nia.* See A. GLANDULOSA.
,, *moupine'nsis* (Moupine). Pale green, yellow. W. China. 1910. Climber.
,, *pa'llida* (pale-flowered). 2. White, purple. Italy. 1640. Herbaceous perennial.
,, *Pistolo'chia* (pistolochia). 2. Purple. July. South of Europe. 1597. Deciduous trailer.
,, *pon'tica* (G. C., 1902, xxxi. 333, f. 113). Greenish-purple. Caucasus.
,, *sagitta'ta* (arrow-shaped). See A. SERPENTARIA.
,, *Serpenta'ria* (snake-root-like). 1. Dark purple. July. N. Amer. 1632. Deciduous trailer.
,, *sina'rum.* Green. China. 1859.
,, *Si'pho* (tube-*bearing*). 30. Yellow, brown. July. N. Amer. 1763. Deciduous climber.
,, *tomento'sa* (downy). 20. Purple. July. N. Amer. 1799. Deciduous climber.

GREENHOUSE.

A. alti'ssima (B. M., t. 6586). Yellow, brown. June to August.
,, *arbore'scens* (tree-like). 20. Yellow, purple. July. America. 1737. Evergreen shrub.
,, *cilia'ta* (fringed). See A. FIMBRIATA.
,, *fimbria'ta.* Purple, yellow. Buenos Ayres.
,, *glau'ca* (milky-green-*leaved*). See A. BÆTICA.
,, *hi'rta* (hairy). 2. Purple. June. Asia Minor. 1759. Herbaceous perennial.
,, *rotu'nda* (round-*rooted*). 2. Dark purple. July. South of Europe. 1596. Herbaceous perennial.
,, *sempervi'rens* (evergreen). 4. Purple. June. Candia. 1727.

STOVE.

A. acumina'ta (long-pointed). 10. Purple. Mauritius. 1822.
,, *angui'cida* (snake-like). 5. White, brown. December. New Grenada. 1845. Twining evergreen.
,, *arbo'rea.* Brown, purple. New Grenada. 1862.
,, *barba'ta* (bearded). 10. Purple. Caracas. 1796.
,, *biloba'ta* (two-lobed). 10. Purple. 1824.
,, *bractea'ta* (bracted). 3. Purple. July. E. Ind. 1793. Evergreen trailer.
,, *brasilie'nsis* (Brazilian). 20. Purple, netted brown. Brazil. 1820.
,, *cauda'ta* (tailed-*lipped*). 5. Lurid. June. Brazil. 1828. Deciduous twiner.
,, ,, *fæ'tens* (stinking-*flowered*). 20. Purple, yellow. June. W. Ind. 1832.
,, *cilio'sa* (fringed). See A. FIMBRIATA.
,, *clypea'ta.* White, deep purple. Colombia. 1871.
,, *cordifo'lia.* 30. Creamy-yellow, liurid purple. Mexico. 1871.
,, *cymbi'fera* (boat-*flowered*). 20. Purple. July. St. Paul. 1829.
,, *dammeria'na* (G. C., 1895, xvii. 452). Climber. Central Amer.
,, *delloi'dea variega'ta.* Leaves variegated with white. Colombia. 1870.
,, *Ducha'rtrei.* See A. RUIZIANA.
,, *e'legans* (B. M., t. 6909). Yellowish-green, white, and red-purple. Brazil. 1885.
,, ,, × *brasilie'nsis* (G. C., 1897, xxii. 126, f. 36). Garden hybrid.
,, *floribu'nda.* Purplish-red, with yellow veins. Brazil 1868.
,, *fœ'tida* (fœtid). 20. July. Mexico. 1822.
,, *galea'ta.* Climber. Cream-coloured, with purplish veins. New Grenada. 1873.
,, *Gibe'rtii.* Yellow, purple. Paraguay.
,, *gigante'a* of Hooker. See A. GRANDIFLORA.
,, *gigante'a* (gigantic-flowered). 20. Yellow, brown. July. Brazil.
,, *gi'gas* (giant). 6. White, brown. June. Guatemala. 1842. Deciduous climber.
,, ,, *Sturtevan'tii* (G. and F., 1891, 546). Large flowered variety. Guatemala.
,, *goldiea'na.* Large flowers, outside greenish, inside deep yellow, with chocolate veins. Old Calabar River. 1867.

A. grandiflo'ra (large-flowered). 20. Jamaica. 1824.
,, *hasta'ta* (halbert-*leaved*). See A. PENTANDRA.
,, *hi'ans* (G. C., 1887, i. 40). Climber. Venezuela.
,, *hyperbo'rea* (northern). 20. Purple. May. India. 1836.
,, *i'ndica* (Indian). 10. Purple. July. E. Ind. 1780.
,, *labio'sa* (*great*-lipped). 20. Purple, green, yellow. July. Brazil. 1821.
,, *leuconeu'ra*. Purple-brown. September. Magdalena. 1858.
,, *longicauda'ta*. Climber. Creamy-white, with purple veins. British Guiana. 1890.
,, *longifo'lia* (B. M., t. 6884). Purple-brown. Climber. Hong-Kong.
,, *macrou'ra* × *brasilie'nsis*. Hybrid.
,, *ma'xima*. 20. Purple. July. New Spain. 1759.
,, *odorati'ssima* (sweetest-scented). 10. Purple. July. Jamaica. 1737.
,, *ornithoce'phala* (bird's-head). See A. BRASILIENSIS.
,, *pandura'ta*. 10. Caraccas. 1823.
,, *pandurifo'rmis* (fiddle-shaped). See A. PANDURATA.
,, *penta'ndra*. 16. July. Cuba. 1822.
,, *promis'sa* (G. C., 1879, ii. 494). Victoria, W. Africa.
,, *rids'cula* (B. M., t. 6934). Tawny, with purple-brown veins. Stove climber.
,, *ri'ngens* (gaping). See A. BRASILIENSIS.
,, *roxburghia'na*. September. India. 1881.
,, *ruizia'na* (Ruizian). Cream-white, brown. Peru. 1868.
,, *sacca'ta* (pouch-*flowered*). 20. Purplish-red. September. Sylhet. 1829. Deciduous climber.
,, *Sal'pinx* (G. C., 1886, xxvi. 456, 457, f. 92). Climber; flowers cream-coloured, with purple veins. Paraguay.
,, *suriname'nsis* (Surinam). 20. Yellow. Surinam. 1823.
,, *Thwaite'sii*. 3. Yellow. March. Old Calabar. 1854.
,, *tricauda'ta*. Dark purple-brown. August. Mexico. 1866.
,, *tri'fida* (three-cleft-leaved). See A. TRILOBATA.
,, *triloba'ta* (three-lobed). 6. Purple. June. W. Ind. 1775.
,, *unguliformis'lia*. Brownish-purple. June. Labuan. 1880.
,, *Westla'ndi* (B. M., t. 7011). Climber. Greenish-yellow, veined purple-brown. China. 1888.

ARISTOLOCHIA'CEÆ. A remarkable order of plants, with curiously inflated flowers, consisting of a calyx of a dull tint. It is generally known as the Birthwort family, and includes *Aristolochia Clematitis*.

ARISTOTE'LIA. (In memory of the great *Aristotle*. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

This genus has been placed among Homaliads, or Philadelphiads, by some botanists; but Dr. Lindley says (Veg. King., 371) it has most affinity to this order. *A. Ma'cqui* produces edible berries, of a dark purple colour, and wine is made from them in Chili. It is a hardy evergreen shrub. Layers in autumn, and cuttings in April, in sand, under a hand-light. Common, sandy soil.

A. Brailwai'tei. White. New Hebrides. 1881.
,, *Ma'cqui* (Macqui). 4. Whitish-green. May. Chili. 1735.
,, ,, *variega'ta* (variegated-*leaved*). 4. Whitish-green. May. Gardens.
,, *peduncula'ris* (long-stalked). 6. White. Tasmania. 1818.
,, *racemo'sa*. 6 to 20. New Zealand. 1873.

ARMENI'ACA. (From *Armenia*, the native country of the apricot. Nat. ord. *Almondworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Hardy deciduous trees; generally budded in summer on plum-stocks, but some use apricot seedlings for budding peaches; rather heavy, loamy soil. See APRICOT. Also referred to Prunus.

A. briganti'aca (Briançon). 6. Pink. March. South of Europe. 1819.
,, *dasyca'rpa* (thick-fruited). 15. White. April. 1800.
,, ,, *persicifo'lia* (peach-leaved). 15. Pink. April. 1800.
,, *sibi'rica* (Siberian). 6. Pink. April. Siberia. 1788.
,, *vulga'ris* (common apricot). 15. White. April. Levant. 1548.
A. vulga'ris cordifo'lia (heart-leaved). 15. White. March. Levant. 1548.
,, ,, *flo're-ple'no* (double-flowered). 15. White. April.
,, ,, *fo'liis variega'tis* (variegated-leaved). 15. White. April.
,, ,, *ovalifo'lia* (oval-leaved). 15. White. March. Levant. 1548.

ARME'RIA. Thrift. (The Latin name for the *Sweet William*. Nat. ord. *Leadworts* [Plumbaginaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*.)

All hardy herbaceous perennials, except when otherwise specified. Division of the plant; seeds in spring; sandy, loamy soil. The tender kinds will require to be well drained, and receive the protection of a frame, or pit, during winter.

A. allia'cea (garlic-leaved). See A. PLANTAGINEA LEUCANTHA.
,, *alpi'na* (alpine). 1. Purple. July. Carinthia.
,, *arena'ria* (sand). See A. MARITIMA.
,, *argyroce'phala*. White. Greece. 1888.
,, *bæ'tica hi'rta*. 1. Pink. July. N. Africa. 1820. Greenhouse.
,, *Cephalo'tes* (*round*-headed). See A. LATIFOLIA and A. MAURITANICA.
,, *cæspito'sa* (Gfl., t. 1192). 1. Pink. June. South of Europe. 1817. Syn. *A. humilis*.
,, *denticula'ta* (toothed). 2. Flesh. June. Naples. 1816.
,, *dianthoi'des* (pink-like). See A. PLANTAGINEA.
,, *elonga'ta* (elongated). Red. July. Europe.
,, *fascicula'ta* (bundled). 2. Purple. July. Portugal. Greenhouse evergreen shrub.
,, *hi'rta* (hairy). See A. BÆTICA HIRTA.
,, *hu'milis* (dwarf). See A. CÆSPITOSA.
,, *ju'ncea*. ½. Rose-pink. June. S. Europe.
,, *juniperifo'lia* (juniper-leaved). See A. CÆSPITOSA.
,, *latifo'lia* (broad-leaved). 2. Light red. July. Algarbia. 1740.
,, *littora'lis* (seashore). 1. Pink. July. South of Europe.
,, *mari'tima* (seaside). 1. Red. July. Britain.
,, ,, *a'lba* (white-*flowered*). ½. White. September. Gardens.
,, ,, *cocci'nea* (scarlet-*flowered*). ½. Red. September. Gardens.
,, *maurita'nica*. N. Africa. Syn. *A. Cephalotes*.
,, *monta'na* (mountain). See A. MARITIMA.
,, *pinifo'lia* (pine-leaved). 1. Pink. June. Portugal.
,, *plantagi'nea* (plantain-like). 1. Red. June. S. of Europe. 1818.
,, ,, *leuca'ntha*. White flowered. Syns. *A. alliacea*, *plantaginea alba*, and *A. scorzonerifolia*.
,, *pu'ngens* (pungent). 1. Pink. June. Spain. 1818.
,, *scorzoneræfo'lia* (scorzonera-leaved). See A. PLANTAGINEA.
,, *undula'ta* (W. G, 1888, 325). See A. ARGYROCEPHALA.
,, *vulga'ris* (common) of Wildenow. See A. ELONGATA.

ARMERIA'STRUM. See ACANTHOLIMON.

ARNE'BIA. (Arabic name of the plant. Nat. ord. Boraginaceæ.) Allied to Lithospermum. Cuttings from side-shoots taken off close to stem during the autumn and placed in close frame. *A. echnoides* may be propagated from root cuttings. All are hardy.

A. cornu'ta (G. and F., 1888, 6). 1½. Yellow, brown. Afghanistan. 1888.
,, *echioi'des* (B. M., t. 4409). See MACROTOMIA ECHIOIDES.
,, *Griffi'thii* (B. M., t. 5266). ½. Orange, black. Afghanistan. Annual.
,, *hispidi'ssima*. 2. Blue. May. Egypt. 1817. Syn. *Anchusa asperrima*.
,, *macrothy'rsa* (W. G., 1891, 128). 1 to 1½. Yellow. Armenia. 1891.

A'RNICA. (From *arnakis*, lamb-skin; in reference to the texture of the leaves. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Groundsel.)

Hardy, dwarf, herbaceous plants; division of the plants in spring or autumn. They like a little peat incorporated with the soil. *A. co'rsica* prefers bog-earth. Tincture of Arnica is used as a medicine.

A. Aro'nicum. See A. SCORPIOIDES.
,, *Bellidia'strum*. See ASTER BELLIDIASTRUM.

A. Chamisso'nis. 2. Yellow. July. N. Amer.
,, *Clu'sii* (Clusius's). See DORONICUM GLACIALE.
,, *corda'ta* (heart-shaped). 1. Yellow. July. Switzerland. 1819.
,, *co'rsica* (Corsican). See DORONICUM CORSICUM.
,, *Doro'nicum* (leopard's-bane). See SENECIO DORONICUM.
,, *folio'sa.* 2. Pale yellow. August. United States.
,, *glacia'lis* (icy). See DORONICUM GLACIALE.
,, *helve'tica* (Swiss). See A. MONTANA.
,, *lani'gera* (wool-bearing). See SENECIO LANATUS.
,, *monta'na* (mountain). 1. Yellow. July. Europe. 1731.
,, *scorpioi'des* (scorpion-like). 1. Yellow. July. Austria. 1710.

ARNO'LDIA. See DIMORPHOTHECA.

ARNOPO'GON. Sheep's-beard. (From *arnos*, a lamb, and *pogon*, a beard; in reference to the bearded seeds. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Urospermum.)
Hardy plants; seed in March or April. Common garden soil.

A. a'sper (rough). See UROSPERMUM PICROIDES ASPERUM.
,, *cape'nsis* (Cape). See UROSPERMUM PICROIDES CAPENSE.
,, *Dalecha'mpii* (Dalechamp's). See UROSPERMUM DALECHAMPII.
,, *picroi'des* (picris-like). See UROSPERMUM PICROIDES.

ARODE'NDRON ENGLE'RI (Gartenwelt, viii. 501). Araceæ. A very distinct aroid, growing about 6 ft. high, with an extremely large fructification. Zanzibar. 1904. Treatment same as other tropical aroids.

AROI'DEÆ. See ARACEÆ.

ARO'NIA. See CRATÆGUS ARONIA and PYRUS.

ARO'NICUM. (From *arnica*, lamb-skin; in reference to the softness of the flower-heads. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Referred to Doronicum.)
A hardy, herbaceous, perennial, groundsel-like plant. Divisions; common soil.

A. alta'icum (Altaic). See DORONICUM ALTAICUM.

ARPOPHY'LLUM. (From *arpe*, a scimitar, and *phyllon*, a leaf; alluding to the shape of the leaf. Nat. ord. Orchidaceæ.)
Evergreen epiphytes may be grown in peat, sphagnum, charcoal, and crocks, and require plenty of water while growing. To flower them well they must be well exposed to the sun after they have made growth.

A. cardina'le (Pescatorea, vol. i, t. 45). 1. Rose. Summer. New Grenada.
,, *gigante'um* (Warn. Sel. Orch., t. 39). 2. Dark purple, rose. April. Mexico.
,, *spica'tum* (B. M., t. 6022). 1. Purple. April. Guatemala. 1839.

ARRABIDÆ'A. (Meaning not evident. Nat. ord. Bignoniaceæ.)
Stove climber. Cuttings in bottom-heat. Loam, peat, and sand.

A. ca'ndicans (whitish). 10. Guiana. 1820.

ARRACA'CIA. (Its Spanish name in South America. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Conium.)
A. escule'nta, a native of the tableland of Grenada, produces large esculent roots not unlike parsnips, but of a better quality. Stove tuberous perennials. Division of the roots; rich loam. Summer temp., 70° to 85°; winter, 55° to 60°.

A. Duge'sii (Duges's). 4. White. Mexico. 1904.
,, *escule'nta* (eatable). See A. XANTHORRHIZA.
,, *mosche'ta* (musky). 2. White. June. S. Amer. 1824.
,, *xanthorrhi'za.* 3. Brownish. July. Jamaica. 1823.

ARRHENA'THERUM. (From *arrhen*, a male, and *ather*, a point; on account of the awns on the male spikes. Nat ord. *Grasses* [Gramineæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)
This genus really should be reunited to Avena. Perennial grasses; seeds; division. Common soil, as for any other grass. Useful for sandy soils.

A. avena'ceum (oat-like). 5. Apetal. June. Britain.
,, ,, *mu'ticum* (awnless). 4. Apetal. July. Scotland.
,, ,, *bulbo'sum* (bulbous). 3. Apetal. July. Britain.

ARRHOSTO'XYLUM. See RUELLIA.

ARROW ARUM. See PELTANDRA VIRGINICA.

ARROW-GRASS. See TRIGLOCHIN.

ARROW-HEAD. See SAGITTA'RIA.

ARROW-ROOT. See MARA'NTA.

ARTABO'TRYS. (From *aratao*, to suspend or support, and *botrys*, grapes; in reference to the way the fruit is supported by the curious tendril. Nat. ord. *Anonads* [Anonaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)
The leaves of this plant are held in Java to be invaluable against cholera. Stove evergreen shrub. Cuttings of ripened wood in sand, in close frame with bottom-heat, in March or April. Sandy loam and peat, with a little rotten dung. Summer temp., 65° to 75°; winter, 50° to 55°.

A. odorati'ssimus (sweetest-scented). 6. Brown. India. 1818.

ARTANE'MA. (From *aratao*, to support, and *nema*, a filament; in reference to a tooth-like process growing on the longer filaments. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Torenia.)
A greenhouse evergreen shrub. Seeds; cuttings of the half-ripened shoots in autumn or spring. Will keep over the winter in the greenhouse, but seeds may be sown in the open border, in the beginning of May, as an annual. Sandy loam, and a little peat or leaf-mould.

A. fimbria'tum (fringed-*corollaed*). 3. Pale blue. August. Moreton Bay. 1830.

ARTAN'THE. See PIPER.

ARTEMI'SIA. Wormwood. (From *Artemis*, one of the names of Diana. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)
Various species of Artemisias, or Wormwoods, have been used as tonic, bitter, and aromatic medicines from remote ages. All hardy herbaceous perennials, except where otherwise specified. Annuals, by seed; those with branching, shrubby stems, and the whole of the greenhouse varieties, which are mostly shrubby, by cuttings; the hardy species, by dividing the roots. For greenhouse kinds, sandy loam, well drained; for the others, common soil. Greenhouse summer temp., moderate; winter, 40° to 45°.

A. Abro'tanum (southernwood). 4. Yellow, green. August. Europe. 1548. Hardy deciduous shrub.
,, ,, *hu'mile* (low). 1½. Yellow, green. September. South of Europe.
,, ,, *tobolskia'num* (Tobolskian). 5. Yellow, green. September.
,, *Absi'nthium* (absinthe). White, yellow. Europe. Britain. 1548.
,, *Ada'msii.* 10. Yellow, green. October. China. 1732. Syn. *A. tenuifolia.*
,, *a'fra* (African). 3. White. August. Greenhouse evergreen shrub.
,, *alpi'na* (alpine). See A. LANATA.
,, *anethifo'lia.* 4. Yellowish-green. Autumn. Siberia 1816.
,, *apri'ca* (sunny). See A. FRIGIDA.
,, *arbore'scens* (tree-like). 10. July. Levant. 1640 Hardy evergreen shrub.
,, *arge'ntea* (silvery). 4. Yellow, green. June. Madeira. 1777. Greenhouse evergreen shrub.
,, *armeni'aca.* Armenia.
,, ,, *potentillæfo'lia.* 1. July. Siberia. 1818. Syn. *A. potentillæfolia.*
,, *arragone'nsis.* See A. HERBA-ALBA.
,, *austri'aca.* 1. White. October. E. Europe.
,, ,, *orienta'lis.* 2. Yellow, green. July. Armenia. 1816. Syn. *A. orientalis.*
,, ,, *re'pens.* Syn. *A. repens.*
,, *bie'nnis.* Yellowish. October. 1823. Coppermine River, N. Amer. Syn. *A. hispanica.*
,, *borea'lis.* Yellow. green. July. Siberia. 1820.

A. campe'stris. Green. England.
„ *camphora'ta* S. Europe.
„ „ *saxa'tilis.* 3. Brown. July. Hungary.
„ *cærule'scens* (bluish). 2. Yellow. September. Mediterranean Region. Hardy evergreen shrub.
„ *ca'na.* 2 to 3. Yellow. N. Amer. 1800.
„ *cauca'sica.* See A. LANATA CAUCASICA.
„ *chine'nsis* (Chinese *Moxa*). 4. Yellow. July. China. 1818. Greenhouse herbaceous.
„ *Dracu'nculus* (tarragon). 2. White, green. July. South of Europe. 1548.
„ *fri'gida* (cold). 1. Yellow, green. August. Siberia. 1826. Syn. *A. aprica.*
„ *furca'ta* (forked). See A. TRIFURCATA.
„ *ga'llica* (French). 2. Brown. August. France.
„ *glacia'lis* (icy). 1. Yellow, green. July. Switzerland. 1739.
„ *He'rba-a'lba.* White. Spain. Morocco.
„ *hispa'nica.* See A. BIENNIS.
„ *inodo'ra.* See A. CAMPESTRIS.
„ *juda'ica* (Judean). 2. Yellow. August. 1774. Half-hardy evergreen.
„ *lacinia'ta.* N. China.
„ *lactiflo'ra* (pale-flowered). 2. Pale white. November. Nepaul. 1828. Greenhouse evergreen.
„ *lana'ta.* Spain. Italy; Tauria. 1804.
„ „ *cauca'sica.* Corolla woolly at top. Caucasus.
„ *lednice'nsis* (Lednisc). See A. CAMPESTRIS.
„ *mari'tima* (sea). 1. Brown. July. Britain.
„ *marschallia'na* (Marschall's). See A. CAMPESTRIS.
„ *Mutelli'na* (mutellina). 1. Yellow. July. Alps. Europe. 1815.
„ *norve'gica* (Norwegian). 1. Yellow. July. Norway. 1818.
„ *orienta'lis* (oriental). See A. AUSTRIACA.
„ *Palla'sii* (Pallas's). See A. BOREALIS.
„ *pectina'ta* (comb-leaved). 1. Brown. June. Dauria. 1806. Hardy annual.
„ *pedunculo'sa* (flower-stalked). See A. SPLENDENS.
„ *po'ntica* (Pontine). 3. Yellow. September. Austria. 1570.
„ *potentillæfo'lia* (potentilla-leaved). See A. ARMENIACA.
„ *ramo'sa* (branchy). 2. Canaries. 1816. Greenhouse evergreen.
„ *re'pens* (creeping). See A. AUSTRIACA.
„ *rupe'stris* (hill). 2. Brown. August. Siberia. 1748.
„ *saxa'tilis* (rock). See A. CAMPHORATA.
„ *scopa'ria.* 3 to 5. Whitish. Autumn. S. Europe.
„ *seri'cea* (silky-*leaved*). 2. White. June. Siberia. 1796.
„ *spica'ta* (spiked). 1. Brown. June. Switzerland. 1790.
„ *sple'ndens.* 1. Yellow. July. Caucasus. 1818. Syn. *A. penduncularis.*
„ *stelleria'na.* ½. Yellowish. N. Amer.
„ *tanacetifo'lia.* 1½. Brownish. Summer. Siberia. 1768.
„ *tau'rica* (Taurian). 1. White, green. July. Tauria. 1818.
„ *tenuifo'lia* (slender-leaved). See EUPATORIUM FŒNICULACEUM.
„ *tournefortia'na* (Rchb. Hort., vol. i., t. 5). 2. Greenish. Orient.
„ *tridenta'ta* (Späth. Cat., 1894–95). Western N. Amer.
„ *trifurca'ta.* Soongaria. Syn. *A. furca'ta.*
„ *valenti'na* (Valentian). See A. HERBA-ALBA.
„ *vulga'ris* (common wormwood).
„ „ *au'rea.* Leaves yellow. 1879.
„ „ *variega'ta* (variegated-leaved). 2. Purple. August. Gardens.
„ *Wulfe'nii* (Wulfen's). See A. MUTELLINA.

ARTHROPHYLLUM MADAGASCARIE'NSE. See PHYLLARTHRON BOJERIANUM.

ARTHROPO'DIUM. (From *arthron*, a joint, and *pous*, a foot; in reference to the flower-stalks being jointed. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anthericum.)

Greenhouse herbaceous perennials, except where otherwise specified. Seeds, offsets, and suckers. Sandy loam and a little peat, or leaf-mould. Summer temp., medium; winter, 40° to 45°.

A. cirra'tum (curled). 3. White. June. New Zealand. 1821.
„ *fimbria'tum* (fringed). See DICHOPOGON SIEBERIANUS.
A. mi'nus (smaller). 2. White. July. N. Holland. 1823.
„ *ne'o-caledo'nicum.* 1½. White. May. New Caledonia. 1877.
„ *panicula'tum* (panicled). 3. White. August. N. S. Wales. 1800. Greenhouse bulb.
„ *pe'ndulum* (pendulous). See A. PANICULATUM.

ARTHRO'PTERIS. See NEPHRODIUM and NEPHROLEPIS.

ARTHROSO'LEN. (From *arthros*, a joint, and *solen*, a tube; the flowers are jointed. Nat. ord. Thymeleaceæ.)

Greenhouse evergreens. Cuttings of half-ripe shoots in sand, under a bell-glass. Fibrous loam, peat and sand.

A. la'xus (loose). ¾. White. June, July. S. Africa. 1804.
„ *spica'tus* (spiked). 1. White. May. S. Africa. 1787.

ARTHROSTE'MMA. (From *arthron*, a joint, and *stemma*, a crown; the flower-stalks being jointed. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Osbeckia.)

Cuttings of small, firm, side-shoots in August or April, under a glass, in sandy soil. The stove species with heat; sandy loam, and a little peat or leaf-mould.

A. fra'gile (brittle). 3. Rosy. June. Mexico. 1846. Stove evergreen.
„ *ni'tidum* (glossy-leaved). See TIBOUCHINA NITIDA.
„ *versi'color* (changeable-flowered). See TIBOUCHINA VERSICOLOR.

ARTHROTA'XIS. See ATHROTAXIS.

ARTICHOKE. (*Cy'nara Sco'lymus.*) Many persons have thought that the name of this vegetable refers to the almost unswallowable part of it known by the name of "the choke"; but this is quite a mistake. The word artichoke is merely the English mode of spelling its French name, *artichaut;* and this is said, by old writers, to be a corruption of the Arabic name for it, *alcocalos*, which has reference to the shape of its heads being like that of the pine-apple. The Arabs prize it highly, not only for its edible heads, but its roots as a purgative, and its gummy exudations as an emetic.

Varieties.—There are two varieties in cultivation, the *conical*, or *French*, of which the heads are green, and the scales of their calyx spreading; and the *globe*, tinged with purple, with the scales curved inwards and compactly. The artichoke is sometimes called the *globe artichoke*, on account of the round outline of its heads. These heads are boiled, and the bottom of each scale, or calyx, eaten with butter and salt. The *bottom* of these heads, which is the part named "the receptacle" by botanists, because it is the receptacle or part containing all the members of the flower, is very fleshy, and is cooked in various ways; being, also, sometimes dried, and used in winter.

Propagation.—It may be raised from seed; but the most expeditious and usual way is to plant suckers from the old roots in the spring. When the suckers are eight or ten inches high, in open weather, about the end of March, or early in April, select such as have much of their fibrous roots, and are sound, and not woody. The brown, hard part by which they are attached to the parent stem must be removed, and, if that cuts crisp and tender, the suckers are good, but, if tough and stringy, they are worthless. Further, to prepare them for planting, the large, outside leaves are taken off so low that the heart appears above them. If they have been some time separated from the stock, or if the weather is dry, they are greatly invigorated by being put into water for three or four hours before they are planted. They should be set in rows, four feet and a half by three feet apart, and about half their length beneath the surface. Turn a large flower-pot, or a sea-kale pot, over each, and water them abundantly every evening until they are established, as well as during the droughts of summer. The only other attention they require, during the summer, is the frequent use of the hoe, and an occasional supply of liquid-manure. It is also an excellent plan to have some mulch kept about their roots during dry weather, immediately after planting, and during the whole summer, and to remove all small, weak suckers about June. The plants will produce a succession of heads from July to October of the year they are planted. For about five years they will continue similarly productive during

May, June, and July. At the end of five years a fresh bed should be made.

No vegetable is more benefited than the artichoke by the application of sea-weed or any other manure containing common salt.

To obtain Chards.—Those who require chards must make a plantation annually; for making the chards destroys the plants. After the best heads have been cut, early in July, the leaves are to be cut over within half a foot of the ground, and the stems as low as possible. In September or October, when the new shoots or leaves are about two feet high, they are bound close with a wreath of hay or straw, and earth or litter is drawn round the stems of the plants. The blanching is perfected in a month or six weeks. If the chards are wished late in the winter, the whole plants may be dug up before frost sets in, and laid in sand in their blanched state. In this way they may be kept for several weeks.

Gobbo.—The Italians, to make this, bend the stem of an artichoke down to a right angle, and the stalks of the leaves are bound together, and covered over so as to blanch. The result is a lump, which is eaten raw, with salt, and is tolerably good. In Italy it is used in the autumn and winter, and replaces radishes.

Winter Dressing.—As soon as a stem is cleared of all its heads in the summer, it should be broken down close to the root; and early in November the beds should be dressed for the winter. Cut away the old leaves close to the ground, but without injuring the centre or side-shoots. Fork over the bed, throwing the earth in a ridge, about eight inches high, over each row, putting it close round each plant, but being careful to keep the heart free from the crumbs of soil. After this has been done, pile round every plant some long litter, or pea-haulm, three or four inches thick; and, to keep this from blowing away, as well as to help in preserving the roots from severe frosts, cover over the litter, or haulm, two inches deep with coal-ashes. The ashes may be turned into the soil in the spring, being much liked by the artichoke.

Soil and Situation.—The finest heads are produced in a soil abounding in moisture; but in such they will not survive the winter. They should have a rich, deep loam allotted to them. Manure must be applied every spring; and the best compost for them is a mixture of three parts well-putrefied dung, and one part of fine coal-ashes. They should always have an open exposure, and, above all, be free from the influence of trees; for if beneath their shade or drip the plants spindle, and produce worthless heads.

Insect.—The leaves of the artichoke are liable to injury by a beetle. See CASSIDA VIRIDIS.

Saving Seed.—Select any number of the earliest and finest heads; and as soon as the flowers begin to decay, the heads should be turned, and tied downwards, so as to prevent the wet lodging in them, which would rot the seeds.

ARTILLERY PLANT. See PILEA MUSCOSA.

ARTOCA'RPEÆ. A tribe of the large order Urticaceæ.

ARTOCA'RPUS. Bread-fruit. (From *artos*, bread, and *carpos*, fruit. The fruit, baked, resembles bread. Nat. ord. *Artocarpads* [Urticaceæ]. Linn. 21-*Monœcia*, 1-*Monandria*.)

In this order we meet with such anomalies as the invaluable bread-fruit-tree of the tropics, the useful cow-tree of Caraccas, and the virulent poison of the upas-tree of Java, side by side. Stove evergreen trees. Cuttings of ripened wood in sand, under a hand-light, and in a brisk, sweet, bottom-heat. Loamy soil. Summer temp., 60° to 70°; winter, 60° to 65°. The flowers of all the species are whitish-green.

A. Canno'ni (Fl. and Pom., 1875, p. 211). Society Islands.
„ *ebu'rnea* (Bull. Cat., 1878). 4. Dark green, with white veins. South Sea Islands.
„ *inci'sa* (cut-*leaved*). 50. South Sea Islands. 1793.
„ „ *nuci'fera* (nut-bearing). 50. E. Ind. 1793.
„ *integrifo'lia* (entire-leaved. *Jack-tree*). 60. June. E. Ind. 1778.
„ „ *heterophy'lla* (variable-leaved). 60. E. Ind. 1778.
„ *Karste'ni.*
„ *lacinia'ta.* Polynesia.
„ „ *meta'llica.* Leaves bronzy above, reddish-purple beneath. Polynesia.

A'RUM. (From *aron*, supposed to be an ancient Egyptian word. Nat. ord. *Arads* [Aroideæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

All are propagated by division of the roots; best done when the plants commence growing, in spring. Sandy loam will suit the most of them; the stove species should have a portion of peat. Winter temp. for them, from 50° to 60°. All are herbaceous perennials, except where otherwise particularised.

HARDY.

A. atroru'bens (dark-purple-*streaked*). 1. Brown. July. N. Amer. 1758. See ARISÆMA.
„ *bulbi'ferum* (bulb-bearing). This is Amorphophallus.
„ *byzanti'num.* See A. ITALICUM.
„ *concinna'tum.* See A. ITALICUM.
„ *Diosco'ridis.* Greece. Asia Minor.
„ „ *specta'bile* (G. C., 1897, xxi. 2).
„ *Draco'ntium* (*green*-dragon). See ARISÆMA DRACONTIUM.
„ *Dracu'nculus* (*common*-dragon). See DRACUNCULUS VULGARIS.
„ *Egge'ri* (S. H., 1898, 395). Closely allied to *Dioscoridis.*
„ *elonga'tum.* See A. ORIENTALE.
„ *gra'tum.* See A. ORIENTALE.
„ *ita'licum* (Italian). 2. Light yellow. June. Italy. 1683.
„ *macula'tum.* Britain. Spathe greenish, leaves spotted.
„ *Magdale'næ* (B. T. O., 1894, 227). Nearly allied to *A. palæstinum.*
„ „ *marmora'tum*, marbled with yellow.
„ *Ma'lyi.* See A. MACULATUM.
„ *marmora'tum.* See A. ITALICUM.
„ *modice'nse* (B. T. O., 1894, 227). Vigorous form of *A. italicum.* Sicily.
„ *Nicke'lii.* See A. ITALICUM.
„ *ni'grum.* Spathe blackish inside.
„ *numi'dicum.* See A. ITALICUM.
„ *orienta'le* (eastern). 1. June. Tauria. 1820.
„ *palæsti'num.* Black, purple. Orient. 1864.
„ „ *fo'liis variega'tis* (B. T. O., 1902).
„ „ *tri'color* (Gard., 1904, lxv. 215). Apparently the same as *A. palæstinum foliis variegatis.*
„ *palma'tum* (hand-shaped). 2. 1825.
„ *Petle'ri.* See A. ORIENTALE.
„ *philista'um.* Spathe spotted inside. Syria. 1859.
„ *pi'ctum* (painted). 2. Corsica. 1800.
„ *prososci'deum* (proboscis-like). See ARISARUM PROBOSCIDEUM.
„ *sa'nctum.* See A. PALÆSTINUM.
„ *specta'bile.* See A. DIOSCORIDIS SPECTABILE.
„ *syri'acum.* See A. DIOSCORIDIS.
„ *tenuifo'lium* (fine-leaved). See BIARUM.
„ *triphy'llum* (three-leaved). See ARISÆMA ATRORUBENS.
„ *variola'tum.* See XANTHOSOMA VIOLACEUM.
„ *zebri'num* (zebra). 1. Brown. June. N. Amer. 1664.

GREENHOUSE.

A. crini'tum (hairy-*sheathed*). See HELICODICEROS CRINITUS.
„ *detrunca'tum.* Greenish-yellow, spotted purple. Asia Minor. 1889.
„ *ri'ngens* (gaping). 1. June. Japan. 1800.
„ *terna'tum* (three-*leafleted*). See PINELLIA TUBERIFERA.

STOVE.

A. campanula'tum (bell-shaped). See AMORPHOPHALLUS.
„ *Coloca'sia* (colocasia). See COLOCASIA ANTIQUORUM.
„ *divarica'tum* (straggling). See TYPHONIUM.
„ *hedera'ceum* (ivy-*leaved*). See PHILODENDRON.
„ *i'ndicum* (Indian). See COLOCASIA INDICA.
„ *integrifo'lium* (entire-leaved). See AGLAONEMA.
„ *lingula'tum* (tongue-*leaved*). 6. W. Ind. 1793. Epiphyte.
„ *margina'tum* (margined). 2. E. Ind. 1820.
„ *obtusi'lobum* (blunt-lobed). 2. 1824.
„ *orixe'nse* (Orissan). See TYPHONIUM TRILOBATUM.
„ *peda'tum* (pedate). See SAUROMATUM.
„ *pentaphy'llum* (five-leaved). See ARISÆMA PENTAPHYLLUM.
„ *ramo'sum* (branchy). 3. June. 1810. Evergreen.

A. sagittifo'lium (arrow-leaved). See UROSPATHA.
„ *sarmento'sum* (runner-bearing). Brazil. 1835.
„ *spira'le* (spiral). See CRYPTOCORYNE.
„ *triloba'tum* (three-lobed). See TYPHONIUM DIVARICATUM.
„ „ *auricula'tum* (eared).
„ *veno'sum* (veiny-*purple-flowered*). See SAUROMATUM GUTTATUM.

ARUM LILY. See RICHA'RDIA AFRICA'NA.

ARUNDINA'RIA. (From *Arundo*, a reed). A genus of handsome hardy Bamboos. Nat. ord. *Grasses* [Gramineæ].

A. a'nceps. Origin unknown.
„ *arista'ta*. N. E. Himalaya.
„ *auri'coma*. 2 to 3. Japan. Syn. *Bambusa Fortunei aurea* of gardens.
„ *chrysa'ntha*. 3 to 4. Japan. 1894.
„ *falca'ta*. 4 to 6. Himalaya. Syn. *Bambusa falcata*. Half-hardy.
„ *Falcone'ri*. 4 to 6. Himalaya. Syn. *Thamnocalamus Falconeri*.
„ *Fortu'nei*. 1. Japan. Syn. *Bambusa Fortunei variegata*.
„ *Hi'ndsii*. 10. Japan.
„ „ *grami'nea*. 3. Japan.
„ *hookeria'na*. Sikkim.
„ *hu'milis*. 1. Japan.
„ *japo'nica*. 10. Japan. Syns. *Bambusa Metake* and *B. japonica*.
„ *Koka'ntsik*. 3. Japan.
„ *Kumasa'sa*. 4. Japan. Syns. *Arundinaria metallica* and *Bambusa palmata*.
„ *Laydeke'ri*. 1894.
„ *macrospe'rma*. Large Cane. N. Amer.
„ „ *te'cta*. Switch Cane.
„ *Maximowi'czii*. See SIMONI VARIEGATA.
„ *Meta'ke*. See A. JAPONICA.
„ *ni'tida*. 8 to 10. Central China. 1881. Syn. *A. khasyana*.
„ *no'bilis*. Origin unknown.
„ *pu'mila*. Japan.
„ *pygmæ'a*. 1. Japan. Syn. *Bambusa pygmæa*.
„ *racemo'sa*. N. Ind.
„ *Simo'ni*. 12 to 20. China.
„ „ *Chi'no*.
„ „ *variega'ta*. Leaves striped creamy-white. Syn. *A. Maximowiczii*.
„ *Vei'tchii*. 2. Japan.

ARU'NDO. Reed. (A word of doubtful derivation; perhaps from the Latin word *arundo*, a reed. Nat. ord. *Grasses* [Gramineæ]. Linn. 3-*Triandria*, 2-*Digynia*.)
Seeds and divisions; common soil.

A. conspi'cua. See CORTADERIA.
„ *Do'nax* (donax). 10. Apetal. July. S. Europe. 1648.
„ „ *versi'color* (striped). 3. Apetal. July. S. Europe. 1648.
„ *madagascarie'nsis* (K. B., 1893, 341). 10 to 20. Feathery panicles. Asia, Africa, and Madagascar.
„ *maurita'nica*. See A. PLINIANA.
„ *plinia'na*. Greenhouse. Mediterranean Regions.

ARYTE'RA. See RATONIA.

ASAFŒTIDA. See NARTHEX ASAFŒTIDA.

A'SARUM. Asarabacca. (From *a*, not, and *saron*, feminine; the application not obvious, but perhaps because too violent a medicine for women. Nat. ord. *Birthworts* [Aristolochiaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)
A. europæ'um is called *cabaret* in France, and is said there to be used by frequenters of pot-houses to produce vomiting. Hardy herbaceous plants, more curious than pretty. Divisions of the plant; common border; if with a little leaf-mould, all the better.

A. albive'nium. Green, purple; leaves white-veined. Japan. 1864.
„ *arifo'lium* (arum-leaved). 1. Brown. June. N. Amer. 1823.
„ *canade'nse* (Canadian). 1. Brown. June. Canada. 1713.
„ *cauda'tum*. Brownish-red. California. 1880.
A. caudi'gerum (G. C., 1890, vii. 422). Dwarf arum-like plant.
„ *e'legans*. Purple, green. Japan. 1863.
„ *europæ'um* (European). 1. Purple. May. England.
„ *geo'philum* (B. M., t. 7168). Red-purple, spotted white, edged golden-yellow.
„ *grandifo'lium* (large-leaved). 1. Brown. May. N. Amer. 1820.
„ *macra'nthum* (B. M., t. 7022). Pale brown, yellow, purple. Kelung, Formosa. 1877.
„ *ma'ximum* (G. and F., 1895, 133). Maroon-purple, with white blotch.
„ *parvifo'ra*. See A. ELEGANS.
„ *Thunbe'rgii*. ½. Purplish-green. May. Japan. 1839. Syn. *Heterotropa asaroides*.
„ *virgi'nicum* (Virginian). 1. Brown. May. Virginia. 1759.

ASCARI'CIDA. (From *ascaris*, an intestine worm, and *cædo*, to kill; referring to its virtue in medicine. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)
Now referred to Vernonia. Stove annuals; seeds in March, in heat; common soil. Temp., 60° to 75°.

A. anthelmi'nthica (worm-killing). See VERNONIA.
„ *tripline'rvia* (triple-nerved). See BACCHARIS.

ASCLE'PIADA'CEÆ. A numerous order of, for the greater part, lactescent, climbing shrubs. Flowers subumbellate, fascicled, or racemose, interpetiolar; pollen collected in the form of waxy masses, adhering to the cells of the contiguous anthers; follicles two. Leaves entire, generally opposite.

ASCLE'PIAS. Swallowwort. (The Greek name of *Æsculapius* of the Latins. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
All hardy herbaceous and sub-shrubby perennials, except when otherwise specified. The hardy species, chiefly by division of the root in April; the stove and greenhouse kinds, by the same process; and cuttings of the young shoots, when they begin to grow, in heat; and also seeds, kept over, and sown in heat, in February. Loam, leaf-mould, and manure, but most of the loam. The stove species will stand the winter if the temperature is not below 48°.

A. acumina'ta (long-pointed). See A. KLAPROTHIANA.
„ *amæ'na* (pleasing). See A. PURPURASCENS.
„ *amplexicau'lis* (stem-clasping). 2. Red. July. N. Amer. 1816.
„ *angustifo'lia* (narrow-leaved). 3. White. July. Mexico. 1817.
„ *arbore'scens*. See GOMPHOCARPUS.
„ *atrosangui'nea au'rea*. Blood-red, corona yellow. Bolivia. 1881.
„ *campe'stris*. White. July. Brazil. 1818. Stove.
„ *cine'rea* (grey). 2. Brown. July. N. Amer. 1825.
„ *citrifo'lia* (citron-leaved). See A. CAMPESTRIS.
„ *conni'vens*. See ASCLEPIODORA VIRIDIS.
„ *Cornu'ti*. See A. SYRIACA.
„ *curassa'vica* (Curassoa). 3. Scarlet. July. S. Amer. 1692. Stove herbaceous.
„ „ *a'lba* (white). 1. White. July. S. Amer. Stove herbaceous.
„ *decu'mbens* (decumbent). See A. TUBEROSA.
„ *Dougla'sii* (Douglas's). See A. SPECIOSA.
„ *exalta'ta* (lofty). See A. SYRIACA.
„ *gigante'a*. See CALOTROPIS.
„ *Ha'llii* (G. C., 1900, xxviii., 183, f. 53). California.
„ *hy'brida*. See A. PURPURASCENS.
„ *incarna'ta* (flesh-*coloured*). 2. Purple. July. N. Amer. 1710.
„ „ *pu'lchra*. Purple.
„ *Klaprothia'na*. 2. Red. July. N. Amer. 1826.
„ *laurifo'lia*. See A. RUBRA.
„ *Lina'ria* (toad-flax-*leaved*). 2. White. July. Mexico. 1802. Greenhouse herbaceous.
„ *linifo'lia* (flax-leaved). 3. White. July. Mexico. 1818. Greenhouse herbaceous.
„ *longifo'lia* (long-leaved). 2. Pale purple. July. N. Amer. 1816.
„ *mexica'na* (Mexican). 3. White. July. Mexico. 1821. Greenhouse evergreen.
„ *Michau'xii*. N. Amer. Syn. *A. angustifolia*, Ell.
„ *ni'vea* (snowy). See A. PHYTOLACCOIDES.

A. obtusifo'lia (blunt-leaved). 3. Purple. July. N. Amer. 1820.
,, *parviflo'ra* (small-flowered). See A. PERENNIS.
,, *paupe'rcula* (poor). 2. Red. July. N. Amer. 1817.
,, *pere'nnis*. 3. White. September. N. Amer. 1774.
,, *phytolaccoi'des* (phytolacca-like). 3. Purple. July. N. Amer. 1812.
,, ,, *ni'vea*. White. N. Amer. 1730.
,, *polysta'chia* (many-spiked). 4. White. July. N. Amer. 1825.
,, *pu'lchra* (fair). See A. INCARNATA.
,, *purpura'scens* (purplish). 3. Purple. July. N. Amer. 1732.
,, *quadrifo'lia* (four-leaved). 1. White, red. July. N. Amer. 1820.
,, *ro'sea* (rosy). 1. Red. July. Mexico. 1824. Greenhouse herbaceous.
,, *ru'bra* (red). 1. Red. July. Virginia. 1825.
,, *sca'ndens* See PHILIBERTIA VIMINALIS.
,, *specio'sa*. Red. N.W. Amer. 1846.
,, *Sulliva'ntii*. Deep purple. Allied to *A. syriaca*.
,, *syri'aca* (Syrian). 4. Purple. July. N. Amer. 1629.
,, *tenaci'ssima*. See MARSDENIA.
,, *tubero'sa* (tuberous-*rooted*). 2. Orange. August. N. Amer. 1680. Hardy tuber.
,, *variega'ta* (variegated). 4. White. July. N. Amer. 1597.
,, *verticilla'ta* (whorl-*leaved*). 3. White, green. July. N. Amer. 1759.
,, ,, *linifo'lia*. See A. LINIFOLIA.
,, *vesti'ta* (clothed). 3. Yellowish-green. October. N. Amer. 1844.
,, *vimina'lis*. See PHILIBERTIA VIMINALIS.

ASCLEPIODO'RA. (Swallowworts. Nat. ord. *Asclepiads* [Asclepidaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Propagated by division of the root when growth is commencing in spring. Ordinary garden soil.

A. procu'mbens. ½. Green, yellow. September. N. Amer.
,, *vi'ridis*. N. Amer. 1812.

ASCY'RUM. (From *a*, not, and *skyros*, roughness; plants not hard to the touch. Nat. ord. *Tutsans* [Hypericaceæ]. Linn. *Polyadelphia*, 8-*Polyandria*.)

All, but one, greenhouse evergreens; cuttings of small shoots, pretty hard; placed in very sandy soil, in close frame, any time during summer; peat and loam. Summer temp., 50° to 65°; winter, 38° to 45°.

A. amplexicau'le (stem-clasping). 2. Yellow. August. N. Amer. 1823.
,, *Cru'x-A'ndreæ* (St. Andrew's cross). 2. Yellow. July. N. Amer. 1759.
,, *hypericoi'des* (hypericum-like). 2. Yellow. August. W. Ind. 1759.
,, *pu'milum* (dwarf). 1. Yellow. July. Georgia. 1806. Half-hardy herbaceous.
,, *sta'ns* (standing). 2. Yellow. August. N. Amer. 1816.

ASHES are the remains of a substance which has undergone burning, and are as various in the proportions of their components as are the bodies capable of being burnt. Whatever be the substance burnt, the process should be made to proceed as slowly as possible; for, by such regulation, more carbon, or charcoal, is preserved in the ashes, which is the most valuable of their constituents. The simplest mode of effecting a slow combustion is to bank the burning substance over with earth, leaving only a small orifice, to admit the air sufficiently to keep up a smouldering fire.

Ashes have been usually recommended as a manure most useful to heavy soils; but this is a decided mistake. As fertilisers they are beneficial upon all soils; and they can never be applied in sufficient quantity to alter the staple of a too tenacious soil. To thirty square yards, twenty-eight pounds are an average application; and they cannot be put on too fresh.

Peat-ashes contain—

Silica (flint)	32
Sulphate of lime (gypsum)	12
Sulphate and muriate of soda (Glauber and common salt)	6
Carbonate of lime (chalk)	40
Oxide of iron	3
Loss	7

They are an excellent application to lawns turnips, cabbages, potatoes, and peas.

Coal-ashes contain carbon, silica, alumina, sulphate of lime, iron and potash, carbonate of lime, and oxide of iron. They are a good manure for grass, peas, and potatoes. Sprinkled half an inch deep on the surface, over beans and peas, they hasten the germination of the seed, and preserve it from mice. They are also used for forming dry walks in the kitchen-department.

Soap-boilers' ashes contain—

Silica	35.0
Lime	35.0
Magnesia	2.3
Alumina (clay)	1.5
Oxide of iron	1.7
,, manganese	1.8
Potash (combined with silica)	0.5
Soda ,, ,,	0.2
Sulphuric acid (combined with lime)	0.2
Phosphoric acid ,, ,,	3.5
Common salt	0.1
Carbonic acid (combined with lime and magnesia)	18.2

They are good for all crops, but especially grass and potatoes.

Wood-ashes and the *ashes of garden-weeds* generally contain silica, alumina, oxides of iron and manganese, lime, magnesia, potash, partly in the state of a silicate, soda, sulphates of potash and lime, phosphate of lime, chloride of sodium (common salt), and carbonates of lime, potash, and magnesia, with a considerable portion of charcoal. They are a good application to cabbages, potatoes, and peas.

Turf-ashes contain silica, alumina, oxides of iron and manganese, lime, magnesia, sulphates of potash and lime, phosphates of lime and magnesia, common salt, and charcoal. They have been used beneficially to grass, onions, carrots, beans, potatoes, and beetroot.

ASH-TREE. *Fra'xinus exce'lsior.*

ASIATIC-POISON BULB. *Cri'num asia'ticum.*

ASI'MINA. (A Canadian name, not explained. Nat. ord. *Anonads* [Anonaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

A. tri'loba is a fit companion to such plants as *Da'phnes*, *Illi'ciums*, and *Di'rca palu'stris* in British gardens. Sometimes by seed, but chiefly by layering the branches, towards the end of summer. Peat and loam.

A. grandiflo'ra (large-flowered). 3. White. June. Georgia. 1820.
,, *parviflo'ra* (small-flowered). 3. Brown. May. N. Amer. 1806.
,, *pygmæ'a* (pigmy). 2. White. N. Amer. 1812.
,, *tri'loba* (three-lobed-flowered). 8. Pale purple. August. N. Amer. 1822.

ASPA'LATHUS. (From *a*, not, and *spao*, to extract; in reference to the difficulty of extracting its thorns from a wound. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 1-*Decandria*.)

With one exception, all greenhouse evergreen shrubs. Cuttings of half-ripened wood, in April, in sand; placed over sandy peat, well drained, kept shaded, and little water given, as they are apt to damp off. Loam and lumpy peat. Temp., summer, 55° to 65°; winter, 40° to 45°.

A. affi'nis (kindred). 3. Yellow. July. Cape of Good Hope. 1822.
,, *a'lbens* (white). 4. White. July. Cape of Good Hope. 1774.
,, *arachnoi'dea*. Shrubby, erect. Corolla silky. S. Africa.
,, *araneo'sa* (cobwebbed). 3. Yellow. July. Cape of Good Hope. 1795.
,, *arge'ntea* (silvery-*leaved*). 2. Yellow. July. Cape of Good Hope. 1759.
,, *asparagoi'des* (asparagus-like). 3. Yellow. July. Cape of Good Hope. 1812.
,, *astroi'tes* (starry). 2. Yellow. July. Cape of Good Hope. 1818.
,, *callo'sa* (beautiful). 3. Yellow. July. Cape of Good Hope. 1812.

A. ca'ndicans (whitish). 2. Pale yellow. July. Cape of Good Hope. 1774.
„ *capita'ta* (head-flowered). 2. Yellow. July. Cape of Good Hope. 1823.
„ *carno'sa* (fleshy-*leaved*). 3. Yellow. July. Cape of Good Hope. 1795.
„ *Cheno'poda* (goose-foot). 3. Yellow. July. Cape of Good Hope. 1759.
„ *cilia'ris* (fringed). 2. Yellow. July. Cape of Good Hope. 1799.
„ *crassifo'lia* (thick-leaved). 2. Yellow. July. Cape of Good Hope. 1800.
„ *ericifo'lia* (heath-leaved). 2. Yellow. July. Cape of Good Hope. 1789.
„ *galioi'des* (galium-like). 2. Yellow. July. Cape of Good Hope. 1817.
„ *genistoi'des* (broom-like). 2. Yellow. July. Cape of Good Hope. 1816.
„ *globo'sa* (globular). 3. Orange. July. Cape of Good Hope. 1802.
„ *hi'spida* (stiff-haired). See A. THYMIFOLIA.
„ *Hy'strix* (porcupine). 2. Yellow. July. Cape of Good Hope. 1824.
„ *i'ndica* (Indian). See INDIGO'FERA ASPALATHOIDES.
„ *laricifo'lia*. 2. Yellow. July. S. Africa. 1823.
„ *larici'na* (larch-leaved). See A. LARICIFO'LIA.
„ *lotoi'des*. S. Africa. 1816. Syn. *A. quinquefolia*.
„ *mucrona'ta* (spine-pointed). See VIBORGIA ARMATA.
„ *multiflo'ra* (many-flowered). See A. THYMIFOLIA.
„ *pedunculata'ta* (long-flower-stalked). 6. Yellow. July. Cape of Good Hope. 1775.
„ *quinquefo'lia* (five-leaved). See A. LOTOIDES.
„ *seri'cea* (silky). 2. Yellow. July. Cape of Good Hope. 1816.
„ *spino'sa* (spiny). 2. Yellow. July. Cape of Good Hope. 1824.
„ *squarro'sa* (squarrose). See A. PEDUNCULATA.
„ *subula'ta* (awl-leaved). 2. Yellow. July. Cape of Good Hope. 1789.
„ *thymifo'lia* (thyme-leaved). 2. Yellow. July. Cape of Good Hope. 1825.
„ *uniflo'ra* (single-*flowered*). 3. Yellow. July. Cape of Good Hope. 1812.

ASPA'RAGUS. (From *a*, intensive, and *sparasso*, to tear; in reference to the strong prickles of some species. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

The *A. officina'lis* is well known in our kitchen-gardens: it, as well as the other hardy kinds, is propagated chiefly by seeds, and rejoices in rich, light loam, well drained. The stove and greenhouse varieties are propagated chiefly by dividing the roots, and prefer sandy loam and peat. All herbaceous perennials, except where otherwise specified.

HARDY.

A. ama'rus (bitter). See A. SCABER.
„ *Broussone'tii* (Broussonet's). 2. Canaries.
„ *davu'ricus* (Davurian). 3. Green. April. Davuria. 1823. Syn. *A. glycycarpus*.
„ *longifo'lius* (long-leaved). 3. White. July. Siberia. 1827.
„ *mari'timus* (maritime). 2. Green. June.
„ *officina'lis* (officinal). 4. Green. July. England.
„ *sca'ber*. 4. Green. July. France. 1824.
„ *sylva'ticus* (wood). See A. TENUIFOLIUS.
„ *tenuifo'lius* (fine-leaved). Yellow. June. Hungary.
„ *tricarina'tus*. See A. VERTICILLA'TUS.
„ *verticilla'ris* (whorl-leaved). See A. VERTICILLATUS.
„ *verticilla'tus*. 2. White. July. Caucasus. 1752.

GREENHOUSE.

A. acutifo'lius (acute-leaved). 2. Whitish-green. Spain. 1640. Evergreen shrub, half-hardy.
„ *æthio'picus* (Ethiopian). 3. White. Cape of Good Hope. 1816. Evergreen shrub.
„ „ *albane'nsis*. Allied to *A. plumosus*.
„ „ *ternifo'lius*. White. August. S. Africa. 1872.
„ *africa'nus depe'ndens*. 4. White. June. Cape of Good Hope. 1819. Evergreen climber.
„ *a'lbus* (white). 12. White. Spain. 1540. Half-hardy.
„ *aphy'llus stipula'ris*. S. Europe. 1800. Syn. *A. horridus*.
A. asia'ticus (Asiatic). 3. White. Asia. 1759. Evergreen shrub.
„ *cape'nsis* (Cape). 4. Green. April. Cape of Good Hope. 1691. Evergreen shrub.
„ *Colma'ni* (G. C., 1906, xxxix., 109).
„ *Coope'ri*. Whitish. S. Africa. 1862. Climber.
„ *comore'nsis*. Emerald green. 1888.
„ *cri'spus*. Syns. *A. decumbens* and *A. flexuosus*.
„ *declina'tus* (down-bent). 5. Whitish-green. Cape of Good Hope. 1759. Half-hardy.
„ *decu'mbens* (decumbent). See A. CRISPUS.
„ *depe'ndens* (drooping). See A. AFRICANUS.
„ *Duche'snei* (R. H., 1900, 583). Congo Free State.
„ *elonga'tus* (elongated). 6–7. Africa. 1908.
„ *falcifo'rmis*. See A. MEDEOLOIDES FALCIFORMIS.
„ *filici'nus* (B. T. O., 1902, 142). Resembling *A. lucidus*.
„ „ *Gira'ldii* (Girald's). Green. China. 1908.
„ *glycyca'rpus*. See A. DAVURICUS.
„ *grandiflo'rus* (large-flowered). See A. UMBELLATUS.
„ *Greenfie'ldi* (G. M., 1902, 441). See A. MYRIOCLADUS.
„ *ho'rridus* (horrid). See A. APHYLLUS STIPULARIS.
„ *japo'nicus* (G. M., 1902, 42). See A. SCANDENS.
„ *la'nceus* (lance-*leaved*). White. May. Cape of Good Hope. 1811. Herbaceous climber.
„ *larici'nus* (larch-like). White. May. Cape of Good Hope. 1816.
„ *Leo'nis* (Leo's). White or yellowish. S. Africa. 1909.
„ *lo'ngipes* (K. B., 1901, 134). Cameroon Mountains.
„ *medeoloi'des*. S. Africa. Best known as Smilax.
„ „ *angustifo'lius* (narrow-leaved). 6. July. 1752.
„ „ *falcifo'rmis*. Syns. *A. falciformis, Myrsiphyllum, asparagoides*, and *M. falciforme*.
„ „ *myrtifo'lius* (myrtle-leaved). Leaves small. 1904.
„ *myrio'cladus* (G. M., 1902, 441). Dwarf species. Natal.
„ *nivenia'nus* (Niven's). Whitish-purple. May. Cape of Good Hope. 1811.
„ *pectina'tus*. See A. SCANDENS.
„ *plumo'sus*. White. S. Africa. 1876.
„ „ *Blampié'di* (G. C., 1902, xxxi., 150).
„ „ *na'nus*. S. Africa. 1880.
„ „ *robu'stus*. Vigorous variety.
„ *racemo'sus* (racemose). 3. Whitish-green. E. Ind. 1808. Evergreen shrub.
„ *ramosi'ssimus*. Cream colour. S. Africa. 1862.
„ *retrofra'ctus* (backwards-bent). 4. White. July. Africa. 1759. Evergreen twiner.
„ „ *arbo'reus* (Jard., 1890, 255, f.).
„ *sca'ndens* (climbing). 6. Green. Cape of Good Hope. 1795. Evergreen climber.
„ *smithia'nus* (Smith's). Teneriffe. 1529. Evergreen shrub.
„ *Sprenge'ri* (Gfl., 1890, p. 490). Natal.
„ „ *compa'cta* (G. C., 1898, xxiv., 445).
„ „ *falcatoi'des* (Gfl., 1902, 162).
„ „ *ochroleu'ca* (Gfl., 1902, 133). Fruits yellow.
„ „ *variega'ta* (G. C., 1898, xxiii., 250).
„ „ *sieberia'nus*. Garden hybrid (*crispus* and *tenuissimus*).
„ *stipula'ceus* (large-stipuled). 4. White. Cape of Good Hope. 1821. Evergreen twiner.
„ *subula'tus* (winged). White, fragrant. Himalaya. Climber.
„ „ *gra'cilis* (Gard., 1904, lxvi., 220).
„ *subula'tus* (awl-*leaved*). 3. Cape of Good Hope. 1811. Evergreen shrub.
„ *tenui'ssimus*. Light green foliage. S. Africa.
„ *tetrago'nus* (four-angled). White. S. Africa. 1909.
„ *umbella'tus*. Canary Islands. Syn. *A. grandiflorus*.
„ *umbellula'tus* of Bresler. Syn. *A. crispus* of Bojer.
„ *undula'tus* (waved). 6. S. Africa. 1816.
„ *virga'tus*. 5. Green. S. Africa. 1862.

STOVE.

A. falca'tus (sickle-*leaved*). 3. Whitish-green. Trop. Africa. 1792. Evergreen shrub.
„ *flexuo'sus* (zigzag). See A. CRISPUS OF LAMARCK.
„ *madagascarie'nsis* (B. M., t. 8046). Yellowish. Madagascar. 1905.
„ *sarmento'sus* (twiggy). 6. Whitish-green. August. Ceylon. 1810. Evergreen twiner.

ASPA'RAGUS (*Aspa'ragus officina'lis*) was, by the old gardeners, called *sperage*, and by the modern vulgar, *grass*, or *sparrow-grass*. The small heads are sometimes spoken of as *sprue*.

Varieties.—Formerly we had only two varieties—the red-topped and the green-topped—now we have Connover's Colossal, Giant Argenteuil, and Palmetto, a fine American variety, but much depends upon soil and culture.

Soil best suited to this vegetable is a fresh, sandy loam, made rich by the abundant addition of manure. It should be trenched from two feet to two feet and a half deep. This depth of good, rich soil, on a dry sub-soil, is ample to yield the very best of heads, if the yearly successive management be attended to.

Situation.—The bed should enjoy the influence of the sun during the whole of the day, as free as possible from the influence of trees and shrubs, and ranging north and south. The sub-soil should be dry, or the bed kept so by being founded on rubbish, or other material, to serve as a drain. The space of ground required for the supply of a small family is at least eight square perches. If less, it will be incapable of affording one hundred heads at a time. Sixteen perches will, in general, afford two or three hundred every day, in the height of the season.

Sowing.—To raise plants, sow any time, from the middle of February to the beginning of April, in drills, one inch deep, and one foot apart, if the seedlings are to be transplanted; but two feet apart, if they are to remain where sown. When starting with seedlings some may remain in the seed-beds, and will give good results a year earlier than those transplanted. Much depends upon soil in good loam and a gravelly sub-soil. Where water gets away naturally, it will not be necessary to make much preparation, except to manure the ground and work it well before sowing the seed.

Culture in Seed-bed.—If dry weather, the bed should be refreshed with moderate but frequent waterings; and, if sown as late as April, the seeds should be soaked for at least a day, and the surface soil kept moist by watering in the evenings during dry weather. Care must be taken to keep free from weeds, though this operation should never commence until the plants are well above ground, which will be in the course of three or four weeks from the time of sowing. Sprinkle them about twice a month with salt, and supply them once a week with a good soaking of liquid-manure, during the growing season. Towards the end of October, as soon as the stems are completely withered, they must be cut down, and well-rotted dung spread over the bed, to the depth of about two inches. This serves to increase the vigour of the plants the following year. About March in the next year thin the plants to one foot apart; and those removed may be transplanted into a bed, twelve inches apart, if it is intended that they should attain another or two years' further growth before being finally planted out; or they may be planted immediately into the beds, for production. It may be here remarked, that the plants may remain one or two years in the seed-bed. They will even succeed after remaining three; but if they continue four, they generally fail when transplanted.

Time of Planting.—The best time is the end of March, if the soil is dry, and the season warm and forward; otherwise it is better to wait until the commencement of April. A very determinate signal of the appropriate time for planting is when the plants are beginning to grow. If moved earlier, and they have to lie torpid for two or three months, many of them die, or, in general, shoot up very weak.

Construction of the Beds.—Have them four and a half feet wide. The situation should be fixed upon a month or two previously to making and planting the beds. The whole should be trenched two feet to two feet and a half deep, and thoroughly well manured, as the work goes on, with rich, thoroughly-decayed manure. When all is trenched and manured in this way, give a good surface-dressing of salt, which will wash in with rains. After lying in this way for a month, give the whole another surface-dressing with similar manure, and double-dig or trench the whole over again, leaving the surface rough and open, giving the whole another salting, and let it lie in this way until the time for planting. Previously to marking out the beds, the whole should have another thorough good digging over, making the surface neat and even as the work goes on.

Mode of Planting.—The plants being taken from the seed-bed carefully with a narrow-pronged dung-fork, with as little injury to the roots as possible, they must be laid separately and evenly together, for the sake of convenience whilst planting, the roots being apt to entangle, and cause much trouble and injury in parting them. They should be exposed as short a time as possible to the air; and, to this end, it is advisable to keep them, until planted, in a basket covered with a little sand. The mode of planting is to form drills, or narrow trenches, five or six inches deep, and one foot apart, cut out with the spade, the line-side of each drill being made perpendicular; and against this the plants are to be placed, with their crowns one and a half or two inches below the surface, and twelve inches asunder. The roots must be spread out wide, in the form of a fan, a little earth being drawn over each, to retain it in its position whilst the row is proceeded with. For the sake of convenience, one drill should be made at a time, and the plants inserted and covered completely before another is commenced. When the planting is completed, the bed is to be lightly raked over, and its outline distinctly marked out. Care must be taken never to tread on the beds (they are formed narrow to render it unnecessary); for everything tending to consolidate them is injurious, as, from the length of time they have to continue, without a possibility of stirring them to any considerable depth, they have a closer texture than is beneficial to vegetation. Water must be given, in dry weather, daily, until the plants are established. The paths between the beds should be two feet wide. The first season after planting the beds, a crop of radishes may be sown upon them without injury to the young plants, if the radishes are all drawn off early. It too often happens that new asparagus-beds are ruined by being pestered with other crops; but a row, or even two rows, of either lettuces or spinach, may be sown in the alleys.

Subsequent Cultivation.—Throughout the year care must be taken to keep the beds clear of weeds; and, in May and summer, apply liquid-manure twice a week plentifully, giving a sprinkling of salt once a month. In the latter end of October, or commencement of November, the beds are to have the winter dressing. The stalks must be cut down and cleared away; the beds cleaned, if weedy, and carefully forked up. A thoroughly good dressing of manure is put all over the beds equally, and the alleys forked over too; whilst, for the sake of giving the whole a finish, a line is put down each side of the alley, the edges made up a little, and a few crumbs from the alleys thrown upon the beds, and the edges marked out with the point of the spade. The work is then done for the winter.

Spring Dressing.—In the month of March the beds are again forked over carefully, the manure and soil well broken up and mixed together, and some of the rougher parts of manure, with all the rakings, forked into the alleys; after which the beds are raked over.

Production.—In the May of the second year after planting, if they are very highly cultivated with liquid-manure, cutting may commence; but, under ordinary culture, cutting had better not begin until the third year. There is some difference of opinion regarding when asparagus should be cut. The French method is to cut almost before any green shows, but some English people prefer it with more green. Cutting should cease at the end of June, or very early in July.

Forcing may be commenced at the end of November. For this purpose, take up the plants from an old bed, or others raised purposely, when they are three or four years old. Carefully commence on one side one of the outer rows of the bed, by digging out a trench, forking the earth as much as possible from underneath the plants, so that they may easily, and without straining or injuring their roots, be moved out entirely, by thrusting down the fork behind them. Be very careful, at the same time, that the buds about the crowns of the plants are not injured by the fork, or trampled upon, or bruised in any way during their removal. Obtaining handsome, strong shoots depends much upon the care with which the plants are thus handled. Asparagus is very easily forced, and is very productive under the treatment when properly managed. It may be forced in various modes through the winter; but those who have the command of hot water, to give it a moderate bottom-heat, will find this give the least trouble. It may also be grown in winter, in any kind of forcing-house, either in boxes filled

with earth, or in a pit filled with leaves, tan, or other fermenting materials. Melon-pits and frames may be used for the same purpose. The hotbed of fermenting materials, thoroughly well worked previously to being made up into the beds, may give but a slight heat, and on it may be put six inches of old tan, or leaf-mould. Put the asparagus-plants into this, and keep them, during the winter months, about one foot from the glass. Cover them, at first, only slightly with the old tan, or leaf-mould; but, in ten days or a fortnight, add three or four more inches of the same kind of covering. Take care that altogether the crowns of the plants are not covered more than five or six inches deep. When the plants have begun to grow freely, and the shoots begin to appear through the surface, give them some weak, slightly-warmed, or tepid liquid-manure, adding to each gallon of it two ounces of common salt.

Quantity to be Forced.—To keep a supply during the winter months, commencing the first week in November, use two or three light cucumber-frames; and a successional bed should be made up in about a fortnight or three weeks afterwards, and so on until the end of March, taking the advantage of fine, open weather for taking up and planting.

Insects.—See CRIOCERIS ASPARAGI.

To obtain Seed.—Some shoots should be marked, and left in early spring; for those which are allowed to run up after the season of cutting is over are seldom forward enough to ripen their seeds perfectly. In choosing the shoots for this purpose, those only must be marked which are the finest, roundest, and have the closest heads; those having quick-opening heads, or are small or flat, are never to be left. It is remarkable that while some plants seed freely every year others invariably fail. Each chosen shoot must be fastened to a stake, which, by keeping it in its natural position, enables the seed to ripen more perfectly. The seed is usually ripe in September, when it must be collected; put in moist sand, where it should remain until the pulp has thoroughly ripened, and there will be no difficulty in getting the sand separated after it is quite dry, when it may be well cleansed in water. The seeds sink to the bottom, and the refuse floats, and will pass away with the water as it is gently poured off. By two or three washings, the seeds will be completely cleansed, and, when perfectly dried by exposure to the sun and air, may be stored for use; but should not be placed where it gets very dry, or warm; it will keep for a considerable time in a tin box if placed in a cool, dry position.

ASPA'SIA. (From *aspazomai*, I embrace; the column embraced by the labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, best grown in baskets containing sphagnum, peat, and broken crocks, with charcoal; rather dry during winter, and moister when growing. Summer temp., 65° to 80°; winter, 58° to 65°.

A. epidendroi'des (epidendrum-like). 1. Whitish-yellow. Panama. 1833.
„ *luna'ta* (crescent-marked). Brazil. 1844.
„ *lu'tea* (yellow). Yellow. March. Guiana. 1838.
„ *papiliona'cea*. ½. Yellowish, brownish, orange, violet. Costa Rica. 1876.
„ *principi'ssa*. Light green, buff. 1888.
„ *psittaci'na*. Green, brown, purplish. Ecuador. 1878.
„ *variega'ta* (variegated-*flowered*). 1. Green and yellow. February. Panama. 1836.

ASPEN. *Po'pulus tre'mula.*

ASPERE'LLA. (From *asper*, rough. Nat. ord. Gramineæ.)

A. Hy'strix (Wien Gart. Zeit., 1889, p. 228, f. 45). Hardy annual; sow early in spring.

ASPE'RULA. Woodruff. (The diminutive of *asper*, rough; in reference to the rough leaves. Nat. ord. *Stellates*, or *Starworts* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

All hardy herbaceous plants, except where otherwise described. Division of the plant in March; common soil. Most of them succeed in shady positions, and will grow under trees. *A. tricho'des* from seed.

A. alpi'na (alpine). See A. CYNANCHICA.
„ *arcadie'nsis* (Arcadian). ½. Red. April. Arcadia. 1819.
A. arista'ta (awned). 1. Yellow. July. South of Europe. 1823.
„ *as'pera* (rough). Greenish-yellow. July. Caucasus; Persia. 1837.
„ *azu'rea*. 1. Pale blue. Caucasus. 1867. Syn. *A. orientalis*.
„ *brevifo'lia* (short-leaved). ½. Purple. July. Asia Minor. 1825. Half-hardy evergreen trailer.
„ *cala'brica*. See PUTORIA CALABRICA.
„ *crassifo'lia* (thick-leaved). See A. TOMENTOSA.
„ *cyna'nchica* (cynanche-like). 1. Flesh. July. England.
„ „ *saxa'tilis*. Syn. *A. pyrenaica*. 1. Flesh. July. Spain. 1821.
„ *galioi'des* (galium-like). 1. White. July. South of Europe. 1710.
„ „ *tyra'ica* (Tyrian). ½. White. May. Levant. 1829.
„ *glomera'ta* (crowded). 1. Yellow. July. Orient. 1824.
„ *Gusso'ni*. 1. Pink. August. Sicily. 1829.
„ *hirsu'ta* (soft-haired). 1. White. June. Portugal. 1819.
„ *hi'rta* (bristly). 1. Purple. July. Pyrenees. 1817.
„ *inca'na* (hoary). Purple. June. Crete. 1823.
„ *læviga'ta* (smoothed). 1. White. June. South of Europe. 1775.
„ *longiflo'ra* (long-flowered). 1. Yellowish-purple. July. Hungary. 1821.
„ *longifo'lia* (long-leaved). See GALIUM.
„ *molluginoi'des* (Mollujo-like). 1. Yellow. July. Caucasus. 1820.
„ *monta'na* (mountain). See A. CYNANCHICA.
„ *ni'tida* (glossy). See A. GUSSONI.
„ *odora'ta* (sweet-scented). 1. White. June. Britain.
„ *orienta'lis*. See A. AZUREA.
„ *pyrena'ica* (Pyrenean). See A. CYNANCHICA SAXATILIS.
„ *ri'gida* (stiff). 1. Red. July. Greece. 1819.
„ *sca'bra* (rough). See A. ARISTATA.
„ *scutella'ris* (skull-cap). 1. Russia. 1838.
„ *subero'sa*. ½. Pink. June. Greece. 1903.
„ *supi'na* (supine). See A. CYNANCHICA.
„ *tauri'na* (bull). 1. White. June. Italy. 1739.
„ *tincto'ria* (dyer's). 1. White. July. Europe. 1764.
„ *tomento'sa* (downy). 1. Red. July. South of Europe. 1817. Syn. *A. crassifolia*.
„ *tricho'des* (hairy). White. June. Persia. 1838. Hardy annual.

ASPHALT, BITUMEN, or **JEW'S PITCH,** is found floating on the Dead Sea, and elsewhere. It becomes very hard by exposure to the air; and its name has been appropriated to various artificial preparations, all of which owe their properties to the boiled gas-tar which enters into their composition. Thus the *asphalt felt* is rendered waterproof for shed-roofing, &c., by being soaked in that tar; and *asphalt walks* are most dry and excellent when made as follows: Take two parts of very dry *lime-rubbish*, and one part *coal-ashes*, also very dry, and both sifted fine. In a dry place, on a dry day, mix them, and leave a hole in the middle of the heap, as bricklayers do when making mortar. Into this pour boiling-hot *coal-tar*; mix, and, when as stiff as mortar, put it three inches thick where the walk is to be. The ground should be dry, and beaten smooth. Sprinkle over it coarse sand; when cold, pass a light roller over it, and in a few days the walk will be solid and waterproof.

ASPHODELI'NE. Nat. ord. Liliaceæ. A genus of plants closely allied to Asphodelus, but distinguished by erect leafy stems. Hardy plants that thrive in any ordinary garden soil; propagated by divisions.

A. Bala'nsæ (G. C., 1898, xxiii., 111, f. 43). White. Cilicia and Cappadocia.
„ *Basi'lii* (G. C., 1898, xxiii., 111.) Mount St. Basil.
„ *brevicau'lis*. Yellow, veined with green. Orient.
„ *damascе'na*. White. Asia Minor.
„ *dammeria'na* (G. C., 1898, xxiii., 111). White. Cilicia.
„ *isthmoca'rpa* (G. C., 1898, xxiii., 111, f. 44). Cilicia.
„ *imperia'lis* (G. C., 1897, xxii. 397, f. 116). Asia Minor.
„ *libu'rnica*. Yellow, striped with green. S. Europe. Syns. *Asphodelus capillaris* and *A. creticus*.

A. lu'tea. Yellow. Sicily. 1596. Syn. *Asphodelus luteus.*
,, ,, *sibi'rica* (B. R., t. 1507). Pale yellow. May. Siberia. 1829. There is another form with double flowers.
,, *proli'fera.* 1. White. August. Armenia. 1824. Hardy annual. Syn. *Asphodelus prolifer us.*
,, *tau'rica.* White, striped with green. Asia Minor, &c. 1812. Syn. *Asphodelus tauricus.*
,, *tenu'ior.* Yellow. Orient. Syn. *Asphodelus tenuior.*

ASPHO'DELUS. Asphodel. (From *a*, not, and *sphallo*, to supplant; the stately flowers not easily surpassed. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia.*)

Hardy herbaceous perennials, except where otherwise specified. Dividing the roots, except the stove annuals, which may be raised from seed. Grown in any common soil. *A. interme'dius* requires the protection of a cold pit in winter; temperature for it at that period, 38° to 45°.

A. æsti'vus (summer). See A. TENUIFOLIUS.
,, *a'lbus* (white). 2. White. April. South of Europe. 1820.
,, *asia'ticus* (Asiatic). White. June. Levant. 1824.
,, *capilla'ris* (hair-*leaved*). See ASPHODELINE LIBURNICA.
,, *clava'tus* (club-*seeded*). See A. TENUIFOLIUS.
,, *como'sus.* 2. White, green. N. W. Himalaya. 1887.
,, *cre'ticus* (Cretan). See ASPHODELINE LIBURNICA.
,, *fistulo'sus* (pipe-stalked). 2. White. August. South of Europe. 1596.
,, *interme'dius* (intermediate). See A. RAMOSUS.
,, *lu'teus* (yellow). See ASPHODELINE LUTEA.
,, *microca'rpus* (small-podded). See A. RAMO'SUS MICROCA'RPUS.
,, *proli'ferus* (proliferous). See ASPHODELINE PROLIFERA.
,, *ramo'sus* (branchy). 2. White. April. South of Europe. 1551.
,, ,, *a'lbus.* 2. White. April. South of Europe. 1820.
,, ,, *interme'dius.* 2. White. July. Canaries. 1822. Syn. *A. intermedius.*
,, ,, *microca'rpus.* Dalmatia. 1831.
,, ,, *Villa'rsii.* White. Eastern France. 1888.
,, *sibi'ricus* (Siberian). See ASPHODELINE LUTEA.
,, *tau'ricus* (Taurian). See ASPHODELINE TAURICA.
,, *tenuifo'lius.* Oriental India.
,, ,, *clava'tus.* White. July. E. India. 1808.
,, *tenu'ior* (slenderer). See ASPHODELINE.
,, *Villa'rsii.* See A. RAMOSUS.

ASPIDIO'TUS. See Co'ccus.

ASPIDI'STRA. (From *aspidiseon*, a little round shield; shape of flower, or, probably, in reference to the mushroom-shaped stigma by which Aspidistræ are characterised. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 8-*Octandria*, 1-*Monogynia.*)

Most useful foliage plants for house decoration propagated by division; pot in good loamy compost. They have been described as stove plants, but though thriving well in heat they are almost hardy.

A. ela'tior (taller). 2. Brown. October. Japan. 1835.
,, *lu'rida* (lurid). 1. Purple. July. China. 1832.
,, ,, *puncta'ta* (dotted). 1. Purple. March.
,, ,, *variega'ta.* 2. Brown. October. Japan. 1835.
,, *ty'pica* (W. G., 1894, 266). Supposed to have been introduced from Tonkin.

ASPI'DIUM. Shield Fern. (From *aspidion*, a little buckler; the shape of the spores or seed-apparatus. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.*)

Spores or seed, and division of the roots, just after they start growing in the spring. Shady situation; loam and peat. The greenhouse and stove kinds should have their appropriate treatment; those of the latter should not have the temperature lower than 50° in winter. See FERNS for general culture.

HARDY.

A. acrostichoi'des. N. Amer. Syn. *Polystichum acrostichoides.*
,, ,, *gra'ndiceps.* Crested form. Garden variety.
,, ,, *inci'sum.* Pointed, pinnules deeply incised.
,, *aculea'tum.* The Hard Shield Fern. Syn. *Polystichum aculeatum.*
,, *alpi'num* (alpine). See CYSTOPTERIS ALPINA.
A. angula're. The Soft Shield Fern. There are numerous varieties of this kind. Syn. *Polystichum angulare.*
,, ,, *gra'ndiceps.* With narrow fronds, and much forked top.
,, *atoma'rium* (atomed). See CYSTOPTERIS BULBIFERA.
,, *bulbi'ferum* (bulb-bearing). See CYSTOPTERIS BULBIFERA.
,, *crista'tum.* See NEPHRODIUM CRISTATUM.
,, ,, *clintonia'num* (G. and F., 1888, 342). See NEPHRODIUM.
,, *crista'tum*×*margina'le* (G. and F., 1896, 444, f. 58). Natural hybrid.
,, *denta'tum* (toothed). See CYSTOPTERIS FRAGILIS DENTATA.
,, *dilata'tum* (widened-crested). See NEPHRODIUM.
,, *dumeto'rum* (thicket). See NEPHRODIUM SPINULOSUM DUMETORUM.
,, *fra'gile* (brittle). See CYSTOPTERIS FRAGILIS.
,, *Halle'ri* (Haller's). Brown. April. Switzerland. 1824.
,, *irri'guum* (plashy). See NEPHRODIUM IRRIGUUM.
,, *loba'tum* (lobed). 1–2. June. Britain.
,, *Lonchi'tis.* 1 to 2. Britain. Syn. *Polystichum Lonchitis.*
,, ,, *aspe'rrimum* (roughest). 1. July. N. Amer.
,, *monta'num* (mountain). See NEPHRODIUM MONTANUM.
,, *muni'tum.* California. Syn. *Polystichum munitum.*
,, *re'gium* (royal). See CYSTOPTERIS ALPINA.
,, *rhæ'ticum* (Rhætian). See ASPLENIUM FILIX FŒMINA RHÆTICUM.

GREENHOUSE.

A. æ'mulum. See NEPHRODIUM ÆMULUM.
,, *arista'tum.* 1 to 2. Japan, Himalayas, New South Wales. Syn. *Polystichum aristatum.*
,, ,, *conifo'lium.* Finely divided fronds.
,, ,, *variega'tum.* With a band of green running through the bases of the pinnules.
,, *cape'nse.* 1 to 2. S. Amer., New Zealand, Cape Colony. Syns. *A. coriaceum* and *Polystichum capense.*
,, *falcine'llum.* 1. May. Madeira. Syn. *Polystichum falcinellum.*
,, *fœnicula'ceum.* Syn. *Polystichum fœnicula'ceum.*
,, *frondo'sum.* Syn. *Polystichum frondosum.*
,, *laserpitiifo'lium.* Syns. *Lastrea Standishii* and *Polystichum laserpitiifolium.*
,, *lepidocau'lon.* Syn. *Polystichum lepidocaulon.*
,, *mohrioi'des.* Syn. *Polystichum mohrioides.*
,, *pu'ngens.* Syn. *Polystichum pungens.*
,, *tri'pteron.* Syn. *Polytsichum tripteron.*
,, *va'rium.* Syn. *Lastrea varia* and *Polystichum varium.*

STOVE.

A. ala'tum (winged). See NEPHRODIUM VASTUM.
,, *ama'bile.* Syn. *Polystichum amabile.*
,, *ano'malum.* Syn. *Polystichum anomalum.*
,, *auricula'tum.* Syns. *A. ocellatum* and *Polystichum auriculatum.*
,, ,, *le'ntum.* Pinnæ divided into lobes.
,, ,, *margina'tum.* Texture more coriaceous.
,, *cicula'rium* (cowbane-like). See NEPHRODIUM.
,, *decu'rrens* (decurrent). See NEPHRODIUM.
,, *exalta'tum* (lofty). 4. Brown. July. Jamaica. 1793.
,, *falca'tum.* Syn. *Cyrtomium falcatum.*
,, ,, *caryoti'deum.* Syn. *Cyrtomium caryotideum.*
,, ,, *Fortu'nei.* Syn. *Cyrtomium Fortunei.*
,, ,, *Ma'yi* (May's). Fronds crested. 1908.
,, *fle'xum.* Syn. *Polystichum flexum.*
,, *gra'nde* (grand). See NEPHRODIUM PACHYPHYLLUM.
,, *heracleifo'lium* (cow-parsnip-leaved). See A. TRIFOLIATUM.
,, *Hooke'ri* (Hooker's). Brown, yellow. June. Malay Archipelago. 1812.
,, *indivi'sum* (whole-*leafed*). 2. Brown. July. Jamaica. 1824.
,, *latifo'lium* (broad-leaved). See NEPHRODIUM LATIFOLIUM.
,, *macrophy'llum* (large-leaved). See NEPHRODIUM.
,, *meniscioi'des.* Syns. *A. confertum* and *Cyclodium meniscioides.*
,, *mucrona'tum.* Syn. *Polystichum mucronatum.*
,, *pa'tens* (spreading). See NEPHRODIUM.

A. pectina'tum (comb-like). 1. Brown. July. W. Ind. 1820.
„ *pu'ngens* (stinging). Brown. W. Ind.
„ *repa'ndum* (wavy-leaved). Brown. July. Island of Luzon.
„ *rhizophy'llum* (root-leaved). ½. Brown. July. Jamaica. 1820.
„ *semicorda'tum*. Syn. *Polystichum semicordatum*.
„ *singaporia'num* (Singapore). See NEPHRODIUM.
„ *trapezioi'des* (trapezium-like). See A. VIVIPARUM.
„ *tria'ngulum*. Syn. *Polystichum triangulum*.
„ *trifolia'tum* (three-leaved). 2. Brown. July. W. Ind. 1769.
„ „ *heracleifo'lium*. The pinnæ pinnatifid on both sides at the base.
„ *vivi'parum*. Syns. *A. trapezioides* and *Polystichum viviparum*.

Some authors include *Athyrium Filix-fœmina* in this genus, but it has now been put with the Aspleniums by the Kew authorities.

ASPIDO'PTERYS. (From *aspis, aspidos*, a shield, and *pteron*, a wing; the fruits have shield-like wings. Nat. ord. Malpighiaceæ.)

Stove climbers. Cuttings of firm young shoots in sand, in bottom-heat. Loam, peat, and sand.

A. nu'tans (nodding). 10. White. July. Himalaya. 1820.
„ *roxburghia'na* (Roxburghian). 10. White. July. India. 1820.

ASPLE'NIUM. Spleenwort. (From *a*, not, and *splen*, spleen; referring to its supposed medicinal properties. Nat. ord. *Ferns* [Filices]. Linn. *24-Cryptogamia, 1-Filices.*)

This is an extensive and variable genus, the disposition of the spores being the only connecting link. Taking the large, broad-fronded *A. Nidus*, and compare it with *A. viviparum*, which has very finely-cut small fronds, there appears to be little affinity. *A. Felix-fœmina*, better known in gardens as Athyrium F.—f. (which see) has given us innumerable garden varieties, many of which are of exquisite beauty; and about one hundred varieties have gained certificates from the Royal Horticultural Society. These are all natives of Britain, and the ordinary type is known as "The Lady Fern." The species most extensively grown for market (or decorations) belong to the bulbiferum type; yet *A. Nidus* (the Bird's-nest Fern) has more recently come into favour and is extensively grown. For treatment, see FERNS.

HARDY.

A. Adia'ntum-ni'grum (black adiantum). 1. Brown. August. Britain.
„ „ *acu'tum* (Eng. Bot., ed. 3, t. 1875). Ireland.
„ „ *caudifo'lium*.
„ „ *crista'tum*. Crested. 1881.
„ „ *gra'ndiceps*. Large crested.
„ „ *oxyphy'llum*. Sharp-leaved.
„ „ *refra'ctum*.
„ *alternifo'lium* (alternate-leaved). 1. Brown. July. Scotland. See A. GERMANICUM.
„ *angustifo'lium* (narrow-leaved). 1. Brown. July. N. Amer. 1812.
„ *Athy'rium* (athyrium). 2. Brown. August. N. Amer. 1823. See A. FILIX-FŒMINA.
„ *Ce'terach* (scale or scaly fern). Britain. Syn. *Ceterach officinarum*.
„ „ *au'reum*. Canaries and Madeira. Syns. *Ceterach aureum* and *A. aureum*.
„ *crena'tum*. Scandinavia.
„ *ebe'neum* (ebony-*stalked*). 1. Brown. July. N. Amer. 1779.
„ *Fi'lix-fœ'mina* (female fern). 2. Brown. April. Britain. There are numerous varieties of this species.
„ *fonta'num* (fountain). 1. Brown. July. England.
„ *germa'nicum*. Syn. *A. alternifolium*.
„ *Halle'ri* (Haller's). See A. FONTANUM.
„ *lanceola'tum* (lanceolate). 1. Brown. August. England.
„ „ *crispa'tum*. Curled.
„ „ *mi'crodon*. Useful for case culture.
„ *mari'num* (sea). 1. Brown. July. Britain. The varieties of this include: *coro'nans, crena'tum, mira'bile, plumo'sum, ra'mo-plumo'sum, ramo'sum, sub-bipinna'tum*, and *Thomso'næ*.
A. Michau'xi (Michaux's). See A. FILIX-FŒMINA.
„ *monta'num* (mountain). 1. Brown. July. N. Amer. 1812.
„ *platyneu'ron* (Ebony spleenwort). Maine to Florida, and westward to California.
„ *polyphy'llum*. See A. ACUMINATUM.
„ „ *myriophy'llum*. With broader fronds.
„ *rhizophy'llum* (rooting-leaved), See SCOLOPENDRIUM RHIZOPHYLLUM.
„ *Ru'ta-mura'ria* (wall-rue). ½. Brown. July. Britain.
„ *septentriona'le* (northern). 1. Brown. July. Britain.
„ *thelypteroi'des* (thelypteris-like). 1. Brown. July. N. Amer. 1823.
„ *Tricho'manes* (maiden-hair). ½. Brown. July. Britain. The varieties in cultivation comprise *crista'tum, inci'sum, multi'fidum*, and *ramo'sum*.
„ *vi'ride* (green). 1. Brown. June. Britain.

GREENHOUSE.

A. acumina'tum. 2. Sandwich Islands. Syn. *A. polyphyllum*.
„ *acu'tum* (acute). 2. Brown. April. Teneriffe. 1818.
„ *alte'rnans*. Syn. *A. Dalhousiæ*.
„ *alterna'tum* (tapering). 1. Brown. July. N. Holland. 1824.
„ *ambi'guum* (doubtful). 1. Brown. W. Ind.
„ *anisophy'llum* (unequal-leaved). Natal.
„ *Arno'ttii*. Sandwich Islands. 1877. Syns. *A. diplazioides* and *Diplazium Arnottii*.
„ *aspidioi'des*. Trop. Amer. Syn. *A. multisectum*.
„ *attenua'tum* (attenuated). Queensland.
„ *bulbi'ferum* (bulb-bearing). 1. Brown. July. New Zealand. 1820.
„ „ *fabia'num*. Syn. *A. fabianum*.
„ „ *la'xum*. Habit more slender.
„ *canarie'nse* (Canary). Brown. July. Canaries. 1824.
„ *cauda'tum* (tailed). Polynesia.
„ *Cole'nsoi*. 1½. New Zealand.
„ *compre'ssum*. St. Helena. Stove or greenhouse.
„ *conti'guum*. Sandwich Islands.
„ „ *fi'ssum*. South Sea Islands. 1880.
„ *Dalhou'siæ*. See A. ALTERNANS.
„ *denta'tum*. W. Ind. 1820.
„ *de'ntex* (sharp-toothed). Brown. June. Cape of Good Hope. 1790.
„ *diffo'rme* (irregular). 1. Brown. August. N. Holland. 1823. See A. OBTUSATUM.
„ *dimo'rphum*. Norfolk Islands. Syns. *A. diversifolium* and *Darea dimorpha*.
„ *diplazioi'des*. See A. ARNOTTII.
„ *diversifo'lium* (various-leaved). 2. Brown. June. Norfolk Islands. 1831. Garden Syn. of *A. dimorphum*.
„ *exte'nsum*. Andes of Columbia and Peru.
„ *falca'tum*. 1 to 1½. Polynesian Islands, Australia, New Zealand, &c. 1825.
„ *fernandesia'num*. A variety of *A. lunulatum*.
„ *fi'ssum* (cleft-fronds). Brown. April. Hungary. 1825.
„ *flabellifo'lium* (fan-leaved). 1. Brown. July. N. Holland. 1820.
„ *fla'ccidum* (feeble). New Zealand. 1823.
„ *goringia'num pi'ctum*. See A. MACROCARPUM.
„ *Hemioni'tis*. ½. S. Europe and N. Africa. Syn. *A. palmatum*.
„ „ *crista'tum*. Syn. *A. palmatum cristatum*.
„ „ *multi'fidum*. Azores.
„ *Herb'stii* (G. C., 1896, xx., 470). Garden hybrid.
„ *heteroca'rpum*. 1 to 3. Himalayas and South-Eastern Asia. Stove or greenhouse.
„ *hookeria'num*. 1½. New Zealand.
„ *ho'rridum*. Sandwich Islands. 1884.
„ *inci'sum*. 1. Japan, &c.
„ *java'nicum*. See ALLANTODIA BRUNONIANA.
„ *la'nceum*. Syns. *A. subsinuatum* and *Diplazium lanceum*.
„ *laserpitiifo'lium*. Polynesian Islands, N. Australia, &c.
„ *macroca'rpum*. 1 to 3. Syn. *A. goringianum pictum*.
„ *madere'nse* (Madeira). 1. Brown. July. Madeira. 1828.
„ *mona'nthemum* (one-flowered). 1. Brown. July. Cape of Good Hope. 1790.
„ *multise'ctum*. See A. ASPIDIOIDES.
„ *ni'tidum*. N. India, Ceylon, &c.

4. *No'væ-caledo'niæ.* An evergreen Fern. New Caledonia.
„ *obtusa'tum* (blunt-*fronded*). 2. Brown. July. N. Holland. 1824.
„ „ *diflo'rme.*
„ „ *lu'cidum.* Syn. *A. lucidum.*
„ *odonti'tes.* See A. FLACCIDUM.
„ *oxyphy'llum.* 1 to 2. Himalayas, Java, and Japan. Syns. *Athyrium oxyphyllum* and *Lastrea eburnea.*
„ *palma'tum* (hand-shaped). See A. HEMIONITIS.
„ *Petra'rchæ* (Petrarch's). ½. Brown. August. France. 1819.
„ *pinnati'fidum.* Pennsylvania.
„ *planicau'le.* Himalayas. 1841.
„ *po'lyodon* (many-toothed). See A. FALCATUM.
„ *prolonga'tum.* See A. RUTÆFOLIUM.
„ *rutæfo'lium.* Ceylon, S. Africa, &c. Syn. *Darea rutæfolia.*
„ „ *prolonga'tum.*
„ *Selo'sii.* Tyrol and Carinthia.
„ *Shephe'rdii* (Shepherd's). 1. Brown. August. Trop. Amer. 1820.
„ „ *inæquila'terum* (unequal-sided).
„ *spinulo'sum.* 1. Amurland, Manchuria, &c. Syns. *Athyrium spinulosum* and *Cystopteris spinulosa.*
„ *sple'ndens.* 1. Cape Colony.
„ *umbro'sum.* Canaries, Himalayas, &c. Syns. *Allantodia australis* and *Athyrium umbrosum.*
„ *va'rians.* Himalayas.

STOVE.

A. absci'ssum. Trop. Amer. Syn. *A. firmum.*
„ *affi'ne.* Mascarene Islands. Syn. *A. spathulinum.*
„ *ala'tum* (winged). 1. Brown. W. Ind.
„ *alismæfo'lium.* Syn. *Anisogonium alismæfolium.*
„ *amboine'nse* (Williams' Cat., 1881, 31). South Sea Islands.
„ *api'cidens.* See A. VIEILLARDII.
„ *arbore'scens* (tree-like). Syn. *Diplazium arborescens.*
„ *auricula'tum.* Trop. Amer. 1820.
„ *auri'tum* (eared). 1. Brown. September. S. Amer. 1829.
„ *australa'sicum.* See A. NIDUS.
„ *Bapti'stii.* South Sea Islands. 1879. See A. VIEILLARDII.
„ *Belange'ri.* Malayan Peninsula. Syns. *A. veitchianum* and *Darea Belangeri.*
„ *biauri'tum* (two-eared). 1. Brown. July. W. Ind.
„ *biparti'tum* (equal-parted). 2. Brown. August. Jamaica. 1820.
„ *bisse'ctum* (bisected). 2. Brown. July. Jamaica. 1821.
„ *brachy'pteron* (broadly-winged). Madagascar. Syn. *Darea brachypteron.*
„ *brasilie'nse* (Brazilian). 1. Brown. July. Brazil. 1822.
„ *breviso'rum* (shortly soriate). Jamaica. Syn. *Athyrium brevisorum.*
„ *calophy'llum* (beautiful-leaved). Brown. June. Island of Luzon.
„ *Campbe'llii* (G. C., 1885, xxiv. 7). British and Dutch Guiana.
„ *cicuta'rium* (cowbane-like). 1. Brown. August. W. Ind. 1820.
„ *crena'tum* (round-notched). Brown. September. Brazil. 1836.
„ *crista'tum.* Garden hybrid.
„ *cultrifo'lium* (knife-leaved). 1. Brown. W. Ind. 1820.
„ *cunea'tum* (wedge-shaped). 1. Brown. September. W. Ind. 1832.
„ *decussa'tum.* Syn. *Anisogonium decussatum.*
„ *denta'tum* (toothed). 1. Brown. July. W. Ind. 1820.
„ *depre'ssum* (depressed). 1. Brown. August.
„ *dimidia'tum* (halved). Brown. September. W. Ind. 1827.
„ *Druery'i.* A variety of *Baptistii.*
„ *du'ale* (G. C., 1893, xiii. 10).
„ *eleganti'ssimum.* Garden hybrid.
„ *elonga'tum* (elongated). See A. TENERUM.
„ *ere'ctum.* See A. LUNULATUM.
„ *ero'sum* (jagged-*leaved*). Brown, yellow. June. W. Ind.
„ *escule'ntum.* Syn. *Anisogonium esculentum.*
A. fijie'nse. 2. Fiji.
„ *formo'sum* (beautiful). 1. Brown. June. W. Ind. 1822.
„ *fra'grans* (fragrant). 1. Brown. August. Jamaica. 1703.
„ „ *fœnicula'ceum.* Narrower segments.
„ *Franco'nis.* Trop. Amer. Syn. *Diplazium Franconis.*
„ *furca'tum.* Syn. *A. præmorsum.*
„ *Gardne'ri.* Ceylon. 1873.
„ *grandifo'lium.* Syn. *Diplazium grandifolium.*
„ *Grevi'llei.* Fronds undivided. India.
„ *hetero'chroum* (Bull. Cat., 1878, 155). In the way of *A. monanthemum.*
„ *he'terodon.* See A. VULCANICUM.
„ *lacera'tum* (G. C., 1906, xl. 263, f. 107). Allied to *A. Nidus.*
„ *la'cteum* (milky). Yellow. April. W. Ind.
„ *læ'tum* (gay). W. Ind.
„ *laffania'num.* Bermuda. 1880.
„ *Laure'ntii denticula'tum.* Pinnæ bilobed, deeply toothed. Congo. 1908.
„ *linea'tum.* 1 to 2. Mauritius.
„ *longiso'rum.* New Grenada. 1881.
„ *longi'ssimum* (longest). Brown. May. Malacca. 1840.
„ *lu'cidum* (shining). See A. OBTUSATUM.
„ *lunula'tum* (crescent-shaped). Tropics. Varieties are *erectum, lobatum, pteropus, fernandezianum, tenellum,* and *tripinnatifidum.*
„ *macrophy'llum.* Trop. Asia.
„ *margina'tum* (G. C., 1893, xiii. 641). Large pinnate-leaved species. Trop. Amer.
„ *ma'ximum.* Syns. *A. diversifolium* and *Diplazium decurrens.*
„ *melanocau'lon.* Syn. *Diplazium melanocaulon.*
„ *May'i* (G. C., 1898, xxiii. 372, f. 140). Garden hybrid.
„ *musæfo'lium.* A variety of *A. Nidus.*
„ *myriophy'llum.* See A. RHIZOPHYLLUM.
„ *Ni'dus* (*bird's*-nest). 2. Brown. August. E. Ind. 1820.
„ „ *australa'sicum.* Australia. Syn. *Thamnopteris australasicum.*
„ „ *musæfo'lium* (Musa-leaved). 3–6. May. E. Ind.
„ „ *Phylli'tidis* (Phyllitidis). 1–2. Himalaya; Malaya.
„ *ni'tens.* Mauritius. Syn. *A. macrophyllum* of gardens.
„ *obtusifo'lium* (obtuse-leaved). ½. Brown. Jamaica. 1838.
„ *obtusi'lobum.* New Hebrides. 1861. Syn. *Darea obtusiloba.*
„ *oligophy'llum* (few-leaved). Brown. Brazil. 1841.
„ *Oti'tes* (otites). 1841.
„ *palea'ceum.* Australia. 1879.
„ *pa'rvulum.* Syn. *A. trilobum.*
„ *persicifo'lium* (peach-leaved). Brown. Island of Luzon.
„ *planicau'le* (smooth-stalked). E. Ind. 1841.
„ *plantagi'neum.* W. Ind. 1819. Syn. *Diplazium plantagineum.*
„ *præmo'rsum* (jagged-pointed). See A. FURCATUM.
„ *pulche'llum.* Trop. Amer.
„ *pu'lchrum* (fair). Brown. June. Jamaica.
„ *pu'milum* (dwarf). 1. Brown. July. W. Ind. 1823.
„ *rachirhi'zon.* Trop. Amer. Syn. *A. rachirhinæ.*
„ *radi'cans* (rooting). 1. Brown. June. W. Ind. 1820.
„ *rese'ctum* (shredded). 1. Brown. July. Mauritius. 1820.
„ *rhizo'phorum* (root-bearing). 1. Brown. August. Jamaica. 1793.
„ *rhizophy'llum.* Trop. Amer.
„ „ *myriophy'llum.* Broader fronds.
„ *salici'num* (willow-like). 1. Brown. May. E. Ind. 1839.
„ *salicifo'lium* (willow-leaved). 1. Brown. June. W. Ind.
„ *Sanderso'ni.* Natal. 1880.
„ *sca'ndens.* 1 to 2. New Guinea, Philippines. 1887.
„ *schi'zodon.* See A. VIEILLARDII.
„ *Schkuhrii.* Ceylon. Syn. *Diplazium Schkuhrii.*
„ *scolopendrioi'des* (hart's-tongue-like). Brown. July. Island of Leyte. 1840.
„ *serra'tum* (saw-*leaved*). 2. Brown. August. W. Ind. 1793.

A. serrula'tum (minutely-toothed). Brownish-yellow. June. India.
„ *stria'tum* (striated). See A. SHEPHERDII.
„ *sulca'tum* (furrowed). Brown. July. W. Ind. 1827.
„ *sylva'ticum*. 2. India.
„ *te'nerum*. Brown, yellow. June. Malaya. 1840.
„ „ *elonga'tum*.
„ *Thwaite'sii*. 1. Ceylon. Syn. *Diplazium Thwaitesii*.
„ *tri'lobum*. Chili and S. Brazil. See A. PARVULUM.
„ *veitchia'num*. See A. BELANGERI.
„ *Vieilla'rdi*. 1. New Caledonia. Syn. *A. schizodon*.
„ „ *api'cidens*.
„ „ *Bapti'stii*.
„ „ *fa'cile*. ½. New Caledonia. 1881.
„ *vittæfo'rme* (ribbon-like). Brownish-yellow. Island of Luzon.
„ *vivi'parum* (viviparous). 1. Brown. August. Mauritius. 1820.
„ *vulca'nicum*. 1 to 2. Java and Fiji. Syn. *A. heterodon*.
„ *zamæfo'lium* (zamia-leaved). 2. Brown. July. Caraccas. 1820.
„ *zeyla'nicum*. Ceylon. Syn. *Diplazium zeylanicum*.

ASSAM TEA. *Camellia thei'fera assa'mica.*

ASSO'NIA. (After the Spanish botanist, *Ignatius de Asso*. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 7-*Decandria*.) They are now referred to Dombeya.

Stove trees. Cuttings in sand, in heat, under a glass; sandy loam. Summer temp., 60° to 75°; winter, 50° to 60°.

A. popu'linea (poplar-*leaved*). 10. White. Bourbon. 1820.
„ *viburnoi'des* (viburnum-like). 11. White. Bourbon. 1822.

ASTA'RTEA. (A classical name, after *Astarte*, a goddess of the Assyrians and Sidonians, called in Scripture *Ashtaroth*. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

A greenhouse shrub. Cuttings of small shoots, half-ripe, in sandy soil, in close frame, and kept shaded for a time; sandy loam and peat. Intermediate temperature.

A. fascicula'ris (bundle-*flowered*). 3. N. Holland. 1830.

ASTE'LIA. (From *astelos*, wanting a pillar, in reference to its having no stem or trunk. Nat. ord. Liliaceæ. Tribe, Dracæneæ.)

Greenhouse perennials with long, slender, hairy leaves; propagated by divisions in spring; light, loamy soil.

A. Ba'nksii (Hort. Vanh., t. 5). Greenish. New Zealand.
„ *bivitta'ta*. New Zealand. 1864.
„ *Cunningha'mii* (B. M., t. 5175). Green. February. N. Island, New Zealand.
„ *Sola'ndri* (B. M., t. 5503). Greenish. New Zealand. 1864.

ASTE'LMA. (From *a*, not, and *stelma*, a crown; in reference to the construction of the fruit. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

A. fragrans, *imbricatum*, and *retortum* are now referred to Helichrysum; the rest to Helipterum. Greenhouse evergreen shrubs; all natives of the Cape of Good Hope. Seeds sown in a gentle heat; cuttings in sand and loam, in close frame or hand-glass; light, fibrous loam and peat, good drainage. Summer temp., 50° to 65°; winter, 40° to 48°.

A. cane'scens (hoary). 2. Purple. June. 1794.
„ *exi'mium* (fine). 3. Crimson. July. 1793.
„ *fra'grans* (fragrant). 2. Pink. July. 1803.
„ *imbrica'tum* (imbricated). 2. White. August. 1820.
„ *millefio'rum* (thousand-flowered). 1. Pale purple. July. 1802. See HELIPTERUM PHLOMOIDES.
„ *reto'rtum* (twisted-back). 1. White. July. 1732.
„ *speciosi'ssimum* (showiest). 8. White. August. 1691.
„ *spira'le* (spiral-leaved). See HELIPTERUM VARIEGATUM.
„ *Stæheli'na* (Stæhelina-like). See HELIPTERUM SPECIOSISSIMUM.
„ *variega'tum* (variegated). 2. Brown, white. June. 1801.

ASTE'PHANUS. (From *a*, without, and *stephanos*, a crown; in reference to the stamens. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Greenhouse twining evergreen plants; division and cuttings; peat and sandy loam. Winter temp., 40° to 45°.

A. linea'ris (linear). 4. White. July. Cape of Good Hope. 1816.
„ *triflo'rus* (three-flowered). 4. White. July. Cape of Good Hope. 1816.

A'STER. Starwort. (From *aster*, a star. The flowers of Composites, or Starworts, are called florets, and, being collected together on a receptacle, as in the daisy or dahlia, the rays of their circumference resemble stars. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

In this genus we have many variable species, and a large number of garden hybrids. It is those known popularly as Michaelmas Daisies or Starworts that are the most important section. Flowering late in the summer and during the autumn up to the time we get severe frosts they are much appreciated, and though at one time much neglected, in recent years they have come to the front again, and many very pretty garden varieties have been added. There are several distinct sections, yet it is difficult to place some of the garden hybrids. The varieties of AMELLUS are a distinct type and do not appear to intercross with others; they are of dwarf habit with rather broad leaves, which are covered with short, silky hairs. The flowers are of various shades of blue-violet, and some have a distinct pink shade; they may be propagated from cuttings or divisions, but the roots do not spread much. ACRIS is another distinct type, and most are dwarf in habit, forming compact clumps, which may be readily divided to increase the stock. CORDIFOLIUS is distinguished by the rather large basal leaves and tall spikes of small starry flowers of various shades from white to deep mauve, and the underground rhizomes spread freely. DIFFUSUS may be described as of tufted growth, with broad spreading racemes of medium-sized flowers. There are several distinct varieties, and are of medium height, and though growing compact may be readily divided to increase the stock. ERICOIDES, of which there are some pretty varieties, all have very small flowers, produced in graceful sprays, and very small heath-like foliage. NOVÆ-ANGLIÆ includes some very pretty varieties of erect growth with rather large flowers, varying in colour from pink to deep purple small, woolly leaves, and tufted growth. NOVI-BELGII is perhaps the most important type, and of this the varieties are very numerous, varying in height from about 2 feet to 5 feet, and flowers vary in size, also in colours, from white, pink, to deep blue, the most distinct characteristic being the spreading rhizomes and lance-shaped leaves. The strong-growing sorts of this section prove rather troublesome weeds if allowed to seed, and the rhizomes also spread a great distance when allowed to do so. VIMINEUS forms another distinct group with small starry flowers and of dwarf habit, and garden varieties are numerous.

In addition to the above there are many other distinct species of which we have no garden varieties, and the hybrids, which cannot be classified, are numerous. All of those known as MICHAELMAS DAISIES are easily cultivated and are quite hardy. They may be grown in any ordinary garden soil. In planting, due regard should be paid to the heights and habits of the various sorts. They may be specially recommended for supplying cut bloom after the summer flowers are passed, but those of the Novæ-Angliæ section, though very showy in the daytime, close their flowers at night.

The evergreen, greenhouse species are not often seen in cultivation. They may be propagated from cuttings in the spring and grown in any ordinary potting compost. This section is now mostly referred to Olearia and Felicia.

The Chinese Asters, which are annuals, and known as *Aster chinensis*, *A. sinensis* and *A. hortensis*, are now given under *Callistephus hortensis* by botanical authorities, yet in gardens and in the markets they are still known as Asters, sometimes as German Asters, as we get the largest proportion of seed from Germany. It seems doubtful if the name "Callistephus" will ever become popular, yet it is useful to prevent confusion with the Michaelmas Daisies. For culture, &c., see CALLISTEPHUS.

HARDY.

A. abbrevia'tus (shortened). 2. Blue. August. N. Amer.
,, *a'cris* (acrid). 2. Blue. August. South of Europe. 1731.
,, ,, *ca'rnea*. Flesh pink, dwarf and compact.
,, ,, *dracunculoi'des*. 2½. Mauve-blue.
,, ,, *na'nus* (G. C., 1902, xxxii. 293).
,, *acumina'tus* (long-pointed). 2. Pale red. September. N. Amer. 1806.
,, *adulteri'nus* (false). See NOVI-BELGII.
,, *æsti'vus* (summer). 2. Blue. July. N. Amer. 1776. Labrador Starwort. See A. LONGIFOLIUS.
,, *a'lbus* (white). See A. PTARMICOIDES.
,, *alpi'nus* (alpine). 1. Purple. June. Europe. 1658.
,, ,, *flo're-a'lbo* (white-flowered). 1. White. July. Europe. 1828.
,, ,, *lo'ngipeduncula'tus* (Gfl., 1903, 362).
,, ,, *ramo'sus* (*small*-branchy). 1. Blue. June. Europe.
,, ,, *specio'sus*. Large-flowered variety.
,, *alta'icus* (Altaic). 1. Blue. June. Siberia. 1804.
,, *alvarte'nsis* (Alwart). See ERIGERON PULCHELLUS.
,, *amelloi'des* (amellus-like). 1½. Violet. July. Podolia. 1824.
,, *Ame'llus* (Amellus). 2. Purple. August. Italy. 1596. Italian Starwort.
,, ,, *angustifo'lius* (narrow-leaved). 2. Pale blue. August. South of Europe. 1596.
,, ,, *bessara'bicus*. Purple. September. Russia. 1834.
,, ,, *cassu'bicus*. Deep violet-blue.
,, ,, *Disti'nction*. Rosy-mauve.
,, ,, *Framfie'ldi*. Deep blue, dwarf habit.
,, ,, *ma'jor*. Large, deep blue.
,, ,, *On'ward*. Deep purple-blue.
,, ,, *ro'seus* (rosy). Rose. 1909.
,, ,, *ste'lla*. Clear mauve.
,, *amethysti'nus*. 3. Bright lilac. October. United States. Syn. *A. bostoniensis*.
,, *amplexicau'lis* (stem-clasping). See A. LÆVIS.
,, *amygdali'nus* (almond-leaved). See A. UMBELLATUS.
,, *angu'stus* (G. C., 1886, xxvi. 659). N. Amer. and N. Asia.
,, *aragone'nsis*. Syn. *A. lusitanicus*.
,, *arge'nteus* (silver-*leaved*). See A. SERICEUS.
,, *artemisiifo'rus* (wormwood-flowered). See A. TRADESCANTI.
,, *azu'reus*. 3. Violet. United States.
,, *Bellidia'strum*. 1. White. June. Austria. 1570. Syns. *Bellidiastrum Michelli* and *Doronicum Michelli*.
,, *bellidiflo'rus* (daisy-flowered). See A. PANICULATUS.
,, *bessara'bicus* (Bessarabian). See A. AMELLUS.
,, *bi'color* (two-coloured). See A. LONGIFOLIUS.
,, *bifloʻrus* (two-flowered). See A. SIBIRICUS.
,, *Bigelo'vii*. 2½. Purple, yellow. Colorado. 1878. Syn. *A. Townshendi*.
,, *bla'ndus* (charming). See A. PUNICEUS.
,, *brachy'trichus* (R. H., 1900, 369, f. 172). Violet-blue. Yunnan.
,, *cabu'licus* (Cabul). See MICROGLOSSA ALBESCENS.
,, *cane'scens* (hoary). 2. Violet. September. N. Amer. 1812. Hardy biennial.
,, *ca'nus* (hoary-*leaved*). 2. Purple. August. Hungary. 1816.
,, *carno'sus* (G. C., 1901, xxx. 219). Violet and orange. N. Amer.
,, *cassiara'bicus* (Arabian cassa). 2. Pink. September. Russia. 1834.
,, *cauca'sicus* (Caucasian). 1. Purple. July. Caucasus. 1804.
,, *Chapma'nni*. 4. Bright blue. United States.
,, *chine'nsis*. See CALLISTEPHUS HORTENSIS.
,, *chrysophy'llus*. See OLEARIA CHRYSOPHYLLA.
,, *cilia'tus* (fringed). See A. MULTIFLORUS.
,, *conci'nnus* (neat). 2. Purple. October. N. Amer. 1800.
,, *co'ncolor* (one-coloured). 1. Purple. October. N. Amer. 1759.
,, *conyzoi'des* (conyza-like). See SERICOCARPUS.
,, *Corde'lia* (G. C., 1902, xxxii. 293). Garden hybrid.
,, *cordifo'lius* (heart-leaved). 2. Blue. July. N. Amer. 1759.
,, ,, *al'bulus*. White, shaded lilac.
,, ,, *Da'ndy*. 3½. Pale lavender.
A. cordifo'lius Dia'na. 4. Blush, mauve.
,, ,, *e'legans*. 4. White, lavender shade.
,, ,, *magni'ficus* (G. C., 1902, xxxii. 238). Pale blue.
,, *coridifo'lius* (coris-leaved). See A. DUMOSUS.
,, *cornifo'lius* (cornus-leaved). See A. INFIRMUS.
,, *corymbo'sus* (corymbed). 2. White. October. N. Amer. 1765.
,, *Curti'sii*. 2. Bright lilac. United States.
,, *cya'neus* (bright blue). See A. LÆVIS.
,, *dahu'ricus*. 2. Pale blue. Central Siberia.
,, *Delava'yi* (R. H., 1897, 27). Violet-brown. Yunnan.
,, *deserto'rum* (desert). 2. Blue. July. Russia. 1820.
,, *diffu'sus* (diffuse). 2. White. October. N. Amer. 1777.
,, ,, *Coombe Fi'shacre*. 2. Bluish-rose.
,, ,, *Da'tschii*. 2. Creamy-white.
,, ,, *horizonta'lis*. Bluish-tinted ray florets, rosy disc.
,, ,, *pen'dulus*. 2½. White.
,, ,, *The Prince*. 2½. Bluish-white, rosy disc.
,, *diplostephioi'des* (B. M., t. 6718). Light purple. Himalaya.
,, *divarica'tus* (straggling). 2. White. September. N. Amer. 1800.
,, *Dougla'sii*. 3 to 4. Purple. California.
,, *dracunculoi'des* (tarragon-like). See A. ACRIS.
,, *dumo'sus* (bushy). 3. White. October. N. Amer. 1734.
,, ,, *a'lbus*. White. N. Amer.
,, ,, *viola'ceus*. Violet-purple. N. Amer.
,, *e'legans* (elegant). 2. Blue. September. 1790.
,, *e'minens* (eminent). See A. NOVI-BELGII.
,, ,, *virgi'neus* (pure-white-*rayed*). 3. Whitish-yellow. September. United States.
,, *ericoi'des* (heath-like). 3. White. September. N. Amer. 1758.
,, ,, *Clio*. 3. Dwarfer in habit.
,, *Falcone'ri* (Falconer's). 1½. Sky-blue. Kashmir. 1910.
,, *Fendle'rii* (Gard., 1900, lvii. 209). Violet. N. Amer.
,, *fi'rmus* (firm). 6. Red. August. N. Amer. 1816.
,, *floribu'ndus* (many-flowered). 4. Purple. September. N. Amer.
,, *foliolo'sus* (small-leafy). See A. EMINENS.
,, *folio'sus* (leafy). See DUMOSUS.
,, *fra'gilis* (brittle). See A. DUMOSUS.
,, *Fremo'nti* (Gard., 1900. lvii. 475). Soft pink. Rocky Mountains.
,, *gra'cilis* (slender). 1. Green. August. N. Amer.
,, *graminifo'lius* (grass-leaved). See ERIGERON HYSSOPIFOLIUS.
,, *grandiflo'rus* (great-flowered. Catesby's Starwort). 2. Blue. November. N. Amer. 1720.
,, *grave'olens* (strong-smelling). See A. OBLONGIFOLIUS.
,, *gymnoce'phalus* (B. M., t. 6549). Rose-purple. Mexico.
,, *Herve'yi* (G. and F., 1889, 472, f. 131). Bright lilac. N. Amer.
,, *heterophy'llus* (various-leaved). See A. CORDIFOLIUS.
,, *hi'spidus* (bristly-*stalked*). See HETEROPAPPUS.
,, *hu'milis* (humble). See A. INFIRMIS.
,, *hy'bridus Di'adem*. 3. Rosy-lilac.
,, *hyssopifo'lius* (hyssop-leaved). See A. ACRIS.
,, *ibe'ricus* (Iberian). See A. AMELLUS.
,, *inci'sus* (cut-*leaved*). See BOLTONIA INCISA.
,, *infi'rmus*. 3. White. October. N. Amer.
,, *inuloi'des* (inula-like). See ERIGERON MULTIRADIATUS.
,, *ju'nceus* (rush-like). 4. Flesh. September. N. Amer. 1758.
,, *læviga'tus* (smooth-*stemmed*). See A. LÆVIS.
,, *læ'vis* (smooth). 2. Blue. September. N. Amer. 1758.
,, *lanceola'tus* (spear-headed). See A. PANICULATUS.
,, *laxiflo'rus* (loose-flowered). See A. LONGIFOLIUS.
,, *la'xus* (supple-stalked). See A. NOVI-BELGII.
,, *linarifo'lius* (savory-leaved). 1. Pale blue. September. N. Amer. 1699.
,, *lindleya'nus* (G. and F., 1889, 448, f. 127). Pale violet. N. Amer.
,, *linifo'lius* (flax-leaved). See A. SUBULATUS.
,, *Lino'syris* (Eng. Bot., ed. 3, t. 777). Bright yellow. Syns. *Chrysocoma Linosyris* and *Linosyris vulgaris*.
,, *longifo'lius* (long-leaved). 3. White. October. N. Amer. 1798.
,, ,, *for'mosus*. 1½ to 2. Pink.
,, *lusita'nicus* (Spanish). See A. ARAGONENSIS.

A. luxu'rians (luxuriant). See A. Novi-Belgii.
„ *macrophy'llus* (large-leaved). 2. White. August. N. Amer. 1739.
„ *margina'tus* (bordered). 1. Violet. July. New Granada. 1827.
„ *Me'sa grandiflo'rus* (large-flowered). See Erigeron macranthus Mesa.
„ *mi'ser*. 2. White. August. 1812.
„ *monta'nus* (mountain). See A. sericeus.
„ *multiflo'rus* (many-flowered). 3. White. September. N. Amer. 1732.
„ *muta'bilis* (changeable). See A. Novi-Belgii.
„ *myrtifo'lius* (myrtle-leaved). See A. miser.
„ *nanshani'cus* (G. C., 1899, xxv. 330, f. 120). Pale lilac. N.W. China.
„ *nemora'lis* (grove). 1. Lilac. August. N. Amer. 1778.
„ *No'væ-A'ngliæ* (New England). 6. Purple. September. N. Amer. 1710.
„ „ *Melpo'mene*. 3. Purple-blue, centre orange.
„ „ *Mrs. J. F. Ray'ner*. 3. Bright rosy-red.
„ „ *præ'cox*. Purple, with crimson shade.
„ „ *pre'cocite*. Large blue-purple.
„ „ *pulche'llus*. 4. Purple.
„ „ *ru'ber* (red-*flowered*). 6. Red. July. N. Amer. 1812.
„ „ *W. Bow'man*. Rosy-purple, large.
„ *No'vi-Be'lgii* (New York). 4. Purple, blue. September. N. Amer. 1710.
„ „ *Arctu'rus*. 3½. Deep blue.
„ „ *Colere'tti*. Rose. 3½. Bright rose.
„ „ *Calli'ope*. 3. Blush-pink.
„ „ *Ela'ine*. 3. Rosy-lavender.
„ „ *E'sme*. 1½. Snow white.
„ „ *Finchley*. White. Large white.
„ „ *Ire'ne*. 3½. Blue lilac. Large.
„ „ *Lady Treve'lyan*. Pure white.
„ „ *læviga'tus*. Rosy-pink.
„ „ *Margaret Matthews*. Large white, with yellow disc.
„ „ *Mary Crum*. Pale blue, on a white ground.
„ „ *Nancy*. 3. Clear blue, very free flowering.
„ „ *Perle Lyonnaise*. 2. Pure white, starry flowers.
„ „ *Robert Parker*. 4. Lavender-blue.
„ „ „ *na'nus*. 3.
„ „ *se'mi-ple'na* (G. C., 1902, xxxii. 293). Lavender-blue.
„ „ *Theodo'ra*. Deep mauve, with a rosy tint.
„ „ *T. S. Ware*. 3½. Mauve, tinted red.
„ „ *White Spray*. 5. Pure white.
„ „ *Wm. Marshall*. 4. Clear mauve, long racemes.
„ *nudiflo'rus* (naked-flowered). See A. Radula.
„ *obli'quus*. See A. salicifolius.
„ *oblongifo'lius* (oblong-leaved). 2. Lilac. July. N. Amer. 1797.
„ *pa'llens* (pale-*flowered*). See A. patulus.
„ *paludo'sus* (marshy). 3. Blue. August. N. Amer. 1784.
„ *panicula'tus* (panicled). 4. Blue. September. N. Amer. 1640.
„ „ *la'xus* W. J. Grant. 3½. Flesh pink, with rosy disc.
„ *panno'nicus* (Hungarian). See A. Tripolium.
„ *pa'tens* (spreading-*haired*). 2. Purple. October. N. Amer. 1773.
„ *pa'tulus*. 2. Violet. July. N. Amer. 1800.
„ *pauciflo'rus* (few-flowered). See A. ericoides.
„ *pe'ndulus* (down-hanging). See A. diffusus.
„ *peregri'nus* (foreign). 1. Blue. July. N. Amer.
„ *phlogifo'lius* (phlox-leaved). See A. patens.
„ *Picco'lii* (B. M., t. 7669). 2 to 3. Lilac-purple. N. China.
„ *pilo'sus* (downy). See A. amethystinus.
„ *plantaginifo'lius* (plantain-leaved). See Sericocarpus conyzoides.
„ *polyphy'llus* (many-leaved). 3. White. September. N. Amer.
„ *Porte'ri* (Gard., 1900, lviii. 372). White. N. Amer.
„ *præa'ltus* (very tall). See A. Novi-Belgii.
„ *præ'cox* (early-*flowering*). See A. patulus.
„ *prenanthoi'des* (prenanthes-like). 3. Blue. September. N. Amer. 1821.
„ *Pseu'd-ame'llus* (G. C., 1886, xxvi. 659). Bluish-purple. W. Himalayas.
„ *ptarmicoi'des*. 1½. White. N. Amer.

A. pulche'llus (pretty). See Erigeron.
„ *pulche'rrimus* (prettiest). See A. linariifolius.
„ *puncta'tus* (dotted). See A. acris.
„ *puni'ceus* (red-*stalked*). 8. Blue. September. N. Amer. 1710.
„ „ *demi'ssus* (dwarf). 2. Blue. September. Gardens. 1820.
„ „ *pulche'rrimus* (fairest). White, tinted pale blue. 1908.
„ *pyrenæ'us* (Pyrenean). 2. Violet. July. Pyrenees.
„ *Ra'dula* (rasp-*leaved*). 2. White. October. N. Amer. 1785.
„ *ramo'sus* (*small*-branchy). 1. Purple, red. June. N. Amer. 1816.
„ *recurva'tus* (bent-back). See A. diffusus.
„ *reticula'tus* (netted-*leaved*). 3. White. July. N. Amer. 1812.
„ *rigi'dulus* (stiffish). See A. salicifolius.
„ *ri'gidus* (stiff-leaved). See A. linariifolius.
„ *rivula'ris* (river-side). 3. White. August. N. Amer 1820.
„ *rubricau'lis* (red-stemmed). See A. lævis.
„ *sagittifo'lius* (arrow-leaved). 2. Flesh. June. N Amer. 1760.
„ *salicifo'lius* (willow-leaved). 6. Flesh. September N. Amer. 1760.
„ *sali'gnus* (sallow-leaved). See A. paniculatus.
„ *salsugino'sus*. See Erigeron.
„ *sangui'neus* (bloody). See A. paniculatus.
„ *Schrebe'ri* (Schreber's). See A. macrophyllus.
„ *seri'ceus* (silky). 2. Purple. October. N. Amer.
„ *sero'tinus* (late-*flowering*). See A. Novi-Belgii.
„ *sessiliflo'rus* (stalkless-flowered). 5. Red. October. N. Amer. 1700.
„ *Sho'rtii*. 2 to 4. Purplish-blue. N. Amer.
„ *sibi'ricus* (Siberian). 2. Blue. August. Siberia. 1768.
„ *sikkime'nsis* (Sikkim). 3. Bluish-purple. October. Sikkim, Himalaya. 1850.
„ *si'mplex* (single-*stemmed*). See A. paniculatus.
„ *solidaginoi'des* (solidago-like). See Sericocarpus solidagineus.
„ *sparsiflo'rus* (scattered-flowered). See A. tenuifolius.
„ *specta'bilis* (showy). 2. Blue. August. N. Amer. 1777.
„ *spu'rius* (spurious). See A. Novæ-Angliæ.
„ *squarro'sus* (squarrose). 2. Blue. June. N. Amer. 1801.
„ *stellula'tus* (small-star-like). See Olearia.
„ *Stra'cheyi* (B. M., t. 6912). Bluish-purple. Western Himalaya.
„ *stri'ctus* (straight). See A. Radula.
„ *subcæru'leus* (G. C., 1901, xxx. 385). N.W. India.
„ *subula'tus* (awl-shaped). 2. Pale blue. September. N. Amer.
„ *surculo'sus* (spriggy). 2. Purple. August. N. Amer.
„ *tardiflo'rus* (late-flowered). 2. Blue. September. N. Amer. 1775.
„ *tata'ricus* (Tartarian). 1. White. August. Tartary. 1818.
„ *tenuifo'lius* (slender-leaved). 3. White. August. N. Amer. 1723.
„ *Thomso'ni*. 1½. Lilac. Himalayas.
„ *tomento'sus* (woolly). See Olearia dentata.
„ *tortifo'lius* (twisted-leaved). 1. Purple. September. N. Amer.
„ *Townshe'ndi*. See A. Bigelovii.
„ *Tradesca'nti* (Tradescant's). 3. White. August. N. Amer. 1633.
„ *trice'phalus* (G. C., 1886, xxvi. 686). Purple. Sikkim.
„ *trine'rvis* (three-nerved). 2. White. August. Nepaul. 1818.
„ *Tripo'lium* (Tripoly-Sea starwort). 2. Blue. August. Britain.
„ *turbine'llus*. Mauve. N. Amer.
„ „ *a'lbus*. White.
„ *umbella'tus* (umbelled). 5. White. N. Amer. 1759.
„ *undula'tus* (wave-*leaved*). 3. Purple. September. N. Amer. 1699.
„ *Va'hlii* (Vahl's). Chili.
„ *versi'color* (various-coloured). 3. White, purple. August. N. Amer. 1790.
„ *villo'sus* (shaggy). 2. Yellow. August. Europe, 1799.

A. Vilmori'ni (J. H. F., 1896, 1188). Bluish-purple. Western China.
,, *vimi'neus* (twiggy). 3. Blue. September. N. Amer. 1800.
,, ,, *perfe'ctus* (G. C., 1902, xxxii. 238). White, tipped with pink.

GREENHOUSE.

A. aculea'tus (prickly-*leaved*). See OLEARIA RAMULOSA.
,, *angustifo'lius* (narrow-leaved). See FELICIA.
,, *argophy'llus* (silvery-leaved). See OLEARIA.
,, *carolinia'nus* (Carolina). 8. Purple. September. Carolina.
,, *Cymbala'riæ* (ivy-leaved). 2. White. September. Cape of Good Hope. 1786.
,, *erube'scens* (blushing). See OLEARIA MYRSINOIDES.
,, *exaspera'tus* (roughened). See OLEARIA RAMULOSA.
,, *filifo'lius* (thread-leaved). 3. White. May. Cape of Good Hope. 1812.
,, *frutico'sus* (shrubby). 2. Mauve; disc yellow. S. Africa. 1759.
,, *fruticulo'sus* (rather shrubby). See A. PLURIFLORUS.
,, *lira'tus* (rigid-stemmed). See OLEARIA STELLULATA.
,, *myrsinoi'des* (myrsine-like). See OLEARIA.
,, *obtusa'tus* (blunt-*leaved*). 4. White. June. Cape of Good Hope. 1793.
,, *pluriflo'rus* (many-flowered). 2. White. June. Cape of Good Hope. 1759.
,, *reflе'xus* (bent-back-*leaved*). See FELICIA.
,, *seri'ceus* (silky-*leaved*). 3. Blue. August. N. Amer. 1786.
,, *tene'llus* (delicate). 1. Blue. August. Cape of Good Hope. 1769. Greenhouse biennial.
,, *villo'sus* (long-haired). See FELICIA ANGUSTIFOLIA.

ASTERACA'NTHA. (From *aster*, a star, and *acantha*, a spine; referring to the disposition of the spines. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Barleria.) See also HYGROPHILA, the correct name.

Greenhouse herbaceous perennial. Division and seeds; sandy loam. Winter temp., 38° to 45°.

A. longifo'lia (long-leaved). 2. Yellow. July. Egypt. 1781. See HYGROPHILA SPINOSA.

ASTE'RISCUS MARI'TIMUS. See ODONTOSPERMUM MARITIMUM.

ASTEROCE'PHALUS. (From *aster*, a star, and *kephale*, a head; in reference to the fruit. Nat. ord. *Teazleworts* [Dipsaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Now included with Scabiosa. Annuals, from seed; perennials, from seed, or cuttings, under a hand-glass; common soil. All hardy, except where otherwise specified.

ANNUALS.

A. atropurpu'reus (dark purple). Brown. July. S. Europe. 1629.
,, ,, *a'lbus* (white). White. July. S. Europe. 1629.
,, ,, *ca'rneus* (flesh-coloured). 3. Flesh. July. S. Europe. 1629.
,, ,, *proli'ferus* (proliferous). 3. Purple. July. S. Europe. 1629.
,, ,, *ro'seus* (rose-coloured). 3. Red. July. S. Europe. 1629.
,, ,, *variega'tus* (variegated). 3. Variegated. July. S. Europe. 1629.
,, *Bieberstei'nii* (Bieberstein's). See S. MICRANTHA.
,, *grandiflo'rus* (great-flowered). See S. MARITIMA.
,, *legione'nsis* (Leon). 1½. Pink. July. Spain. 1820.
,, *mari'timus* (sea). 2. Purple. July. Italy. 1683.
,, *negle'ctus* (neglected). 1½. Red. June. Germany. 1825.
,, *palæsti'nus* (Palestine). 1. Citron. July. Palestine. 1771.
,, *pectina'tus* (comb-leaved). 1½. Violet. July. Arabia. 1824.
,, *pro'lifer* (many-suckered). 1. Yellow. July. Egypt. 1683.
,, *rota'tus* (wheel-shaped). 1½. Pink. July. Iberia. 1823.
,, *saxa'tilis* (rock). 1½. Pink. July Spain. 1827.
,, *si'culus* (Sicilian). 1. Pink. July. Sicily. 1783.
,, *si'mplex* (simple). See S. MONSPELIENSIS.
,, *stella'tus* (starry). 1½. Blue. July. Spain. 1596.

PERENNIALS.

A. africa'nus (African). See S. CRETICA.
,, *agre'stis* (field). See S. GRAMUNTIA.
,, *alti'ssimus* (very tall). See S. AFRICANA.
,, *amœ'nus* (pleasant). Purple. June. 1820.
,, *arge'nteus* (silvery). See S. UCRANICA.
,, *banna'ticus* (Bannatic). 3. Pink. July. Hungary. 1802.
,, ,, *a'lbus* (white-*flowered*). 3. White. July. Gardens.
,, *cane'scens* (hoary). See S. SUAVEOLENS.
,, *capilla'tus* (long-haired). 2. Violet. July. 1820.
,, *cauca'sicus* (Caucasian). 1. Blue. June. Caucasus. 1803.
,, *ceratophy'llus* (buckhorn-leaved). 2. Red. July. Italy. 1826.
,, *Columba'ria* (pigeon-*coloured*). 1. Purple. July. Britain.
,, *commuta'tus* (changed). 1. Blue. July. Siberia. 1826.
,, *crena'tus* (scolloped). 2. Flesh. August. Italy. 1825.
,, *cre'ticus* (Cretan). 1. Purple. June. Crete. 1596. Greenhouse evergreen shrub.
,, *e'legans* (elegant). See S. CAUCASIA.
,, *graminifo'lius* (grass-leaved). 1. Blue. July. Switzerland. 1683.
,, *gramu'ntius* (Gramont). See S. GRAMUNTIA.
,, *holoseri'ceus* (all-silky). 1. Blue. July. Pyrenees. 1818.
,, *inca'nus* (hoary). 1. Red. July. Europe. 1826.
,, *interme'dius* (intermediate). See S. LUSITANICA.
,, *isete'nsis* (Isetsk). 1. White. July. Siberia. 1801.
,, *lu'cidus* (shining). See S. NITENS.
,, *lu'teus* (yellow). June. Russia. 1820.
,, *lyra'tus* (lyrate-*leaved*). See S. SICULA.
,, *micra'nthus* (small-flowered). 1. Pink. July. Armenia. 1825.
,, *molli'ssimus* (softest). See S. COLUMBARIA.
,, *ni'tens* (glittering). June. Azores. 1779.
,, *ochroleu'cus* (yellowish-white). See S. ISETENSIS.
,, *paucise'tus* (few-bristled). See S. GRAMUNTIA.
,, *pyrena'icus* (Pyrenean). See S. COLUMBARIA.
,, *rupe'stris* (hill). 1. Pink. July. Caucasus. 1824.
,, *rutæfo'lius* (rue-leaved). 1. Scarlet. July. Sicily. 1804.
,, *Scopo'lii* (Scopoli's). 2. Straw. July. S. Europe. 1819.
,, *se'tifer* (bristle-bearing). See S. SETIFERA.
,, *silenifo'lius* (silene-leaved). See S. BRACHIATA.
,, *tomento'sus* (woolly). See S. SUCCISA.
,, *ucra'nicus* (Ukraine). 1. Light yellow. July. Ukraine. 1795.
,, *urceola'tus* (jagged). See S. RUTÆFOLIA.
,, *webbia'nus* (Webb's). See S. ORCHROLEUCA.

ASTEROSTI'GMA. See STAUROSTIGMA.

ASTI'LBE. (From *a*, not, and *stilbe*, brightness; flowers not very striking. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*.)

Hardy herbaceous perennials propagated by divisions, or may be raised from seeds. They grow freely in any rich garden soil, and delight in moisture, but require good drainage. *A. japonica* (better known as *Spiræa japonica*) and the varieties are much esteemed for forcing. They are also retarded by the cold storage (refrigerating) treatment, so that we now get them all the year through, and the retarded plants (or clumps) are more satisfactory for mid-winter or up to March than those forced. There are now a great many hybrid varieties of these. Peach Blossom and Queen Alexandra have pink flowers and are very pretty, and there are several improved white varieties. Marquis of Salisbury has proved one of the best; but there are so many nearly alike, and we are constantly getting further additions, and some are so nearly allied to the herbaceous spiræas that it is difficult to divide them at sight, but here other authors are followed as near as possible. Hoteia was a name used at one time, but most authorities have now dropped this name, and Astilbe is the correct one, though Spiræa is the popular garden name.

A. a'lba (G. C., 1904, xxxvi. 46). Garden hybrid.
,, *Aru'ncus*. See SPIRÆA ARUNCUS.
,, *barba'ta*. See A. JAPONICA.

A. chine'nsis (Gard., 1892, xlii. 221). Pink-coloured. China.
„ *David'ii* (G. C., 1902, xxxii. 95, 122, f. 34).
„ *deca'ndra, Don* (*A. biternata*, Britt.). Often confounded with *Aruncus sylvester*, that is, *Spiræa*.
„ *gra'ndis* (G. C., 1905, xxxviii. 74, 426, f.). White. China.
„ *japo'nica*. Pure white. May. Japan. Syns. *Spiræa barbata* and *japonica*, also *Holeia barbata* and *H. japonica*.
„ „ *variega'ta*. Variegated with yellow.
„ *Lemoi'nei* (R. H., 1895, 567, f. 185). Garden hybrid.
„ *rivula'ris*. 3. Yellowish-white. Himalayas. 1835.
„ „ *gigante'a*. 5. Cream. 1909.
„ *ro'sea* (G. C., 1904, xxxvi. 46, 143, f. 58). Garden hybrid.
„ *ru'bra*. 4 to 6. Rose. Late summer and autumn. Himalayas. 1851.
„ *simplicifo'lia* (simple-leaved). ½–1. White. Japan. 1910.
„ *Thunbe'rgii*. 1½. White. Japan. 1878.
„ *vire'scens* (green). Green. China. 1908.

ASTI'RIA. (From *a*, not, and *steiros*, sterile; in allusion to the absence of barren stamens. Nat. ord. Sterculiaceæ.) A stove evergreen shrub allied to Dombeya; propagated from cuttings in the spring; light, sandy loam and peat, in close frame.

A. ros'ea (B. R., 1844, t. 49). Pink. May. Mauritius. 1843.

ASTRA'GALUS. Milk Vetch. (An ancient Greek name for some leguminous plant. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

All hardy, except where otherwise specified. Annual species, seed, in common, sandy soil, in March. Perennial herbaceous species, division of the plant. The undershrubs, cuttings, under a hand-light; common, sandy soil for all.

ANNUALS.

There are very few of this genus in general cultivation. In searching through I can find only about six species referred to; of these, *alpinus* for the rockery and *hypoglottis* and its white variety are among the most useful, but rock plants have become so popular we may see more of them.

A. Ægi'ceras (goat's-horn-*podded*). 1. Pale yellow. July. 1818.
„ *Alope'cias* (sea-fox). 3. Yellow. June. Siberia. 1800.
„ *annula'ris* (ring-formed). 1½. Purple. July. Egypt. 1800. Trailer.
„ *bæ'ticus* (Bœtic). 1. Pale yellow. July. South of Europe. 1759. Trailer.
„ *brachy'ceras* (short-horn-*podded*). ½. Yellow. July. Tauria. 1828.
„ *Bu'ceras* (ox-horn-*podded*). 1. Pale yellow. July. 1818. Trailer.
„ *canalicula'tus* (channel-*podded*). See A. SCORPIOIDES.
„ *caryoca'rpus* (nut-podded). 1. Purple. July. N. Amer. 1800. Biennial.
„ *Ci'cer* (vetch). 2. Yellow. July. Europe. 1570. Trailer.
„ *contortuplica'tus* (twisted-plaited). 1. Pale yellow. July. Siberia. 1764. Trailer.
„ *crucia'tus* (cross-formed). 1½. Violet. July. 1820. Trailer.
„ *cymbæca'rpus* (boat-podded). ½. White. July. Portugal. 1800. Trailer.
„ *Gla'ux* (milkwort). ½. Purple. July. Spain. 1596.
„ *lotoi'des* (lotus-like). See A. SINICUS.
„ *mareo'ticus* (Mareotic). ½. Lilac. July. Egypt. 1817. Trailer.
„ *nuttallia'nus* (Nuttall's). ½. Blue. July. America. 1820. Trailer.
„ *oxiglo'ttis* (sharp-tongue-*leaved*). ½. Blue. July. Tauria. 1817. Trailer.
„ *pentaglo'ttis* (five-tongued). ½. Purple. July. Spain. 1739. Trailer.
„ *reticula'tus* (netted). Blue. July. Caucasus. 1828.
„ *Schmalhau'seni* (Schmalhausen's). ½. Summer. Turkestan. 1883.
„ *scorpioi'des* (scorpion-like-*podded*). 1. Pale blue. July. Spain. 1816.
A. sesa'meus (sesame-like). 1. Pale blue. July. South of Europe. 1816. Trailer.
„ *si'nicus* (Chinese). ½. Red. August. China. 1763.
„ *triangula'ris* (three-angled). 1. Pale yellow. July. 1818.
„ *tribuloi'des* (tribulus-like). ½. Purple. July. Egypt. 1817. Trailer.
„ *trime'stris* (three-monthly). ½. Pale yellow. July. Egypt. 1730. Trailer.
„ *trimo'rphus* (three-formed). See A. ANNULARIS.

PERENNIALS.

A. acutifo'lius (pointed-leaved). ½. July. Switzerland. 1826.
„ *adsu'rgens* (arising). ½. Purple. July. Siberia. 1820.
„ „ *prostra'tus* (prostrate). ½. Purple. July. Siberia. 1818. Trailer.
„ *adu'ncus* (hooked). 1. Purple. July. Caucasus. 1819.
„ *albicau'lis* (white-stemmed). ½. Purple. July. Caucasus. 1803.
„ *alopecuroi'des* (fox-tail-like). 2. Light yellow. July. Siberia. 1737.
„ *alpi'nus*. Bluish-purple. Britain.
„ „ *dahu'ricus* (Dahurian). Pale yellow. Dahuria. 1820.
„ *annuody'tes* (sand-viper). ½. White. July. Siberia. 1820. Evergreen under-shrub.
„ *a'rcticus* (Arctic). ½. Purple. July. N. Europe. 1816.
„ *arena'rius* (sand). 1. Blue. July. Germany. 1798. Trailer.
„ *arista'tus* (awned). 1. Purple. July. Pyrenees. 1791. Evergreen.
„ *a'sper* (rough). 3. Pale yellow. July. Astracan. 1796.
„ *austra'lis* (southern). 1. White. July. France. 1818.
„ *austri'acus* (Austrian). ½. Pale blue. July. Austria. 1640.
„ *baicale'nsis* (Baical). 1. August. Yellow. Siberia. 1830.
„ *baionne'nsis*. ½. Purple. July. France. 1816.
„ *bayone'nsis* (Bayonne). See A. BAIONNENSIS.
„ *brachyca'rpus* (short-podded). 1½. Purple. July. Caucasus. 1820. Trailer.
„ *breviflo'rus* (short-flowered). See A. ERIOCEPHALUS.
„ *buchtorme'nsis* (Buchtorm). ½. Yellow. Siberia. 1818.
„ *calyci'nus* (long-calyxed). August. Caucasus. 1819.
„ *canade'nsis* (Canadian). 1½. Pale yellow. July. N. Amer. 1732.
„ *capita'tus* (headed). See A. EMARGINATUS.
„ *capri'nus* (goat-*scented*). 1. Pale yellow. July. Barbary. 1683.
„ *carolinia'nus* (Carolina). See A. CANADENSIS.
„ *cauca'sicus* (Caucasian). ½. White. July. Caucasus. 1824. Evergreen.
„ *Cephalo'tes*. 1. Purple. July. Caucasus. 1819.
„ *charta'ceus*. 4. Yellow. July. Persia. 1835.
„ *chine'nsis* (Chinese). 1. Pale yellow. July. China. 1795. Greenhouse.
„ *chlorosta'chys* (green-spiked). 3. Greenish-yellow. September. Nepaul. 1824.
„ *chorine'nsis* (Chorinan). ½. Cream. July. Siberia. 1796.
„ *Christia'nus* (Christian). 3. Pale yellow. July. Armenia. 1737. So called by Dioscorides, because a native of the birth-land of Christianity.
„ *dahu'ricus* (Dahurian). ½. Purple. June. Dahuria. 1822.
„ *da'nicus*. ½. Purple. June to September. Britain.
„ „ *a'lbus*. White. Gardens.
„ *dasya'nthus* (thick-flowered). 1. June. Hungary. 1819.
„ *dasyglo'ttis* (thick-tongue-leaved). See A. PENTAGLOTTIS.
„ *depre'ssus* (depressed). ½. Pale yellow. July. Europe. 1772. Trailer.
„ *diffu'sus* (wide-scattered). See A. DOLICHOPHYLLUS.
„ *dolichophy'llus*. ½. Pale yellow. July. Caucasus. 1820.
„ *donia'nus* (Don's). ½. Purple. July. Nepaul. 1818. Trailer.

A. emargina'tus (nicked-leaf). 1. Pale yellow. July. Levant. 1759.
,, *epiglo'ttis* (heart-podded). ½. Pale yellow. July. South of Europe. 1737. Trailer.
,, *eriocе'phalus*. ½. Purple. July. Armenia. 1826. Half-hardy evergreen.
,, *exsca'pus* (scapeless). ½. Yellow. July. Hungary. 1827.
,, *falca'tus* (sickle-*podded; hairy-podded*). 3. Greenish-yellow. July. Siberia. Syn. *A. virescens.*
,, *falcifo'rmis* (sickle-shaped). 1½. Pale yellow. July. Algiers. 1816.
,, *fri'gidus* (cold). 1. Cream. July. Austria. 1795.
,, *frutico'sus* (shrubby). 1½. Violet. July. Siberia. 1804.
,, *galegifo'rmis* (goat's-rue-*leaved*). 2. Yellowish-green. June. Caucasus. 1729.
,, *gilgia'nus* (N. B., 1896, 185). Deep ray-violet. Asia Minor.
,, *glycyphylloi'des* (glycyphyllus-like. Liquorice milk-vetch). 1. Pale yellow. July. Caucasus. 1818. Trailer.
,, *glycyphy'llos* (sweet-leaved). 3. Yellowish-green. July. Britain. Trailer.
,, *gra'cilis* (slender). ¾. Purple. June. N. Amer. 1821.
,, *halica'cabus* (kettle-calyxed). ½. Pale yellow. May. Armenia. 1806.
,, *hamo'sus* (hook-*podded*). 1. Pale yellow. July. Spain. 1683. Trailer.
,, ,, *macroca'rpus* (large-fruited). ½. Pale yellow. June. South of Europe. 1820. Trailer.
,, *hymenoca'rpus* (membranous-*podded*). See A. CHARTACEUS.
,, *hypoglo'ttis* (tongue-under-tongue). See A. DANICUS.
,, ,, *a'lbus* (white-*flowered*). See A. DANICUS ALBUS.
,, *inca'nus* (hoary). ½. Purple. July. Montpelier. 1759.
,, *infla'tus* (swollen). 1. Purple. July. Mendoza. 1827.
,, *lactiflo'rus* (milk-flowered). See A. TESTICULATUS.
,, *lani'gerus* (wool-bearing). ½. Yellow. June. Egypt. 1791.
,, *Laxma'nni* (Laxmann's). See A. ADSURGENS.
,, *leonti'nus* (lion-tail). ½. Blue. July. Austria. 1815. Trailer.
,, *leptophy'llus* (fine-leaved). ½. White. July. Barbary. 1811.
,, *leucophæ'us* (dusky). ½. Whitish-yellow. July. Sicily. 1776. Trailer.
,, *linearifo'lius* (linear-leaved). See A. ONOBRYCHIS.
,, *longiflo'rus* (long-flowered). ½. Yellow. July. Tartary. 1806.
,, *lusita'nicus* (Portuguese). ½. Pale purple. May. S. Europe. 1640.
,, *macroce'phalus* (large-headed). 4. Yellow. June. Caucasus. 1831. Trailer.
,, *ma'ximus* (greatest-*fox-tail*). 3. Yellow. June. Armenia.
,, *melilotoi'des* (melilot-like). 3. Purple. June. Siberia. 1785.
,, *Menzie'sii* (Menzies'). 1. Red. July. California. 1822.
,, *micra'nthus* (small-flowered). 1. Pale yellow. July. 1800.
,, *microphy'llus* (small-leaved). 1. Yellow. June. Siberia. 1773.
,, *monspessula'nus* (Montpelier). 1. Purple. July. France. 1710. Evergreen trailer.
,, ,, *a'lbus* (white). 1. White. July. South of Europe. Evergreen trailer.
,, *narbone'nsis* (Narbonne). 3. Pale yellow. July. South of Europe. 1789.
,, *negle'ctus* (neglected). ½. July. Siberia. 1826.
,, *odora'tus* (sweet-scented). 2. Pale yellow. July. South of Europe. 1820.
,, *onobrychioi'des* (sainfoin-like). See A. CEPHALOTES.
,, *Onobry'chis* (purple-spiked). 1½. Purple. July. Austria. 1640. Trailer.
,, *oroboi'des* (Orobus-like). 1. Purple. July. Norway. 1820.
,, *oto'pterus* (ear-winged). 1. Pale blue. July. Altai. 1817.
,, *Palla'sii* (Pallas's). ½. Purple. July. Caspian. 1818.
,, *palle'scens* (palish). 1. Pale yellow. June. Siberia.
A. panno'sus (woolly). Rose-coloured. July. Cilicia.
,, *pentaglo'ttis* (five-tongued). ½. Purple. July. Mediterranean Region. 1818.
,, *physo'des* (inflated). ¾. Purple. July. Caspian. 1759.
,, *pi'ctus* (painted). Lilac. June. N. Amer. 1827.
,, *platyphy'llus* (broad-leaved). 1. Pale yellow. July. Siberia. 1824. Trailer.
,, *po'nticus* (Pontic). 2. Pale yellow. Tauria. 1820.
,, *Pote'rium* (poterium). ½. White. July. Spain. 1640. Evergreen.
,, *procu'mbens* (lying-down). 1½. Yellowish-blue. May. Chili. 1832. Half-hardy.
,, *purpu'reus* (purple). ½. Purple. July. South of France. 1820. Trailer.
,, *re'ptans* (creeping). ½. White. July. Mexico. 1818. Greenhouse evergreen creeper.
,, *schanginia'nus* (Schang's). 1. White. Siberia. 1832.
,, *secu'ndus* (one-sided). 1. Yellow. July. Altai. 1828.
,, *semibilocula'ris* (half-two-celled). 1½. Pale yellow. July. Siberia. 1804.
,, *Ste'lla* (star-*podded*). ½. Blue. July. South of Europe. 1658. Trailer.
,, *stipula'tus* (*large*-stipuled). 1. Yellow. June. Nepaul. 1822.
,, *subula'tus* (awl-shaped). ¾. Purple. July. Siberia. 1820.
,, *succule'ntus* (succulent). See A. CARYOCARPUS.
,, *sulca'tus* (furrowed). 4. Light blue. July. Siberia. 1785.
,, *sylvi'colus* (wood). See OXYTROPIS SYLVATICA.
,, *tau'ricus* (Taurian). ½. Purple. July. Tauria. 1826.
,, *testicula'tus* (egg-shaped). ½. Fleshy-white. July. Tauria. 1818.
,, *tomento'sus* (woolly-leaved). 3. Pale yellow. July. Egypt. 1800. Half-hardy.
,, *Tragaca'ntha* (great-goat's-thorn). Pale yellow. July. South of Europe. 1640. Evergreen.
,, *triangula'ris* (triangular). 1. Blue. July. Siberia. 1824.
,, *tu'midus* (swelling). ½. Pale yellow. July. Egypt. 1816. Evergreen.
,, *uligino'sus* (marsh). 2. Pale yellow. July. Siberia. 1752.
,, *unca'tus* (hooked). ½. White. July. Asia Minor. 1760.
,, *u'triger* (bladder-bearing). ½. Yellow. July. Russia. 1818.
,, *vagina'tus*. 1. Rosy-purple. Siberia.
,, *vesica'rius* (bladder-*calyxed*). 1. Whitish-yellow. July. Europe. 1737. Trailer.
,, *vimi'neus* (rod-like). See A. FRUTICOSUS.
,, *vire'scens*. See A. FALCATUS.
,, *virga'tus* (twiggy). 3. Violet. July. Siberia. 1806.
,, *vulpi'nus* (fox). 2. Light yellow. July. Caucasus. 1815.

ASTRA'NTHUS. (From *astron*, a star, and *anthos*, a flower; in reference to the star-like divisions of the flower. Nat. ord. Samydaceæ. Linn. 8-*Octandria*, 1-*Monogynia*.) Now referred to Homalium, *which see.*
Greenhouse evergreen shrub; cuttings in sandy soil, under a glass; rich, light loam. Temp., 50° in summer; winter, 40° to 45°.

A. co'chin-chine'nsis (Cochin-Chinese). See HOMALIUM FAGIFOLIUM.

ASTRA'NTIA. Masterwort. (From *astron*, a star, and *anti*, comparison; referring to the disposition of the flower-umbels. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
Allied to Sanicula. Hardy herbaceous perennials; dividing the plant in March, April, or October; sandy loam.

A. Bieberstei'nii (Bieberstein's). 2. May. Caucasus. 1835.
,, *carnio'lica* (Carniolian). 1. Striped. June. Carniola. 1812.
,, *cauca'sica* (Caucasian). See A. MAJOR.
,, *helleborifo'lia*. 2. Pink. Caucasus. 1804. Syn. *A. maxima.*
,, *ma'jor* (greater). 2. Striped. June. Alps, Europe. 1596.
,, *ma'xima* (greatest). See A. HELLEBORIFOLIA.
,, *mi'nor* (smaller). ½. Pink. June. Switzerland. 1686.

A. pauciflo'ra (few-flowered). ½. White. July. Sicily. 1820.

ASTRAPÆ'A. (From *astrape*, lightning; in reference to the brightness of the flowers in India. Nat. ord. Sterculiaceæ.)

Stove evergreen trees; cuttings of young wood in April, in sand, under a bell-glass, in heat; loam and peat. Summer temp., 65° to 80°; winter, 55° to 65°. All are now referred to Dombeya.

A. tiliæfo'lia (lime-tree-leaved). See DOMBEYA ACUTANGULA.
,, *visco'sa* (clammy). See DOMBEYA CANNABINA.
,, *Walli'chii* (Wallich's). See DOMBEYA WALLICHII.

ASTROCA'RYUM. (From *astron*, a star, and *karuon*, a nut; referring to the disposition of the fruit. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*.)

Allied to Cocos. Stove palms; seed in hotbed, in spring; rich loam. Summer temp., 65° to 75°; winter, 55° to 60°.

A. acau'le (stemless). 10. Brazil. 1820.
,, *aculea'tum* (prickly). 40. Guiana. 1824.
,, *argе'nteum* (silvery). See A. MALYBO.
,, *campe'stre* (field). 10. Brazil. 1826.
,, *deco'rum* (Bull. Cat., 1879, 3). Colombia.
,, *fila're* (thready). Colombia. 1875.
,, *granate'nse*. Colombia. 1875.
,, *Ma'lybo*. Colombia. 1875.
,, *mexica'num*. Mexico. 1864.
,, *Murumu'ru* (Murumuru). 40. Brazil. 1825.
,, *rostra'tum* (beak-*sheathed*). 10. White. Bahia.
,, *vulga're* (common). 30. Brazil. 1825.

ASTROLO'BIUM. United to Ornithopus.

ASTROLO'MA. (From *astron*, a star, and *loma*, a fringe; in reference to the bearded fringe on the flowers. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Young cuttings, firm at their base, in sand and peat in close frame; sandy loam and turfy peat. Winter temp., 40° to 48°.

A. denticula'tum (finely-toothed). See A. HUMIFUSUM.
,, *divarica'tum* (divaricate). 2. Pink. Australia.
,, *humifu'sum* (trailing). 1. Scarlet. July. New South Wales. 1807.
,, *longiflo'rum* (long-flowered). Red. April. Australia.
,, *pinifo'lium* (pine-leaved). 6. Scarlet. June. Australia. 1811.

ASTROPHY'TUM MYRIOSTI'GMA. See ECHINOCACTUS MYRIOSTIGMA.

ASTYDA'MIA. (Derivation uncertain. Nat. ord. Umbelliferæ.)

Greenhouse evergreen. Seeds; cuttings. Fibrous loam, leaf-mould, and sand.

A. canarie'nsis (Canary). 1½. Yellow. July. Canaries. 1780.
,, *latifo'lia* (broad-leaved). See A. CANARIENSIS.

ASTY'RIA. See ASTIRIA.

ASYSTA'SIA. (From *a*, without, and *stachys*, a spike; the inflorescence, not in spikes, as is often the case in Acanthads. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreen shrubs; cuttings of young shoots in April, in sandy soil, in close frame; leaf-mould and loam, with a little sand, and, when vigour is required, a little dried cowdung. Liquid manure may also be given. Summer temp., 60° to 80°; winter, 50° to 55°.

A. be'lla. 4 to 6. White striped or netted red. Natal. 1869. Syn. *Mackaya bella*.
,, *chelonoi'des* (Chelone-like). 3 to 4. India. 1871.
,, *coromandelia'na* (Coromandel). Purple. September. India. 1845.
,, *macrophy'lla*. 8 to 20. June. Fernando Po. 1867.
,, *sca'ndens*. 6. Sierra Leone. 1845. Syn. *Henfreya scandens*.
,, *va'ria* (G. C., 1892, xii. 760). Zululand.
,, *viola'cea*. 1 to 2. India. 1870.

ATA'CCIA. See TACCA.

A. a'spera. See TACCA INTEGRIFOLIA.
,, *crista'ta*. See TACCA CRISTATA.

ATALA'NTA. See CLEOME.

ATALA'NTIA. (A classical name, after *Atalanta*, daughter of Schœnus, King of Scyrus. "She being wearied with the importunities of her suitors, consented to have the man that could outrun her. Hippo'menes did so by the help of Venus's golden apples. He cast three before her, and she lost ground in gathering them." The fruit is golden-coloured. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove evergreen shrub; cuttings in close propagating pit with bottom-heat; sandy loam and peat.

A. monophy'lla (one-leaved). 4. White. July. E. Ind. 1777.
,, *buxifo'lia* (box-leaved). 2–3. White. May. China.

ATAMASCO-LILY. *Zephyra'nthes Atama'sco*.

ATELA'NDRA. (From *atalos*, soft, and *aner*, an anther. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Westringia.) Now included with Hemige'nia, *which see*.

Greenhouse evergreen shrub. Cuttings of half-ripened wood in sand and loam in close frame, with a little bottom-heat; loam and peat. Winter temp., 40° to 45°.

A. inca'na (hoary). Slate. Swan River.

ATHALIA SPINARUM. The Turnip Saw-fly. "The grub of this insect—known as the Black Caterpillar, Black Canker, Black Palmer, Negro, and Nigger, or Black Grub—sometimes destroys thousands of acres of our turnips. Its body is cylindrical, as thick as a crow-quill, about half an inch long, greenish-black, with a darker line down the back; then a line of dull, yellowish-grey, and a third of dark slate. Underneath, the body is paler; it is wrinkled, and the head is black. When alarmed, this grub curls itself together in a somewhat spiral form. They feed on the leaf of the turnip, leaving nothing but its largest ribs, from the middle of August until about the same period of October. They never attack the Swedish turnip. When full grown, the grubs bury themselves just below the surface of the earth, each forming a small, oval cocoon of earth, formed into a paste with a gummy moisture from its mouth. It remains in the chrysalis state until July, when the perfect insect, or Turnip Saw-fly, comes forth. Our drawing represents it magnified, the natural size being shown by the cross lines. It is the *Alhalia centifoliæ* of some, and *A. spinarum* of other naturalists. Its colour is bright orange, head black, upper lip pale yellow, antennæ black, thorax has two large dark spots, and other dark marks are about the body and wings. On small plots of turnips the black grub may be easily removed by hand-picking, and from larger breadths by turning upon them some broods of ducks."—(*Cottage Gardener*, iii. 149.)

ATHAMA'NTA. (From Mount Athamas, in Sicily. Nat. ord. Umbelliferæ.)

Remarkable for its pretty foliage; hardy herbaceous plant; grows freely in any ordinary garden soil; may be propagated from seeds or divisions.

A. Matthi'oli. 1 to 2. White. Summer. Alps of Carinthia.

ATHANA'SIA. (From *a*, not, and *thanatos*, death; in reference to the flowers being what is called "ever lasting." Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Greenhouse evergreens; all natives of the Cape of Good Hope. Cuttings of half-ripe wood in spring, in sand, peat, and loam, in close frame; pot in loam, peat, and leaf-mould. Winter temp., 40° to 45°; summer, 60° and upwards.

A. cane'scens (hoary). 3. Yellow. July. 1820.
,, *capita'ta* (headed). 1½. Yellow. March. 1774.
,, *crena'ta* (scolloped). 2. Yellow. July. 1816.
,, *crithmifo'lia* (samphire-leaved). 2. Yellow. July. 1723.
,, *cuneifo'lia* (wedge-leaved). 2. Yellow. July. 1816.
,, *denta'ta* (toothed). 1½. Yellow. July. 1759.
,, *filifo'rmis* (thread-shaped). 2. Yellow. August. 1787.

A. longifo'lia (long-leaved). 2. Yellow. July. 1800.
,, *parvifo'ra* (small-flowered). 2. Yellow. April. 1731.
,, *pectina'ta* (comb-*leaved*). 1½. Yellow. July. 1774.
,, *pinna'ta* (pinnate). 1½. Yellow. July. 1818.
,, *pube'scens* (downy). 6. Yellow. July. 1768.
,, *puncta'ta* (dotted). 3. Yellow. June. 1822.
,, *tomento'sa* (woolly-*leaved*). 2. Yellow. May. 1774.
,, *tricu'spis* (three-pointed). See A. TRIFURCATA.
,, *trifurca'ta* (three-forked-*leaved*). 3. Yellow. July. 1710.
,, *virga'ta* (twiggy). 1. Yellow. July. 1815.

ATHEROPO'GON. (From *ather*, an awn, and *pogon*, a beard; in reference to its bearded awns. Nat. ord. *Grasses* [Gramineæ]. Linn. 23-*Polygamia*, 1-*Monœcia*, Allied to Chloris.) Now included under Boutelo'ua.

A hardy perennial grass; seeds and division; common soil.

A. apludoi'des (apluda-like). ½. Apetal. August. S. Europe. 1768. Correct name *Bouteloua racemosa*.

ATHEROSPE'RMA. (From *ather*, an awn, and *sperma*, seed; seeds awned. Nat. ord. Monimiaceæ. Linn. 21-*Monœcia*, 8-*Icosandria*.)

This beautiful New-Holland tree attains the great height of 150 feet, and has the aspect of a stately conifer, with a girth of 6 to 7 feet. The colonists make a pleasant tea-beverage from the bark, either dried or in a green state. "Its effects are, however, slightly aperient."—*Backhouse*. Greenhouse evergreen tree; cuttings; loam and peat. Winter temp., 40° to 50°.

A. moscha'ta (musk or plume nutmeg). White. June. N. Holland. 1824.

ATHEROSPE'RMEÆ. See MONIMIACEÆ.

ATHERU'RUS. See PINELLIA.

ATHRI'XIA. (From *a*, not, and *thrix*, a hair; the receptacle being destitute of hairs. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Leyssera.)

Greenhouse evergreen shrub; cuttings of rather young wood, under a bell-glass, in sandy soil; lumpy loam and peat. Winter temp., 40° to 45°.

A. cape'nsis (Cape). 3. Red. April. Cape of Good Hope. 1821.

ATHROTA'XIS. (From *athros*, crowded together, and *taxis*, arrangement; alluding to the arrangement of the scales of the cones. Nat. ord. Coniferæ.)

Small evergreen shrubs from Tasmania; require greenhouse in winter, but may live out of doors in sheltered positions; propagated from cuttings on moderate bottom-heat.

A. cupressoi'des. 30. Deep, glossy green.
,, *donia'na*. See A. LAXIFOLIA.
,, *imbrica'ta*. Garden synonym of *A. selaginoides*.
,, *laxifo'lia*. 20 to 25. Lateral growths somewhat pendulous. Syn. *A. doniana*.
,, *selaginoi'des*. Glossy green. Syns. *A. imbricata* and *gunniana* of gardens.

ATHY'RIUM. See ASPLENIUM. The name Athyrium is still retained by most nurserymen and gardeners.

ATIME'TA. (From *atimetos*, despised. Nat. ord. Araceæ.) Now referred to Rhodospatha.

Treatment same as for other tropical Aroids.

A. filamento'sa. Spathe yellowish. Brazil. 1860.

ATMOSPHERE. See AIR.

ATRA'GENE. (From *athros*, pressed, and *genos*, birth; in reference to the manner in which the branches clasp their supports. First applied by Theophrastus to our Traveller's Joy—*Cle'matis Vita'lba*. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.) Now referred to Clematis.

Hardy deciduous climbers; seeds when procurable; sown in a cold pit, and pricked off into other pots as soon as up; layers in summer and autumn; cuttings in spring and summer, under a hand-light; common soil.

A. alpi'na. Syns. *A. austriaca* and *A. sibirica*. See C. ALPINA.
,, *america'na* (American). 15. Purple. June. N. Amer. 1797. See C. VERTICILLARIS.
A. america'na obli'qua (unequal-sided). 15. Purple. June. N. Amer. 1797. See C. VERTICILLARIS.
,, *austri'aca* (Austrian). 8. Brown, yellow. July. Austria. 1792. See C. ALPINA.
,, *macrope'tala* (large-petaled). Russia. 1831. See C. MACROPETALA.
,, *occidenta'lis* (western). 10. July. 1618. See C. OCCIDENTALIS.
,, *ochote'nsis* (Ochotsk). 12. White. June. Siberia. 1818. See C. OCHOTENSIS.
,, *sibi'rica* (Siberian). 12. Whitish-yellow. July. Siberia. 1753. See C. ALPINA.

ATRAPHA'XIS. (From *atraphaxis*, a culinary vegetable or garden orach; suggested from the similarity to some species of orach or Atriplex. Nat. ord. Polygonaceæ. Allied to Polygonum.)

Hardy, twiggy, much-branched, often spiny shrubs. Cuttings of side-shoots in a cold frame or pit during summer. Ordinary soil.

A. buxifo'lia (box-leaved). 2–3. White. July, August. Caucasus. 1800.
,, *lanceola'ta* (lance-shaped). 2–3. White; anthers red. July, August. Temperate Asia.
,, *Laxma'nni* (Laxmann's). Russia; Central Asia. 1891.
,, *micra'ntha* (small-flowered). 2. Pink. July. Siberia. 1778.
,, *Muschketo'wi* (Muschketow's). 2. White; anthers red. Central Asia.
,, *spino'sa* (spiny). 2–3. White. August. Orient.
,, *Tournefo'rtii* (Tournefort's). 2–3. White. August. Syria.

A'TRIPLEX. Orach, or Arach. (From *ater*, black, and *plexus*, woven together, on account of the dark colour and habit of some of the species. Nat. ord. *Chenopods* [Chenopodiaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)

A. Ha'limus is a hardy evergreen shrub, rather ornamental, and *A. portulacoi'des* is a hardy under-shrub; but the species most deserving notice is *A. horte'nsis*, Garden Orach. See ORACH. There are many other species quite undeserving the notice of the gardener.

A. Brewe'ri (S. C. A. A. Cat., 1900, 50). California.
,, *halimoi'des monumenta'lis* (B. T. O., 1890, 42, f. 3). Seedling form of tall habit.
,, *nummula'ria* (Damm. Cat., 1890, 91, 87).

A'TROPA. Nightshade. (Named after *Atropos*, one of the three Fates, in reference to its poisonous qualities.)

We introduce this native weed (*A'tropa Bellado'nna*) for the purpose of warning country people from eating its berries, fatal accidents frequently occurring in consequence. The berries are at first green, but become black and juicy.

A. Bellado'nna. Known as the Deadly Nightshade. An indigenous plant, the berries of which, when ripe, are black and juicy, but are of a deadly poison, and many fatalities have occurred through eating them.

ATTALE'A. (From *attalus*, magnificent; in reference to the beauty of these palms. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*. Allied to Cocos.)

Stove palms. Seeds; rich, loamy soil. Summer temp., 65° to 80°; winter, 55° to 60°.

A. amygdali'na. New Grenada. Syn. *A. nucifera*.
,, *Cohu'ne*. 50. Honduras.
,, *co'mpta* (decked). 22. Brazil. 1820.
,, *exce'lsa* (tall). 70. Brazil. 1826.
,, *funi'fera* (rope). 40. Brazil. 1824.
,, *hu'milis* (humble). 10. Brazil. 1820.
,, *nuci'fera*. See A. AMYGDALINA.
,, *Ro'ssii* (Ross's). 20. Brazil. 1825.
,, *specio'sa* (showy). 70. Brazil. 1826.
,, *specta'bilis* (remarkable). 70. Brazil. 1824.

AUBRIE'TIA. (Named after *M. Aubriet*, a French botanical draughtsman. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Arabis.)

Hardy evergreen trailers. Dividing in spring or autumn; cuttings under a hand-glass, in sandy soil; any dry soil.

A. deltoi'dea (three-angled). ½. Purple. April. Levant. 1710.

A. deltoi'dea Bougainvi'llea. Light violet-purple. Dwarf habit.
„ „ *Campbe'lli.* Deep violet-blue.
„ „ *Ey'rei.* Rich violet-purple.
„ „ *græ'ca.* Light purple. Greece. 1872.
„ „ *Henderso'ni.* Dark purple.
„ „ *hesperidiflo'ra* (B. C., t. 1706). Purple. March. S. Europe. 1823.
„ „ *Leichtli'nii* (W. G., 1888, 325). Deep red.
„ „ *Moerhei'mi* (Lem. Cat., 1905, 7). Rosy-pink.
„ „ *Perki'nsii* (Gard., 1905, lxvii. 344). Deep purple, white centred flowers.
„ „ *purpu'rea.* Purple. April. Greece. 1820.
„ „ *ro'sea.* Rose.
„ „ *supe'rba.* See A. DELTOIDEA GRÆCA.
„ „ *tau'rica.* Violet-purple.
„ „ *tauri'cola* (Gard., 1902, lxi. 266). Apparently the same as *A. deltoidea taurica.*
„ „ *variega'ta.* Variegated with creamy-yellow.
„ „ *viola'cea.* Deep violet-purple.

AU'CUBA. (The name of the shrub in Japan. Nat. ord. *Cornels* [Cornaceæ]. Linn. 21-*Diœcia*, 4-*Tetrandria.*)
Cuttings in spring and autumn, and layers in any light soil, without covering; common soil, if drained; stands the smoke of towns well. It is sometimes called the *Variegated Laurel.*

A. himala'ica. Leaves lanceolate or lanceolate acuminate. Berries spherical. Himalaya.
„ *japo'nica* (Japan-*blotch-leaved*). 6. Apetal. June. Japan. 1783.

AUDIBE'RTIA. (Named after *M. Audibert*, a noted nurseryman of Tarascon. Nat. ord. *Labiates* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia.* Allied to Monarda.)
Hardy evergreen. Seeds, in March or April; common soil.

A. inca'na (hoary). 1½. Pale blue. August. Columbia. 1827.
„ *polysta'chya.* 2. White. October. California. 1849.

AUDOUI'NIA. (Named after *Audouin*, a celebrated entomologist. Nat. ord. *Bruniads* [Bruniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)
Greenhouse evergreen under-shrub. Cuttings of half-ripened wood, in sand, in close frame with a slight bottom-heat; peat and loam. Winter temp., 45°.

A. capita'ta (headed). 1½. Purple. June. Cape of Good Hope. 1790.

AULACOSPE'RMUM. See PLEUROSPERMUM.

AU'LAX. (From *aulax*, a furrow; in reference to the furrowed under side of the leaves. Nat. ord. *Proteads* [Proteaceæ]. Linn. 22-*Diœcia*, 4-*Tetrandria.*)
Greenhouse evergreen shrubs. Ripe cuttings, in sandy soil, in close frame with bottom-heat; loam and peat. Winter temp. 45° to 50°.

A. cneorifo'lia. 2. Yellow. July. Cape of Good Hope. 1774.
„ *pinifo'lia* (pine-leaved). 2. Yellow. August. Cape of Good Hope. 1780.
„ *umbella'ta* (umbelled). See A. CNEORIFOLIA.

AURI'CULA. (*Pri'mula Auri'cula.*) The Bear's Ear, or Mountain Cowslip.
The varieties of this flower are very numerous, and their numbers are annually increased. They are divided into five classes—(1) *Green-edged*; (2) *Grey-edged*; (3) *White-edged*; (4) *Selfs*, or one coloured; and (5) *Alpines*, which have the outer edge of the petals shaded by a mixture of two colours, not separated into distinct bands of colour, as in the edged varieties; and there is no paste round the tube as it is in the edged and selfs.
"As florists have several terms relative to the Auricula, which may not be understood by every amateur, we may as well explain that the *thrum* is a collective name for the stamens in the very centre or *tube* of each flower. *Paste*, in the edged and self varieties, is the white colour next round the edge of the tube, or *eye*, of the flower: this part is yellow in the Alpines, without paste. *Ground-colour* is the next colour to this on the petal, being the distinctive colour of the variety. *Edge* is the outer colour of all, forming the border of the flower. A *Pip* is the single flower, and a *Truss* is several pips, with their several footstalks springing from one stem common to them all.
"The properties of the Auricula may be divided into two series, namely, those of the single pip, and those of the single plant.
"*The Pip.*—1. Should be circular, large, with petals equal, firm, fleshy, smooth at the edges, without notch or serrature, and perfectly flat.
"2. The centre, or tube, should not exceed one-fourth of the diameter of the pip; it should be of a fine yellow or lemon colour, perfectly round, well filled with the anthers, or thrum, and the edge rising a trifle above the paste, or eye.
"3. The paste, or eye, should be perfectly circular, smooth, and of a dense, pure white, without crack or blemish, forming a band not less than half the width of the tube, and encircling it.
"4. The ground-colour should be dense, whole, and form a perfect circle next the eye. The brighter, darker, or richer the colour, the better the flower; but if it be paler at the edges (where they are parted into five), or have two colours or shades, it is a fatal defect.
"5. The margin, or outer edge, should be a clear, unchangeable green, grey, or white, and be about the same width as the ground-colour, which must in no part go through to the edge. From the edge of the paste to the outer edge of the flower should be as wide as from the centre of the tube to the outer edge of the paste. In other words, the proportions of the flowers may be described by drawing four circles round a given point, at equal distances; the first circle forming the tube, the second the white eye, the third the ground-colour, and the fourth the outer edge of the flower; and the nearer they approximate to this (except that the ground-colour, which may be a little broader than the other bands, and the green or grey edge, may run into each other in feathery points), the better the flower. The colours should not be liable to fly, as is the defect of Stretch's Alexander, the colours of which fade in three or four days.
"*Of the Plant.*—1. The stem should be strong, round, upright, elastic, bearing the truss upright without support, and from four to seven inches high, so as to carry the truss well, but not too high above the leaves.
"2. The length and strength of the foot-stalks of the pips should be so proportioned to the number and size of these, that all the pips may have room to show themselves, and to form a compact, semi-globular truss of flowers, not less than five, though we prefer seven in number, without lapping over each other. The pips should be all alike in colour, size, and form, so as not to be easily distinguished from one another; for, otherwise, the unity and harmony of the truss will be destroyed, and, although ever so beautifully formed, would appear as if taken from different sorts of Auricula. An Auricula ought to flower freely, and expand all its pips at the same time; for, by this means, the colours in them all will appear equally fresh and lively; whereas, in those trusses that do not open some of the pips till others have passed their prime, the whole appearance of the truss is impaired.
"3. The truss is improved if one or more leaves grow, and stand up well behind the bloom; for it assists the truss, and adds much to the beauty of the bloom, by forming a green background.
"4. The foliage, or grass, should be healthy, well-grown, and almost cover the pot.
"We are of opinion that all these criteria are founded upon the dictates of correct taste; but, as these excellencies are never combined in one variety, and as some, being equals in many qualities, are mutually superior in others, the question constantly arises, at Auricula exhibitions, as to which variety has the preponderance of merit. Now, we are clearly of opinion that *form*, including in this the relative proportions of the colours on the pips, the half-globular form of the truss, the number of pips, &c., is by far the most striking excellence in an Auricula. Next to this we should place the harmony, or, as we should prefer, the agreeable contrast, or complemental association of the colours."
Propagation is effected by taking slips from, and dividing roots of, approved varieties, after the seed has ripened, in July and August, and by the seed itself.
Raising Varieties.—The parent plants should be vigorous; and, before the pips of the mother-plant are quite open, cut off the anthers of all of them with a pair of sharp-pointed scissors, cover with a hand-glass, dust the pistil with pollen from the father-plant, and

keep the hand-glass over as before, until the flower, beginning to fade, shows that there is no danger of any other pollen being intruded to frustrate your object. Gather the seed-vessels as they become brown, in June and July; place them in the sun, on a sheet of white paper, until they burst. Rub out the seeds, and sow them early in September, or keep them in the seed-vessels, in a dry place, until March, which is better. Sow them in a warm border of light soil, or in boxes, under glass; cover them with light sandy soil. See PROPAGATING. Keep the seedlings free from weeds, and, when they have four or five leaves, transplant them from the boxes, or from the border, into a similar border, in rows eight inches apart each way, there to remain until they flower, which will be next spring. Those that you mark as good must be potted as soon as the bloom is over, and treated as we shall direct for established old plants.

Culture of Established Plants.—The choice sorts grown in pots should have attention as soon as they have done flowering. All that are not required for seeding should have the flower-stems removed, and a little later the plants may be re-potted. It is better to leave them until a good many of the old leaves at the base can be removed, which allows the plants to be potted down to cover the stem, for it is from the stem made during the previous season that new roots are made. The most suitable compost consists of good yellow loam, with the addition of some leaf-mould and cow-dung, which should be thoroughly dried and some soot added, also some sand, and good drainage should be given. When re-potting some of the old roots may be cut away and much of the old soil shaken out. It is necessary to be careful to work the soil well among the roots. Some authorities recommend the use of oyster-shells for drainage; a few small pieces in each pot may be beneficial, but they should not be used too liberally; pot fairly firm, and do not fill the pots too full, for in the spring the plants will be benefited by a top-dressing. When this is done all decayed leaves should be removed, also the surface soil as far down as can be done without disturbing the roots, and the soil in the pots must be moderately moist when this is done. Much depends upon the condition of soil and handling the plants when potting; the roots should not be exposed or allowed to get dry. After potting a slight surface watering may be given, and the plants placed in a pit or frame; previous to doing this, the ground may have a good watering with weed-killer, and a surfacing of coal ashes. For the first few days the lights may be kept on, giving a little air and shading from bright sunshine. As soon as re-established they should be well exposed, but are better where they do not get full exposure to the sun. For ordinary culture the side growths (or suckers) may remain, but for exhibition only one crown should be grown. The side shoots, if taken off carefully, will give further stock. The Alpine varieties may be raised from seed, but it takes two years to make effective plants; though seed sown in May will produce plants that will flower the following spring, but they will only be fit for selection for the following year. From seed we get such a large number of plants that they may be grown closely together the first season, and when they flower the weedy ones may be pulled out, and any of special value labelled.

To get good results much depends upon winter treatment. Although quite hardy when grown in the ground the pot-plants should have some protection, but only in very severe weather should they be kept under close frames; in all favourable weather the lights should be taken off. Many plants are spoiled through being kept too close in mild weather during the winter, and the Auriculas are among the plants that must have plenty of light and air.

The spring treatment of those grown in pots will depend to some extent upon the time they are required to come into flower. They cannot be forced, but placed on a shelf in a cool greenhouse where they are fully exposed to the sun they come on early. When they begin to start into growth after clearing off any bad leaves they may be surfaced, as recommended above. Watering is an important factor; careful attention, and liquid manure made from cow-dung will greatly assist growth. See MANURES. When in flower, those with the farina, or paste on the flowers, must be protected from wet; they will also last longer if shaded from the sun.

Diseases.—The Auricula is not subject to so many diseases as most plants; canker or ulceration of the roots being the chief trouble. This may be averted by careful potting and the occasional use of lime water. Like most other root diseases, it is brought about by inattention to watering. If the plants get too dry the roots suffer and cannot take up the water, and this causes canker and decay.

AVE'NA. A genus of the Nat. ord. *Grasses*, of which it is only necessary to observe here that one of its species, *Ave'na sati'va*, is the Oat.

A'VENS. *Ge'um.*

AVENUE. Trees planted in a straight line on either side of a roadway; the Chestnut Avenue at Hampton Court is a good example It is rarely that modern landscape gardeners follow this formal way of planting.

AVERRHO'A. (Named after *Averrhoes*, a Spanish physician. Nat. ord. *Oxalids* [Geraniaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)

The leaves of *A. Cara'mbola* exhibit that kind of irritability we call "sensitive." The fruit of both species is eaten in India; but its acidity is intolerable to Europeans. Stove evergreen shrubs; half-ripened cuttings in April, in sand, loam, and peat in close frame with bottom-heat; loam and peat. Summer temp., 60° to 85°; winter, 55° to 60°.

A. Bili'mbi (bilimbi-*tree*). 8. Reddish-yellow. August. E. Ind. 1791.
„ *Carambo'la*. 14 to 20. 1793.

AVERRUNCATOR (from the Latin *averrunco*, to prune). A small pair of powerful shears, on a long handle, for severing boughs on lofty trees.

AVIARY. This building, devoted to the preservation of live birds, distinguished for the beauty either of their notes or plumage, is rarely admitted within a garden; and still more rarely is it sufficiently ornamental, or sufficiently free from disagreeables, to be a source of pleasure.

AVOCA'DO. See PERSE'A GRATI'SSIMA.

AXIL. This term, meaning, literally, the *arm-pit*, is used by botanists to indicate the point of the angle between a leaf and a branch, or between a branch and the stem.

AYE'NIA. (Named after the *Duke d'Ayen*. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove plants; cuttings in sand; rich soil; ordinary stove treatment.

A. læviga'ta (smooth). 2. Scarlet. Jamaica. Evergreen under-shrub.
„ *pusi'lla* (small). 1. Purple. August. Jamaica. 1756. Biennial.

AZA'LEA. (From *azaleos*, dry; in reference to the habitation of the plant. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

It was said that the Pontic honey which stupefied the Greek soldiers was collected from *Rhodode'ndron po'nticum*; but Pallas believes it to have been gathered from *Aza'lea po'ntica*. Some authorities include the Azaleas with Rhododendrons. I find this is done in the published awards made by the Royal Horticultural Society. This brings in a difficulty, for *Azalea pontica* is quite a different plant to *Rhododendron ponticum*. This may have caused the confusion referred to in the old edition, and which has been repeated without alteration in a later edition. *Azalea pontica* is *Rhododendron flavum*, if placed in that genus. Where the specific name is changed under Rhododendron, the name is given under Azalea as a synonym. All the greenhouse species are evergreen, except *A. squama'ta*; and all the hardy species are deciduous. The hardy species, by layers, made in summer and autumn, and doing best in sandy peat, though many will thrive well in peat and loam; the Indian species and varieties are propagated by seed, and cuttings of stiff, but not overhard, shoots, inserted in sand, under a bell-glass; sandy peat. Summer temp., 60° to 75°, if required to bloom early; winter, 45° to 55. A lower temperature will suit, if late bloom is wanted.

HARDY.

A. arbore'scens (tree-like). 10. Red. June. N. Amer. 1818.
„ *bi'color* (two-coloured). 4. Scarlet. June. N. Amer. 1734. Syn. *Rhododendron nudiflorum.*
„ *cane'scens* (hoary). 3. Red. June. N. Amer. 1812. Syn. *Rhododendron nudiflorum.*
„ *calendula'cea* (marigold-like). 4. Orange. June. N. Amer. 1806.
„ „ *chrysole'cta* (fine-golden). 4. Yellow. June. N. Amer.
„ „ *cro'cea* (saffron-coloured). 4. Saffron. June. N. Amer.
„ „ *cu'prea* (copper-coloured). 4. Copper. June. N. Amer.
„ „ *fla'mmea* (flame-coloured). 4. Red. June. N. Amer. 1812.
„ „ *grandiflo'ra* (large-flowered). 4. Orange. June. N. Amer.
„ „ *igne'scens* (fire-coloured). 1. Red. June. N. Amer.
„ „ *sple'ndens* (shining). 4. Orange. June. N. Amer.
„ „ *triu'mphans* (triumphant). 4. Orange. June. N. Amer.
„ *glau'ca* (*dwarf*-glaucous). 2. White. June. N. Amer. 1734. Syn. *Rhododendron viscosum glaucum.*
„ *hi'spida* (bristly). 5. White. June. N. Amer. 1734. Syn. *Rhododendron viscosum.*
„ *hy'brida Daviesii* (Gfl., 1893, 65, t. 1387). White. Garden hybrid.
„ *ledifo'lia* (ledum-leaved). 2. White. April. China. 1824.
„ *ni'tida* (shining-*leaved*). 4. White. April. N. Amer. 1812. Syn. *Rhododendron viscosum nitidum.*
„ *nudiflo'ra* (naked-flowered). 3. Deep pink. June. N. Amer. 1734.
„ „ *a'lba* (*early*-white). 4. White. June. N. Amer.
„ „ *a'lba-ple'na* (double-white). 4. White. June. N. Amer.
„ „ *bla'nda* (soft). 4. Blush. June. N. Amer.
„ „ *ca'rnea* (flesh). 4. Pale red. June. N. Amer. 1734.
„ „ *carolinia'na* (Carolina). 4. Scarlet. June. N. Amer.
„ „ *Cobu'rghii* (Coburg's). Scarlet. June. N. Amer.
„ „ *cocci'nea* (scarlet). 4. Scarlet. June. N. Amer.
„ „ *corymbo'sa* (corymbose). 4. Scarlet. June. N. Amer.
„ „ *cri'spa* (curled). 4. Pink. June. N. Amer.
„ „ *cumula'ta* (bundled). 4. Scarlet, pink. June. N. Amer.
„ „ *di'scolor* (two-coloured). 4. White, scarlet. June. N. Amer.
„ „ *fastigia'ta* (pyramidal). 4. Pink. June. N. Amer.
„ „ *flo'rida* (many-flowered). 4. Pink. June. N. Amer.
„ „ *globo'sa* (globe-like). 4. Pink. June. N. Amer.
„ „ *glomera'ta* (round-headed). 4. Pink. June. N. Amer.
„ „ *inca'rnata* (hoary). 4. Pink. June. N. Amer.
„ „ *incarna'ta* (flesh-coloured). 4. Flesh. June. N. Amer.
„ „ *mira'bilis* (wonderful). 4. Scarlet. June. N. Amer.
„ „ *magni'fica* (magnificent). 4. Scarlet. June. N. Amer.
„ „ *monta'na* (mountain). 4. Scarlet. June. N. Amer.
„ „ *pa'llida* (pale-*flowered*). 4. Pale red. June. N. Amer.
„ „ *paludo'sa* (marsh). 4. Pale red. June. N. Amer.
„ „ *papiliona'cea* (butterfly). 4. Striped. June. N. Amer.
„ „ *parti'ta* (*five*-parted). 4. White and red. June. N. Amer.
„ „ *parviflo'ra* (small-flowered). 4. June. N. Amer.
„ „ *proli'fera* (proliferous). 4. June. N. Amer.
„ *pu'mila* (dwarf). 4. White. June. N. Amer.
„ „ *purpura'scens* (purplish). 4. Purple. June. N. Amer.
„ „ *purpu'rea* (purple). 4. Purple. June. N. Amer.
A. nudiflo'ra purpu'reo-ple'no (double-purple). 4. Purple. June. N. Amer.
„ „ *ro'sea* (rosy). 4. Red. June. N. Amer.
„ „ *rube'rrima* (reddest). 4. Dark red. June. N. Amer.
„ „ *rube'scens* (reddish). 4. Red. June. N. Amer.
„ „ *rubicu'nda* (ruddy). 4. Red. June. N. Amer.
„ „ *ru'bra* (red). 4. Red. June. N. Amer.
„ „ *ru'tilans* (shining-red). 4. Dark red. June. N. Amer.
„ „ *semidu'plex* (semi-double). 4. White. June. N. Amer.
„ „ *stami'nea* (long-stamened). 4. Red. June. N. Amer.
„ „ *stella'ta* (starry). 4. Red. June. N. Amer.
„ „ *tri'color* (three-coloured). 4. Scarlet, white. June. N. Amer.
„ „ *varia'bilis* (variable). 4. Red. June. N. Amer.
„ „ *variega'ta* (variegated). 4. Red and white. June. N. Amer.
„ „ *versi'color* (party-coloured). 4. Red and white. June. N. Amer.
„ „ *viola'cea* (violet-coloured). 4. Violet. June. N. Amer.
„ *po'ntica* (Pontic). 6. Yellow. June. Turkey. 1793. Syn. *Rhododendron flavum.*
„ „ *albiflo'ra* (white-flowered). 6. White. May. Turkey.
„ „ *a'rdens*. Glowing red.
„ „ *corona'rium* (garland). 7. Yellow. June. Holland. 1832.
„ „ *cu'prea* (copper-coloured). 6. Copper. June. Turkey.
„ „ *glau'ca* (milky-green-*leaved*). 6. Yellow. June. Turkey.
„ „ *pa'llida* (pale). 6. Pale yellow. April. Turkey.
„ „ *tri'color* (three-coloured). 6. Pale red. April. Turkey.
„ *rubiflo'ra flo're ple'no* (Fl. and P., 1882, 89). Lilac pink, spotted with carmine-purple. Double. Japan.
„ *ru'stica flo're ple'no* (R. H., 1893, 195). Garden race, stated to be derived from *A. mollis* and *A. occidentalis.*
„ *specio'sa* (showy). 4. Scarlet. June. N. Amer.
„ „ *acutifo'lia* (pointed-leaved). 4. June. N. Amer.
„ „ *aura'ntia* (orange). 4. Orange. June. N. Amer.
„ „ *cilia'ta* (fringed). 4. June. N. Amer.
„ „ *cri'spa* (curled). 4. Scarlet. June. N. Amer.
„ „ *cuculla'ta* (hooded). 4. June. N. Amer.
„ „ *ma'jor* (larger-*scarlet*). 4. Scarlet. June. N. Amer.
„ „ *obli'qua* (unequal-sided). 4. June. N. Amer.
„ „ *prunifo'lia* (plum-leaved). 4. June. N. Amer.
„ „ *revolu'ta* (rolled-back-*leaved*). 4. June. N. Amer.
„ „ *tortulifo'lia* (twisted-leaved). 4. June. N. Amer.
„ „ *undula'ta* (waved-*leaved*). 4. June. N. Amer.
„ *visco'sa* (clammy). 2. White. July. N. Amer.
„ „ *cri'spa* (curled). 4. White. July. N. Amer.
„ „ *dealba'ta* (whitened). 4. White. July. N. Amer.
„ „ *fi'ssa* (cleft). 4. White. July. N. Amer.
„ „ *glau'ca*. 2. White. June. N. Amer.
„ „ *ni'tida* (shining). 2 to 4. White, tinged red. N. Amer. 1812.
„ „ *odora'ta* (scented). 4. White. July. N. Amer.
„ „ *penicilla'ta* (pencilled). 4. White. July. N. Amer.
„ „ *pube'scens* (downy). 4. White. July. N. Amer.
„ „ *rube'scens* (reddish). 4. White. July. N. Amer.
„ „ *variega'ta* (variegated). 4. White. July. N. Amer.
„ „ *vitta'ta* (banded). 4. White. July. N. Amer.

GREENHOUSE.

A. ama'na (bright-*flowered*). 1. Crimson, purple. April. Shanghai.
„ *balsamæflo'ra*. Salmon-red. Japan. 1848.
„ *crispiflo'ra* (crisped-flowered). Rose. April. China.
„ *danielsia'na* (Daniel's). 3. Carmine. June. China. 1830.
„ *dianthiflo'ra*. Rose or violet, dotted brown. Japan. 1889.
„ *i'ndica* (Indian). 4. Scarlet. June. China.
„ „ *auranti'aca* (orange). 4. Orange. April. China. 1822.

A. i'ndica igne'scens (fire-coloured). 2. Brown. April. China.
,, ,, *lateri'tia* (brick-red-*coloured*). 2. Red. May. China. 1833.
,, ,, *phœni'cea* (purple). 3. Purple. April. China. 1824.
,, ,, *purpu'reo-ple'na* (double-purple). 4. Purple. May. China. 1819.
,, ,, *variega'ta* (variegated). 4. Striped. June. China. 1824.
,, *linearifo'lia*. Rose. February. Japan. 1869.
,, *mo'llis*. Yellow, rose, orange, white. Japan. 1867. See A. SINENSIS.
,, ,, *gla'brior*. Orange. Japan. 1868.
,, *obtu'sa* (blunt-*leaved*). 1½. Red. March. China. 1844.
,, ,, *a'lba* (Veitch Cat., 1887, 9). Japan.
,, *occidenta'lis*. White, yellow. California.
,, *Oldha'mi*. See RHODODENDRON OLDHAMI.
,, *ova'ta* (egg-shape-*leaved*). 8. Pink. China. 1844.
,, ,, *a'lba* (white-flowered). 8. White. May. N. China. 1844.
,, *ramenta'cea*. White. March. Hong-Kong. 1846.
,, *rosæflo'ra*. Lake-red (double). Japan. 1848. See A. BALSAMINÆFLORA.
,, *serpyllifo'lia*. White. Japan. 1882.
,, *sine'nsis* (Chinese). 3. Yellow. May. China. 1823. Syn. *A. mollis*.
,, *squama'ta* (scaly). 2. Rose, crimson. March. China. 1844. Syn. *R. Farrerœ*.
,, *stenope'tala*. Rosy. Japan. 1864.

AZALEAS (AMERICAN). These include what are called *Ghent Azaleas*, which are seedling varieties of *A. calendula'cea*, *A. nudiflo'ra*, *A. specio'sa*, and *A. visco'sa*. The varieties were first raised in the neighbourhood of Ghent.

Propagation.—By layers in the month of March; the layers require notching or twisting. If the part buried in the ground is covered with moss they will root more freely. They should not be taken off the parent till after the second year's growth. Many of these are now raised from seeds.

Soil.—Sandy peat, in a dry situation, at least eighteen inches deep; but, in a damp one, a foot deep will be sufficient.

Culture.—In spring, protect the young shoots and flowers by hoops in low situations, as the late frosts often destroy the young, early shoots. In winter, and in summer, if the soil is very dry, cover the bed with green moss.

Diseases.—Sometimes the plants die off just at the surface of the soil, owing to too much moisture. The remedy, if the situation is low and damp, is either to drain it thoroughly, or to raise the bed completely above the general level of the ground.

Varieties may be raised by crossing the kinds in such a way as is likely to effect a pleasing change. Choose the best forms and brightest colours; let the plants with flowers of the best form be the seed-bearing mother, and rely for the colour upon the pollen of the male. Sow the seed in April, in pans, placed under a cold frame; prick the seedlings out the year following in beds, four inches apart, to remain till they flower.

AZALEAS (INDIAN OR CHINESE).

Raising Varieties.—The best and most certain way to obtain new varieties is by impregnating the best-shaped flowers with the pollen of some fine, high-coloured variety. Remove the anthers before they burst from the one intended to seed; cover with fine gauze the flower impregnated, to prevent impregnation by insects. When the seed is ripe, gather it, and sow it the February following in shallow pans, in a gentle heat. As soon as the seedlings have two or three leaves, transplant them into fresh, sandy peat, in deeper pans. They may remain in these pans till the spring following; then pot them singly into 2½-inch pots, and grow them on, repotting them as they require it, till they flower.

Propagation by Cuttings.—Take the young tops, three inches long; dress them by cutting off the bottom leaves. Fill a pot, to within an inch of the top, with sandy peat; fill up the rest with silver sand; put in the cuttings thickly; water gently. Place in a close frame where there is a slight bottom-heat and a cool surface, and when rooted gradually expose them. They should thus remain till rooted; then place them in a greenhouse for a week or two. They may then be potted off singly into small pots, and placed in a close frame till fresh roots are made; then gradually inure them to bear the full sun and air; re-pot, and grow on to any size required.

Propagation by Grafting.—See GRAFTING. The best mode is that called *side-grafting*. The grafts must be very small,—not more than 1 to 1½-inch long; tie them with worsted, or thick cotton thread, to the stock. The best time is early spring. Place the grafted plants in a close frame, in gentle heat. *The stock* most suitable is the common form of *Aza'lea i'ndica* or *A. phœni'cea*, both easy to strike.

Soil.—Sandy peat three-fourths, light loam one-fourth.

Summer Culture.—Azaleas require the same treatment as Camellias. After the bloom is over give them a moderate degree of artificial heat, 55° to 60°. Syringe them freely during that period. As soon as they have made their growth, give plenty of air for a fortnight, and then set them behind a low, north wall till autumn.

Winter Culture.—As soon as there is any fear of frost, remove them into an airy greenhouse, and keep them just from frost, and give very moderate supplies of water. When they begin to show flower, give more heat, and a more liberal supply of water.

Insects.—The *Thrips* is the great pest of Azaleas; but the *Green-fly* is also apt to trouble them when growing. Both insects may be destroyed by tobacco-smoke frequently applied.

Diseases.—These plants are often attacked by a disease which causes them to die off just at the crown of the roots. The small-leaved varieties, such as *A. i'ndica*, var. *Gledstane'sii*, *lateri'tia*, and *variega'ta*, are especially subject to die off thus prematurely. This is caused by a fungoid disease, which may be checked by the use of lime and sulphur.

AZALEA'STRUM ALBIFLO'RUM. See RHODODENDRON ALBIFLORUM.

AZA'RA. (Named after *J. N. Azara*, a Spanish patron of botany. Nat. ord. *Bixads* [Bixaceæ]. Linn. 3-*Polyandria* 1-*Monogynia*.)

Greenhouse evergreens. Cuttings in sand, peat, and loam, in close frame, with bottom-heat. Sandy loam. Summer temp., 60° to 75°; winter, 55° to 60°.

A. denta'ta (toothed-*leaved*). 10. Yellow. Chili. 1830.
,, *Gillie'sii* (B. M., t. 5178). 15. Yellow. Spring. Chili. 1859.
,, *integrifo'lia* (entire-leaved). 18. Conception. 1832.
,, *microphy'lla*. 12. Greenish. Autumn. Chili. 1873.
,, *serra'ta* (saw-edged). 12. Chili. 1832.

AZI'MA. (From *azimena*, the Malagasy name of a shrub. Nat. ord. Salvadoraceæ.)

A. tetraca'ntha (four-spined). 3. White. July. India. 1758.

AZO'LLA. (From *azo*, to dry, and *ollo*, to kill. Nat. ord. Marsileaceæ.)

A half-hardy aquatic that has escaped into ditches and streams in some parts of England. It is usually grown in greenhouses and stoves, and floats on the surface of the water, in water-lily and other tanks.

A. carolinia'na. ¼. Leaves minute, green, or red outdoors.
,, *pinna'ta*, of gardens. See A. CAROLINIANA.

B

BABIA'NA. (From *babianer*, the Dutch for baboon; in reference to the bulbs being eaten by the baboons. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

All greenhouse bulbs, from the Cape of Good Hope. Offsets; sandy peat and loam; water freely when growing. Keep dry when at rest. Those potted in autumn must be kept in a cold pit or greenhouse during winter. Those planted in spring, in a warm border, should be taken up before winter, and kept secure from frost.

B. angustifo'lia (narrow-leaved). See B. STRICTA.
,, *bi'color* (two-coloured). Blue, white. June. 1843.

B. di'sticha (two-ranked). ½. Blue. June. 1774.
„ *flabellifo'lia* (I. S. H. T., 161, t. 200). S. Africa. 1906.
„ *mucrona'ta* (sharp-pointed). ½. Purple. June. 1825.
„ *na'na* (dwarf). ½. Blue. April. 1807.
„ *obtusifo'lia* (blunt-leaved). See B. STRICTA.
„ *plica'ta* (folded). ½. Purple. May. 1774.
„ „ *mu'ltiplex* (full-*flowered*). ½. Purple. June. 1834.
„ *purpu'rea* (purple). ½. See B. STRICTA.
„ *ri'ngens* (gaping-*flowered*). ½. Purple. May. 1752.
„ *rubrocya'nea* (red and blue). See B. STRICTA.
„ *sambu'cina* (elder-*scented*). ½. Blue. April. 1799.
„ *socotra'na* (B. M., t. 6585). Violet-blue. Socotra.
„ *spatha'cea* (sheathy). ½. Light blue. June. 1801.
„ *stri'cta* (upright). 1. Blue, white. May. 1757.
„ „ *angustifo'lia*. 1. Bright blue. May and June. 1757.
„ „ *obtusifo'lia*. ½. Blue. May. 1825.
„ „ *purpu'rea*. ½. Purple. 1806.
„ „ *ru'bro-cya'nea*. Blue and crimson. May, June. 1796.
„ „ *sulphu'rea* (B. M., t. 1053). Cream-coloured or pale yellow. April. May. 1795. Syns. *Gladiolus sulphureus, G. plicatus.*
„ „ *villo'sa* (B. M., t. 583). Brilliant crimson, with violet-blue anthers. August. 1778.
„ *sulphu'rea* (sulphur-*flowered*). See B. STRICTA.
„ *tenuiflo'ra* (slender-flowered). ½. Purple. May. 1825.
„ *Thunbe'rgii* (Thunberg's). 1. White and red. April. 1774.
„ *tuba'ta* (*long*-tubed). ½. Yellow and red. June. 1774. Syns. *Gladiolus tubatus* and *G. longiflorus.*
„ *tubiflo'ra* (tube-flowered). ½. Dark red. May. 1774. Syn. *Gladiolus tubiflorus.*
„ *villo'sa* (hairy). See B. STRICTA.

BABINGTO'NIA. (Named in compliment to *Charles Babington, Esq.*, of Cambridge, a distinguished botanist. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Leptospermum and now referred to Bæckea.)

A greenhouse evergreen shrub. Cuttings of half-ripened wood in sand and peat in close frame; pot in loam, leaf-mould, well dried cow-manure and sand added; good drainage. Winter temp., 45° to 50°.

B. Camphoro'smæ (camphor-smelling). 7. Pinkish. July. Swan River. 1841.

BACA'SIA. See BARNADE'SIA.

BA'CCHARIS. Ploughman's Spikenard. (From *Bacchus*, wine; referring to the spicy odour of the roots. The ancients sometimes boiled down their wines, and mixed them with such spices. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Cuttings under glass, with or without heat, according as the species are stove, greenhouse, or hardy; loam and peat.

GREENHOUSE.

B. ala'ta (winged-*stemmed*). See B. GENISTELLOIDES.
„ *angustifo'lia* (narrow-leaved). 2. White. July. N. Amer. 1812.
„ *genistelloi'des*. 5. Pale yellow. December. Peru. 1829.
„ *ivæfo'lia* (iva-leaved). See CONYZA IVÆFOLIA.

STOVE.

B. adna'ta (adhering-*stamened*). See PLUCHEA SUBDECURRENS.
„ *confe'rta* (crowded). 3. White. July. Mexico. 1826.
„ *glutino'sa* (clammy). 3. White. August. Peru. 1824.
„ *i'ndica*. See PLUCHEA INDICA.
„ *margina'lis*. 3. White. July. Peru. 1820.
„ *scopa'ria*. 3. Cream-coloured. July. Jamaica. 1820.
„ *tripline'rvis*. Purple. November. Brazil. 1825.

HARDY.

B. Diosco'ridis. See PLUCHEA DIOSCORIDIS.
„ *glomeruliflo'ra*. 3. White. August. N. Amer. 1817.
B. halimifo'lia. 6 to 12. White. July. N. Amer. "Groundsel Tree."
„ *lycopodioi'des*. See ERIOTHRIX JUNIPERIFOLIA.
„ *neriifo'lia*. See BRACHYLÆNA NEREIFOLIA.
„ *patago'nica*. Strait of Magellan.
„ *sali'cina* (Späth Cat., 1894, 5). 6. Gray-green leaves. Western N. Amer.
„ *tri'mera* (R. H., 1896, 152, ff. 50–52). See B. GENISTELLOIDES.

BACKHO'USIA. (Complimentary to the late *Mr. James Backhouse*, of York, a noted botanical traveller. Nat. ord. Myrtaceæ.)

A greenhouse evergreen shrub, propagated from half-ripened growths in spring, in sandy soil, close frame. Pot in loam, leaf-mould, and sand, but if loam is heavy add some peat.

B. myrtifo'lia (B. M., t. 4133). 16. White. May. New South Wales. 1844.

BACO'NIA. A synonym of Pavetta.

BA'CTRIS. (From *baktron*, a cane; the young stems being used for walking-sticks. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*. Allied to Cocos.)

Palm walking-sticks are much used in England, under the name of *Penang lawyers*. All stove palms. Seeds; sandy loam. Summer temp., 65° to 85°; winter, 60°.

B. baculi'fera. Leaves pinnate. 2 ft. to 6 ft. long. Mexico.
„ *caryotæfo'lia* (caryota-leaved). 10. Brazil. 1825.
„ *cuspida'ta* (tapering-*leaved*). 20. Brazil. 1826.
„ *flavispi'na*. See B. PALLIDISPINA.
„ *globo'sa mi'nor*. See ACROCOMIA MINOR.
„ *guiane'nsis* (Guiana). 16. Guiana. 1820.
„ *macraca'ntha* (long-spined). 20. Brazil. 1823.
„ *ma'jor* (greater). 25. Carthagena. 1800.
„ *Mara'ja* (Maraja Palm). 30 to 50. Yellow. Bahia. 1868.
„ *mi'nor* (less). 12. S. Amer. 1691.
„ *pallidispi'na* (pale-spined). Guiana.
„ *pectina'ta* (comb-*leaved*). 15. Brazil. 1825.
„ *simpli'cifrons* (leaves undivided). Brazil.
„ *trichospa'tha* (hairy spathed). Brazil.

BACULA'RIA. (From *baculum*, a walking-stick. Nat. ord. Palmaceæ.)

This genus contains two species; the species *monosta'chya* is known as the Walking-stick Palm, by reason of its providing slender sticks useful for the purpose. Raised from seeds, and ordinary treatment as for temperate Palms.

B. mi'nor. Leaves 3½ ft. Queensland.
„ *monosta'chya* (B. M., t. 6644). 10. New South Wales. 1824. Syn. *Areca monostachya.*

BADGER'S BANE. *Aconi'tum melo'ctonum.*

BÆ'A. (Named in compliment to the *Rev. Dr. Beau*, of Toulon, brother-in-law to Commerson, the discoverer of the genus. Nat. ord. Gesneraceæ. The name is more correctly written Bœa.)

Interesting herbaceous perennials, raised from seeds in good rich loam, greenhouse treatment.

B. hygrome'trica (B. M., t. 6468). Pale blue, yellow throat. Summer. N. China. 1868.

BÆ'CKEA. (Named after *Dr. Bæck*, a Swedish physician. Nat. ord. *Myrtle-blooms* [Myrtaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. All white-flowered. Cuttings in spring, under a glass; sandy peat, and lumpy, fibrous loam. Winter temp., 40° to 45°.

B. astarteoi'des. 3. White, shaded pink. June. Australia. 1881.
„ *camphora'ta* (camphor-*scented*). 3. July. N. Holland. 1818.
„ *Camphoro'smæ* (B. R., 1842, t. 10, 7). Pinkish. July. Swan River. 1841. Syn. *Babingtonia Camphorosmæ.*
„ *densifo'lia* (thickly-leaved). 3. September. New South Wales.
„ *diosmifo'lia* (diosma-leaved). 3. August. N. Holland. 1824.
„ *frute'scens* (shrubby). 3. November. China. 1806.

B. gra'cilis (slender). 2. N. Holland. 1826.
,, *linifo'lia* (flax-leaved). 3. August. N. Holland. 1818.
,, *pa'rvula* (Gfl., t. 886, f. 2). See B. VIRGATA.
,, *ramosi'ssima* (branchiest). 3. N. Holland. 1824.
,, *saxi'cola* (rock-dwelling). 2. July. N. Holland. 1824.
,, *virga'ta* (twiggy). 3. September. New Caledonia. 1806.

BÆOBO'TRYS I'NDICA (B. M., t. 2052). See MÆSA INDICA.

B. pube'scens. See MÆSA PUBESCENS.

BÆOME'TRA. (From *baios*, small, and *metron*, a measure, or height; literally, of small stature. Nat. ord. Liliaceæ.)
Half-hardy or greenhouse bulb. Offsets. Loam, peat, and sand.

B. columella'ris (small-column). ¾. White, yellow. June. S. Africa. 1787.

BÆ'RIA. (Named after *Professor Bær*, of the University of Dorpat. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy annuals. Seeds, in March and April; common soil.

B. chryso'stoma (golden-mouthed). 1. Yellow. May. California. 1835.
,, *gra'cilis* (B. M., t. 3758). Yellow. California. Syn. *Burrielia gracilis*.

BAHI'A. (Apparently from Port of Bahia or San Salvador, S. Amer. Nat. ord. Compositæ.)
Useful hardy herbaceous perennials of branching habit and silvery grey appearance, propagated from seed or divisions.

B. confertiflo'ra (Gfl., 1888, 329, t. 1275, f. 1). Yellow radiate flower heads. California.) See ERIOPHYLLUM CONFERTIFLORUM.
,, *lana'ta* (B. R., t. 1167). Yellow. May. N. Amer. See ERIOPHYLLUM CÆSPITOSUM.
,, *oppositifo'lia*. 1. Yellow. N. W. Amer. Syn. ERIOPHYLLUM OPPOSITIFOLIUM.

BAIKIÆ'A. (Probably commemorative. Nat. ord. Leguminosæ.)
Evergreen stove tree. Cuttings in sand in a close case, with bottom-heat. Loam, peat, and sand.

B. insi'gnis (remarkable). 30–40. Lemon-yellow, snow-white, 10 in. across. W. Trop. Africa. 1909.

BAKED is a term descriptive of the hard, impervious state of clayey soils, long exposed to drought. It can be prevented only by altering the staple of the soil, by the admixture of sand, chalk, coal-ashes, and other matters less cohesive than clay.

BAKE'RIA OF ANDRE'. (Named after *Mr. J. G. Baker*, F.R.S., of Kew. Nat. ord. Bromeliaceæ.)
Treatment as for Tillandsias, which require stove temperature.

B. tillandsioi'des (R. H., 1889, t. 84). Rosy-purple. Brazil.

BAKE'RIA OF SEEMANN. (Nat. ord. Araliaceæ.) A synonym of Plerandra. This is quite a different plant to the above, being a small tree with digitate leaves, raised from seeds.

B. viti'ensis (Gfl., 1887, 71). Fiji. See PLERANDRA VITIENSIS.

BALA'KA. (The native name. Nat. ord. Palmaceæ.)
Stove palms. Seeds. Fibrous loam, peat, and sand.

B. perbre'vis (very short). Fiji.
,, *Seema'nni* (Seeman's). Fiji.

BALANI'NUS NU'CUM. The Nutweevil. See CO'RYLUS.

BALA'NTIUM. (From *balantion*, a purse; referring to the shape of the seed-pouch, or indusium, on the back of the leaf. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Stove herbaceous Ferns. Divisions; peat and loam. Summer temp., 60° to 70°; winter, 50° to 60°. Now referred to Dicksonia.

B. Cu'lcita (cushion). 3. Brown. August. Madeira.

BALBI'SIA. (Named after *Giovanni Battista Balbis*, a Turin Professor of Botany. Nat. ord. Geraniaceæ.)
A pretty, half-hardy, evergreen shrub, may be grown in the open in summer and in the greenhouse in winter; seeds or cuttings; light loamy soil.

B. verticilla'ta (B. M., t. 6170). 3 to 6. Yellow. Chili. 1846. Syn. LEDOCARPON VERTICILLATUM.

BALCONY. A word probably derived from the Persian, signifying an ornamentally-barred window, and by us applied to a frame, usually of iron, and encompassed with a balustrade, placed in front of one window, or of several windows. It is an excellent place for giving air to room-plants, and for the cultivation of some flowers.

BALDINGE'RA. A synonym of Premna.

BALLO'TA. (The Greek name. Nat. ord. Labiatæ.)

B. cine'rea. See ROYLEA ELEGANS.
,, *Pseu'do-dicta'mnus* (false-Dictamnus). Crete. "False Dittany of Crete."
,, *suave'olens* (W. G., 1889, 81). See HYPTIS SUAVEOLENS.

BALM. (*Meli'ssa officina'lis*). This hardy herbaceous plant has a citron scent and aromatic flavour. It is cultivated now only for making a grateful drink for the sick.
The Soil best suited to its growth is any poor and friable, but rather inclining to clayey than sandy. Manure is never required. An eastern aspect is best for it.
Planting.—It is propagated by root division (of which the smallest piece will grow), and by slips of the young shoots. The first mode any time during the spring and autumn, but by slips only during May or June. If divisions of an old plant are employed, they may be planted at once where they are to remain, at twelve inches apart; but if by slips, they must be inserted in a shady border, to be thence removed, in September or October, to where they are to remain. At every removal water must be given, if dry weather, and until they are established. During the summer they require only to be kept clear of weeds. In October the old beds (which may stand for many years) require to be dressed, their decayed leaves and stalks cleared away, and the soil loosened by the hoe or slight digging.
Old beds may be gathered from in July for drying, but their green leaves, from March to September; and those planted in spring will even afford a gathering in the autumn of the same year. For drying, the stalks are cut, with their full clothing of leaves, to the very bottom, and the drying completed gradually in the shade.

BALM OF GILEAD. *Dracoce'phalum canarie'nse* and *Cedrone'lla triphy'lla*.

BALSAM AND BALSAMI'NA. See IMPA'TIENS.

BALSAM APPLE. *Momo'rdica Balsami'na*.

BALSAMI'TA. (From *balsamon*, greasy, referring to the viscid glands on the plant. Nat. ord. Compositæ.)
Hardy, herbaceous plant that may be grown in any good garden soil. Propagation by division of the plant in spring.

B. vulga'ris (common). See CHRYSANTHEMUM BALSAMITA.

BALSAMODE'NDRON. (From *balsamon*, balm, or balsam, and *dendron*, a tree. Nat. ord. *Burserads* [Burseraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
According to Capt. Harris, Myrrh is obtained, on the Abyssinian coast, from a species of this genus; and the Balesson of Bruce, or *Balm of Mecca*, is the produce of another species of this Balsam-tree. It is a stove tree. Sandy loam, and a little rotten dung; cuttings of ripe young wood in April, under a glass, and in heat. Summer temp., 60° to 80°; winter, 55° to 60°.

B. madagascarie'nse. White. August. Madagascar.
,, *My'rrha*. "Myrrh." Arabia.
,, *zeyla'nicum* (Ceylon). See CANARIUM ZEYLANICUM.

BALSAM OF COPAI'BA. *Copai'fera*.

BALSAMS. By this name are usually known the varieties of the common annual, *Impa'tiens Balsami'na*, by some needlessly separated, with a few others, into a separate genus, and called *Balsami'na horte'nsis*.

Culture.—The chief object in cultivating these is their fine, large, double flowers; and, to secure this object, seed should be saved only from the finest plants; and, if the seed is several years old, the plants will be less luxuriant, and the blooms will be more double.

To have them very fine, the seed should be sown in a sweet hotbed, in the middle of March; the plants pricked out into small pots when three inches in height, using light, rich soil, shifting them again, and successively, never allowing them to be pot-bound, and plunging the pots into a medium temperature of 75°, until some time after their last shifting into eight, twelve, or sixteen-inch pots, according as you aim at moderate-sized or very large specimens. Allow, all the time, a current of air, less or more, according to the weather, to keep the plants bushy, and using richer materials every time of potting, until the last soil used may consist of nearly as much very rotten, but sweet dung (cow-dung is best), as turfy, sandy loam.

Successions may be sown in April and May, and treated in a similar manner, either for pots, or to be turned into beds, where they frequently do well until the middle of October.

When you cannot accommodate any but the best flowers in the greenhouse, adopt the following method:—After pricking out into three or four-inch pots, and plunging them in the bed, allow the pots to get full of roots, keep them drier and cooler, and give plenty of air, which will soon cause flowers to appear; then select plants with best flowers, rub every flower-bud off them, fresh pot, disentangling the roots a little as you proceed, and grow them on as advised above; and what you lose in time you will make up in selectness.

BALSAM-TREE. *Clu'sia.*

BALTIMO'RA. (Nat. ord. Compositæ.) A stout plant of little value for cultivation, raised from seeds and grown in good loam.

B. re'cta. 1. Yellow. July. Mexico. Syn. *Fougerouxia recta.*

BAMBU'SA. Bamboo Cane. (From *bambos*, its Indian name. Nat. ord. *Grasses* [Gramineæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

The very young shoots of the Bamboo are eaten in India as asparagus. All hardy shrubs except where described as stove. Suckers, in spring or autumn; rich loam. Summer temp., 60° to 85°; winter, 55° to 65°.

Since the publication of the earlier editions of this work much more attention has been paid to the culture of the Bamboos, and they are much appreciated as pot plants; the best varieties for this purpose being *Arundinaria falcata* (also known as *Bambusa*), *Phyllostachys aurea* (also known as *Bambusa*), *Bambusa vulgaris*, *B. v. striata*, and *Arundinaria Simoni*, of which there is a pretty variegated variety. It is remarkable that after once flowering and producing seed the old plants die away. It is many years ago when a fine specimen of Arundinaria flowered at Syon House, and then died off. A large batch of seedlings were raised at the R.H.S. gardens, Chiswick, from the seed of that unique specimen. Many other instances have occurred since.

All the Bamboos may be increased by divisions and should be grown in good loamy soil, requiring but little manure, but plenty of water. Bamboo gardens are now a great feature in many large gardens. It was at Kew where a large collection was planted, that first created the idea of Bamboo gardens. They may be grown in almost any sheltered position, but succeed best on the banks of a running stream, or near a pond or lake, surrounded by trees to protect them from gales of wind in winter, when the foliage will keep green till the young leaves develop in May and June.

B. angustifo'lia (Gard., 1894, xlvi. 547). Syn. *B. Vilmorini*. Japan.
,, *arista'ta* (awned). See ARUNDINARIA ARISTATA.
,, *arundina'cea* (reed like). 40. Apetal. E. Ind. 1730. Stove.
,, ,, *spino'sa* (spiny). 1820.
,, *au'rea*. See PHYLLOSTACHYS AUREA.
B. Castillo'ni (Rev. Hort., 1886, p. 513, f. 122). See PHYLLOSTACHYS QUILIOI CASTILLONIS.
,, *chrysa'ntha* (G. C., 1894, xv. 368). See ARUNDINARIA CHRYSANTHA.
,, *di'sticha* (Gard., 1894, xlvi. 547).
,, *Fortu'nei* (Fl. Ser., t. 1535). See ARUNDINARIA FORTUNEI.
,, *glau'ca* (milky-green). See B. NANA OF ROXBURGH.
,, *gra'cilis*. See ARUNDINARIA FALCATA.
,, *Heno'nis* (G. C., 1894, xv. 368). See PHYLLOSTACHYS HENONIS.
,, *heterocy'cla*. See PHYLLOSTACHYS MITIS HETEROCYCLA.
,, *japo'nica*. See ARUNDINARIA JAPONICA.
,, *Laydeke'ri* (G. C., 1894, xv. 368). See ARUNDINARIA LAYDEKERI.
,, *marmo'rea* (Gard., 1894, xlvi. 547). See ARUNDINARIA KOKANTSIK.
,, *Maximowi'czii*. See ARUNDINARIA SIMONI.
,, ,, *vitta'ta*. See ARUNDINARIA SIMONI VARIEGATA.
,, *Meta'ke*. See ARUNDINARIA JAPONICA.
,, *mi'tis*. See PHYLLOSTACHYS MITIS.
,, *Naga'shima* (Gard., 1894, xlvi. 547). Dwarf bamboo. Japan.
,, *na'na* of gardens. See BAMBUSA DISTICHA.
,, *na'na* of Roxburgh. Japan. Stove.
,, *ni'gra* (black). See PHYLLOSTACHYS NIGRA.
,, *pube'scens* (downy). See DENDROCALAMUS STRICTUS.
,, *pu'mila* (G. C., 1894, xv. 368). See ARUNDINARIA PUMILA.
,, *pygmæ'a* (G. C., 1894, xv. 368). See ARUNDINARIA PYGMÆA.
,, *Quilio'i*. See PHYLLOSTACHYS QUILIOI.
,, *Ragamo'shii*. See B. TESSELLATA.
,, *senane'nsis* (G., 1894, xlvi. 546). Apparently identical with *Arundinaria Veitchii*. Japan.
,, *Simo'nii*. See ARUNDINARIA SIMONI.
,, *spino'sa* (spiny). 20. Apetal. E. Ind. 1820. Stove. See B. ARUNDINACEA SPINOSA.
,, *stria'ta* (B. M., t. 6079). See B. VULGARIS.
,, *stri'cta* (upright). See DENDROCALAMUS STRICTUS.
,, *sulphu'rea*. See PHYLLOSTACHYS SULPHUREA.
,, *tessella'ta*. Syn. *B. Ragamowski*. China and Japan.
,, *variega'ta*. See ARUNDINARIA FORTUNEI.
,, *Veï'tchii* (R. H., 1888, 90). See ARUNDINARIA VEITCHII.
,, *verticilla'ta* (whorl-*flowered*). See GIGANTOCHLOA VERTICILLATA.
,, *viola'scens*. See PHYLLOSTACHYS VIOLASCENS.
,, *vi'ridi-glauce'scens*. See PHYLLOSTACHYS VIRIDI-GLAUCESCENS.
,, *vi'ridi-stria'ta*. See ARUNDINARIA SIMONI.
,, *vulga'ris* (common). Stove. India.
,, ,, *constrictino'da* (narrow-jointed). Stove.
,, ,, *stria'ta* (B. M., t. 6079). Stove.
,, *Weisene'ri*. Japan. 1887.

BANA'NA, or PLANTAIN. *Mu'sa.*

When the earlier editions of this work were published, Bananas were hardly known as edible fruit, now they are seen in the streets every day. It is from foreign imports that our supplies are chiefly derived. Those from Jamaica are the largest, and most showy. The variety is known as *grosse Michael*. The flavour is not so good as the smaller fruit which we get from the Canary Islands. Good varieties are also received from the West Indian Islands; these include the "Claret," which has a dark skin and is one of the best flavoured. The Fig-Banana is also a good flavoured variety, but not large enough for general commercial purposes. Of varieties grown in England M. Cavendishi is the best, being dwarf and fruiting freely, and, when ripened before being gathered, the flavour is superior to those imported. For culture, see MUSA.

BANDEIRÆ'A. (A commemorative name. Nat. ord. Leguminosæ. Allied to Bauhinia.)

Greenhouse evergreen shrub. Cuttings in sand under a bell-glass. Sandy peat and fibrous loam.

B. simplicifo'lia (simple-leaved). Purple or red. June. S. Africa. 1816.

BANE-BERRY. *Actæ'a.*

BANISTE'RIA. (Named after the *Rev. J. Banister*, a zealous botanist. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)

Stove plants. Sandy loam and peat; cuttings of half-ripened wood in heat, under glass. Summer temp., 60° to 90°; winter, 60° to 65°.

TWINERS.

B. argyrophy'lla (silvery-leaved). Brazil.
„ *auricul'ata*. See STIGMAPHYLLON AURICULATUM.
„ *chrysoph'ylla* (golden-leaved). See HETEROPTERIS CHRYSOPHYLLA.
„ *cilia'ta* (fringed). See STIGMAPHYLLON CILIATUM.
„ *dicho'toma* (fork-branched). See STIGMAPHYLLON CONVOLVULIFOLIUM.
„ *emargina'ta* (notched). See STIGMAPHYLLON EMARGINATUM.
„ *ni'tens* (shining). See B. ARGYROPHYLLA.
„ *seri'cea* (silky). See HETEROPTERIS SERICEA.
„ *sinemarie'nsis* (Guiana). See STIGMAPHYLLON PUBERUM.
„ *te'nuis* (slender). See HETEROPTERIS UMBELLATA.
„ *tiliæfo'lia* (lime-leaved). Purple. August. Java. 1820.
„ *tomento'sa* (felted). See STIGMAPHYLLON EMARGINATUM.
„ *zanziba'rica* (Zanzibar). See ACRIDOCARPUS ZANZIBARICUS.

SHRUBS.

B. ferrugi'nea (rusty). 10. Yellow. Brazil. 1820.
„ *fu'lgens* (shining-fruited). 6. Yellow. Guadaloupe Island.
„ *humboldtia'na* (Humboldt's). See STIGMAPHYLLON HUMBOLDTIANUM.
„ *laurifo'lia* (bay-leaved). See HETEROPTERIS LAURIFOLIA.
„ *ova'ta* (egg-shaped). See BRACHYPTERYS BOREALIS.
„ *periplocæfo'lia* (Periploca-leaved). See STIGMAPHYLLON PERIPLOCÆFOLIUM.
„ *sple'ndens* (shining). See STIGMAPHYLLON FULGENS.

BANKS (SLOPING) are very desirable in a kitchen-garden, not only because they aid in forwarding the crops on their south front, and retarding those on their north front, but because they much increase the cultivatable surface. Supposing the banks to run east and west, the south side, especially as respects all low-growing things, such as French beans, potatoes, &c., will produce eight days earlier than when cultivated on a level; while the north side will retain lettuces, &c., during summer, much longer fit for the table. The surface of the ground is also increased, notwithstanding learned assertions to the contrary. In making them, at first, in shallow soils, they should not be wider than six feet at the base; but, as the soil becomes improved, they may be from ten to twelve feet in width. In deep soils, the banks may be formed by trenching in the usual manner, only throwing them into shape by a line and stakes. In thin soils, care should be taken to have plenty of room in the first opening to stir the sub-soil, and then replace again the surface-soil on the surface. The accompanying sketch will give some idea as to how they are formed, each ridge being twelve feet wide at the base. A B is the ground level, *c* the apex of the ridge, and *d d* paths between. Of course they could not be raised so high, at first, without impoverishing the other ground. If drained beneath the paths, all the better; for, in heavy land, without drainage and deep stirring, the moisture will be long retained. If at *c* there is a board fixed, or even a row of dwarf, hardy peas, the south side will be rendered still warmer, and the north side more cool and late. Such banks, therefore, may not only be used for vegetables, but also for accelerating and retarding fruits, such as the strawberry. Owing to the depth of soil thus obtained, if the surface is kept stirred, you will never need much of the water-pot, even in the driest weather. The right hand, or south side, should be the longest; and, in a succession of ridges, the northernmost one should be the highest.

BA'NKSIA. (Named after *Sir Joseph Banks*, a distinguished patron of natural history. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

All interesting greenhouse plants, from New Holland. Seeds, when obtainable, should be sown in spring or summer, in sandy peat and loam, and placed in the greenhouse; seedlings potted off as soon as they can be handled, otherwise they will damp off. Some kinds are most easily propagated by layers, and a few rare ones by grafting; but most are obtained by cuttings of the ripened shoots, with most of the leaves attached, inserted by the sides of a pot, placed under a hand-light, kept close, and shaded from sunshine during the day, and air given, and the glass removed for a time during the night. Sandy peat, with a little loam to the more strong-growing. Summer temp., 50° to 65°; winter, 35° to 45°.

B. æ'mula (B. M., t. 2671). 20. 1824. Syn. *B. elatior*.
„ *attenua'ta* (tapering). 6. Yellow. 1794.
„ *austra'lis* (southern). See B. MARGINATA.
„ *Baue'ri* (Bauer's). Red.
„ *Baxte'ri* (Baxter's). 8. White.
„ *Bro'wnii* (Miss Brown's). 1830.
„ *Cale'yi* (Caley's). 1830.
„ *cocci'nea* (scarlet-*flowered*). 6. Scarlet. 1803.
„ *colli'na* (hill). 6. Yellow. 1800.
„ *co'mpar* (well-matched). See B. INTEGRIFOLIA.
„ *Cunningha'mii* (Cunningham's). See B. COLLINA.
„ *cylindrosta'chya* (cylindric-spiked). See B. ATTENUATA.
„ *denta'ta* (toothed). 4. Yellow. 1822.
„ *dryandroi'des* (Dryandra-like). 6. Yellow. 1822.
„ *ela'tior* (taller). See B. ÆMULA.
„ *ericæfo'lia* (heath-leaved). 6. Yellow. 1788.
„ *Goo'dii* (Good's). 1830.
„ *gra'ndis* (great-*flowered*). 2. Yellow. 1794.
„ *hookeria'na* (Hooker's). 6. Purple. 1853.
„ *Huegel'ii* (Huegel's). Yellow. 1837.
„ *ilicifo'lia* (holly-leaved). Scarlet. 1837.
„ *insula'ris* (island). See B. MARGINATA.
„ *integrifo'lia* (whole-leaved). 12. Yellow. 1788.
„ *latifo'lia* (broad-leaved). 30. Green. July. 1802.
„ *littora'lis* (seashore). (B. R., t. 1363.) See B. COLLINA.
„ *marce'scens* (permanent-leaved). 6. Yellow. 1794.
„ *margina'ta* (bordered). 6. Yellow. July. 1804.
„ *me'dia* (mediate). 6. Yellow. 1824.
„ *Menzie'sii* (Menzies's). Yellow. 1837.
„ *nu'tans* (nodding-*flowered*). 4. Yellow. June. 1803.
„ *oblongifo'lia* (oblong-leaved). See B. MARGINATA.
„ *occidenta'lis* (western). 8. Red. King George's Sound.
„ *paludo'sa* (marshy). See B. INTEGRIFOLIA.
„ *prostra'ta* (prostrate). 2. Yellow. 1824.
„ *pulche'lla* (neat-*flowered*). 6. Yellow. 1805.
„ *quercifo'lia* (oak-leaved). 5. Yellow. 1805.
„ *re'pens* (creeping). 3.
„ *serra'ta* (B. R., t. 1316). 20. Red.
„ *Sola'ndri* (Solander's). 6. 1830.
„ *specio'sa* (showy). 6. Yellow. July. 1805.
„ *sphæroca'rpa* (round-fruited). 6. Yellow. 1803.
„ *spinulo'sa* (small-spined). 6. Yellow. August. 1788.
„ *verticilla'ta* (whorled). 12. Yellow. August. 1794.
„ *Victo'riæ* (B. M., t. 4906). 12. Yellow. Swan River. 1842.

BA'OBAB-TREE. *Adanso'nia.*

BA'PHIA. (From *baphe*, a dye; the Camwood or Barwood, from which a brilliant red colour is obtained, is from *B. ni'tida*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to the Carob-tree.)

Stove tree. Cuttings; sandy peat. Summer temp., 60° to 85°; winter, 55° to 60°.

B. ni'tida (shining). 30. White. August. Sierra Leone. 1793.

BAPTI'SIA. (From *bapto*, to dye; some of the species possessing dyeing properties. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Podalyria.)

Hardy herbaceous plants, except where otherwise specified. Division; common border-soil.

B. a'lba (white-*flowered*). 2. White. June. N. Amer. 1724.
„ *auricula'ta* (eared). Blue. June. N. Amer. 1812.
„ *austra'lis* (southern). 2½. Blue. June. N. Amer. 1758.
„ „ *mi'nor* (smaller). 1½. Blue. June. N. Amer. 1829.
„ *confu'sa* (confused). Blue. June. N. Amer. 1812.

B. exalta'ta (exalted). 3. White. June. N. Amer. 1724.
,, *lanceola'ta* (lanceolate). 1. Yellow. July. N. Amer. 1818.
,, *leuca'ntha* (white flowered). 2. White. N. Amer.
,, *leucophæ'a* (B. M., t. 5900). White. July. N. Amer. 1870.
,, *mi'nor* (smaller). See B. AUSTRALIS MINOR.
,, *mo'llis* (soft). See THERMOPSIS MOLLIS.
,, *perfolia'ta* (perfoliate). 3. Yellow. August. Carolina. 1732.
,, *Sere'næ*. N. Amer.
,, *sphæroca'rpa* (globose-fruited). Texas.
,, *tincto'ria* (dyer's). 1½. Yellow. July. N. Amer. 1750. "Wild Indigo."
,, *versi'color* (various-coloured). 4. Light purple. July. N. Amer. 1824.
,, *villo'sa* (long-haired). 2. Yellow. June. N. Amer. 1811.

BARBACE'NIA. (Named after *M. Barbacena*, a governor of Minas Geraes. Nat. ord. *Bloodroots* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Vellozia.)

Stove herbaceous perennials. Divisions; sandy loam. Summer temp., 60° to 80°; winter, 45° to 55°.

B. gra'cilis (slender). See DASYLIRION ACROTRICHUM.
,, *purpu'rea* (purple-*flowered*). Purple. July. Brazil. 1825.
,, *Rogie'rii* (Rogers's). Purplish-violet. 1850.
,, ,, *hy'bridæ* (Fl. Ser., t. 1152).
,, *sangui'nea* (blood-coloured). Deep crimson. 1847.
,, *squama'ta* (scaly-*stalked*). ½. Yellow, crimson. March. Brazil. 1841.

BARBADOES CEDAR. *Juni'perus barbade'nsis.*

BARBADOES CHERRY. *Malpi'ghia.*

BARBADOES GOOSEBERRY. *Pere'skia.*

BARBADOES LILY. *Hippea'strum eque'stre.*

BARBADOES PRIDE. *Adenanthe'ra pavoni'na.*

BARBARE'A. Winter Cress. (From being formerly called the herb of *Sta. Barbara*. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Arabis.)

All hardy herbaceous biennials. Seeds; common soil.

B. arcua'ta (bowed). 2. Yellow. July. Germany. 1833.
,, *ortho'ceras* (straight-podded). 1½. Yellow. June. Siberia.
,, *præ'cox* (*American-cress*). 1. Yellow. October. England.
,, *stri'cta* (upright). Yellow. Britain. Hardy biennial. Raised from seed.
,, *vulga'ris* (common). 1½. Yellow. July. Britain.
,, ,, *flo're ple'no*. A useful border plant with double flowers.
,, ,, *variega'ta*. An attractive form.

BARBE'RIA. See BARLERIOLA.

BARBERRY. (*Be'rberis vulga'ris.*) There are five varieties of the Common Barberry: the red, without and with stones; the black sweet, which is tender, and requires a sheltered border; the purple; and the white. The seedless (*B. vulga'ris aspe'rma*) is mostly preferred for preserving purposes. The fruit is acid, and the bark is very astringent.

Propagation.—Suckers, cuttings, and layers may be employed, either in the spring or autumn. The seed is very rarely used.

Soil.—A sandy or calcareous soil, with a dry sub-soil, suits it best.

Culture.—It requires no other pruning than such as is necessary to keep it within bounds. As the fruit is very tedious to gather, it is well to keep the middle of the tree open by pruning, somewhat like gooseberry-pruning. Their spines are so formidable, that we have known the common kinds used with good effect to stop gaps in hedges liable to much trespass.

Fruit.—This is fully ripe in October, and is gathered in entire bunches for preserving, pickling, and candying.

Diseases.—It is liable to be infected with a parasitical fungus, the cluster cups of the Barberry (*Æcidium berberidis*), which is an early or spring stage of *Puccinia graminis*. This first gives rise to the Uredo or rust stage on wheat, and afterwards to the black or brand stage, and which is the true Puccinia. This latter rests through the winter, producing spores in spring that again attack the Barberry, thus repeating its life history.

BARBIE'RIA. (Named after *J. B. G. Barbier, M.D.*, a French naturalist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Cajanus.)

Stove evergreen shrub. Cuttings of half-ripened wood in sand, under a glass; sandy peat and loam. Summer temp., 68° to 85°; winter, 50° to 55°.

B. polyphy'lla (many-leaved). Reddish-purple. Porto Rico. 1818.

BARK. The exterior part of the trunks, or stems of plants and trees. And if this covering is damaged in any way it may cause canker, and in the case of its being broken off the entire circumference of the stem it may cause the upper portion to die off. The bark of the oak is extensively used by *tanners* in the preparation of leather. For this purpose it is stripped from the trunks of trees cut down early in the year; the best bark is that from trees cut down about the time the sap begins to rise.

After the bark has been used by the tanners it comes in useful for garden purposes, formerly it was used extensively for heating purposes, but since we have had so much better facilities for heating by hot water it has gone out of use to a great extent. As a manure it is also used, but for this purpose it must be laid up for a considerable period. The only objection to its use is that various fungi are often a trouble where it is used, otherwise it is good manure. Perhaps the best way is to burn it and use the ashes.

BARK BOUND. This is a term applied to cases where the bark, instead of expanding with the growth of stems, splits. This may be remedied by washing with a solution of soft soap and keeping the stems moist with soft water (rain-water).

BARK-STOVE. This is now an obsolete term, for no stoves are heated by fermenting material, as in years gone by. In gardens the bark from the tan-yards is known simply as tan.

BARKE'RIA. (After the late *Mr. Barker*, of Birmingham, an ardent cultivator of orchids. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Lælia.) Now included in Epidendrum.

Stove orchids, divisions; fibrous peat and sphagnum, in shallow baskets. Summer temp., 60° to 85°; winter, 55° to 60°.

B. Barkeri'ola. Rose and white lip. 1884.
,, *cyclote'lla* (G. C., 1880, xiii. 72, f. 15).
,, *e'legans* (elegant). 1½. Light rose. Mexico. 1836.
,, ,, *nobi'lior* (G. C., 1886, xxv. 234). Large flowered.
,, *Lawrence'æ* (Mrs. Lawrence's). 1. Pink. Guatemala. 1847.
,, *lindleya'na* (Dr. Lindley's). 1. Purple and white. November. Costa Rica. 1842.
,, ,, *Cente'næ*. Rosy-lilac. Costa Rica. 1873.
,, *melanocau'lon* (dark-stemmed). 1. Lilac. June. Costa Rica. 1848.
,, *Skinne'ri* (Mr. Skinner's). 1½. Pink. Guatemala.
,, ,, *supe'rbum* (W. S., O., 38). Dark rose. Guatemala.
,, *specta'bilis* (showy). 1. Lilac and purple. July. Guatemala. 1843.
,, *vanneria'na* (G. C., 1885, xxiv. 678).

BARKING IRONS, or **BARK SCALERS,** are for scraping off the hardy outer bark, or dry scales from the stems and branches of trees.

BA'RKLYA. (Named in honour of *Sir H. Barkly*, formerly Governor of S. Australia. Ord. Leguminosæ.)

A large tree requiring greenhouse treatment, and may be grown in the open during the summer; propagated from seeds or cuttings of half-ripened wood, in close frame.

B. syringifo'lia. 30. Golden-yellow. Moreton Bay. 1858.

BARLE'RIA. (After the *Rev. J. Barrelier*, of Paris. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreens, except *B. longifo'lia*. This may be propagated by seed, the others by cuttings of the young

wood, in heat, under a close frame. Pot in loam, leaf-mould, and manure. Summer temp., 60° to 80°; winter, 50° to 60°.

B. a'lba (white). See B. CRISTATA.
,, *buxifo'lia* (box-leaved). 2. White. July. E. Ind. 1768.
,, *cæru'lea* (blue). See B. STRIGOSA.
,, *crista'ta* (crested). 2. Blue. July. E. Ind. 1796.
,, ,, *dicho'toma*. Purple. E. Ind. 1823.
,, *dicho'toma* (twin-branched). See B. CRISTATA.
,, *fla'va* (yellow-*flowered*). 3. Yellow. July. Arabia. 1816. Syn. *B. mitis*.
,, *Gibso'ni* (B. M., t. 5628). Purple. India. 1867.
,, *involucra'ta ela'ta*. 6. Dark blue. Singapore. 1890.
,, *lichtensteinia'na* (G. C., 1870, p. 73).
,, *longifo'ra* (long-flowered). 3. July. E. Ind. 1816.
,, *longifo'lia* (long-leaved). 2. White. August. E. Ind. 1781. See HYGROPHILA SPINOSA.
,, *lupuli'na* (hop-*headed*). 2. Yellow. August. Mauritius. 1824.
,, *Macke'nii* (B. M., t. 5866). Purple. Spring. Natal. 1870.
,, *mi'tis*. See B. FLAVA.
,, *monta'na*. 9. Purple. September. E. Ind. 1818. Syn. *B. purpurea*.
,, *nocturno'ra* (night-flowering). 3. Red. April. E. Ind. 1818.
,, *Prionii'tis* (prionitis-*like*). 3. Orange. July. E. Ind. 1759.
,, *purpu'rea* (purple). See B. MONTANA.
,, *re'pens* (B. M., t. 6954). Rose. Trop. Africa. 1887.
,, *solanifo'lia* (nightshade-leaved). See BARLERIOLA SOLANIFOLIA.
,, *strigo'sa* (bristly). 2. Blue. July. E. Ind. 1820. Syn. *B. cærulea*.
,, *tomento'sa* (felted). S. India.

BARLERI'OLA. (From *Barleria*. Nat. ord. Acanthaceæ.)

B. solanifo'lia. 2. Blue. W. Ind. Syn. *Barleria solanifolia*.

BARLEY. (*Ho'rdeum vulga're*.) A valuable cereal, extensively used in the manufacture of beer and also spirits.

BARNADE'SIA. (After *Barnaday*, a Spanish botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Mutisia.)

B. ro'sea, a very pretty deciduous shrub, requiring to be kept nearly dry, in a greenhouse, in winter. Seeds in hotbed, in March; cuttings of half-ripened wood in April, in sand, in close frame. Summer temp., 60° to 80°; winter, 45° to 55°.

B. grandiflo'ra (large-flowered). 2. Pale rose. S. Amer. 1844. An evergreen, requiring a cool stove. A species of Chuquiraga.
,, *ro'sea* (rose-coloured). 1. Pink. May. S. Amer. 1840.
,, *spino'sa* (spiny). See CHUQUIRAGA SPINOSA.

BARNA'RDIA. (Named after *E. Barnard, F.L.S.* Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to the Squills, and now united with Scilla.)

Half-hardy, bulbous-rooted plant. Offsets; peat and loam; only wants a little protection in winter.

B. scilloi'des (squill-like). See SCILLA CHINENSIS.

BARO'METER, or WEATHER GLASS, so called from two Greek words, signifying a measurer of weight, because it indicates the weight or pressure of the air. We only admit a notice of this because, as a guide to approaching changes of weather, it is useful to the gardener.

The Barometer is now so well understood by all gardeners that it does not require any explanation, except to say that after a few months' study it is not difficult to follow the reading, and judge what the weather may be.

BARO'SMA. (From *barys*, heavy, and *osme*, odour; referring to the powerful scent of the leaves. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Diosma.)

Greenhouse evergreen shrubs, all natives of the Cape of Good Hope. Cuttings of half-ripened wood in June, in close, cool frame; sandy loam and peat. Summer temp., 60°; winter, 35° to 40°.

B. betuli'na (birch-*leaved*). 2. White. June. 1790.
,, *crena'ta* (notched).
,, *crenula'ta* (finely notched). 3. Bluish. April.
,, *dioi'ca* (dicœcious). 2. White. June. 1816.
,, *fœtida'ssima* (most fœtid). 2. June. 1824.
,, *lanceola'ta* (lance-shaped).
,, *latifo'lia* (broad-leaved). White. July. 1789.
,, *ova'ta* (egg-shaped-*leaved*). 2. White. May. 1790.
,, *pulche'lla* (neat). Purple. June. 1787.
,, *scopa'ria* (broom). 1½. June. 1812.
,, *serratifo'lia* (B. M., t. 456). 1 to 3. White. March to June. "Buchu."

BARRED. That part of a plant is said to be *barred* which is striped with a lighter or darker colour than the prevailing colour of that part.

BARREN PLANTS. In the older editions, under this heading, the male flowers of Cucumbers, Melons, and other monœcious flowers are termed barren, but the term should be applied to such flowering plants as fail to produce perfect reproductive organs. In many distinct hybrid plants this occurs; we have an instance of this in Begonia Gloire de Lorraine, and also in other hybrids; in the Begonia it is only after a long extended raceme of flowers has been made that a terminal female flower appears, and then there is no fertile pollen on the male flowers. All the double stocks and other flowers which produce petals in place of stamens prove barren. In Ferns, where we get a multiplicity of growths, or what are termed plumose varieties, they generally fail to produce fertile spores. The ray, or enlarged outer florets, of some composites are devoid of sexual organs, and are further examples of barren flowers. It was over sixty years after female plants of *Aucuba japonica* were introduced before we had the male or pollen-bearing plants, and up to somewhere about 1860 no berries were ever seen on Aucubas, and they were supposed to be barren, yet it is remarkable that the pollen is conveyed from plants a long way off, and the female flowers fertilised. Plants which produce perfectly fertile organs are often prevented from maturing their seeds or fruits through injudicious treatment. Too much moisture and a close atmosphere causes barrenness. It may also be caused by growing the plants too luxuriantly.

In fruits we have some in which the pulpy or edible part is developed abnormally and no seeds are produced. Taking Cucumbers, very fine examples may be grown which will fail to produce perfect seeds even if carefully fertilised. It may be worth adding that the inexperienced often select the most perfect in appearance for seed, with the result that no good seeds are found; those which produce the best seeds are considerably enlarged in girth towards the terminal portion of their growth. And it does not follow that plants are naturally barren because they fail to produce seeds which will germinate; it may be necessary to artificially fertilise. It is so with many of the improved garden varieties of plants.

BARREN SOIL. No soil is absolutely incapable of production; and when it is spoken of as being barren, no more is meant than that, in its present state, it will not repay the cultivator. The unproductiveness arises from a deficiency of some of the necessary mineral matters; from an excess or deficiency of animal and vegetable matters; or from an excess of stagnant water. No soil can be productive where nineteen parts out of twenty are of any one earth or other substance. If either chalk, or sand, or clay, be in excess, the remedy is found in adding one or both of the other two. An excess of organic matter only occurs in peat soils; and these are reclaimed by draining, paring, and burning, and the addition of earthy matter. Drainage is also the cure for an excess of water.

BARRENWORT. *Epime'dium.*

BARRINGTO'NIA. (Named after the *Hon. Daines Barrington*. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Stove evergreen trees and shrubs. *B. echina'ta* and *platyphy'lla* are separated into a genus, Commersonia. Cuttings of ripe shoots under a glass, in a strong heat; lumpy loam and peat. Summer temp., 70° to 90°; winter, 60° to 65°.

B. acuta'ngula. 20. Purple. Moluccas. 1822. Syns. *Stravadium acutangulum* and *rubrum.*
„ *Buto'nica.* 30. Scarlet. Indian Archipelago. 1786.
„ *echina'ta* (hedgehog-*fruited*). See COMMERSONIA PLATYPHYLLA.
„ *insi'gnis* (remarkable). Malaya.
„ *platyphy'lla* (broad-leaved). See COMMERSONIA PLATYPHYLLA.
„ *racemo'sa* (raceme-*flowered*). 30. Red. Moluccas. 1820.
„ *specio'sa* (showy). See B. BUTONICA.

BARRO'TIA PANCHE'RI. See PANDANUS.

BARTHOLI'NA. (Named after *Bartholin*, a Danish physiologist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Serapias.)

One of those terrestrial orchids from the Cape which British gardeners have not yet succeeded in cultivating easily. Greenhouse orchid; division of the root; sandy loam. Summer temp., 60° to 70°; winter, 45°.

B. pectina'ta (comb-leaved). 1. Lilac. November. Cape of Good Hope. 1787.

BARTO'NIA. (Named after *Dr. Barton*, an American botanist. Nat. ord. *Loasads* [Loasaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Now referred to Mentzelia, which see.)

Half-hardy plants; seeds; the biennials should be sown in summer, and protected in a cold pit during the winter; the annuals may be sown in the open air, in April, or in a slight hotbed, and transplanted; most of them delight in a sandy soil and a little peat. *B. au'rea* does best where the soil is peaty and moist.

ANNUALS.

B. albe'scens (white-*stalked*). 2. White. Chili. 1831.
„ *au'rea* (golden-*flowered*). California. 1834. See MENTZELIA LINDLEYI.

BIENNIALS.

B. nu'da (naked-*seeded*). See MENTZELIA NUDA.
„ *orna'ta* (ornamented). Syn. *B. decapetala.* See MENTZELIA ORNATA.

BA'RTSIA. (Named after *J. Bartch, M.D.* Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Euphrasia.)

These require the treatment of choice alpines; hardy annuals, except alpina, which is perennial; seeds in April, on rock-work.

B. alpi'na (alpine). ½. Purple. August. Britain.
„ *cocci'nea.* See CASTILLEJA COCCINEA.
„ *latifo'lia* (broad-leaved). 1. Purple. August. South of Europe.
„ *lu'tea* (yellow). 1½. Purple. August. S. Europe. 1816.
„ *Odonti'tes* (odontites). ½. Pink. August. Britain.
„ *purpu'rea* (purple). ½. Purple. August. Europe. 1826.
„ *visco'sa* (clammy). ½. Yellow. July. Britain.

BARWOOD. *Ba'phia ni'tida.*

BARYO'SMA. See BARO'SMA.

BASANACA'NTHA. (From *basanos*, a trial, or ordeal, and *acantha*, a spine; probably an ordeal plant of the natives. Nat. ord. Rubiaceæ. Allied to Posoqueria.)

Stove evergreen shrub. Cuttings in sand in bottom-heat. Loam, peat, and sand.

B. arma'ta (armed). 7. White. May. Trop. Amer. 1818.

BASE'LLA. Malabar Nightshade. Its Malabar name. (Nat. ord. *Basellads* [Chenopodiaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

B. a'lba and *ru'bra* are used as spinach in the East Indies; and *B. ru'bra* yields a rich purple dye; not easily fixed, however. Stove biennials, except where otherwise specified, and mostly climbers. If sown in good heat in February, and treated as a border annual, they will flower freely the same season; rich, lumpy soil.

B. a'lba (white). See B. RUBRA.
„ *cordifo'lia* (heart-leaved). See B. RUBRA.
„ *lu'cida* (shining). See B. RUBRA.
B. margina'ta (bordered). See BOUSSINGAULTIA BASELLOIDES.
„ *ni'gra* (black). See B. RUBRA.
„ *ramo'sa* (branchy). See B. RUBRA.
„ *ru'bra* (red). 8. Pink. August. E. Ind. 1731.
„ „ *a'lba.* 8. White. August. E. Ind. 1688.
„ „ *cordifo'lia.* 6. Pale purple. August. E. Ind. 1802.
„ „ *lu'cida.* 6. White. August. E. Ind. 1802.
„ „ *ni'gra.* 3. White. August. China. 1822.
„ „ *ramo'sa.* 6. August.
„ *tubero'sa* (tuberous). See ULLUCUS TUBEROSUS.

BASIL. (*O'cimum.*) There are two kinds, the Sweet-scented (*O. Basi'licum*) and the Dwarf-bush (*O. mi'nimum*). The young leaf-tops are the parts made use of in soups and salads, their flavour resembling that of cloves.

The supply is never-failing during summer, as they shoot out rapidly for successional supplies.

Sow on a very gentle hotbed, under glass, about the end of March or first of April, to raise plants for the principal or main crop. The frame should be filled up with earth to within three or four inches of the glass, or very shallow frames may be used for purposes as these. When the plants are up, give a little air by tilting the lights; and, as they advance, and the weather is warmer, give them more air, until the lights may be taken off altogether during the day, and put on at night. By the above management, good, hardened plants will be fit for planting out towards the end of May, or beginning of June, into warm borders, or beds of light, rich earth. If the weather be dry at the time of planting out, let the beds be well watered previously to planting, and plant in the evening. Lift the young plants from the seed-bed with a small fork or trowel, and plant them out with care, eight or ten inches from plant to plant each way, and water them, to settle the earth to the roots. Attend to earth-stirring, and water when required, until the plants are well established. If green tops are required for earlier use, sow in pots, pans, or boxes, and place in any heated structure.

To obtain Seed.—Some of the earliest-raised plants must be left ungathered from. These flower from July to September, and, accordingly, ripen their seed in early or late autumn.

BASINING-UP. Banking-up is the term now usually applied. By this term is meant raising a small bank of earth entirely round a plant, so as to retain water immediately about the roots.

BASKETS, employed by the London gardeners, being made of osier or deal shavings, vary triflingly in size more than measures made of less flexible materials. They are as follows:—

Sea-kale punnets—eight inches diameter at the top, and seven inches and a half at the bottom, and two inches deep.

Mushroom punnets—seven inches by one inch.

Salading punnets—five inches by two inches.

Half sieve—contains three imperial gallons and a half. It averages twelve inches and a half diameter, and six inches in depth.

Sieve—contains seven imperial gallons. Diameter, fifteen inches; depth, eight inches. These baskets are still in use.

Bushel basket—ought, when heaped, to contain an imperial bushel. Diameter at bottom, ten inches; at top, fourteen inches and a half; depth, seventeen inches. The Sussex Bushel basket holds eight imperial gallons when filled up to just below the rim of the basket. Walnuts, nuts, apples, and potatoes are sold by this measure. A bushel of the last named, cleaned, weighs fifty-six pounds; but four pounds additional are allowed if they are not washed. Potatoes are now nearly always sold by weight. After many tests we find seven pounds is equal to a gallon, and there is little variation.

Strawberry baskets, cross-handle baskets holding from four to five pounds, are extensively used by the growers in the south-west of England; they are also used for currants and gooseberries, but do not yet appear to have come into general use among the Kent growers. They are, however, very convenient.

BASKETS (RUSTIC). These are often suitable ornaments for the reception of flowering-plants upon lawns,

and other parts of the pleasure-grounds. These baskets are easily made. Having fixed on the sizes you wish for, procure some inch boards, either of sound oak, which is the best, or of well-seasoned elm or deal. Cut them into the proper lengths, and nail them together the right width; they will then form a square. Mark then the desired form (round or octagon) on this square, and cut it into the desired figure. When this is done, you have the groundwork of your basket; make the basket eight or ten inches deep; and if your garden is moderately extensive, you may have them the largest size to be manageable, that is, from three to five feet in diameter. If a small garden, this size would be inconvenient, and take up too much room. Yet there is no reason why you should not have two or three of these ornaments. For such a garden, the most proper dimensions would be two feet; and for that size, six inches deep would be proportionate. Then proceed to nail to the circular or octagon bottom the sides. If the shape is round, let the pieces of wood to form the sides be narrow, bevel inwards the sides, and shape them so as to form the circle; but if of an octagon form, the pieces will be, of course, of the width of each of the eight sides, and planed to fit at each corner. Fasten them firmly together with nails, and the main foundation and walls of your baskets are complete. On the top of the side put some split hazel rods, of sufficient thickness to cover it, and hang over the outside edge about half an inch. Place some of the same kind close to the bottom; then, between the two, cover the plain boards with some rough oak or elm bark, so closely fitted as to give the idea that the basket has been cut out of a solid tree; or, which is more expensive and troublesome, but certainly more ornamental, cover the sides with (split or whole, as you may fancy) split oak from rods, from one and a half to two inches in diameter, formed into tasteful forms. These should fit so close as to hide completely the material of which the sides are formed. The bark-plan will not require anything more done to it after it is neatly fitted and securely nailed to the sides; but the rods should have a coating of boiled linseed-oil applied.

BASS (or BAST) MATS. These mats, which are so serviceable in gardens, are made from the inner bark of the Russian Lime-trees (Tilias). The best are those known as Archangel mats, and measure about 9×4½ feet; formerly the fibre of which these mats were made was extensively used in gardens as a tying material, but since the introduction of Raffia, it has not been so much in demand for that purpose. There are also the St. Petersburg mats, which are not so large, being only about 7×4 feet. These are useful for covering frames, and also for packing purposes. The Dunnage mats are of the same material but smaller. They are first used for lining ships which carry wheat and other grain, and then sold cheaply for garden purposes.

The Cuba Bast is the fibrous inner bark of *Hibiscus elatus*, better known as *Paritium elatum*. This was extensively used as a substitute for the Russian Bast some years ago when the mats were very dear; it may be split up into very fine threads and is much stronger than the Russian Bast.

BA'SSIA. (Named after *M. Bassi*, curator of the Botanic Garden at Boulogne. Nat. ord. *Sapotads* [Sapotaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

The Bassias are trees of some importance in India. *B. butyra'cea* yields a thick, oil-like butter from its fruit, or *mahwa*. *B. latifo'lia* furnishes a kind of arrack, called *moura*, by distilling the flowers. The fruit of the Illupi-tree (*B. longifo'lia*) yields oil for lamps, soap-making, and also for food; and Mungo Park's Butter-tree was *Butyrospe'rmum Pa'rkii*. Stove trees. Cuttings of ripened young shoots in April, in heat, in a close frame; peat and loam. Summer temp., 60° to 70°; winter, 55° to 60°.

B. butyra'cea (buttery). 40. E. Ind. 1823.
„ *latifo'lia* (broad-leaved). 40. Yellow. E. Ind.
„ *longifo'lia* (long-leaved). 40. E. Ind. 1811.

BASTARD ACACIA. *Robi'nia Pseu'd-aca'cia.*

BASTARD ATOCION. *Sile'ne Pseu'do-ato'cion.*

BASTARD BALM. *Meli'ttis.*

BASTARD BOX. *Poly'gala Chamæbu'xus.*

BASTARD CABBAGE-TREE. *Geofro'ya.*

BASTARD CEDAR. *Guazu'ma* and *Cedre'la.*

BASTARD CHERRY. *Ce'rasus Pseu'do-ce'rasus.*

BASTARD CINNAMON or **CASSIA LIGNEA.** *Cinnamo'mum Ca'ssia.*

BASTARD CORK-TREE. *Que'rcus Pseu'do-su'ber.*

BASTARD CRACCA. *Vi'cia Pseu'do-cra'cca.*

BASTARD DICTAMNUS. *Ballo'ta Pseu'do-dicta'mnus.*

BASTARD GROUND-PINE. *Teu'crium Pseu'do-chamæ'pitys.*

BASTARD HARE'S-EAR. *Phy'llis.*

BASTARD HYSSOP. *Teu'crium Po'lium.*

BASTARD INDIGO. *Amo'rpha.*

BASTARD JASMINE. *Andro'sace Chamæja'sme.*

BASTARD LUPINE. *Trifo'lium Lupina'ster.*

BASTARD MANCHINEEL. *Camera'ria.*

BASTARD MOUSE-EAR. *Hiera'cium Pseu'do-pilose'lla.*

BASTARD OLBIA. *Lava'tera O'lbia.*

BASTARD QUINCE. *Py'rus Chamæme'spilus.*

BASTARD TOAD-FLAX. *The'sium.*

BASTARD VERVAIN. *Stachytarphe'ta.*

BASTARD VETCH. *Pha'ca.*

BASTARD WIND-FLOWER. *Gentia'na linea'ris.*

BASTARD WOOD-SAGE. *Teu'crium Pseu'do-scorodo'nia.*

BATA'TAS. (Aboriginal name. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Pharbitis and Ipomœa, and now united with the latter, which see.)

All stove deciduous climbers. Cuttings of stumpy side-shoots, or young shoots slipped from the tubers, just as they begin to grow; in sandy soil, in bottom-heat, and under a hand-glass; rich, sandy loam and fibrous peat, with manure-water when growing. Temp., summer, 60° to 85°, with moisture; winter, 48° to 55°. Very little water while dormant.

B. beta'cea (beet-like). 6. Pale violet. Demerara. 1839.
„ *bignonioi'des* (Bignonia-like). Dark purple. July. Cayenne. 1824. See I. BIGNONIOIDES.
„ *bonarie'nsis* (Buenos Ayres). 10. Purple. See I. FICIFOLIA.
„ *Cavanille'sii* (Cavanilles'). White, red. August. 1815. See I. CAVANILLESII.
„ *edu'lis* (eatable-*fruited*). White, purple. E. Ind. 1797. See I. BATATAS.
„ *glaucifo'lia* (milky-green-leaved). Purplish. June. Mexico. 1732. See I. GLAUCIFOLIA.
„ *heterophy'lla* (various-leaved). Pale purple. September. Cuba. 1817. See I. HETEROPHYLLA.
„ *Jala'pa* (jalap). Rose. August. Mexico. 1845. See I. JALAPA.
„ *panicula'ta* (panicled). Purple. July. E. Ind. 1799. See I. DIGITATA.
„ *pentaphy'lla* (five-leaved). White. August. E. Ind. 1739. See I. PENTAPHYLLA.
„ *senegale'nsis* (Senegal). White. July. Guinea. 1823. See I. PALMATA.
„ *terna'ta* (three-leafleted). White. July. Brazil. 1824. See I. TERNATA.
„ *veno'sa* (veiny). Purple. July. Mauritius. 1820. See I. VENOSA.
„ *Walde'ckii* (Waldeck's). White and purple. S. Amer. 1847.
„ *Willdeno'vii* (Willdenow's). Purple. July. 1818. See I. HETEROPHYLLA.

BATEMA'NNIA. (Called after *Mr. Bateman*, a keen collector and ardent cultivator of orchids, and author of a splendid work on the Orchids of Mexico and Guatemala. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Maxillaria.)

Stove orchids; divisions and offsets; peat, broken crocks, and sphagnum; plant raised considerably above

the surface of pot, or suspended in shallow baskets. Summer temp., 70° to 85°; winter, 60° to 65°.

B. armilla'ta (braceleted). Green, white. 1875.
,, *Bu'rtii* (B. M., t. 6003). See ZYGOPETALUM BURTII.
,, *Co'lleyi* (Colley's). ½. Purple, green. August. Demerara. 1834.
,, *fimbria'ta*. See ZYGOPETALUM FIMBRIATUM.
,, *grandiflo'ra* (B. M., t. 5567). Sepals and petals olive-green, striped with reddish-brown. New Grenada. 1866. Also referred to *Zygopetalum grandiflorum*.
,, *le'pida*. Brownish-red, white. Brazil.
,, *Melea'gris*. White at base, tessellated with purplish-brown on a yellow ground. June. Brazil. 1838. Syn. *Huntleya Meleagris*.
,, *peruvia'na* (K. B., 1895, 193). Brown, and lip white with purple dots. Peru. 1895.
,, *Walli'sii*. Sepals light greenish-yellow outside, olive-green to chestnut-brown inside, with some yellow at base. Colombia. 1876.

BA'TSCHIA. (Named after *J. G. Batsch*, a German botanist. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. This is now united to Lithospermum.)

All hardy herbaceous perennials; seeds, or divisions; common soil.

B. cane'scens (hoary). See LITHOSPERMUM CANESCENS.
,, *Gmeli'ni* (Gmelin's). See L. HIRTUM.
,, *longiflo'ra* (long-flowered). See L. ANGUSTIFOLIUM.
,, *seri'cea* (silky). See L. CANESCENS.

BAUERA. (Named after *Francis* and *Ferdinand Bauer*, German botanical draughtsmen. Nat. ord. *Hydrangeads* [Saxifragaceæ]. Linn. 13-*Polyandria*, 2-*Digynia*.)

Bau'era is a botanical anomaly which has puzzled the learned as to its proper order. Dr. Lindley has placed it with Hydrangea. Greenhouse evergreen under-shrubs; cuttings in sandy soil, under a glass; sandy loam and peat. Summer temp., moderate; winter, 38° to 45°.

B. hu'milis (dwarf). See B. RUBIOIDES.
,, *rubiæfo'lia* (madder-leaved). See B. RUBIOIDES.
,, *rubioi'des*. 1½. Pink. September. Australia. 1793.
,, ,, *hu'milis*. 1. Red. September. 1804.
,, ,, *microphy'lla*. Port Jackson. Syn. *B. galioides*, Reichb.

BAUHI'NIA. Mountain Ebony. (Named after the brothers *John* and *Caspar Bauhin*, botanists in the sixteenth century. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

One of the tribes of Cæsalpinia. All stove evergreen shrubs, except where otherwise specified. Half-ripe cuttings in summer, in sand, placed under a glass, and in moist bottom-heat; light, sandy loam, and a little peat. Summer temp., 60° to 85°; winter, 55° to 60°.

B. aculea'ta (prickly-*stalked*). 6. White. S. Amer. 1737. Syn. *B. pubescens*.
,, *acumina'ta* (taper-pointed-*leaved*). 8. White. July. E. Ind. 1808.
,, *angui'na* (snaky). 30. White. Yellow. E. Ind. 1790. Climber. Syn. *B. scandens*.
,, *arma'ta* (armed). 6. White. Brazil. 1824. Climber.
,, *auri'ta* (long-eared). 6. White. Jamaica. 1756.
,, *chine'nsis* (Chinese). See B. VARIEGATA.
,, *corymbo'sa* (corymbed). 6. White. China. 1818. Climber.
,, *cumane'nsis* (Cumana). 20. White. July. Cumana. 1826. Climber.
,, *divarica'ta*. See B. LAMARCKIANA.
,, *ferrugi'nea* (rusty-*leaved*). 10. White. E. Ind. 1820. Climber.
,, *forfica'ta* (pincer-*leaved*). 6. White. Brazil. 1823.
,, *gla'bra* (smooth). 15. White. Carthage. 1810. Climber.
,, *glauce'scens* (milky-green). 6. White. Cumana. 1817.
,, *grandiflo'ra* (large-flowered). 4. White. Peru. 1820.
,, *i'ndica* (Indian). 6. White. E. Ind. 1820.
,, *ine'rmis* (unarmed). 6. Yellow, red. Acapulco. 1810.
B. lamarckia'na (Lamarck's). 6. White. S. Amer. 1818. Syns. *B. divaricata* and *B. retusa* of Poir.
,, *latifo'lia* (broad-leaved). 6. White. Mexico. 1818.
,, *Leicha'rdtii* (Leichardt's). Australia.
,, *leptope'tala* (slender-petaled). 5. Yellow, green. Mexico. 1818.
,, *luna'ria* (*half*-moon-*leaved*). 6. White. Acapulco. 1820.
,, *madagascarie'nsis* (Madagascar). 4. Madagascar. 1826.
,, *malaba'rica* (Malabar). 15. White. E. Ind. 1810. Climber.
,, *microphy'lla* (small-leaved). 6. White. S. Amer. 1817.
,, *multine'rvia* (many-nerved). 5. White. Caraccas. 1808.
,, *natale'nsis* (B. M., t. 6086). White. Greenhouse. S. Africa. 1870.
,, *Paule'tia* (Pauletia). 4. White. Panama. 1737.
,, *petiola'ta* (B. M., t. 6277). White. Autumn. Colombia. 1862. Syn. *Casparea speciosa*.
,, *porre'cta* (B. M., t. 708). White or rosy. October. W. Ind. Syn. *Casparia porrecta*.
,, *pube'scens* (downy). See B. ACULEATA.
,, *purpu'rea* (purple). 6. Purple. E. Ind. 1778.
,, ,, *triandra*. 15. White. 1823.
,, *racemo'sa* (racemed). 20. White. E. Ind. 1790. Stove climber.
,, *retu'sa* (abruptly-blunt). 7. White. E. Ind. 1820.
,, *rotundifo'lia*. See B. SUBROTUNDIFOLIA.
,, *sca'ndens* (*small-leaved*-climbing). See B. ANGUINA.
,, *specio'sa* (showy). See B. TOMENTOSA.
,, *subrotundifo'lia* (roundish-leaved). 6. White, Acapulco. 1820. Syn. *B. rotundifolia*.
,, *tomento'sa* (thickly-haired). 6. Yellow, white. E. Ind. 1808.
,, ,, *gla'bra*. Yellow, purple. 1866.
,, *tria'ndra* (three-stamened). See B. PURPUREA.
,, *variega'ta* (variegated). 6. Striped. June. E. Ind. 1700.
,, ,, *ca'ndida*. White.
,, ,, *chine'nsis*. Lilac, with purple spot. China. 1800. Greenhouse.

BAWD-MONEY. *Me'um.*

BAY-TREE. *Lau'rus no'bilis.*

BEAD-TREE. *Me'lia.*

BEAM-TREE. *Py'rus A'ria.*

BEAN. (*Fa'ba vulga'ris.*) There are many varieties of this vegetable; but we shall only name those which are clearly distinct and valuable.

Mazagan.—This has whitish seeds, rather larger than a horse-bean, two to four feet high. Sown in spring, about ten weeks occur before beans are fit for use.

BEAN. A name given to various plants belonging to the natural order Leguminosæ, but most generally applied to the edible beans of general commerce. The Broad Bean (*Vicia Faba*) is too well known to need any description, except to say that there are two distinct types, the "long pods" and the "Windsor," and garden varieties are numerous. It is therefore difficult to define them. In referring to various catalogues, it will be found that each firm have their special varieties. Yet we find that such types as the Early Mazagan, Johnson's Wonderful, Green Windsor, and other standard sorts are still quoted, but are supplemented by many improved varieties. Taking the Windsors as an example, we get some with much longer pods than the original type. It would be unwise to give names of varieties, for, as stated above, each of the large seed firms have special names of their own. For instance, we have Sutton's Giant Windsor, Webb's Improved Windsor; then in American catalogues the Broad Windsor and other varieties are quoted. In the long-podded sorts varieties are even more numerous. All that can be said is that a selection should be made from the best and most reliable seed-growers.

CULTURE. For early crops seeds may be sown in November or December, as weather permits. The Early Mazagan is the best type for first crop. When sowing, some extra seeds should be put in at the ends of the rows; these can be transplanted to fill up any vacancies in the rows which may be caused by failure of seeds germinating,

or being eaten off by slugs, &c. The early crops will do best in a rather dry, warm situation, but for later sowings any ordinary garden soil will suit them. Where soil is not suitable or circumstances prevent sowing in the open ground, seeds should be sown in frames or boxes under cover in January, and planted out as soon as weather permits after the plants are large enough to handle. For successional crops seeds may be sown according to convenience. When sown where they are to remain they should be done in double rows, about four inches apart, and three feet between each double row. For spring sowing, the seed may be soaked in water for one day and will germinate much quicker. The ground should be regularly hoed to keep down weeds, and when a fair crop is set, they may be topped.

For Seed.—The different sorts should be grown as far from each other as possible, and to improve varieties a selection of the best types should be made early, and marked in some way. The first thing is to select those that flower earliest, and no pods should be gathered. Later, some may have to be discarded through imperfect development of the pods, but careful selection from year to year will much improve the stock; while taking seed indiscriminately will cause deterioration.

The storing of seed is another important matter; after being properly ripened they may be kept in the pods in a dry but not too warm position. Under good conditions seeds will keep for a good many years, but they are not reliable after the second year.

The French Bean (*Phaseolus vulgaris*) requires but few remarks, except to say there are many hybrid varieties; they appear to have been crossed with the Scarlet Runners (*Phaseolus multiflorus*). "Lima Bean" is an American name for *Phaseolus lunatus*.

All the above are very tender, and should not be sown or planted until all danger of frost is over. It is hardly necessary to give cultural instructions, except to say that they do best in ground that has been manured and well worked the previous autumn. The dwarf French beans are extensively grown in pots under glass. They require good loamy soil, and the chief thing is to give plenty of light and air. Also to be careful in watering.

Insects.—See APHIS RUMICIS.

BEAN CAPER. The common name for Zygophyllum.

BEAN TREE. Swedish. *Py'rus interme'dia.* And of Australia. *Castanospe'rmum austra'le.*

BEAN TREFOIL. The common name for Anagyris, and anciently given to *Cytisus Laburnum.*

BEAR BANE. *Aconi'tum Lyco'ctonum.* Bearbind. The common name for Calystegia.

BEASTS' BANE. *Aconi'tum Lyco'ctonum.*

BEATO'NIA. (Named by Dr. Herbert after *D. Beaton*, a Scotch gardener; one of the contributors to the *Cottage Gardener* and to this *Dictionary*. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Triandria*. Now referred to Tigridia.)

Greenhouse perennial bulbs. Offsets and seeds; the latter to be sown in a slight hotbed, in March; light, rich soil. To be taken up before frost, or covered up where they have grown, so as to preserve them both from frost and wet.

B. atra'ta (dark-*flowered*). See TIGRIDIA ATRATA.
,, *curva'ta* (curved-*stalked*). See T. CURVATA.
,, *purpu'rea* (purple-*flowered*). See T. VIOLACEA.

BEAUFO'RTIA. (Named after *Mary, Duchess of Beaufort.* Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria.*)

Greenhouse evergreen shrubs. Cuttings of half-ripened shoots, under a glass, in sandy loam, without heat; loam and peat. Summer temp., moderate; winter, 38° to 48°.

B. carina'ta (keel-*leaved*). 3. Scarlet. N. Holland. 1823.
,, *Dampie'ri* (Dampier's). 2. Pink. May. Hartog's Island.
,, *decussa'ta* (decussated). 3. Scarlet. May. N. Holland. 1803.
,, *macroste'mon* (long-stamened). Purple. July. Australia. 1843.
B. purpu'rea (purple-*flowered*). Purple. July. Australia. 1841.
,, *spa'rsa* (scattered-*leaved*). 3. Red. N. Holland. 1803. Syn. *B. splendens.*
,, *sple'ndens* (shining). See B. SPARSA.

BEAUMO'NTIA. (Named after *Mrs. Beaumont*, of Bretton Hall. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

One of our *best* stove twiners, with large, white trumpet-shaped flowers, produced in clusters at the end of the shoots. They succeed best planted out in the borders of a house, intermediate between a stove and a greenhouse. Cuttings of half-ripened wood; rich, lumpy loam and peat. Summer temp., 60° to 70°; winter, 50° to 60°.

B. grandiflo'ra (large-flowered). 20. White. June. E. Ind. 1818.
,, *longifo'lia* (long-leaved). See B. GRANDIFLORA.

BE'CIUM. (United to Ocimum.)

BED is a comprehensive word, applicable to the detached space on which any cultivated plants are grown. It is most correctly confined to small divisions, purposely restricted in breadth for the convenience of hand-weeding, or other requisite culture, and, in the flower-garden, for the promotion of beauty. This involves the question of form, one of the most difficult that is submitted to the gardener, because few tastes agree as to their estimate of the beautiful. Under the head FLOWER-GARDEN we shall give a few general observations upon this subject; and here will merely observe that, in making flower-beds, they should always be proportioned to the size of the plants which are to be their tenants; and that though, for large masses of shrubs and trees, we have seen rectangular forms so planted as to look solid and grand, yet that we believe no arrangement of dwarf-flowers would ever make a separate square or parallelogram bed of them otherwise than decidedly ugly.

BEDDING-IN. This may be applied to the sowing of seeds, but its more general application is to plants propagated from cuttings or layers, and bedded-in thickly until space allows of them being planted in their quarters where they will flower. The term may have a wide meaning, but in modern practice it is not applied to the sowing of seeds, except by quite the old school of gardeners; the term sowing beds being more applicable.

BEDDING-OUT refers to the planting of various subjects grown in pots during the winter and planted in the open for summer flowering, or the plants may have been grown in boxes or in frames until the time comes for putting them in the beds. There are so many modern weekly Horticultural publications published which refer to garden work week by week, that it is not necessary to give a list of plants suitable, except to say that recently the best Begonias of the tuberous section may be added, also the finest varieties of Fuchsias, which formerly it was considered necessary to grow under glass with shading over them in sunny weather, are now found to do well in the open. Many other plants which were kept shut up in the stove under shade have since been found to do well in the open during the summer. Even *Pandanus Veitchi*, *Cocos weddelliana*, and in flowering plants Begonias, Fuchsias, &c., that were nursed up under shade and heat are found to do better in the open during the summer. Experiments were carried on at the Royal Horticultural Society's Gardens years ago, and it was proved that many plants from the tropical regions would do well in the open during the summer. Crotons, or rather Codiæums, may be mentioned; they are not so extensively used for bedding in England, but in America they are great favourites for the summer garden and do well, and in England some enterprising florists have tried them, and they have done well. Yet it would not do to take them direct from the stove; they must be gradually hardened off. The Salvias of the splendens type are another example. They were formerly nursed up under glass, but are now grown in the open; and with favourable treatment make a very bright show during the summer and up to quite late in the autumn. *Plumbago capensis* flowers well in the open, also *Streptosolen Jamesoni.* It is not necessary to enumerate ordinary bedding plants, as they are found in almost every nurseryman's catalogue.

BEDEGUAR. See CYNIPS ROSÆ.

BEDFO'RDIA. (Named in honour of the *Duke of Bedford*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Cacalia.)

Greenhouse evergreen shrub. Cuttings a little dried before inserting them, in rough, sandy soil; sand, peat, loam, and brick-rubbish, in equal proportions. Summer temp., 55° to 70°; winter, 40° to 45°; and almost dry.

B. sali'cina (willow-like). Yellow. April. Australia. 1820.

BEE. (*Apis.*) All the species of this insect are friendly to the gardener; for they all aid in impregnating his flowers, many of which, without their aid, would fall unproductive of either fruit or seed. At the same time they are as often injurious, by causing cross impregnations, and actually injuring flowers in their efforts to get at the honey. The honey-bee (*A. mellifica*) is the most active in this operation; but the humble-bee (*Bombus hortorum*), and others of the robust species, visit flowers in rough weather, when the honey-bee will not venture from its hive.

BEECH. *Fa'gus.*

BEET. There are two sections of this vegetable cultivated by gardeners.

1. For the leaves to boil like spinach, and the stalks of the leaves like sea-kale. Brazilian Beet (*Be'ta brasilie'nsis*), with very large green leaves. Thick-leaved Beet (*B. ci'cla*), of which there are these varieties:—1. Green-leaved, small-rooted. 2. White-veined, or silver. 3. Golden-veined. 4. Red-veined. The silver is the finest, and, when blanched as the chard, nearly equals asparagus. The leaves of all are boiled like spinach, and the foot-stalks peeled and used as sea-kale.

2. Red Beet (*B. vulga'ris*).—Nine varieties occur of this; but the yellow and white-rooted, not meriting cultivation, are here omitted. The others are:—1. Large-rooted. 2. Long-rooted. 3. Dwarf-topped. 4. Turnip-rooted. 5. Small. 6. Castelnaudary. 7. Green-topped. Of these, No. 4 is best for an early crop, and No. 6 for the main crop, if obtained genuine. There are many sub-varieties, but scarcely distinguishable from each other. For table use, the object is to obtain moderate-sized and dark crimson roots. There are numerous varieties, but the old types are still recognised.

Use.—The Red Beet, after being cooked, is used sliced in salads, or alone with an acid dressing. It is much better baked than boiled.

Soil and Situation.—Beet requires a rich, deep, open soil. Its richness should rather rise from previous application, than the addition of manure at the time of sowing; and, to effect this, the compartment intended for the growth of these vegetables is advantageously prepared as directed for Celery. On the soil depend the sweetness and tenderness for which they are estimated; and it may be remarked, that on poor, light soils, or heavy ones, the best sorts will taste earthy. The situation should be open. We have always found it beneficial to dig the ground two spades deep for these deep-rooting vegetables, and to turn in the whole of the manure intended to be applied with the bottom-spit, so as to bury it ten or twelve inches within the ground. Salt is a beneficial application to this crop; one reason for which undoubtedly is, the Beet being a native of the sea-shore.

Time and Mode of Sowing.—Sow from the close of February until the beginning of April, it being borne in mind that the seed must not be inserted until the severe frosts are over, which inevitably destroy the seedlings when young. The best time for inserting the main crop of *red* Beet-root for winter supply is early in April. The Brazilian and Thick-leaved Beets may be sown at the same time for supply in summer; and, at the beginning of July or August, a successional crop of these may be sown for supply in the winter and following spring.

The seed is best sown in drills, a foot asunder, and an inch deep; or by dibble, at the same distance each way, and at a similar depth, two or three seeds being put in each hole. With good seed each carpel contains three seeds; but they do not always germinate if sown too thickly; they should be thinned out as early as possible. The Brazil Beet requires eighteen inches space.

During the early stages of growth, the beds, which, for the convenience of cultivation, should not be more than four feet wide, must be looked over occasionally, and the largest of the weeds cleared by hand. In the course of May, according to the advanced state of growth, the plants must be cleared thoroughly of weeds, both by hand and small hoeing; the Red Beet thinned to ten or twelve inches apart, and the White to eight or ten. The plants of this last variety which are removed may be transplanted into rows at a similar distance. Moist weather is to be preferred for performing this, otherwise the plants must be watered occasionally until they have taken root. They must be frequently hoed, and kept clear of weeds throughout the summer.

It is a great improvement to earth up the stalks of the White Beet, in the same manner as Celery, when they are intended to be peeled, and eaten as asparagus. No vegetable is more benefited by the application of liquid-manure than the White and Brazil Beets.

Taking up the Red Beet.—In October the Beet-root may be taken up for use as wanted, but not entirely, for preservation during the winter, until November, or the beginning of December, if the weather continues open; then to be buried in sand, in alternate layers, under shelter. Before storing, the leaves and fibrous roots must be trimmed off, but the main root not wounded, and a dry day selected for performing it. Beet-root may be kept exceedingly well if stacked up neatly, sloping to a point, against a north wall, or other cool place, upon a dry bottom, and buried with sifted coal-ashes. The thickness of this covering must depend upon the weather.

Gathering from the Green and White Beet.—In gathering from these, the largest outside leaves should be first taken, and the inner left to increase in size, when the same selection must be continued; but, at the same time, it must be remembered that they are to be used whilst perfectly green and vigorous, otherwise they are tough and worthless.

To obtain Seed.—Some roots must be left where grown, giving them the protection of some litter in very severe weather, if unaccompanied with snow; or, if this is neglected, some of the finest roots that have been stored in sand, and have not had the leaves cut away close, may be planted in February or March. Each species and variety must be kept as far away from others as possible, and the plants set at least two feet from each other. They flower in August, and ripen their seed at the close of September. Seed of the previous year is always to be preferred for sowing; but it will succeed, if carefully preserved when two years old. There are many of the highly coloured foliage varieties used for bedding.

BEFA'RIA. (Named by Mutis after *M. Bejar*, a Spanish botanist. Nat. ord. *Heathworts* [Ericaceæ]. Syn. *Bejaria.*)

All are greenhouse or stove evergreen shrubs. Propagated by cuttings of the young wood getting firm at the base, and placed under a bell-glass in the greenhouse, or in a close case where stove heat is required. Use very sandy loam and peat. Pot in loam and peat with less sand.

B. æ'stuans (glowing). 12. Rose. Peru. 1846.
,, *cinnamo'mea* (cinnamon-coloured). 4. Peru. 1847.
,, *coarcta'ta* (close-headed). 5. Purple. Peru. 1847.
,, *glau'ca* (sea-green). 3 to 6. Purple. June. New Grenada. 1826. Stove.
,, *ledifo'lia* (Ledum-leaved). 3 to 5. May. 1847.
,, *lindenia'na* (Linden's). Pink. Venezuela. 1847. Stove.
,, *Matthew'sii* (Matthews'). Yellow. March. Peru.
,, *racem'osa* (raceme-flowered). 3 to 4. Purple. June. Florida. 1810.
,, *tri'color* (three-coloured). Crimson and yellow. New Grenada. 1850.

BEGO'NIA. (After *M. Begon*, a French patron of botany. Nat. ord. *Begoniads* [Begoniaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria.*)

This is an extensive genus, and of great variation; formerly they were nursed up as stove plants, but during the past few years they have been used as bedding plants. It is the tuberous varieties which came from South America, somewhere about 1860, that have proved so prolific with the hybridists; the varieties seen are remarkable for the wonderful development of size, form,

and colours. I, the writer, handled them when *boliviensis* was quite new, and followed on with others. I made various crosses, and while at the R.H.S. Gardens, Chiswick, the Floral Committee gave, on one occasion, over twelve first-class certificates for varieties raised while I was growing them, but they would bear no comparison with the more modern varieties.

Taking the tuberous varieties it is useless to give names for they come so good from seed, and only colours should be defined. In regard to culture, a great change has taken place. The first frost cuts them off, but during the summer and autumn they make a fine show as bedding plants. After the first frost they should be taken up and laid out for the tubers to dry; they may then be stored in any position where there is not too much warmth, but where it is fairly dry and frost does not penetrate. For bedding purposes they should be started as early in the year as possible, and grown on in a cool house without shading.

The semperflorens varieties are also extensively used for bedding, and seed sown the first week in February will make good plants for the purpose; they must be started in heat, and later gradually hardened off. And it will not be safe to plant out until all risk of frost is over, yet I know that some plant early and have a reserve in case of frost destroying these first planted.

Other varieties are also used for bedding, including *B. fuchsioides*, *B. knowsleyana*, and other hybrids. The Gloire de Lorraine varieties for winter flowering are another important type. These may be propagated from leaves or from the young shoots in the spring; for the latter purpose the early propagated plants should be reserved, as they make better cuttings from the base of the plants. Cuttings from flowering shoots may eventually start, but they are usually very slow to make good plants. The old original pink variety is most appreciated, and Turnford Hall variety the best white; but as we have so many other good white flowers, it is not so much appreciated as the pink.

The Rex varieties are another popular section, of which we have many distinct varieties; these are all readily propagated from leaves. If cut through the main ribs, well matured leaves will give a number of young plants.

All the semperflorens type, of which there are many distinct varieties, come true from seed if carefully selected.

The numerous other fibrous-rooted varieties may be readily increased from cutting the short side shoots that have not flowered, and make the best plants.

All the Begonias like a rough, light soil with a liberal addition of stable manure, which should be laid up some time before using it, and the straw taken away.

B. acerifo'lia (maple-leaved). 3. Whitish. Brazil. 1829.
„ *acerifo'lia* of gardens. Hybrid between *B. Burkei* and *B. decora*. 1896.
„ *a'cida* (acid). 1. White. Brazil. 1847.
„ *acumina'ta* (long-pointed-*leaved*). 1. White. July. Jamaica. 1798.
„ *acutifo'lia* (sharp-pointed-leaved). 1. White. August. W. Ind. 1816.
„ *acuti'loba* (sharp-lobed). White. Mexico.
„ *æ'nea* (bronzy). Leaves purplish-copper. Assam. 1871.
„ *a'lbo-cocci'nea* (white and scarlet-*flowered*). 1. White and scarlet. E. Ind. 1844. Stove herbaceous perennial.
„ *a'lbo-pi'cta* (white-spotted). Leaves spotted silvery-white. Brazil. 1885.
„ *alchemilloi'des* (Alchemilla-like). Rose. Brazil.
„ *Alle'ryi* (Allery's). Said to be a hybrid between *B. metallica* and *B. gigantea*.
„ *ama'bilis* (lovely). Rose or white. Assam. 1859.
„ *Ame'liæ* (Amelia's). Rose. Hybrid from *B. Bruantii* and *B. Rœzlii*. 1885.
„ *ama'na* (pleasing). Light rose. N. Ind. 1878. Syn. *B. erosa*.
„ *a'mpla* (ample-leaved). 1 to 2. Rose. Trop. Africa.
„ *angula'ris* (angle-leaved). Brazil.
„ *a'ptera* (wingless). 3. White. July. Celebes. Stove herbaceous perennial.
„ *arbore'scens* (becoming a tree). 8. White. Brazil.
„ *arge'ntea* (silvery). See B. MACULATA.
„ *arge'ntea gutta'ta* (silver-spotted). Hybrid between *B. albo-picta* and *B. olbia*.
B. argyrosti'gma (silver-spotted). See B. MACULATA.
„ *arnottia'na* (Arnott's). See B. CORDIFOLIA.
„ *ascote'nsis* (Ascot). Rose and red. Garden hybrid. 1874.
„ *asplenifo'lia* (Asplenium-leaved). Small, white. Guinea.
„ *assa'mica* (Assamese). Assam.
„ *aucubæfo'lia* (Aucuba-leaved). See B. INCARNATA.
„ *Augu'stinei* (Augustine's). Rose-pink. China. 1900.
„ *auranti'aca* (orange-coloured). See B. CINNABARINA.
„ *auriculæfo'rmis* (ear-shaped). White. Guatemala. 1850.
„ *aurifo'rmis* (ear-formed). See B. INCANA.
„ *bacca'ta* (berried). White. Isle of St. Thomas. 1866.
„ *barba'ta* (bearded). See B. RUBRO-VENIA.
„ *Barke'ri* (Barker's). 4. White. January. Mexico. 1837. Greenhouse herbaceous perennial.
„ *Bauma'nni* (Baumann's). Carmine-rose. Bolivia. 1890.
„ *Ber'lini* (Bertin's). Scarlet. Hybrid of the same group as Gloire de Lorraine. 1902.
„ „ *na'na*. Large red flowers.
„ *Beddo'mei* (Beddome's). Pink. December. Assam. 1883.
„ *bi'color* (two-coloured). See B. GRACILIS.
„ *bipe'tala* (two-petaled). 2. Pink. July. India. 1828.
„ *biserra'ta* (saw-tooth-*leaved*). 2. Pale pink. June. Guatemala. 1847.
„ *Bisma'rckii* (Bismarck's). Of garden origin. 1888.
„ *bolivie'nsis* (Bolivian). 2. Scarlet. Bolivia. 1857.
„ *bowringia'na* (Bowring's). See B. LACINIATA.
„ *Bruan'tii* (Bruant's). White or rose. Hybrid between *B. Schmidtii* and *B. semperflorens*. 1883.
„ *bulbilli'fera* (bulb-bearing). 1. Whitish-pink. July. Peru. 1827. Greenhouse herbaceous perennial.
„ *Bu'rkei* (Burke's). Burma.
„ *ca'ffra* (Caffran). See B. DREGEI.
„ *cala'brica* (Calabrian). Red, yellow, golden. Calabar. 1906.
„ *carmin'ata* (carmine). Garden hybrid between *B. cocci'nea* and *B. Dregei*. 1896.
„ *caroliniæfo'lia* (Carolinea-leaved). 2. Rose. Winter. Mexico. 1852.
„ *Carrie'ri* (Carriere's). Garden hybrid. 1884.
„ *castaneæfo'lia* (chestnut-leaved). 2. Pink. February. Brazil. 1838.
„ „ *a'lba*. Very robust. White.
„ *cathaya'na* (Chinese). 2–3. Vermilion. China. 1908.
„ *Cathca'rti* (Cathcart's). White or pink. Summer. Himalayas.
„ *Cayeu'xi*. Hybrid between *B. semperflorens* and *B. lucida*. 1906.
„ *Ce'lbia*. White. August. Brazil. 1883.
„ *Chelso'ni* (Chelsean). Orange-red. Hybrid between *B. Sedeni* and *B. boliviensis*.
„ *cinnabari'na* (vermilion-coloured). Orange, scarlet. Bolivia. 1848. Stove herbaceous perennial.
„ „ *albovitt'ata*. Red, striped white.
„ *circumloba'ta* (lobed round about). China.
„ *Cla'rkei* (Clark's). Rose. Bolivian Andes. 1867.
„ *Clementi'næ* (Clementine's).
„ *cocci'nea* (scarlet-*flowered*). 3. Scarlet. April. Brazil. 1842.
„ *cocci'nea* (scarlet). (R.H., 1889, 131.) Garden hybrid.
„ *co'mpta* (ornamented). Leaves satiny, with silvery midrib. Brazil. 1886.
„ *conchæfo'lia* (shell-leaved). Pinkish. Mexico. 1851.
„ *conspicu'ua* (conspicuous). Hybrid between *B. decora* and *Rex*. 1899.
„ *coralli'na* (coral-red). Red. Brazil. 1875.
„ *cordifo'lia* (heart-leaved). ½. Winter. India. Syn. *B. arnottia'na*.
„ *coria'cea* (leathery). ½. Rose. Bolivia.
„ *corona'ta* (crowned). Hybrid between *B. caroliniæfo'lia* and *B. polyantha*.
„ *crassicau'lis* (thick-stalked). 3. Whitish-pink. February. Guatemala. 1842.
„ *Credne'ri* (Credner's). Hybrid between *B. scharfiana* and *B. metallica*. 1890.
„ *crini'ta* (stiffly-hairy). 1. Rose. July. Peru. 1866.
„ *cri'spa* (crisped). Petals 6 to 8, crisped. 1904.
„ *cuculla'ta* (hooded). 3. White. Brazil. 1819.
„ *cyclophy'lla* (circular-leaved). Leaf solitary. Rose-pink. S. China.

B. daveauana. See PELLIONIA DAVEAUANA.
„ *dædalea* (adorned). Pink. Leaves netted brown. Mexico. 1860.
„ *Davisii* (Davis'). ½. Crimson-scarlet. July. Peru. 1876.
„ „ *superba*. Crimson, double. 1881.
„ *decora* (adorned). Dark green leaves spotted with grey. Brazil. 1886. This is probably *B. albopicta*.
„ *decora* (adorned). Pink. Leaves coppery-red with yellow veins. Parak. 1892.
„ *Diadema* (jewelled). Leaves blotched white on green. Borneo. 1882.
„ *dichotoma* (forked). 2. Caraccas. Winter. 1860.
„ *dichroa*. Salmon-orange. Fruits whitish-rose. Brazil. 1907.
„ *digitata* (finger-*leaved*). 3. White. June. Brazil. Stove herbaceous perennial.
„ *digswelliana* (Digswellian). Pink. Winter. Garden hybrid.
„ *dipetala* (two-petaled). See B. MALABARICA.
„ *diptera* (two-winged). 1. White. July. Cape of Good Hope. 1822.
„ *discolor* (two-coloured). See B. EVANSIANA.
„ *diversifolia* (various-leaved). See B. GRACILIS.
„ *Dregei* (Drege's). 2. White. July. Cape of Good Hope. 1838. Syns. *B. caffra* and *B. parvifolia*.
„ *dubia* (doubtful). 1. White. July. Brazil. 1818. Stove herbaceous perennial.
„ *Duchartrei* (Duchartre's). Hybrid between *B. echinosepala* and *B. scharffiana*. 1892.
„ *echinosepala* (spiny-sepaled). 2. White. June. Brazil. 1872.
„ *egregia* (distinguished). White. Brazil. 1887.
„ *elatior* (taller). Hybrid between *B. socotrana* and one of the tuberous section. 1906.
„ *elliptica* (elliptic). See B. SCANDENS.
„ *engleriana* (Englerian). 4–5. Leaves one foot long, red-ribbed. E. Trop. Africa. 1904.
„ *erecta multiflora* (erect, many-flowered). Reddish-pink. Winter. Garden variety.
„ *erosa* (bitten). See B. AMŒNA.
„ *erythrophylla* (red-leaved). (Rev. Hort., 1847, 166.)
„ *evansiana* (Evansian). 1½. Pink. Summer. China. 1812. Syns. *B. discolor* and *B. grandis*. Greenhouse or window.
„ *excelsior* (higher). Hybrid between *B. Baumanni* and *B. Veitchii*.
„ *eximia* (excellent). Leaves bronzy-purple, tinted red. Hybrid between *B. rubro-venia* and *B. Thwaitesii*.
„ *fagifolia* (beech-leaved). 3. White. April. Brazil. 1838.
„ *fagopyroides* (buck-wheat-leaved). 3. White. Venezuela.
„ *falcifolia* (sickle-leaved). 2. Rose. Winter. Peru. 1867.
„ *faurea'na metallica*. Leaves darker than in the type. 1895.
„ *Feasti* (Feast's). Hybrid between *B. hydrocotilifolia* and *B. manicata*. 1900.
„ *ferrugi'nea* (rusty). Red. Summer. New Granada. Syn. *B. magnifica*.
„ *Fischeri* (Fischer's). 2. June. S. Amer. 1835.
„ *floribu'nda* (free-flowering). Pink, white. 1875.
„ *folio'sa* (leafy). White. Colombia. 1868.
„ *forgetia'na* (Forgetian). 2. Pink and white. Brazil. 1901.
„ *frigida* (cold). (Bot. Mag., t. 5160.) ½. White.
„ *Fræbelii* (Fræbel's). Scarlet. Winter. Ecuador. 1874.
„ „ *incompara'bilis* (incomparable). Larger and flowers more freely.
„ „ *na'na* (dwarf). Dark scarlet. 1904.
„ „ *verna'lis*. Winter and spring. 1879.
„ *fuchsioi'des* (Fuchsia-like). 5. Scarlet. December. Mexico. 1844.
„ „ *minia'ta*. Flowers cinnabar red.
„ *fulgens* (glowing). Red, fragrant. Allied to *Davisii*. Bolivia.
„ *gemma'ta* (gemmed). Hybrid between *B. decora* and *B. Rex*. 1899.
„ *gemmi'para* (bud-bearing). 1. White, striped rose. Summer. Himalayas.

B. geraniifo'lia (Geranium-leaved). 2. Whitish-red. September. Lima. 1833. Stove tuberous-rooted.
„ *geranioi'des* (Geranium-like). White. Natal. 1866.
„ *gigante'a* (gigantic). White. Himalaya. 1905.
„ *glandulife'ra* (gland-bearing). ½. White. February. W. Ind. 1867.
„ *glandulo'sa* (glandular). 1. Greenish-white. Central Amer. 1854.
„ *glaucophy'lla* (sea-green-leaved). Brazil.
„ *globo'sa* (Gfl., 1888, 645, f. 143). Garden hybrid.
„ *goegoe'nsis*. Pink, white. Sumatra. 1881.
„ *gra'cilis* (graceful). Pink. Mexico. 1829. *B. g. annula'ta*, *B. g. diversifo'lia*, *B. g. lumino'sa*, and *B. g. martia'na*, *B. g. martiana pulcherrima* and *B. g. martiana racemiflo'ra* are varieties.
„ *grahamia'na* (Grahamian). See B. ALBO-COCCINEA.
„ *grandiflo'ra* (large-flowered). See B. OCTOPETALA.
„ *gra'ndis* (grand). See B. REX, EVANSIANA, and VITIFOLIA.
„ *Griffi'thii* (Griffith's). ½. White. Himalayas. 1856.
„ *gunneræfo'lia* (Gunnera-leaved). White. New Grenada. 1875.
„ *gutta'ta* (spotted). Malaya.
„ *haagea'na* (Haagean). White and red. Brazil. 1886. Syn. *B. Scharffiana* of B. M., t. 7028.
„ *Hasska'rlii* (Hasskarl's). Java.
„ *Hæ'ddei* (Hedde's). Near *B. Lehmbachii*. German E. Africa. 1900.
„ *hemsleya'na* (Hemsleyan). Rosy-pink. Yunnan. 1899.
„ *heracleico'tyle*. Hybrid between *B. heracleifolia* and *B. hydrocotylifolia*.
„ *heracleifo'lia* (Heracleum-leaved). 2. Mexico. 1831. Stove tuberous-rooted.
„ „ *longi'pila* (long-haired). Leaves bronze, with grey centre.
„ „ *ni'gricans* (blackish). White. Leaves with black border.
„ „ *puncta'ta*. Rose, spotted red outside.
„ „ *radia'ta* (rayed). 2. Pale pink. Mexico.
„ *herba'cea* (herbaceous). ½. White. March. Brazil.
„ *hernandiæfo'lia* (Hernandia-leaved). See B. PELTATA.
„ *hirsu'ta* (shaggy-*leaved*). See B. HUMILIS.
„ *hirte'lla* (slightly hairy). 2. White. Brazil.
„ *hirte'lla* (small-haired). 1. White. September. Brazil. 1824. Stove herbaceous *perennial*.
„ *hæge'na*. White, half the size of *B. nitida*. Climbing. Mexico. 1886.
„ *homo'nyma* (ambiguous). See B. DREGEI.
„ *Hooke'ri* (Sir W. Hooker's). See B. NITIDA.
„ *hookeria'na* (Hookerian). 5. White. Spring. Brazil. 1850.
„ *humilis* (humble). ½. White. September. W. Ind. 1788. Stove biennial. Syn. *B. hirsuta*.
„ *hy'brida floribu'nda* (hybrid, free-flowering). Rose. Summer. Hybrid between *B. fuchsioides* and *B. multiflora*.
„ „ *multiflo'ra*. Pink. Winter. 1882.
„ *hydrocotylifo'lia* (hydrocotyle-leaved). ½. Pink. June. Mexico. 1843. Stove herbaceous perennial.
„ „ *asarifo'lia* (Asarum-leaved). White. Mexico.
„ „ *hy'brida* (hybrid). 1½. Pink. March.
„ *illustra'ta* (illustrated). Gardens.
„ *imperia'lis* (imperial). ½. White. Leaves olive with brighter veins. Mexico. 1861.
„ „ *smaragdi'na*. Leaves bright green. Mexico. 1861.
„ *inca'na* (hoary). White. April. Mexico. 1838. Stove herbaceous perennial.
„ *incarna'ta* (flesh-coloured). 2. Pink. Winter. Mexico. 1822.
„ „ *aucubæfo'lia*. Leaves spotted.
„ „ *maculo'sa*. Leaves with white spots.
„ „ *meta'llica*. Leaves bronzy-purple.
„ „ *papillo'sa*. Leaves edged rose.
„ „ *purpu'rea*. Leaves dark bronzy-purple.
„ *incompara'bilis* (incomparable). Hybrid between *B. socotrana* and a tuberous variety.
„ *In'grami* (Ingram's). Scarlet. Hybrid between *B. fuchsioides* and *B. nitida*. 1849.
„ *insi'gnis* (remarkable). See B. INCARNATA.
„ *involucra'ta* (involucred). 3. White. Winter. Central Amer.
„ *jatrophæfo'lia* (Jatropha-leaved). See B. HERACLEIFOLIA.
„ *Jaure'zi* (Jaurez's). Semi-double garden variety. 1890.

B. Johnsto'ni (Johnston's) 1. Rose. E. Trop. Africa. 1887.
,, *Jose'phi* (Joseph's). 1. Rose. Summer. Himalayas.
,, *kalli'sta* (most beautiful). (Fl. and Pom., 1877, 211.) Hybrid between *B. Sedeni* and *B. Stella*. 1876.
,, *kewe'nsis* (Kew). White. Garden origin. 1908.
,, *knowsleya'na* (Knowsley). Garden hybrid. Winter. 1882.
,, *Kumme'riæ* (Frau Kummer's). German E. Africa. 1904.
,, *kunthia'na* (Kunthian). White. Trop. Amer. 1862.
,, *lacinia'ta* (cut-leaved). 2. White. Himalayas. China. Syn. *B. bowringiana*.
,, *Lansbe'rgeæ* (Lansberge's). (Ill. H., 1893, 41, t. 174.)
,, *Lapeyrou'sei* (Lapeyrouse's). Garden origin.
,, *lauri'na* (laurel-leaved). See B. OTTONIS.
,, *Lehmba'chii* (Lehmbach's). Cameroons. 1900.
,, *Lemahou'tii* (Lemahout's). (Jard., 1889, 258.)
,, *Leopo'ldii* (Leopold's). Hybrid between *B. Griffithii* and *B. splendida*.
,, *lepro'sa* (scaly). China.
,, *Lesou'dsii* (Lesoud's). Garden hybrid. 1888.
,, *lindleya'na* (Lindleyan). 2½. White. Winter. Guatemala.
,, *linea'ta* (lined). Pale pink. Tuberous-rooted species. Java. 1882.
,, *lobula'ta* (small-lobed). Mexico.
,, *longicy'ma* (long-cymed). Hybrid between *B. schmidtiana* and *B. semperflorens*.
,, *lo'ngipes* (long-stalked). 3. White. March. Mexico. 1828.
,, *longi'pila* (long-haired). See B. HERACLEIFOLIA LONGIPILA.
,, *Lubbe'rsii* (Lubber's). White. Brazil. 1883.
,, *lu'cida* (shining). See B. SCANDENS.
,, *luxu'rians* (luxuriating). Bluish-white. Brazil.
,, *lynchia'na* (Lynchian). Bright carmine. Colombia. Syn. *B. Rœzlii*.
,, *macrophy'lla* (large-leaved). 3. White. July. Jamaica. 1793.
,, *macro'ptera* (large-winged). 1. White. June. Brazil, 1818. Syns. *B. patula* and *B. pauciflora*.
,, *macula'ta* (blotched). White or red. Summer. Brazil. 1821. Syn. *B. argyrostigma*.
,, ,, *coralli'na*. Coral-red.
,, ,, *eleganti'ssima*.
,, ,, *Wi'ghtii*.
,, *magni'fica* (magnificent). Carmine. New Grenada. 1855.
,, *malaba'rica* (Malabar). 3. Pink. July. S. Ind. 1827.
,, *manica'ta* (collared). 3. Pale pink. April. Mexico. 1842. Stove herbaceous perennial.
,, ,, *macula'ta*. Leaves blotched.
,, *Ma'nnii* (Mann's). Rose. Trop. Africa. 1862.
,, *margarita'cea* (pearly). Appears related to *B. incarnata*. Hybrid. 1895.
,, *Marga'ritæ* (Margaret's). Hybrid between *B. echinosepala* and *B. incarnata*. 1884.
,, *margina'ta illustra'ta* (Sander. Cat. 1897, 6). Leaves with green and chocolate veins.
,, *marmora'ta* (marbled). A variety of *B. Xanthina*.
,, *martia'na* (Martius's). See B. GRA'CILIS.
,, *ma'xima* (largest). 6. White. Summer. Mexico. 1853.
,, *megaphy'lla* (large-leaved). White. Winter. Brazil.
,, *meta'llica* (metallic). 1 to 2. Pink. Mexico. 1875.
,, ,, *Van Gee'rti* (Van Geert's). A small-leaved variety. 1904.
,, ,, *variega'ta*. Variegated.
,, *Meye'ri* (Meyer's). 3. White. February. Mexico. 1838.
,, *meysselia'na* (Meysselian). Leaves bright green, spotted with silver. Sumatra. 1883.
,, *microphy'lla* (small-leaved). See B. FOLIOSA.
,, *micro'ptera* (small-winged). 1½. White, pink. December. Borneo. 1856.
,, *minia'ta* (vermilion). See B. FUCHSIOIDES.
,, *mo'dica* (modest). ¼. Yellow. W. Trop. Africa. 1908.
,, *mono'ptera* (one-winged). 2½. White. July. Mexico. 1826.
,, *moritzia'na* (Moritzian). See B. SCANDENS.
,, *multibulbillo'sa* (many-bubilled). 2. White. Brazil. 1830. Stove.

B. multiflo'ra (many-flowered). Colombia.
,, *multine'rvia* (many-veined). White and rose. Brazil. 1869.
,, *murica'ta* (warted). 3. White. September. Brazil. Stove.
,, *natale'nsis* (Natal). White and rose. November. Natal. 1855.
,, *nelumbiifo'lia* (Nelumbium-leaved). White. Winter. Mexico. Syn. *B. hernandiæfolia*.
,, *nemo'phila* (shade-loving). See B. CATHCARTII.
,, *ni'gro-ve'nia* (black-veined). See B. GLANDULOSA.
,, *ni'tida* (shining-*leaved*). 1½. Pink. August. Jamaica. 1777. Syn. *B. pulchra*.
,, *obli'qua* (oblique). See B. NITIDA.
,, *Octa'vie*. Garden hybrid. 1889.
,, *octope'tala* (eight-petaled). 2. Greenish-white. October. Peru. 1835. Stove tuberous-rooted.
,, ,, *Lemoi'nei* (Lemoine's). Hybrid between *B. octopetala* and a tuberous Begonia. 1889.
,, *odora'ta* (fragrant). See B. SUAVEOLENS.
,, *odorati'ssima* (sweetest-scented). See B. BAUMANNI.
,, *ohlendorffia'na* (Ohlendorffian). 1. Pink. Brazil. 1879. Syn. *B. platanifolia ohlendorffiana*.
,, *o'lbia*. White. Leaves bronzy-green, spotted white. Brazil. 1884.
,, *opuliflo'ra* (Guelder-rose-flowered). 1. White. Spring. New Grenada. 1854.
,, *Ottonia'na* (Ottonian). Hybrid between *B. conchæfolia* and *B. coriacea*. 1859.
,, *Otto'nis* (Otto's). New Granada.
,, *ovatifo'lia* (ovate-leaved). Himalayas.
,, *palma'ris* (hand-shaped). Mexico.
,, *palma'ta* (hand-shaped). 1. White. August. Nepaul. 1819.
,, *papillo'sa* (pimpled). See B. INCARNATA PAPILLOSA.
,, *parviflo'ra* (small-flowered). White. 1881.
,, *parvifo'lia* (small-leaved). See B. DREGEI.
,, *parvipelta'ta* (small peltate-leaved). 3. White. Brazil. 1816.
,, *pa'tula* (spreading). See B. MACROPTERA.
,, *pa'tula* (spreading). (Regel Descr., 13.) Pink. Brazil. 1889.
,, *Pea'rcei* (Pearce's). 1. Yellow. Summer. Bolivia. 1865.
,, *Pea'rcei* × *Bauma'nni*. Garden hybrid.
,, *pelta'ta* (peltate-leaved). ¾. White. Brazil. 1815. Syns. *B. coriacea* of Hasskarl, and *B. hernandiæfolia* of B. M., t. 4676.
,, *peltifo'lia* (shield-leaved). See B. PARVIPELTATA.
,, *pentaphy'lla* (five-leaved). See B. MURICATA.
,, *periste'gia* (involucred). Brazil.
,, *petalo'des* (full-petaled). Pink, white. April. Peru. 1833.
,, *phyllomani'aca* (leaf-mad). Pale rose. Stem clothed with many small and a few large leaves. Winter. Guatemala. 1861.
,, *pi'cta* (painted). ¾. Pink. August. Nepaul. 1818. Stove tuberous-rooted.
,, *pictavie'nsis*. Garden hybrid between *B. scharffiana* and *B. metallica*.
,, *platanifo'lia* (plane-tree-leaved). 10. Pink. September. Brazil. 1829.
,, ,, *deco'ra* (decorated). Silvery markings on the leaves predominate in this variety.
,, ,, *illu'stris* (striking).
,, ,, *pulvina'ta* (cushioned).
,, *Po'ggei* (Pogge's). White. Congo. 1906.
,, *polya'ntha* (many-flowered). Mexico.
,, *polype'tala* (many-petaled). Red. Winter. Peru. 1878.
,, *prestonie'nsis* (Prestonian). Orange-red. Hybrid between *B. cinnabarina* and *B. nitida*.
,, *prismatoca'rpa* (prism-fruited). ¼. Yellow. Summer. Trop. Africa. 1861.
,, *pruina'ta* (frosty-leaved). White. Costa Rica. 1870.
,, *pulche'lla* (neat). ½. White. July. Brazil. 1823. Stove annual.
,, *pu'lchra* (beautiful). See B. NITIDA.
,, *puncta'ta* (spotted). See B. HERACLEIFOLIA.
,, *punctati'ssima* (much spotted). Hybrid between *B. decora* and *B. Rex*. 1899.
,, *putzeysia'na* (Putzeys'). White. Winter. Venezuela. 1871.
,, *radia'ta* (rayed). See B. HERACLEIFOLIA.
,, *radi'cans* (rooting). Brazil. A climber.

B. Ra'jah. Pink. Leaves rich metallic green and coppery-red. Malaya. 1894.
,, *ramenta'cea* (scaly-*stemmed*). 1. Whitish-blush. June. Brazil. 1830. Stove herbaceous perennial.
,, *Reichenhei'mi* (Reichenheim's). Hybrid between *B. rubella* and *heracleifolia*. 1903.
,, *renifo'rmis* (kidney-shaped). See B. DREGEI and B. VITIFOLIA.
,, *Re'x* (king). Pink. Himalayas. 1858. There are many fine varieties of this in cultivation, all noted for handsome foliage.
,, *Re'x* × *deco'ra* (Jard., 1886, 267, f. 123). Many hybrids have been raised.
,, *Re'x* × *socotra'na*. Garden hybrid. 1894.
,, *Rhee'dii* (Rheed's).
,, *rhizocarpoi'des* (Rhizocarp-like). Epiphytic on trees. S. Brazil. 1902.
,, *rhizocau'lis* (rooting-stemmed). Pink. August. Central Amer. 1856.
,, *richardsia'na* (Richardsian). 1. White. Natal. 1871.
,, *ricinifo'lia* (castor-oil-leaved). Garden hybrid. 1882.
,, ,, *gigante'a odora'ta*. Hybrid between *B. ricinifolia* and *fulgens* × *scharffiana*. 1905.
,, *Ro'zlii* (Rœzl's). See B. LYNCHIANA.
,, *rosa'cea* (rose-like). ½. White. September. New Grenada. 1857.
,, *rosæflo'ra* (rosy-flowered). 1. Bright rose. July. Andes of Peru. 1866.
,, *ro'seo-multiflo'ra* (many-flowered, rosy). Variety of *B. semperflorens*.
,, *rube'lla* (little-red). Leaves bronzy-green with paler nerves. Nepaul. 1883.
,, *rubricau'lis* (red-stemmed). 1½. Blush. Peru.
,, *ru'bro-ve'nia* (red-veined). ½. White. red. Bootan. 1852.
,, *rupe'stris* (rock). 2. Pink. April. Brazil. Stove herbaceous perennial.
,, *ru'tilans* (brilliant). 4. White, rose. October. 1855.
,, *sagitta'ta* (arrow-shaped). Garden hybrid. Pink. 1868.
,, *sangui'nea* (blood-red-*leaved*). 3. White. June. Brazil. 1829.
,, *Saunde'rsii* (Saunders'). Garden hybrid.
,, *sca'brida* (scabrid). White. Venezuela. 1857.
,, *sca'ndens* (climbing). White. S. Amer. 1874. Syns. *B. elliptica*, *B. lucida*, and *B. moritziana*.
,, *Sce'ptrum* (sceptre). Leaves palmate, blotched with silver-grey. Brazil. 1883.
,, *scharffia'na* (Scharffian). Brazil.
,, *scharffia'na* × *meta'llica*. Garden hybrid. 1890.
,, *scharffia'na* (Scharffian) of B. M., t. 7028. See B. HAAGEANA.
,, *schmidtia'na* (Schmidtian). White, tinted red on back.
,, ,, *ro'sea* (rosy). Deep rose-red.
,, *scutella'ta* (little-shield). See B. CONCHÆFOLIA.
,, *Sede'ni* (Seden's). Hybrid between *B. boliviensis* and *B. Veitchii*. 1870.
,, *Sello'wii* (Sellow's). White. September. Stove herbaceous perennial.
,, *semperflo'rens* (ever-blooming). Pink. Brazil. 1829. Early raised varieties are *B. carminea*, *grandiflora*, *gigantea*, *purpurea*, *atropurpurea*, *rosea*, and *Sturzii*.
,, *sine'nsis* (Chinese). 2. Pink. China and Japan. 1899.
,, *sinua'ta* (vandyked). 2. White. June. Brazil. 1836.
,, *socotra'na* (Socotra). Rose-pink. Winter. Socotra. 1880.
,, *sparsi'pila* (scattered hairs). Central Amer.
,, *spathula'ta* (spathulate). See B. CUCULLATA.
,, *stigmo'sa* (spotted-*leaved*). 1½. White. Stove herbaceous perennial.
,, *strigillo'sa* (finely strigose). Pink. Summer. Central Amer. 1851.
,, *suave'olens* (sweet-scented). 1. White. August. W. Ind. 1816. Syn. *B. odorata*.
,, *sulca'ta* (furrowed). 3. White. Colombia.
,, *Sutherla'ndii* (Sutherland's). 1 to 2. Orange. June. Natal. 1862.
,, *Teuscae'ri* (Teuscher's). Leaves deep green, spotted and blotched white. Dutch Ind. 1879.
,, *Theulie'ri ro'sea*. Hybrid derived from *B. semperflorens*. 1901.
,, *Thwaite'sii* (Thwaites'). 6. White and pink. Ceylon. 1852.
,, *tomento'sa* (felted). 3. White. Brazil.
B. tubero'sa (tuberous). ½. White. August. Amboyna. 1810. Stove tuberous-rooted.
,, *ulmifo'lia* (Elm-leaved). 3. White. Winter. Venezuela. 1854.
,, *umbraculi'fera* (umbrella-bearing). White. Brazil. (B. M., t. 7457.)
,, *undula'ta* (waved). 2. White. July. Brazil. 1826.
,, *urophy'lla* (tail-leaved). White. March. Mexico.
,, *Ve'itchii* (Veitch's). Scarlet. Summer. High Peruvian Andes. 1867.
,, *vendictia'na* (Vendictian). September. 1880.
,, *veno'sa* (veiny). 4. Brazil. 1899. (B. M., t. 7657.)
,, *vernico'sa* (varnished). See B. MULTINERVIA.
,, *Verschaffe'lti* (Verschaffelt's). Rose. Hybrid between *B. carolinæfolia* and *B. manicata*. 1881.
,, *Viau'di* (Viaud's). Hybrid between *B. Duchartrei* and *B. pictaviensis*. 1897.
,, *villo'sa* (villous). See B. HIRTELLA.
,, *vitifo'lia* (vine-leaved). 3. White. Winter. Brazil. 1833. Syns. *B. grandis* and *B. reniformis*.
,, *wageneria'na* (Wagenerian). 3. White. Winter. Brazil. 1856.
,, *Wallenstei'nii* (Wallenstein's). Leaves dark green and chocolate. 1884.
,, *wallichia'na* (Wallichian). 3. White or rose. India.
,, *Warscewi'czii* (Warscewicz's). See B. CONCHÆFOLIA.
,, *weltonie'nsis* (Walton). 1. Pink. Useful greenhouse or window plant. Hybrid. 1875.
,, *Wettstei'ni* (Wettstein's). Garden origin.
,, *Wi'lliamsii* (Williams'). White. Garden origin. 1882.
, *xanthi'na* (golden). 1. Golden-yellow. Summer. Himalayas. 1850.
,, ,, *La'zuli* (Lapis-lazuli). Leaves metallic purple.
,, ,, *pictifo'lia* (painted-leaved). Pale yellow. Leaves with silvery spots.
,, *zebri'na* (striped like a zebra). See B. ANGULARIS.

BE'HNIA. (A commemorative name. Nat. ord. Liliaceæ.)
Greenhouse evergreen climber. Seeds; divisions. Loam, peat, and sand.
B. reticula'ta (netted). 6–8. Greenish-yellow, or white. S. Africa. 1867.

BEILSCHMIE'DIA. (A commemorative name. Nat. ord. Lauraceæ.)
Stove evergreen tree. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
B. pe'ndula (drooping). 40. Yellow. Mexico. 1800.

BEJA'RIA. See BEFARIA.

BELAMCA'NDA. (A commemorative name. Nat. ord. Liliaceæ.)
Hardy, perennial herb. Seeds; divisions in spring. Rich, light soil in a sheltered situation.
B. chine'nsis (Chinese). See B. PUNCTATA.
,, *puncta'ta* (spotted). 2. Orange, spotted with crimson. June. China. 1759.

BELLADO'NNA. See ATROPA.

BELLADONNA LILY. *Amary'llis Bellado'nna.*

BELLEISLE CRESS. *Barbare'a præ'cox.* See AMERICAN CRESS.

BELLEVA'LIA. (Named after *P. R. Belleval*, a French botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Hyacinthus.)
Hardy bulbs; offsets; common garden-soil.
B. Auche'ri (Aucher's). See HYACINTHUS AUCHERI.
,, *opercula'ta* (lid-covered). 1. White. May. Italy. 1596. See H. ROMANUS.
,, *syri'aca* (Syrian). Orange, blue. May. Syria. 1844. See H. TRIFOLIATUS.

BELL-FLOWER. *Campa'nula.*

BELL GLASSES. Formerly these which are bell-shaped, with a nob at the top, were much in use for covering cuttings, and even now amateurs who have no ordinary propagating pit may make good use of them for covering cuttings. In the older editions of the *Dictionary* they are recommended for use in the propagation of many plants for which no modern grower would think of using them. The ordinary propagating pit

or frame being now more in use, even for Erica cuttings the Bell glasses are now dispensed with. Yet there is a revival of the French method of protecting early spring crops with "cloches" (or large bell glasses). It is, however, doubtful if they can come into general use, the expense from breakage, &c., being too great.

BELLIDIA'STRUM. (From *bellis*, a daisy, and *astrum*, a star; being star-like. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Aster.)

B. Miche'lii (Micheli's). See ASTER BELLIDIASTRUM.

BE'LLIS. The Daisy. (From *bellus*, pretty; referring to the flowers. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

All the cultivated kinds are hardy herbaceous perennials. Seeds, but chiefly division of the roots; common soil.

B. hy'brida (hybrid). See B. PERENNIS.
,, *integrifo'lia* (entire-leaved). ½. White, pink. July. Texas. 1801.
,, *pere'nnis* (perennial). ½. White. June. Britain. This is the common Daisy.
,, ,, *aucubæfo'lia* (Aucuba-leaved). ½. Red. Leaves creamy-yellow veined.
,, ,, *conspi'cua* (conspicuous). Red.
,, ,, *fistulo'sa* (piped, *double-quilled*). See B. P. TUBULOSA.
,, ,, *horte'nsis* (garden, *large-double*). ½. Red. June.
,, ,, *proli'fera* (proliferous). ½. Striped. June. Commonly called *The Hen and Chickens*.
,, ,, *tubulo'sa* (tubular). ½. Double-quilled. Red.
,, *rotundifo'lia* (round leaved). ½. White. Algeria. 1873.
,, ,, *cærule'scens* (round-leaved blue). ½. Pale lilac-blue. Algeria. 1873. The Blue Daisy.
,, *sylve'stris* (wood). ½. White. June. Portugal. 1797.

It is curious that the daisy is not more cultivated and crossed by florists and amateurs. It is quite as capable of improvement as the chrysanthemum. The continental florists have not treated it with similar neglect; and M. Van Houtte, of Ghent, has more than twenty distinct varieties in his catalogue—white, pink, and variegated; quilled, red-disked, and double. In recent years English growers have given more attention to these attractive flowers, and we have some very fine varieties.

BE'LLIUM. (From *bellis*, a daisy; the flowers being like the daisy. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Seeds and divisions; sandy soil, and a little peat.

B. bellidioi'des (daisy-like). ½. White. July. Italy. 1796. Hardy annual.
,, *crassifo'lium* (thick-leaved). ½. Whitish-yellow. June. Sardinia. 1831. Half-hardy perennial.
,, *interme'dium* (intermediate). ½. White. August. Hardy herbaceous perennial.
,, *minu'tum* (minute). 1. White. August. Levant. 1772. Hardy herbaceous perennial.

BELLOWS. The bellows formerly used for the fumigating with Tobacco have quite gone out of use, but we have various designs of a smaller size which are used for distributing the different powder insecticides. There are also various other distributors of powder insecticides. See notes on FUMIGANTS and INSECT PESTS.

BELL PEPPER. *Cap'sicum gros'sum.*

BELLU'CIA. (A handsome, evergreen, stove shrub or tree, belonging to the nat. ord. of *Melastomads* [Melastomaceæ]. It is propagated by firm cuttings in sand in a close case. Loam, peat, and sand.)

B. Aublе'tii (Aublet's). Flesh-coloured and white. Guiana. 1820.

BELOPE'RONE. (From *belos*, an arrow, and *perone*, a band, or strap; in reference to the arrow-shaped connectivum. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Justicia.)

Stove evergreen shrubs. Cuttings; light loam. Pot in loam and leaf-mould with sand and a little manure added. Summer temp., 60° to 70°; winter, 45° to 55°.

B. angustiflo'ra (narrow-flowered). Purple-violet. Trop. Amer. 1908.

B. atropurpu'rea (dark purple). 2. Dark purple. Brazil.
,, *auranti'aca* (orange). S. Amer.
,, *caracasa'na* (Caraccas). 5. Violet. May. Caraccas. 1822. Trailer.
,, *cilia'ta* (ciliated). See DIANTHERA.
,, *nemoro'sa* (grove). 2. Purple. May. W. Ind. 1795.
,, *oblonga'ta* (oblong-*leaved*). 3. Rosy-purple. September. Brazil. 1832.
,, *plumbaginifo'lia* (Leadwort-leaved). 3. Brazil.
,, *viola'cea* (violet). 3. Violet. Mexico. 1859.

BELOSPE'RMA ATROPURPU'REA. See SIMONSIA CHRYSOPHYLLA.

BENDING-DOWN. This term is chiefly applied to the bending of the annual or other shoots of fruit-trees, for the purpose of making them fruitful, or to make them assume some desired form. Balls of clay have been fastened to the extremities of the shoots, to weigh them down into the position required; but the most desirable mode is by fastening them by a string to pegs driven into the ground.

BENGAL QUINCE. *Æ'gle Marme'los.*

BENJAMIN-TREE. *Fi'cus Benjami'na* and *Linde'ra Benzo'in.*

BENTHA'MIA. (Named after *Mr. Bentham*, a distinguished English botanist. Nat. ord. *Cornels* [Cornaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Now referred to Cornus.)

Hardy evergreen shrubs. Layers; seeds where procurable; loam; does in a sheltered place.

B. flo'rida (flowery). See CORNUS.
,, *fragi'fera* (strawberry-fruited). See C. CAPITATA.
,, *japo'nica* (Japanese). See C. KOUSA.

It is doubtful whether *B. fragi'fera* will endure our winters unprotected, except in our southern counties. It ripens its fruit against a wall in Devonshire. It is like a raspberry, and ornamental, but not eatable.

BENTI'NCKIA. (A genus of Palms. Nat. ord. Palmaceæ.)

Handsome feather-leaved Palms, with finely cut segments. Seeds. Sandy loam and a little peat. Temp., 55° to 60° in winter; 70° to 80° in summer.

B. Condapa'nna (Condapanna). India.
,, *nicoba'rica* (Nicobar). 2 to 70. Leaves 6 to 8 feet long; leaflets 2 feet. Nicobar Islands. (Sand. Cat., 1895, 46.)

BERA'RDIA. (Named after *M. Berard*, a chemist of Montpelier. Nat. ord. *Bruniads* [Bruniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Raspalia.)

B. globo'sa (globose). 2. White. July. 1816.
,, *microphy'lla* (small-leaved). See RASPALIA MICROPHYLLA.
,, *palea'cea* (chaffy). See NEBELIA PALEACEA.
,, *phylicoi'des* (Phylica-like). See RASPALIA PASSERINOIDES.

BERA'RDIA. (Named after *M. Berard*. Nat. ord. *Composites* [Compositæ]. This is the true Berardia.)

Hardy herbaceous perennial. Seeds. Well drained, good garden soil, on a rockery.

B. subacau'lis (nearly stemless). ½. Whitish, solitary, large. Mountains of France.

BERBERIDO'PSIS. (From *Berberis*, the Barberry, and *opsis*, like; the shrub being somewhat like a Barberry. Nat. ord. Berberidaceæ.)

Handsome, evergreen shrub, hardy in the south and west, but requiring the protection of a wall in the midlands and north. Seeds or cuttings with a heel in spring in cold frame. Layers in August to October. Ordinary soil, well drained.

B. coralli'na. 6 to 10. Crimson-red. Chili. 1862.

BE'RBERIS. The Barberry. (From *berberys*, its Arabian name. Nat. ord. *Berberids* [Berberidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

We have reunited with this genus all the species separated from it, and called *Mahonias*. Seeds, sown in spring; cuttings root freely if planted early in autumn; and suckers are abundantly produced. Grafting is

resorted to with rare species. Deep, sandy soil. All are hardy, except where otherwise specified. See BARBERRY.

EVERGREENS.

B. actinaca'ntha (ray-spined). 3. Yellow. June. Strait of Magellan.
„ *acumina'ta* (pointed-leaved). Bronzy-yellow. S.W. China. (Veitch I. N., 1906, 2 f.).
„ *andrea'na* (Andrean). 6. Yellow. Uruguay. 1899.
„ *angulo'sa* (angular). Yellow. Northern Ind. 1844.
„ *Aquifo'lium* (holly-leaved). 6. Yellow. April. N. Amer. 1823.
„ „ *fascicula'ris* (fascicled). 4 to 6. Yellow.
„ „ *latifo'lia* (broad-leaved).
„ „ *macrophy'lla* (large-leaved).
„ „ *murraya'na* (Murrayan).
„ „ *rotundifo'lia* (round-leaved).
„ „ *undula'ta na'na* (wavy-leaved dwarf).
„ *argu'ta* (acute-leaved). Lemon yellow. Panicle 12–16 in. Country unknown. 1908. Syn. *Mahonia arguta.*
„ *arista'ta* (awned) of B. M., t. 2549. See B. UMBELLATA.
„ *asia'tica* (Asiatic). 4. Yellow. Nepaul. 1823.
„ *aurahuace'nsis* (Aurahua). Golden-yellow. New Grenada. 1847.
„ *aurahuace'nsis* of gardens. See B. LYCIUM.
„ *Bea'lei planifo'lia* (Mr. Beale's Chinese, flat-leaved). See B. JAPONICA.
„ *buxifo'lia* (box-leaved). 3. Yellow. Strait of Magellan. 1827.
„ *conci'nna* (neat). 2. Yellow. Sikkim Himalaya.
„ *congestiflo'ra hakeoi'des* (crowded-flowered, Hakea-like). 3 to 4. Bright yellow. Chili. (B. M., t. 6770.)
„ *Darwi'nii* (Darwin's). 2. Orange. May. S. Chili. 1849.
„ *dealba'ta* (whitened-*leaved*). 5. Yellow. May. Mexico. 1833.
„ *dia'phana* (thin-leaved). 6 to 8. Yellow. N.W. China.
„ *du'lcis* (sweet-*fruited*). See B. BUXIFOLIA.
„ *Ehrenbe'rgii* (Ehrenberg's). Yellow, white. Mexico.
„ *e'legans* (elegant). See B. LYCIUM.
„ *emargina'ta* (notch-*petalled*). See B. VULGARIS.
„ *empetrifo'lia* (Empetrum-leaved). 2. Yellow. May. Strait of Magellan. 1827. Half-hardy.
„ *fascicula'ris* (bundle-*flowered*). See B. AQUIFOLIUM FASCICULARIS.
„ *floribu'nda* (free-flowering). See B. ARISTATA.
„ *Fortu'nei* (Fortune's). Yellow. July. China. 1846.
„ *Fremo'nti* (Fremonts'). Yellow. Texas and Arizona. 1888.
„ *Gagnepai'nii* (Gagnepain's). 3–6. Delicate yellow. Western China. 1907.
„ *glau'ca* (sea-green). Yellow. Colombia. Greenhouse.
„ *gluma'cea* (chaffy). See B. NERVOSA.
„ *Guimpe'lii* (Guimpel's). Yellow. Origin unknown.
„ *heterophy'lla* (various-leaved). 4. Yellow. May. Strait of Magellan. 1805.
„ *Hooke'ri* (Hooker's). See B. WALLICHIANA.
„ *hy'brida autumna'lis* (hybrid, autumn-flowering). 4. Orange. 1884.
„ *hypoleu'ca* (white beneath). See B. ASIATICA.
„ *ilicifo'lia* (holly-leaved). 4. Yellow. July. Terra del Fuego. 1791.
„ *ine'rmis* (unarmed). 2. Yellow. Strait of Magellan. 1827. Half-hardy.
„ *Jameso'nii* (Jameson's). Yellow. Ecuador. 1850.
„ *japo'nica* (Japanese). 3 to 4. Yellow. Japan. 1850. Syns. *B. Bealei* and *B. Bealei planifolia.*
„ „ *flo're lu'teo.* Chrome-yellow. 1902.
„ *leschenaultia'na* (Leschenaultian). See B. NEPALENSIS.
„ *loxe'nsis* (Loxanese). 3 to 4. Yellow. Peru. Not quite hardy.
„ *lu'tea* (yellow). 18. Yellow. Ecuador.
„ *Ly'cium* (ophthalmic). Yellow. June. Himalayas. Syns. *B. aurahuacensis* of gardens, and *B. elegans* of gardens.
„ *macrophy'lla* (large-leaved). See B. WALLICHIANA LATIFOLIA.
„ *mi'tis* (gentle-*thornless*). See B. VULGARIS.
„ *monta'na* (mountain). Yellow. Chili.
„ *nepale'nsis* (Nepaul). 4. Yellow. Himalayas.
B. nervo'sa (*large*-nerved). Yellow. June. N. Amer. 1804.
„ *Neube'rti* (Neubert's). Hybrid between *B. Aquifolium* and *B. vulgaris.* 1891.
„ *pa'llida* (pale). Yellow. April. Mexico. 1844. Greenhouse.
„ *pangharange'nsis* (Pangharang). 1848. Half-hardy.
„ *parviflo'ra* (small-flowered). 3. Yellow. May. S. Amer. 1846. Greenhouse.
„ *pruino'sa* (frosted). 3. Sulphur-yellow. Yunnan, China. 1896.
„ *re'pens* (creeping). 1 to 2. Yellow. N. Amer. 1822. Syn. *Mahonia repens.*
„ *ruscifo'lia* (Butcher's-broom-leaved). 5. Yellow. May. Argentina. 1823.
„ *sangui'nea* (blood-red). Sepals red, yellow inside. Western China. 1903.
„ *stenophy'lla* (narrow-leaved). Golden-yellow. Hybrid between *B. empetrifolia* and *B. Darwinii.*
„ *tenuifo'lia* (thin-leaved). Vera Cruz. 1836.
„ *tincto'ria* (dyers'). Neilgherries.
„ *trifoliola'ta* (three-leafleted). Yellow. May. Texas. 1839. Greenhouse.
„ *trifu'rca* (three-forked). 6. Yellow. Spring. China. 1850.
„ *undula'ta* (wavy-leaved). 6. Yellow. Peru.
„ *virga'ta* (twiggy), of Jour. Hort. Soc. See B. PARVIFLORA; of Hort. Koch. See B. ACTINACANTHA.
„ *wallichia'na* (Wallich's). 4. Yellow. May. Nepaul. 1820. Half-hardy.
„ „ *latifo'lia* (broad-leaved). Himalayas. Syn. *B. macrophylla.*
„ „ *microca'rpa* (small-fruited). Khasia Hills.
„ „ *pa'llida* (pale). Bhotan. 1904.

DECIDUOUS.

B. approxima'ta (approximate). 5. Pale yellow, small. China. 1909.
„ *arista'ta* (bearded). 6. Yellow. Northern Ind. 1825. Syns. *B. Chitria, B. coriaria.*
„ „ *floribu'nda* (free-flowering). 10. Yellow. June. Nepaul. *B. umbellata* of B. R., 1844, t. 44.
„ „ *integrifo'lia* (entire-leaved). Nearly spineless. 1888.
„ *Bretschnei'deri* (Bretschneider's). 6 to 10. Pale yellow. N. China. 1907.
„ *canade'nsis* (Canadian). 5. Yellow. May. Canada. 1759.
„ *carolinia'na* (Carolina). See B. CANADENSIS.
„ *coria'ria* (tanner's). See B. ARISTATA.
„ *crataegina* (Cratægus-like). 6. Yellow. May. Asia Minor. 1829. A form of *B. vulgaris.*
„ *cre'tica* (Cretan). 3. Yellow. April. Candia. 1759.
„ „ *serratifo'lia* (saw-edged-leaved). Yellow. May. Candia. 1759.
„ *dau'rica* (Daurian). 8. Yellow. May. Dauria. 1818.
„ *dictyophy'lla* (netted-leaved). 6. Pale yellow. Yunnan, China. 1901.
„ *Fendle'ri* (Fendler's). 6. Yellow. Rocky Mountains. 1888.
„ *floribu'nda* (many-flowered). See B. ARISTATA FLORIBUNDA.
„ *hetero'poda* (various-stalked). Yellow. Central Asia.
„ *ibe'rica* (Iberian). A form of *B. vulgaris.*
„ *intege'rrima* (very entire). Yellow. Central Asia.
„ „ *Pyraca'ntha* (Fiery-Thorn-leaved).
„ *parvifo'lia* (small-leaved). 2. Pale yellow. W. China. 1910.
„ *provincia'lis* (Provence). A form of *B. vulgaris.*
„ *rotundifo'lia* (round-leaved). Light yellow. Chili. 1881.
„ *sero'tina* (late). Origin unknown.
„ *sibi'rica* (Siberian). 2. Yellow. July. Siberia. 1790.
„ *Siebo'ldii* (Siebold's). Pale yellow. Japan. 1890.
„ *sine'nsis* (Chinese). 4. Yellow. May. China. 1815.
„ *Thunbe'rgii* (Thunberg's). Red, straw. April. Japan. 1882.
„ „ *mi'nor* (smaller). A dwarf variety. 1900.
„ *umbella'ta* (umbellate-*flowered*). 6. Yellow. Nepaul. 1842. Syn. *B. aristata* of B. M., t. 2549.
„ *vire'scens* (greenish). Syn. *B. belstaniana.*
„ *vulga'ris* (common). 10. Yellow. April. England.
„ „ *a'lba* (white-*fruited*). See B. v. FRUCTU ALBO.
„ „ *aspe'rma* (seedless). 6. Yellow. April. Europe.

B. vulga'ris du'lcis (sweet-*red-fruited*). Yellow. May. Austria. Evergreen.
„ „ *fo'liis purpu'reis* (purple-leaved). 10. Yellow. May. 1841.
„ „ *fo'liis variega'tis* (Leaves variegated).
„ „ *fru'ctu a'lbo* (white fruited).
„ „ *fru'ctu ni'gro* (black fruited).
„ „ *glau'ca* (milky-green-*leaved*). 10. Yellow. May.
„ „ *longifo'lia* (long-leaved). 10. Yellow. May.
„ „ *lu'tea* (yellow-*fruited*). 10. Yellow. May. Europe.
„ „ *macrophy'lla* (large-leaved). 1905.
„ „ *mi'tis* (gentle-*thornless*). 10. Yellow. May.
„ „ *ni'gra* (black-*fruited*). See B. v. FRUCTU NIGRO.
„ „ *purpu'rea* (purple-fruited).
„ „ *viola'cea* (violet-fruited).
„ *Wilso'næ* (Mrs. Wilson's). Golden. Fruit coral red. Western China. 1907.
„ *yunnane'nsis* (Yunnan). 3–6. Pale yellow. Western China. 1908.

BERCHE'MIA. (Named after *M. Berchem*, a French botanist. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Seeds, cuttings, and divisions; sandy loam and peat. All twiners. Greenhouse treatment for the two species first named. *B. volu'bilis* and *racemosa* are hardy.

B. floribu'nda (many-flowered). White. Nepaul. 1827.
„ *linea'ta* (lined). 8. Green. June. China. 1804.
„ *racemo'sa* (racemed). 10. Green. Japan and China. 1888.
„ „ *variega'ta* (variegated).
„ *volu'bilis* (twining). 15. Green. June. Carolina. 1714. "Supple-Jack."

BERGAMOT MINT. See MENTHA AQUATICA CITRATA.

BERGE'RA. (Named after *M. Berger*, a botanist at Kiel. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
Stove evergreen shrubs. Layers and cuttings; sandy loam. Summer temp., 60° to 70°; winter, 55° to 60°.

B. intege'rrima (entire-leaved). Now referred to *Micromelum pubescens*.
„ *Koeni'gii* (Koenig's). Now referred to *Murraya Koenigii*.

BE'RGIA. (Named after *P. J. Bergius*, *M.D.* Nat. ord. *Water-peppers* [Elatinaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)
Hardy annual. Seeds; sandy soil.

B. cape'nsis (Cape of Good Hope). 1. White and red. June. S. Africa. 1820.
„ *verticilla'ta* (whorled). See B. CAPENSIS.

BERKHE'YA. (Named after *M. J. L. de Berkhey*, a Dutch botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Gorteria.)
All from S. Africa, and greenhouse evergreens, except where otherwise specified. Biennial species by seed, as a tender annual; herbaceous ones by seed, but chiefly divisions, in spring; evergreens by cuttings under a glass, in sandy soil; pot in sandy loam. Winter temp., 40° to 50°.

B. Adla'mi (Adlam's). 6. Yellow. S. Africa. 1897.
„ *carduifo'rmis* (Carduus-formed). 2½. Yellow. Autumn. 1864.
„ *carlinoi'des* (Carlina-like). Yellow. July. 1823.
„ *ce'rnua* (drooping-*flowered*). See DIDELTA CERNUA.
„ *cunea'ta* (wedge-*leaved*). 2. Yellow. June. 1812.
„ *cynaroi'des* (artichoke-like). 1. Yellow. June. 1789. Greenhouse herbaceous.
„ *frutico'sa* (shrubby). 2. Yellow. July. 1793.
„ *grandiflo'ra* (large-flowered). 2. Yellow. July. 1812.
„ *inca'na* (hoary). See B. FRUTICOSA.
„ *obova'ta* (reversed-egg-*leaved*). 2. Yellow. July. 1794.
„ *palma'ta* (hand-*leaved*). 3. Yellow. July. 1800.
„ *pectina'ta* (comb-*leaved*). See CULLUMIA PECTINATA.
„ *pinna'ta* (pinnate). 1. Yellow. July. 1813.
„ *purpu'rea* (purple). 3. Pale purple. S. Africa. 1872. Syn. *Stobæa purpurea*.
„ *spinosi'ssima* (most spiny). 2. Yellow. July. 1821. Greenhouse herbaceous.
„ *uniflo'ra* (one-flowered). 3. Yellow. July. 1815.

BERMUDA CEDAR. *Juni'perus bermudia'na*.

BERNA'RDIA. (A commemorative name. Nat. ord. Euphorbiaceæ.)
Stove evergreen shrub. Cuttings in sand in bottom-heat. Loam, peat, and sand.

B. dicho'toma (forked). 6. Green. July. W. Ind. 1768.

BERRY. A succulent or juicy fruit, formed from an inferior, one-celled ovary, with, at least, two rows of seeds attached to the inner walls and nestling in pulp, as in the Gooseberry and Currant. The term is, however, loosely applied to all sorts of succulent, juicy, or baccate fruits, such as strawberries, raspberries, grapes, rowan, mulberry, &c., the botanical structure of which is entirely different.

BERSA'MA. (A commemorative name. Nat. ord. Sapindaceæ.)
Evergreen stove tree. Cuttings in bottom-heat. Loam, peat, and sand.

B. usambare'nsis (Usambar). See B. USAMBARICA.
„ *usamba'rica* (Usambar). 50. White, silky. 1904.

BERTERO'A. (Named after *C. J. Bertero*, a friend of Decandolle's. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Now united with Alyssum.)
Biennial and perennial from seed and cuttings; the shrubby and rather more tender species from cuttings under a hand-glass, in summer; loamy soil.

B. inca'na (hoary). 2. White. July. Europe. 1640. Hardy biennial.
„ *muta'bilis* (changeable). 2. White, pink. July. Levant. 1802. Hardy herbaceous perennial.
„ *obli'qua* (unequal-sided-*leaved*). See B. MUTABILIS.

BERTHOLLE'TIA. Brazil Nut. (Named after *L. C. Berthollet*, a distinguished chemist. Nat. ord. *Myrtle-blooms* [Myrtaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
The Brazilian nuts of the shops are the produce of this ornamental stove evergreen tree. Cuttings, ripened wood, in sand, and in bottom-heat; peat and loam. Summer temp., 60° to 70°; winter, 55° to 60°.

B. exce'lsa (tall). 100. Para.

BERTOLO'NIA. (Named after *A. Bertoloni*, an Italian botanist. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
A remarkable genus of dwarf-spreading stove foliage plants, requiring a moist, moderate stove temperature; should be potted in loose soil consisting of peat, leaf-mould, and a small portion of fibrous loam with sand added and good drainage. They require careful attention, and when well grown are very attractive; propagated by divisions in close frame.

B. æ'nea (coppery). ½. Purple. Garden hybrid. 1882.
„ *gutta'ta* (spotted). See GRAVESIA GUTTATA.
„ *hirsu'ta* (hairy). See TRIOLÆNA HIRSUTA.
„ *houttea'na* (Van Houttean). Country unknown.
„ *macula'ta* (blotched). ½. Pink, purple. Brazil. 1850. (B. M., t. 4551.)
„ *margarita'cea* (pearly). See SALPINGA.
„ *marmora'ta* (marbled). ½. Purple. Brazil. 1858.
„ *primulæflo'ra* (primrose-flowered). See MONOLENA.
„ *pube'scens* (softly hairy). Leaves light and dark green. Ecuador.
„ *superbi'ssima* (most superb). See GRAVESIA GUTTATA SUPERBA.
„ *vitta'ta* (striped). Pale rose. Garden hybrid. 1879.

BERTONE'RILA. (Compounded from *Bertolonia* and *Sonerila* and applied to a garden race of hybrids. Nat. ord. *Melastomads* [Melastomaceæ].)
Stove herbaceous plants requiring similar treatment to Bertolonia. (Lind. Cat., 1896, 7, ff.)

BERZE'LIA. (Named after *Berzelius*, the celebrated chemist. Nat. ord. *Bruniads* [Bruniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Greenhouse evergreen shrubs, from the Cape of Good Hope. Cuttings of half-ripened wood in sand, under a glass; loam and peat. Winter temp., 40° to 45°.

B. abrotanoi'des (southernwood-like). 1½. White. June. 1787.
„ *lanigino'sa* (woolly). 3. White. July. 1774.
„ *squarro'sa* (spreading). 2. White. July. 1804.

BESCHORNE'RIA. (Named after *H. Beschorner*, a German botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Related to Agave.)

Warm greenhouse succulents of an evergreen character. They require similar treatment to the American Aloe (*Agave americana*).

B. bractea'ta (bracteated). 2. Reddish. March. Mexico. (B. M., t. 6641.)
,, *cohnia'na* (Cohnian). See B. TUBIFLORA.
,, *decosteria'na* (Decosterian). 7. Green and tinted red. Mexico. 1880. (B. M., t. 6768.)
,, *du'bia* (doubtful). 3. Green. Mexico. 1877. (R. H., 1877, 153–156.)
,, *pube'scens* (pubescent). Scape, 4 to 5. Green, fading to yellow. Mexico. 1906.
,, *supe'rba* (superb). Mexico.
,, *toneliа'na* (Tonelian). 4. Red, green. Mexico. 1872. (B. M., t. 6091.)
,, *tubiflo'ra* (tube-flowered). 5. Green, red. Mexico. 1845. Syns. *B. cohniana* and *Furcræa tubiflora*.
,, *Wri'ghtii* (Wright's). 8. Green. Mexico (?). 1901.
,, *yuccoi'des* (Yucca-like). 4. Green. Mexico. 1860.

BESLE'RIA. (Named after *Besler*, an apothecary at Nuremberg. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Gesnera.)

Stove evergreen under-shrubs, except where otherwise specified. Cuttings, slightly dried, and placed in sweet soil; peat and loam. Summer temp., 60° to 80°; winter, 50° to 60°.

B. cocci'nea (scarlet-*berried*). See ALLOPLECTUS COCCINEUS.
,, *crista'ta* (crested). See ALLOPLECTUS CRISTATUS.
,, *di'chrus* (two-coloured). See ALLOPLECTUS DICHROUS.
,, *grandifo'lia* (large-leaved). 3. Yellow. August. Brazil. 1823.
,, *Imra'yi* (Imray's). Yellow. W. Ind. 1862. Herbaceous.
,, *incarna'ta* (flesh-coloured-*berried*). 3. Yellow. Guiana. 1820. Stove herbaceous perennial.
,, *leuco'stoma* (white mouth). 1. Orange. New Grenada.
,, *lu'tea* (yellow-*flowered*). 3. Yellow. July. W. Ind. 1739.
,, *mo'llis* (soft). 3. Yellow. S. Amer. 1823.
,, *pulche'lla* (neat). See TUSSACIA PULCHELLA.
,, *serrula'ta* (finely saw-edged). See DRYMONIA SERRULATA.
,, *tigri'na* (tiger-spotted). 4. White, crimson. December. Caraccas. 1853.
,, *viola'cea* (purple-*berried*). 6. Yellow. Guiana. 1824. Stove evergreen climber.

BESOM, or **BROOM**, received its second name from being often made of the broom-plant; but the best, both for flexibility and durability, are made of the ling, or heath. Birch-brooms are the most common, and are those to which the name besom applies, and the most useful for all garden purposes; *beso*, in the Armorican language, being the birch. But whatever the material, they will endure much longer if soaked in water for some time before using. If kept constantly in water, they would be still less brittle. Where walks are liable to become mossy, a broom made of wire is frequently employed for sweeping them. If the wire be iron, it ought to be well dried and dipped in oil before and after being used, or it is soon destroyed by the rust. Small Rakes now take the place of these.

BESSE'RA. (Named after *Dr. Besser*, professor of botany at Brody. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Elegant little Mexican bulbs, allied to the Brodiæas.)

Offsets; sandy peat; kept dry and cool, but secure from frost when not growing; kept moist when growing and flowering. They require a cold pit or greenhouse.

B. e'legans (elegant). 2. Scarlet. September. Mexico.
,, ,, *fistulo'sa* (hollow-stalked). 1. Purple. September. Mexico. 1831.
,, ,, *Herbe'rti* (Dr. Herbert's). Purple and white. September. Mexico. 1846.
,, ,, *minia'ta* (vermilion). Scarlet, white. Mexico. 1850.

BE'TA. Beet Root. (From *bett*, the Celtic word for red; in reference to the red colour of the beet. Nat. ord. *Chenopods* [Chenopodiaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Hardy biennials, except where otherwise described. Seeds in March or April; deep soil. See BEET.

B. Ci'cla (Sicilian *white-beet*). 6. Green. August. Portugal. 1670.
,, *cri'spa* (curled). 6. Green. August. South of Europe. 1800.
,, *horte'nsis meta'llica* (metallic garden). Leaves blood-red.
,, *macrorhi'za* (long-rooted). 6. Green. August. Caucasus. 1820.
,, *mari'tima* (sea). 1. Green. August. Britain.
,, *pa'tula* (spreading). Green. Madeira.
,, *tri'gyna* (three-styled). 3. White. July. Hungary. 1796. Hardy herbaceous perennial.
,, *vulga'ris* (common *red-beet*). 4. Green. August. Europe. 1548.
,, ,, *lu'tea* (yellow-*rooted*). 4. Green. August. South of Europe.
,, ,, *macroca'rpa* (large-fruited).
,, ,, *ru'bra* (red-*rooted*). 4. Green. August. South of Europe.
,, ,, *vi'ridis* (green). 4. Green. August. South of Europe.

BE'TCKEA. (Named after *M. Betcke*, a botanist. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Plectritis.)

For all practical purposes, they may be taken as a common Valerian. Hardy annuals. Seeds in warm situations, in middle of May; or, better, in a slight hotbed, in the middle of March, and transplanted into common garden-beds.

B. ma'jor (larger). See P. SAMOLIFOLIA.
,, *samolifo'lia* (Samolus-leaved). See P. SAMOLIFOLIA.

BETLE NUT. *Pi'per Be'tle.*

BETO'NICA. Betony. (This genus, named after the Celtic title, *Bentonic*, is now united to Stachys.)

B. spica'ta robu'sta (spiked, robust). See STACHYS GRANDIFLORA ROBUSTA.

BE'TONY. *Sta'chys* and *Teu'crium beto'nicum.*

BE'TULA. Birch. (From its Celtic name, *betu*. Nat. ord. *Birchworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 4-*Tetrandria*.)

Hardy deciduous trees and shrubs, except where otherwise specified. Seeds sown as soon as ripe, or kept dry, and sown in the April following, in fine soil, and scarcely more than covered; deep, dry soil suits them best. Shrubs and particular species by suckers and grafting. The flowers of all are inconspicuous, having no petals. There are many which are very ornamental when grown as standards, grafted on the common sorts.

B. a'lba (common white). 40. April. Britain.
,, ,, *daleca'rlica* (Dalecarlian). 40. May. Europe.
,, ,, *fastigia'ta* (upright).
,, ,, *fo'liis variega'tis* (variegated-leaved). May.
,, ,, *macroca'rpa* (large-fruited). 40. June. Europe.
,, ,, *pe'ndula* (pendulous). April. Britain.
,, ,, *pe'ndula You'ngi* (Young's Weeping Birch).
,, ,, *purpu'rea* (purple-leaved).
,, ,, *pyramida'lis* (pyramidal).
B. a'lba, subspecies *pube'scens*, varieties as follows:—
,, ,, *fo'liis au'reis* (golden-leaved).
,, ,, *latifo'lia* (broad-leaved).
,, ,, *po'ntica* (Pontic). 70. May. Turkey.
,, ,, *pube'scens* (pubescent). 30. May. Britain.
,, ,, *undula'ta* (wavy-leaved). 30. May.
,, ,, *urticifo'lia* (nettle-leaved). 40. May.
,, *alnoi'des pyrifo'lia* (alder-like, pear-leaved). Central China.
,, *alpe'stris* (alpine). N. Europe.
,, *Bhojpa'ttra* (Bhojpattra). See B. UTILIS.
,, ,, *glanduli'fera* (gland-bearing). See B. UTILIS.
,, *carpinifo'lia* (horn-beam-leaved). See B. LENTA.
,, *corylifo'lia* (hazel-leaved). Japan.
,, *davu'rica* (Daurian). 30. July. Siberia. 1785.
,, ,, *parvifo'lia* (small-leaved). July. Siberia.
,, *Erma'ni* (Erman's). Japan. 1894.

B. exce'lsa (tall). See B. PAPYRIFERA.
,, *frutico'sa* (shrubby). 6. June. Siberia. 1818.
,, *glandulo'sa* (glanded). May. N. Amer. 1816.
,, *globispi'ca* (globular-fruited). Japan. 1907.
,, *gra'ndis* (great). See B. ALBA.
,, *gro'ssa* (large-tooth-leaved). Japan.
,, *hu'milis* (low). Northern Hemisphere.
,, *hum'ilis* × *pube'scens*. 1905.
,, *interme'dia* (intermediate). Alpine and Arctic Europe.
,, *lanulo'sa* (woolly). See B. NIGRA.
,, *le'nta* (pliant). 50. July. N. Amer. 1759.
,, *lu'tea* (yellow). 20. May. N. Amer.
,, *Maximowi'czii* (Maximowicz's). Japan. 1894.
,, *Medwedie'wi* (Medwediew's). Transcaucasia. 1887.
,, *mo'llis* (soft). E. Ind. 1840.
,, *na'na* (*smooth*-dwarf). 4. May. Northern Hemisphere.
,, ,, *macrophy'lla* (large-leaved). 6. May. Switzerland. 1819.
,, ,, *stri'cta* (upright). May.
,, *ni'gra* (black). 60. July. N. Amer. 1736.
,, *ova'ta* (egg-*leaved*). See B. ALBA.
,, *palle'scens* (palish). 6.
,, *papyra'cea* (paper). See B. PAPYRIFERA.
,, *papyri'fera* (paper-bearing). 50. June. N. Amer. 1750.
,, ,, *fu'sca* (blackish-brown). May. Carolina.
,, ,, *occidenta'lis* (western). Leaves large, shining. N.W. Amer. 1888.
,, ,, *platyphy'lla* (broad-leaved). 50. June. Carolina.
,, ,, *tricho'clada* (hairy-twigged). June. Carolina.
,, *papyri'fera* × *pu'mila*. Garden origin.
,, *populifo'lia* (poplar-leaved). 30. July. N. Amer. 1750. Hardy evergreen.
,, ,, *lacinia'ta* (cut-*leaved*). 30. July.
,, ,, *pe'ndula* (pendulous). July.
,, *pu'mila* (*hairy*-dwarf). 6. May. N. Amer. 1762.
,, ,, *fastigia'ta* (upright).
,, ,, *Gra'yi* (Gray's dwarf). 1890.
,, *pu'mila* × *le'nta*. Garden hybrid. 1895.
,, *raddea'na* (Raddean). Caucasus. 1887.
,, *ru'bra* (red). See B. NIGRA.
,, *Scopo'lii* (Scopoli's). 6.
,, *tri'stis* (sad). 10. May. Kamtschatka.
,, *ulmifo'lia* (elm-leaved). Japan. 1894.
,, *u'tilis* (useful). 50. May. Himalayas. 1840.
,, ,, *glandulı'fera* (gland-bearing). Near *B. Ermani* and *B. ulmifolia*. 1905.

BIANCEA SCANDENS. See CÆSALPINIA SEPIARIA.

BIA'RUM. (The ancient name of a plant. Nat. ord. Araceæ. Allied to Sauromatum.)

Hardy tubers that may be grown in any well-drained, good garden soil, but if heavy, use plenty of leaf-mould and sand. Propagated by offsets when the leaves die down.

B. angusta'tum (narrow). ½. Spathe and spadix blackish-purple. Syria. 1861. Syn. *Ischarum angustatum*.
,, *cri'spulum* (crisped). ½. Blackish-purple. Asia Minor. 1860.
,, *Christma'nni* (Christmann's). Cilicia.
,, *exi'mium* (tall). ½. Blackish-purple. Asia Minor. 1854.
,, *Ko'tschyi* (Kotschy's). ½. Blackish-purple. Syria. 1860.
,, *Pyra'mi* (Pyramus). ½. Spathe and spadix blackish-purple. Palestine. 1862.
,, *Spru'neri* (Spruner's). Closely related to *B. tenuifolium*. Greece. 1894.
,, *tenuifo'lium* (thin-leaved). ½. Dark brown-purple. June. S. Europe. Syns. *B. gramineum*, *B. constri'ctum*, and *Arum tenuifolium*.

BIBIO MARCI. St. Mark's Fly. Mr. Curtis says: "The larvæ, or grubs, of this insect generally live, in large groups of a hundred or more, in strawberry-beds. vine-borders, flower-pots, and similar undisturbed spots, feeding upon the roots, and sometimes destroying the entire plant. Bouché says they completely demolished his bed of Ranunculuses for several successive years, by eating up the tubers. The larva is dark brown, somewhat cylindrical, the belly flattened, moderately broad, and nearly linear; the head is comparatively small, deep brown, and very shining. It changes to a chrysalis, generally, towards the end of March. This is of a pale ochreous colour, the head being brightest. The female lays her eggs in the earth, and in the dung of horses and cows, in May. They do not hatch until August."

BI'DENS. (From *bis*, twice, and *dens*, a tooth; in reference to the seed. Nat. ord., *Composites*. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Coreopsis.)

Hardy ones may be grown in the common border. The others are scarcely worth cultivating; but we have named the best. The annuals and biennials from seed, and the perennials by divisions and suckers. All hardy, except when otherwise specified.

B. argu'ta (arguta). See B. HETEROPHYLLA.
,, *atrosangui'nea* (dark blood-red). 3. Black-crimson. Mexico. Root tuberous.
,, *berteria'na* (Berter's). See COSMOS CAUDATUS.
,, *bipinna'ta* (twice-leafleted). See COSMOS BIPINNATUS.
,, *chrysa'ntha* (golden-flowered). 2. Yellow. August W. Ind. 1752. Stove.
,, *corona'ta* (crowned). See COREOPSIS CORONATA.
,, *dahlioi'des* (Dahlia-like). 2. Pink, purple, rose, white. Mexico. 1910. Root tuberous.
,, *ferulæfo'lia* (Ferula-leaved). 2. Yellow. Autumn. Mexico. 1799.
,, *grandiflo'ra* (large-flowered). 2. Yellow. June. S. Amer. 1800. Annual.
,, *heterophy'lla* (various-leaved). 2. Yellow. August. Mexico. 1803. Greenhouse herbaceous perennial.
,, *hu'milis* (dwarf). Yellow. Peru. Half-hardy perennial. 1861.
,, *leuca'ntha* (white-flowered). 1½. White. July. W. Ind. Annual.
,, *macrospe'rma* (large-seeded). See B. PARVIFLORA.
,, *odora'ta* (sweet-scented). 3. White. June. Mexico. 1825. Annual.
,, *parviflo'ra* (small-flowered). 1. Yellow. June. Siberia. 1829.
,, *pilo'sa* (pilose). 6. White. June. W. Ind. 1699. Stove.
,, *pro'cera* (tall). 6. Yellow. November. Mexico. 1822. Herbaceous perennial.
,, *re'pens* (creeping). See B. TRIPARTITA.
,, *rubifo'lia* (Rubus-leaved). 6. Yellow. August. W. Ind. 1792. Stove.
,, *serrula'ta* (fine-toothed). See B. GRANDIFLORA.
,, *stria'ta* (striated). 3. White. Yellow. Autumn. Mexico. (B. M., t. 3155.)
,, *tripartı'ta* (triparted-leaved). 1 to 2. Yellow. Autumn. Britain.

BIDWI'LLIA. (Named after *Mr. Bidwell*, of Sydney, an ardent cultivator of bulbs. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anthericum.)

Hardy bulb. Divisions and offsets; light, rich soil. Grown in cool greenhouse.

B. glauce'scens (milky-green). White. May. Australia. 1843.

BIEBERSTEI'NIA. (Named after *M. Von Bieberstein*, who wrote a Russian Flora. Nat. ord. *Crane's-bills* [Geraniaceæ]. Linn. 10-*Monadelphia*, 4-*Decandria*.)

Half-hardy herbaceous perennial. Cuttings in close frame in the beginning of summer; seeds, in a slight hotbed, under a glass, in March or April. Requires the protection of a cold pit during winter, or a very dry, sheltered place.

B. odo'ra (sweet). 1. Yellow. May. Altaia. 1837.

BIENNIAL, from *biennis*, the Latin for of two years' continuance, is a plant which, being produced from seed in one year, perfects its seed and dies during the year following. Biennials may often be made to endure longer if prevented ripening their seeds; and many exotics, biennials in their native climes, are perennials in our stoves.

Hardy Biennials.—Some of these ripen their seeds as early as August, in which case they may be sown as soon as harvested. Others, ripening their seeds later, must have these reserved from sowing until May. The double varieties of wallflowers, &c., are propagated by cuttings.

Frame Biennials.—These require the shelter of a frame

during the early stages of their growth; to be removed thence, in May, to the borders, where they bloom in July and August.

BIFRENA'RIA. (From *bis*, twice, and *frænum*, a strap; in reference to a double strap, or band, by means of which the pollen masses are connected with their gland. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Maxillaria.)

Stove orchids. Offsets and divisions. Peat, sphagnum, charcoal, and broken pots; raised above the surface of pots, or in baskets. Summer temp., 65° to 85°; winter, 60° to 65°, and rather dry.

B. a'tro-purpu'rea (dark purple). Dark purple. Rio Janeiro. 1828.
„ *auranti'aca* (orange-coloured). ½. Orange-spotted. September. Demerara.
„ *au'reo-fu'lva* (orange-tawny). Orange. Rio Janeiro. 1840.
„ *bicorna'ria* (two-horned). Orange, spotted purple. Brazil. 1910.
„ *Charleswo'rthii* (Charlesworth's). Yellow, and lip spotted. Brazil. 1894.
„ *Dallema'gnei* (Dallemagne's). See B. TYRIANTHINA.
„ *fra'grans* (fragrant). Brazil.
„ *Hadwe'nii* (Mr. Hadwen's). See SCUTICARIA.
„ *Harriso'næ* (Mrs. Harrison's). White and yellow tips. September. Brazil. 1836.
„ „ *a'lba* (white). White, tipped red. Lip yellow, white, purple.
„ „ *buchania'na* (Buchanian). Violet purple, green, yellow. 1879.
„ *inodo'ra* (scentless). Green and purple. Brazil. 1843.
„ „ *xanthi'na* (yellow). Yellow. Bahia. 1866.
„ *leucorrho'da* (white, red). White. Lip veined rose. 1859.
„ *longico'rnis* (long-horned). Orange, brown. Demerara. 1843.
„ *meli'color* (honey-coloured). Honey-yellow, red. Brazil. 1877.
„ *pa'rvula* (small). Tawny-yellow. Lip purplish. Brazil. 1827.
„ *racemo'sa* (racemose). Straw-colour. Lip white, spotted. Brazil. 1843.
„ *tetrago'na* (four-angled). See LYCASTE TETRAGONA.
„ *tyrianthi'na* (purple). Violet-purple. Brazil. 1836. Syn. *Lycaste tyrianthina*.
„ „ *Goodso'næ* (Mrs. Goodson's). Light purple. 1904.
„ *vitelli'na* (yolk-coloured). Yellow. Rio Janeiro. 1838.

BIGELO'WIA. (Shrubby Composites, with all its florets tubular. Nat. ord. Compositæ.)

May be cultivated in any good garden soil, and do well against a wall.

B. grave'olens (strong smelling). 6 to 8. Yellow. N. Amer. 1907.
„ *nuda'ta* (naked). 2. Yellow. September. Carolina. 1818.

BIGLANDULA'RIA. See SINNINGIA.

BIGNO'NIA. Trumpet Flower. (Named after *Abbé Bignon*, librarian to Louis XIV. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

This order furnishes the most gorgeous climbers in the world; natives of the tropical forests in either hemisphere. Stove evergreen climbers, except where otherwise specified. Propagated easily by young, stiff side-shoots, taken off in summer, inserted in sand and peat in close frame, and placed in bottom-heat; peat and loam. Summer temp., 60° to 75°; winter, 45° to 55°. These mostly produce their flowers on short shoots, proceeding from well-ripened buds of the previous year's wood. Few do well as pot-plants; they like to ramble over the roof in a moderate stove temperature. If the wood is well hardened in summer, many of them do well on the rafters of a common greenhouse, and flower more freely than they would do in a stove; but you must have patience until they fairly mount the rafters. *Jasminoi'des* may be taken as a type of these. The only hardy species is *capreola'ta*, which is an ornamental wall-climber in a sheltered situation; propagated easily by cuttings of its roots, or shoots, under a hand-glass, in spring or autumn. The *ra'dicans* and its near neighbour, but prettier *grandiflo'ra*, the only other hardy species of the order, have been transferred to TE'COMA, which see; the difference in the genera consisting chiefly in the partition of the fruit, being parallel in *Bigno'nia* and contrary in *Te'coma*.

B. adenophy'lla (gland-leaved). See HETEROPHRAGMA ADENOPHYLLUM.
„ *æquinoctia'lis* (equinoctial). 40. Yellow. June. Guiana. 1768.
„ *æsculiflo'ra* (horse-chestnut-flowered). See TABEBUIA ÆSCULIFOLIA.
„ *a'lba* (white). See SPATHODEA BRACTEOSA.
„ *a'lbo-lu'tea* (white, yellow). Garden origin.
„ *allia'cea* (garlic-scented). 10. Yellow. Guiana. 1790.
„ *ama'na* (pleasing). See STEREOSPERMUM HYPOSTICTUM.
„ *apure'nsis* (Apure). 10. Yellow. Orinoco. 1824.
„ *argy'reo-viola'scens* (silvery-violet). Young leaves violet, later with silvery veins. S. Amer. 1865.
„ *articula'ta* (jointed). See PHYLLARTHRON NORONHIANUM.
„ *auranti'aca* (orange). Orange. S. Amer. 1874.
„ *bi'juga* (twin-leaved). 6. Madagascar. 1822.
„ *buccinato'ria* (trumpeter). 10. Red, orange. Mexico. 1824. (B. M., t. 7516.)
„ *cæru'lea* (blue). See JACARANDA CÆRULEA.
„ *ca'ndicans* (white). See ARRABIDÆA CANDICANS.
„ *cape'nsis* (Cape). See TECOMA CAPENSIS.
„ *capreola'ta* (tendrilled). 15. Scarlet. June. N. Amer. 1710.
„ „ *a'tro-sangui'nea* (dark blood-red). Dark red-purple. S. U. States. 1879.
„ *Caroli'næ* (Lady Caroline's). See PITHECOCTENIUM CAROLINÆ.
„ *Chamberlay'nii* (Chamberlayne's). See ANEMOPÆGMA RACEMOSUM.
„ *chelonoi'des* (Chelone-like). See STEREOSPERMUM CHELONOIDES.
„ *Chere're* (Cherere). See B. BUCCINATORIA.
„ *Chi'ca* (Chica). 10. Orinoco. 1819.
„ *chine'nsis* (Chinese). See TECOMA GRANDIFLORA.
„ *chrysa'ntha* (yellow-flowered). See TECOMA CHRYSANTHA.
„ *chrysoleu'ca* (yellowish-white). 10. Yellowish-white. July. S. Amer. 1824.
„ *Cle'matis* (Clematis). 15. Caraccas. 1820.
„ *Co'lei* (Cole's). See COLEA MAURITIANA.
„ *como'sa* (ending with hairs). See ADENOCALYMNA COMOSUM.
„ *crena'ta* (scolloped). 10. E. Ind. 1823.
„ *cruci'gera* (cross-stemmed). See B. CAPREOLATA.
„ *deci'piens* (deceiving). 10. S. Amer. 1823.
„ *diversifo'lia* (various-leaved). 10. Mexico. 1825.
„ *donia'na* (Donian). 12. White. Brazil. 1816.
„ *echina'ta* (bristly-*fruited*). See PITHECOCTENIUM AUBLETII.
„ *elonga'ta* (elongated). 8. Purple. S. Amer. 1820.
„ *floribu'nda* (many-flowered). See B. DONIANA.
„ *fraxinifo'lia* (Ash-leaved). See SPATHODEA FRAXINIFOLIA.
„ *gra'cilis* (slender). See B. UNGUIS-CATI.
„ *grandiflo'ra* (large-flowered). See TECOMA GRANDIFLORA.
„ *grandifo'lia* (large-leaved). 60. Purple, red. June. Caraccas. 1816.
„ *heterophy'lla* (various-leaved). See B. BUCCINATORIA.
„ *incarna'ta* (flesh-coloured). 4. White, orange. Guiana. 1820.
„ *i'ndica* (Indian). See OROXYLON INDICUM.
„ *insi'gnis* (remarkable). Garden name.
„ *jasminifo'lia* (jasmine-leaved). 10. White. Orinoco. 1826.
„ *jasminoi'des* (jasmine-like). See TECOMA JASMINOIDES.
„ *Kere're* (Cherere). See B. BUCCINATORIA.
„ *lactiflo'ra* (milk-flowered). See DISTICTIS LACTIFLORA.
„ *latifo'lia* (broad-leaved). See CALLICHLAMYS RIPARIA.
„ *laurifo'lia* (laurel-leaved). 20. Guiana. 1804.
„ *leuco'xylon* (white-wooded). See TECOMA LEUCOXYLON.
„ *Li'ndleyi* (Lindley's). 12. Variegated. Argentina. 1823.
„ *linea'ris* (linear). See CHILOPSIS SALIGNA.
„ *littora'lis* (shore). Pink, red. Mexico. 1824.
„ *longi'ssima* (longest). See CATALPA LONGISSIMA.
„ *lu'cida* (shining). 10. S. Amer. 1823.

B. magnifica (magnificent). Mauve to purplish-crimson. Colombia. 1879.
,, *meonantha* (smaller-flowered). See TECOMA AUSTRALIS.
,, *microphylla* (small-leaved). 15. White. Island of Domingo. 1820.
,, *mollis* (soft). 10. Guiana. 1818.
,, *mollissima* (very soft). 10. Caraccas. 1820.
,, *multifida* (many-cleft). 10. E. Ind. 1823.
,, *pallida* (pale-*flowered*). 15. White. July. W. Ind. 1823.
,, *Pandorea* (Pandora). See TECOMA AUSTRALIS.
,, *paniculata* (panicled). See AMPHILOPHIUM PANICULATUM.
,, *pentaphylla* (five-leaved). See TABEBUIA PENTAPHYLLA.
,, *perforata* (perforated). August. Brazil. 1881.
,, *picta* (painted). See B. LINDLEYI.
,, *pubescens* (downy). 15. Yellow. June. Campeachy. 1759.
,, *purpurea* (purple). 6. Purple. S. Amer. 1822.
,, *quadrangularis* (four-angled). 10. Trinidad. 1823.
,, *quadrilocularis* (four-celled). See HETEROPHRAGMY ROXBURGHII.
,, *radicans* (rooting). See TECOMA RADICANS.
,, *regalis* (royal). Bright yellow and red. Guiana. 1885.
,, *reticulata* (netted). Colombia. 1873.
,, *rodigasiana* (Rodigasian). Leaves variegated with white. 1893.
,, *Rœzlii* (Rœzl's). Colombia. 1870.
,, *rugosa* (wrinkled). White with yellow tube. Venezuela. (B. M., t. 7124.)
,, *salicifolia* (willow-leaved). 10. Yellow. Trinidad. 1824.
,, *sambucifolia* (Elder-leaved). See TECOMA STANS.
,, *Saundersii* (Saunders'). Gardens.
,, *serratifolia* (saw-leaved). See TECOMA SERRATIFOLIA.
,, *Serrata* (fine-toothed). See SPATHODEA SERRATULA.
,, *spatha'cea* (spathed). See DOLICHANDRONE RHEEDII.
,, *speciosa* (handsome). 20. Pink. May. Uruguay. 1838.
,, *spectabilis* (showy). 10. Purple. W. Ind. 1820.
,, *spicata* (spiked-*flowered*). Trinidad. 1822.
,, *staminea* (*long*-stamened). 10. Yellow. Hispaniola. 1825.
,, *stans* (standing). See TECOMA STANS.
,, *suberosa* (cork-*barked*). See MILLINGTONIA HORTENSIS.
,, *Thwaitsii* (Thwaits's). Origin unknown.
,, *tomentosa* (woolly). See PAULOWNIA IMPERIALIS.
,, *triphylla* (three-leaved). See TABEBUIA TRIPHYLLA.
,, *tweediana* (Mr. Tweedie's). 20. Yellow. June. Buenos Ayres. 1838.
,, *uncata* (hooked), of Andr. Bot. Rep., t. 530. See MACFADYENA UNCINATA.
,, *uncata* (hooked), of B. M., t. 1511. See SPATHODEA UNCATA.
,, *Unguis-Cati* (cat's -claw). Yellow. April. Trop. Amer. 1810. Syn. *B. gracilis*.
,, *variabilis* (variable). 10. Yellow, white. W. Ind. 1819.
,, *venusta* (lovely). 4. Orange. September. S. Amer. 1816.

BILBERRY. *Vaccinium Myrtillus.*

BILIMBI-TREE. *Averrhoa Bilimbi.*

BILL, a sharp-edged tool, employed in cutting hedges, sharpening stakes, &c. It should never be used in pruning; but, where the branch is too strong to be cut with the knife, the saw ought always to be applied. There are now many improved implements in the way of saws and Bills, which see.

BILLARDIE'RA. Apple Berry. (Named after *Labillardière*, a French botanist. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen climbers. Seeds sown in a little heat, in April, from cuttings in May or June, in sand, under a bell-glass; loam and peat. Summer temp., 50° to 70°; winter, 40° to 48°.

B. angustifolia (narrow-leaved). See B. SCANDENS.
,, *cymosa* (cymose). Violet. S. Australia. 1868.
,, *daphnoides* (Daphne-like). Yellow, purple. May. N. S. Wales. 1840.
B. fusiformis (spindle-shaped). See SOLLYA HETEROPHYLLA.
,, *longiflora* (long-flowered). 20. Crimson. July. Van Diemen's Land. 1810. Syn. *B. ovalis*.
,, *mutabilis* (changeable). 8. Crimson. August. N. S. Wales. 1795.
,, *ovalis* (oval-*leaved*). See B. LONGIFLORA.
,, *parviflora* (small-flowered). See MARIANTHUS TENUIS.
,, *scandens* (climbing). 12. Purple. August. N. S. Wales. 1790. Syn. *B. angustifolia*. (B. M., t. 1313.)

BILLBE'RGIA. (Named after *Billberg*, a Swedish botanist. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Stove plants, formerly belonging to Bromelia. Suckers and divisions; sandy loam, peat, and a little rotten cow-dung. Summer temp., 60° to 75°; winter, 55° to 60°.

B. amabilis (lovely). See B. VITTATA.
,, *amœna* (pleasing). See B. SPECIOSA.
,, *andegavensis*. Red, edged indigo. Garden hybrid. 1886.
,, *angustifolia* (narrow-leaved) Red. S. Amer. 1866.
,, *Bakeri* (Baker's). Green; bracts rose. Brazil. 1878. Syn. *B. pallescens*.
,, *baraquiniana* (Baraquinian). See B. DECORA.
,, *bicolor* (two-coloured). See B. PYRAMIDALIS.
,, *bifrons* (two-leaved). Red, yellow. Brazil. 1852.
,, *Binoti* (Binot's). Bracts and stem red. Brazil. 1896.
,, *bivittata* (two-striped). See CRYPTANTHUS BIVITTATUS.
,, *blireiana* (Blireian). Hybrid between *B. nutans* and *B. iridifolia*. 1889.
,, *breauteana* (Breautean). See B. VITTATO-BAKERI.
,, *Bruanti* (Bruant's). Garden hybrid between *B. decora* and *B. speciosa*.
,, *Cappei* (Cappe's). See B. VITTATO-BAKERI.
,, *Chantini* (Chantin's). Red, yellow. Summer. Brazil. 1877.
,, *chlorostricta* (green-spotted). See B. SAUNDERSII.
,, *clavata* (club-shaped). See ÆCHMEA BROMELIÆFOLIA.
,, *croyiana* (Croyan). See B. PYRAMIDALIS.
,, *cruenta* (bloody). 1. Blue, red. August. Rio Janeiro. 1824.
,, *decora* (adorned). Peru. (B. M., t. 6937.)
,, *decora-nutans*. Garden hybrid.
,, *discolor* (two-coloured). See B. SPECIOSA.
,, *elegans* (elegant). See B. SPECIOSA.
,, *Enderi* (Ender's), Blue; bracts coral-red. Brazil.
,, *Euphemiæ* (Euphemia's). Dark purple, green. S. Brazil. 1872. (B. M., t. 6632.)
,, *farinosa* (mealy). See B. ZEBRINA.
,, *fasciata* (fasciated). See ÆCHMEA FASCIATA.
,, *fastuosa* (calendared). See B. THYRSOIDEA.
,, *gireoudiana* (Gireoudian). Garden hybrid. 1887.
,, *glaziovii'na* (Glaziovian). See QUESNELIA STROBILISPICA.
,, *glymiana* (Glymian). See B. MORELI.
,, *horrida* (very spiny). Brazil. 1856.
,, ,, *superba* (superb).
,, *intermedia* (intermediate). Garden hybrid between *B. nutans* and *B. vittata*.
,, *iridifolia* (Iris-leaved). Scarlet, yellow. March. Brazil. 1825.
,, *krameriana* (Kramerian). Garden hybrid. 1888.
,, *leodiensis*. Garden hybrid between *B. vittata* and *B. nutans*.
,, *libonia'na* (Libonian). Blue. August. Brazil. 1858.
,, *Lietzei* (Lietz's). Brazil. 1881.
,, *macrocalyx* (large-calyx). Blue, green. Brazil. 1858.
,, *marmorata* (marbled). Brazil. (Ill. Hort., t. 48.)
,, *melanacantha* (black-spined). See ÆCHMEA SUAVEOLENS.
,, *morelia'na* (Morelian). See B. VITTATA.
,, *Morelii* (Morel's). Brazil. (B. M., t. 4835.)
,, *morrenia'na* (Morrenian). Brazil.
,, *nudicaulis* (naked-stemmed). See ÆCHMEA NUDICAULIS.
,, *nutans* (nodding). Green, blue; bracts rosy. Winter. Brazil. 1868.
,, *olens* (smelling). See KARATAS CAROLINÆ.
,, *pallescens* (becoming pale), of Baker. See B. BAKERI.
,, *pallescens* (becoming pale), of Koch. See B. SPECIOSA.

B. pa'llida (pale). See B. BAKERI.
,, *palliflo'ra* (pale-flowered). Nicara'gua.
,, *perringia'na* (Perringian). Garden hybrid between *B. nutans* and *B. liboniana*. 1890.
,, *polysta'chya* (many-spiked). See ÆCHMEA DISTICHANTHA.
,, *portea'na* (Portean). Brazil. (B. M., t. 6670.)
,, *purpu'rea* (purple). Rose, purple. October. Brazil.
,, *purpu'rea-ro'sea* (purple and rosy). See ÆCHME'A SUAVEOLENS.
,, *pyramida'lis* (pyramidal). 2. Crimson. February. Rio Janeiro. 1817.
,, ,, *bi'color* (two-coloured).
,, ,, *croyia'na* (Croyan).
,, ,, *farino'sa* (mealy).
,, *quesnelia'na* (Quesnelian). See QUESNELIA RUFA.
,, *quintusia'na* (Quintusian). Blue; bracts carmine-red. Brazil. 1890.
,, *Rancou'gnei* (Rancougnean). Hybrid, liboniana being one of the parents. 1884.
,, *rhodocya'nea* (red-blue). See ÆCHMEA FASCIATA.
,, *rhodocya'nea*, of gardens. See B. THYRSOIDEA.
,, *rhodocya'nea purpu'rea*. See ÆCHMEA FASCIATA PURPUREA.
,, *ro'sea* (rosy). Rose. Brazil.
,, *ro'seo-margina'ta* (rosy-margined). See QUESNELIA RUFA.
,, *ru'fa* (red). See QUESNELIA RUFA.
,, *sanderia'na* (Sanderian). Green, tipped blue; bracts rosy. Brazil. 1884.
,, *Saunde'rsii* (Saunders'). Blue; bracts crimson. Brazil. 1868.
,, *Skinne'ri* (Skinner's). See QUESNELIA RUFA.
,, *specio'sa* (showy). 1½. Carmine, violet; bracts carmine-rose. Brazil. 1877.
,, ,, *palle'scens* (pale).
,, *sphacela'ta* (scorched). See GREIGIA SPHACELATA.
,, *sple'ndida* (splendid). See B. THYRSOIDEA.
,, *thyrsoi'dea* (dense-flowered). Scarlet. November. Brazil. 1850.
,, ,, *longifo'lia* (long-leaved).
,, ,, *sple'ndida* (splendid).
,, *variega'ta* (variegated). Brazil. 1881.
,, *vexilla'ria* (standard). Hybrid between *B. thyrsoidea* and *B. moreliana*.
,, *vitta'ta* (striped). Indigo-blue, crimson. Leaves banded. Brazil. 1843.
,, ,, *ama'bilis* (lovely). Blue; bracts crimson. Brazil.
,, ,, *formo'sa* (showy). Bracts orange. 1879.
,, ,, *macraca'ntha* (large-spined).
,, ,, *Roha'nii* (Rohan's).
,, *vitta'to-Bake'ri* (striped-Baker's). Garden hybrid.
,, *vitta'to-nu'tans* (striped-nodding). Garden hybrid. 1885.
,, *Wetherе'lli* (Wetherell's). See B. MORELI.
,, *Wi'ndii* (Wind's). See B. VITTATO-NUTANS, and B. DECORA-NUTANS.
,, *Wio'ti* (Wiot's). See B. BAKERI.
,, *wittmackia'na* (Wittmackian). Hybrid between *B. amœna* and *B. vittata*.
,, *worlea'na* (worlean). See B. VITTATO-NUTANS.
,, *zebri'na* (zebra-*streaked*). 1½. June. S. Amer. 1826.
,, *zona'ta* (zoned-*leaved*). See B. VITTATA.

BILLO'TIA FLEXUO'SA is *Agonis flexuosa* from Australia.

BINDING. A term applied to adhesive soils, to describe the closeness and hardness of their texture in hot, dry seasons. (See BAKING.) This term applies, also, to some gardening processes. Thus, fastening a graft or bud in its place, by means of bast or other material, is termed *binding* in some counties.

BINDWEED. *Convo'lvulus.*

BIOPHY'TUM. (From *bios*, life, and *phuton*, a plant. Nat. ord. Geraniaceæ, tribe Oxalideæ.)

Interesting stove perennials allied to Oxalis. Propagated by seeds on a hotbed in spring. Soil, loam, peat, and sand.

B. proli'ferum (proliferous). Yellow. Ceylon.
,, *sensiti'vum* (sensitive). Yellow. July. Tropics. 1823. Syn. *Oxalis sensitiva*.

BIO'TA. See THUYA.

BIO'TIA. See ASTER CORYMBOSUS.

BIRCH. *Be'tula.*

BIRD-CHERRY. See PRUNUS PADUS.

BIRDLIME. Made from Mistletoe-berries and Holly bark, and used for catching birds.

BIRD-PEPPER. See CAPSICUM BACCATUM.

BIRDS are benefactors, as well as injurers, of the gardener. They destroy millions of grubs, caterpillars, and aphides, which would have ravaged his crops; but, at the same time, some commit havoc upon his fruit and seeds. The wisest course, consequently, is to scare them from the garden at such times, or from the portions of it in which they can be prejudicial, but to leave them to visit it unmolested whenever and wherever they cannot be mischievous. Thus, in early spring, a boy or two will drive them away during such times as the buds of the gooseberry, currant, and plum are open to their attacks; and again during the time that the cherries are ripe. To keep them from the fruit of late gooseberries and currants, it is sufficient to interlace thickly the bushes with black thread. To keep them from attacking peas and other vegetables just emerging from the soil, a similar display of brown thread, fastened to pegs about six inches from the surface, is also sufficiently deterring. Nets, where available, are also effectual guardians. By these aids, but especially by the watching during certain seasons, the gardener may protect himself from injury at a very trifling expense, without depriving himself of the services of the most sharp-sighted, most unwearying, and most successful of all insect-killers.

INSECT-EATING BIRDS, WHICH DO NOT EAT FRUITS OR SEEDS.

One of the most exclusively insect-eating birds is the golden-crested wren (*Regulus cristatus*, Ray), the smallest of the birds of Europe. The species which come nearest to the gold-crest, in appearance and habits, are the wood-wren (*Sylvia sibilatrix*), and the willow-wren, or hay-bird (*S. fitis*). The chiff-chaff (*S. loquax*) also ranks with these as an insect-eating bird, but is least common. The nightingale (*Sylvia luscinia*) does considerable service to the cultivator, by devouring numbers of caterpillars and grubs, as well as the moths, butterflies, and beetles from which they are produced. The whinchat (*Saxicola rubetra*), the stonechat (*S. rubicola*), and the wheatear (*S. œnanthe*), may be ranked as insectivorous birds; the stonechat particularly. The whinchat frequents cabbage-gardens and turnip-fields after the breeding season, and ought to be protected, because it not only eats insects, but small shell-snails, while it never touches fruits or seeds. The wheatear is equally beneficial in clearing crops from insects, without levying any contribution for its services.

The wagtails, particularly the yellow one (*Motacilla flava*), feed wholly on insects, particularly gnats, midges, and other flies that tease cattle. They will also follow the spade, to feed upon the worms and grubs turned up; and, in this way, no doubt, thousands of wireworms and other destructive vermin are effectually destroyed. The tree-pipet, or tit-lark (*Anthus arboreus*), and the meadow-pipet (*A. pratensis*), are common hedgebirds, which search busily after the autumnal hatches of caterpillars and grubs, or the smaller flies and beetles, which they find among the herbage. The cuckoo, the common fly-catcher, and the flusher, or lesser butcher-bird, may be classed among the insectivorous-feeding birds. To these many other hedge-birds might be added, such as the nightjar, the sedge-bird, the wryneck, the creeper, and the bottle-tit, none of which are in the least destructive; while, from their feeding exclusively, or nearly so, on insects, they are of much service in diminishing the number of such as are injurious to field and garden crops.

INSECT-EATING BIRDS WHICH EAT FRUIT OR SEEDS.

These are the common wren, the hedge-sparrow, or dunnock, the redbreast, the redstart, the tom-tit the cole-tit, the marsh-tit, and the greater-tit. The weeds and insects which these birds destroy will, however, certainly more than compensate for the few heads of grain, the flower-seeds, or small fruit which they may occasionally pilfer.

FRUIT-EATING BIRDS, WHICH ALSO FEED ON INSECTS.

In this list are the black-cap, babillard (*Curruca garrula*), the garden warbler, the whitethroat, the missel-thrush, the song-thrush, the blackbird, and the starling.

DECIDEDLY DESTRUCTIVE BIRDS.

The greater portion of those to be enumerated are exclusively grain-eaters, and make no return for their depredations by destroying insects, though they no doubt contribute to keep down the diffusion of weeds by the quantity of seeds which they devour. The goldfinch, the yellow-hammer, the cirl-bunting, the reed-bunting, the corn-bunting, the skylark, the woodlark, the linnet, the chaffinch, the mountain-finch, the bullfinch, the house-sparrow, and the tree-sparrow.

BIRD'S BILL. *Trigone'lla ornithopodioi'des.*

BIRD'S EYE. *Pri'mula farino'sa.*

BIRD'S FOOT. *Orni'thopus* and *Eupho'rbia Orni'thopus.*

BIRD'S-FOOT FERN. *Pellæ'a Orni'thopus.*

BIRD'S-FOOT TREFOIL. *Lo'tus.*

BIRD'S NEST. *Asple'nium Ni'dus.*

BIRD'S TONGUE. *Ornithoglo'ssum.*

BIRTHWORT. *Aristolo'chia.*

BISCUTE'LLA. Buckler Mustard. (From *bis*, double, or twice, and *scutella*, a saucer; in reference to the shape of the seed-vessel when bursting. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Thlaspi, or Candytuft.)

All hardy. The annuals, by seed in March; the perennials, by division, or as early as weather permits in spring. Common soil.

PERENNIALS.

B. ambi'gua (doubtful). See B. LÆVIGATA.
,, *coronopifo'lia* (buckthorn-leaved). See B. LÆVIGATA.
,, *di'dyma* (didymous). 1½. Yellow. July. Mediterranean Region. 1822.
,, *lævига'ta* (smooth-*podded*). 1. Yellow. June. Italy. 1777.
,, ,, *alpe'stris* (alpine). 1. Yellow. June. Hungary. 1816.
,, ,, *longifo'lia* (long-leaved). Switzerland. 1832.
,, *longifo'lia* (long-leaved). See B. LÆVIGATA LONGIFOLIA.
,, *monta'na* (mountain). See B. LÆVIGATA.
,, *raphanifo'lia* (radish-leaved). See B. DIDYMA.
,, *saxa'tilis* (rock). See B. LÆVIGATA.
,, *sempervi'rens* (evergreen). 1. Yellow. June. Spain. 1784.
,, *stenophy'lla* (narrow-leaved). See B. LÆVIGATA.

ANNUALS.

B. cilia'ta (hair-fringed). 1. Yellow. June. South of France. 1820.
,, *Colu'mnæ* (Columna's). See B. DIDYMA.
,, *depre'ssa* (depressed). See B. DIDYMA.
,, *lyra'ta* (lyre-*leaved*). See B. DIDYMA.
,, *mari'tima* (sea). See B. DIDYMA.
,, *obova'ta* (reversed-egg-*shaped*). 1. Yellow. June. Europe. 1817.

BISE'RRULA. Hatchet Vetch. (From *bis*, twice, and *serrula*, a saw; in reference to the seed-pods being armed with teeth. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Astragalus.)

Hardy annual. Seeds in April or September. Sandy soil.

B. Pele'cinus (bastard-*corn-weed*). 1. Purple. July. S. Europe. 1640.

BISMA'RCKIA. (Named after *Prince Bismarck*. Nat. ord. *Palms* [Palmæ]. Allied to *Borassus flabellifer*. For cultivation, see PALMS.)

B. no'bilis. Madagascar.

BITTER ALMOND. *Pru'nus Amy'gdalus ama'ra.*

BITTER APPLE. *Cu'cumis Colocy'nthis.*

BITTER OAK. *Que'rcus Ce'rris.*

BITTER-SWEET. *Sola'num Dulcama'ra.*

BITTER VETCH. *O'robus.*

BITTER WOOD. *Xylo'pia.*

BIVONÆ'A. (After *A. Bivona Bernardi*, a professor of botany in Sicily. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Lepidium.)

Hardy annual. Seeds; common soil.

B. lu'tea (yellow). ½. Yellow. June. Italy. 1824.

BI'XA. Arnotta. (Its native name in S. America. Nat. ord *Bixads* [Bixineæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

The reddish pulp which surrounds the seeds of *B. Orella'na* is the Arnotta or Arnatto of commerce, used in the preparation of chocolate, and by farmers for colouring cheese, and also by dyers for a reddish colour. Stove evergreen trees. Cuttings of half-ripened shoots in sand, in close heated propagating pit; lumpy peat and loam. Summer temp., 65° to 85°; winter, 50° to 60°.

B. Orella'na (Orellana). 20. Pink. June. W. Ind. 1690.
,, *purpu'rea* (purple). 20. Purple. July. E. Ind. 1817.
,, *urucura'na* (Urucu). See B. ORELLANA.

BIZARRE. See CARNATION.

BLACK ADIANTUM. *Asple'nium Adia'ntum-ni'grum.*

BLACK ARCH-MOTH. See PSILU'RA MONA'CHA.

BLACK BRYONY. *Ta'mus commu'nis.* Poisonous weeds, which need not be further noticed.

BLACK BULLACE. *Pru'nus insiti'tia.*

BLACKBU'RNIA. (Named after *Mr. Blackburn*. Nat. ord. *Zanthoxyls* [Rutaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen shrub. Cuttings of half-ripe shoots in sand, under a bell-glass, in April; also by layers, in autumn; peat and loam, both fibrous and sandy. Summer temp., 55° to 75°; winter, 40° to 45°.

B. pinna'ta (leafleted). See ZANTHO'XYLUM BLACKBU'RNIA.

BLACK CATERPILLAR. See ATHA'LIA SPINA'RUM.

BLACK FLEA. (*Ha'ltica memo'rum.*) No insect is more insidious or more sweeping in the destruction it brings upon some of the farmers' or gardeners' crops than the turnip-flea (*Haltica nemorum*). Turnips of all kinds, beetroot, mangold-wurzel, radishes, and flax, are all liable to be destroyed by this insect. It is a singular misapplication of terms, that this insect is known among cultivators of the soil as the black and the turnip flea or fly, none of them ever calling it a beetle, which it really is; and the most descriptive name is the turnip-flea beetle, for this describes not only its real nature, but its favourite food, and its extraordinary power of skipping or leaping like the common flea. This insect is represented in our drawing of its natural size and magnified. The body, one-eighth of an inch long, is rather flattened, and of a brassy-black colour, thickly dotted; the wing cases are greenish-black, with a pale-yellow, broad line on each; the base of the feelers (antennæ) and the legs are pale clay-coloured. The eggs are laid on the under side of the rough leaf of the turnip from April to September. They hatch in two days. Their maggots live between the two skins or cuticles of the rough leaf, and arrive at maturity in sixteen days. The chrysalis is buried just beneath the surface of the earth, where it remains about a fortnight. The beetles are torpid through the winter, and revive in the spring, when they destroy the two first or seed leaves of the young turnip. There are five or six broods in a season. These insects are most to be feared in fine seasons. Heavy rains, cold springs, and long droughts destroy them. Their scent is very perfect: the beetles fly against the wind, and are attracted from a distance. The rapid growth of a plant is the best security against them; to secure which, sow plenty of seed, all of the same age. Burning the surface of the land is beneficial, by destroying the chrysalides. Deep digging is an excellent practice when the chrysalides are in the soil. Drilling is a

far superior practice to sowing the seed broadcast. Destroy charlock: it affords support to the beetles before the turnips come up. The most effectual banishment of the turnip-fly, we think, is secured by sowing the surface of the soil with gas lime two or three mornings after the turnip-seed has been sown. This is so offensive to the insect as to drive it away just at the time the young plants are appearing above ground. The above is taken from the *Cottage Gardener*, but there are now many other remedies which will be found in all modern catalogues.

BLACK GRUB. *Atha'lia spina'rum.*

BLACK JACK OAK. *Que'rcus ni'gra.*

BLACK PINE. *Pi'nus austri'aca.*

BLACK SALTWORT. *Glau'x mari'tima.*

BLACK THORN. *Pru'nus spino'sa.*

BLACK VARNISH-TREE. *Melanorrhœ'a.*

BLACK WATTLE. *Callico'ma serratifo'lia.*

BLADDER BLIGHT. See PEACH—*Blistering of Leaf.*

BLADDER CATCHFLY. *Silé'ne latifo'lia.*

BLADDER KETMIA. *Hibi'scus Trio'num.*

BLADDER NUT. *Staphyle'a.*

BLADDER SENNA. *Colu'tea.*

BLADDER WORT. *Utricula'ria.*

BLÆBERRY, or **BILBERRY.** *Vacci'nium Myrti'llus.*

BLÆ'RIA. (Named after *Dr. Blair*, a physician. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from the Cape of Good Hope. Cuttings of young wood in sand, under a bell-glass; sandy peat. Summer temp., 50° to 65°; winter, 35° to 45°, with plenty of air.

B. articula'ta (jointed). 2. Pink. May. 1795.
,, *bractea'ta* (bracteated). See SYMPIEZA CAPITELLATA.
,, *cilia'ris* (hair-fringed). See GRISEBA'CHIA CILIA'RIS.
,, *dumo'sa* (bushy). See B. PURPUREA.
,, *ericoi'des* (heath-like). 2. Purple. September. 1774.
,, *fascicula'ta* (bundled). See SIMOCHEI'LUS GLABE'LLUS.
,, *purpu'rea* (purple-*flowered*). 2. Purple. May. 1791.

BLA'KEA. (Named after *Martin Blake*, an active promoter of useful knowledge. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Miconia.)

Stove evergreen shrubs. Cuttings from shoots, rather firm; plant in sandy peat, in bottom-heat, under a glass; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

B. gra'cilis (graceful). White and pink, fragrant. Trop. Amer. 1905.
,, *quinquene'rvia* (five-nerved). See BELLU'CIA AUBLE'TII.
,, *trine'rvia* (three-nerved). 8. White. June. Jamaica. 1789.

BLANCHING, or **ETIOLATION,** is effected by making plants grow in the dark; and the more completely the light is excluded, the more entire is the absence of colour from the leaves and stems of the plants. The colouring matter of these is entirely dependent upon their power to decompose water and carbonic acid gas—a power they do not possess when light is absent. The effect of blanching is to render the parts more delicately flavoured, more pleasing to the eye, and more crisp—properties very desirable in sea-kale, celery, endive, lettuces, &c. Wherever it can be accomplished, blanching-pots should be employed, in preference to covering the plants with earth or other materials. The flavour is better, and decay is less liable to be induced. Lettuces and cabbages are usually whitened by tying the leaves over the heart, or centre-bud. With flowering plants, except with Lily of the Valley and a few other bulbs, blanching is destructive to flowering.

BLANDFO'RDIA. (Named after *George, Marquis of Blandford*. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*. 1-*Monogynia*. Allied to Hemerocallis.)

Beautiful greenhouse bulbs, requiring the same treatment as Ixias. Seeds and offsets. Winter temp., 35° to 45°. Loam and peat.

B. au'rea (golden). 2. Golden-yellow. Summer. Australia. 1870.
,, *Backhou'sii* (Backhouse's). See B. GRANDIFLORA.
,, *Cunningha'mii* (Cunningham's). Red, yellow. N. Holland.
,, *fla'mmea* (flame-flowered). Flame. Australia. 1836.
,, ,, *e'legans* (elegant). Crimson, tipped yellow.
,, ,, *hy'brida* (hybrid). Red, edged yellow.
,, ,, *pri'nceps* (chief). Scarlet, yellow. Summer. Australia. 1873.
,, *grandiflo'ra* (large-flowered). 2. Crimson. July. N. S. Wales. 1812.
,, *interme'dia* (intermediate). Yellow. September. N. Holland. 1844.
,, *margina'ta* (*rough*-edged-*leaved*). 2. Copper. July. Australia. 1842.
,, *no'bilis* (noble). 2. Orange. July. N. S. Wales. 1803.
,, *pri'nceps* (chief). See B. FLAMMEA PRINCEPS.

BLAST, or **BLIGHT,** is the popular name for any withering of plants of which neither the scientific title nor the causes are known to the observer. The mildew of corn; the honey-dew on fruit-trees; the withering occasioned by violent cold winds in early spring; and the ravages of the hawthorn caterpillar, are all spoken of by the uninformed under the above titles.

BLASTEMA'NTHUS. (From *blastema*, a bud, and *anthos*, a flower; literally bud-flowered. Nat. ord. Ochnaceæ.)

Stove evergreen tree. Cuttings of ripened shoots in sand, in a close frame with strong bottom-heat. Loam, peat and sand.

B. gemmiflo'rus (bud-flowered). 8. Yellow. Brazil. 1820.

BLE'CHNUM. (From *blechnon*, a Greek name for a Fern. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Spores and divisions of the root; peat and loam. The Cape of Good Hope and New Holland species will thrive in the greenhouse; the South American and Indian require the stove, though none of them will find fault with its heat. Summer temp., 60° to 90°; winter, 55° to 60°, and may be well exposed to the sun. *B. brasilie'nse* is nearly hardy.

B. aspleniof'des (Asplenium-like). ½ to ¾. Brown. Trop. Amer. 1829.
,, *austra'le* (southern). ¾. Brown. June. Cape of Good Hope. 1691.
,, *borea'le* (northern) and varieties. See LOMARIA SPICANT.
,, *brasilie'nse* (Brazilian). ¾. Brown. June. Brazil. 1820. Syn. *B. corcovadense*.
,, *cartilagi'neum* (cartilaginous). 1. Brown. July. N. Holland. 1820.
,, *corcovade'nse* (Corcovado). See B. BRASILIENSE.
,, *denticula'tum* (toothed). Brown. June. Teneriffe. 1826.
,, *finlaysonia'num* (Finlayson's). Brown. Malacca.
,, *fontanesia'num* (Desfontaine's). Brown. July. Brazil.
,, *glandulo'sum* (glanded). ½. Brown. April. Brazil. 1823.
,, *gra'cile* (slender). ¾. Brown. November. Brazil. 1830.
,, *hasta'tum* (halbert-shaped). 1. Brown. July. Chili. 1841.
,, *interme'dium* (intermediate). 1. Brown. July. Brazil. 1841.
,, *Lance'ola* (lance-*leaved*). 3. Brown. September. Brazil. 1829.
,, ,, *trifolia'tum* (three-leaved). 1 to 2 pairs of pinnæ at the base of the top one.
,, *læviga'tum* (smooth). 1. Brown. July. N. Holland. 1821.
,, *longifo'lium* (long-leaved). 1. Brown. July. Caraccas. 1820.
,, ,, *fraxi'neum* (ash-leaved). Denser than the type. Syn. *B. fraxinifo'lium*.
,, *ni'tidum* (shining). Brown. Isle of Luzon.
,, ,, *contra'ctum* (contracted). Narrower fronds. Philippines. 1863.

B. occidenta'le (western). 1. Brown. August. Brazil. 1823.
,, ,, *multi'fidum* (much-cut). Crested and tasselled.
,, *orienta'le* (eastern). Brown. July. E. Ind.
,, *pectina'tum* (comb-*leaved*). 1 Brown. August. S. Amer. 1827.
,, *polypodioi'des* (Polypodium-like). See B. UNILATERA'LE.
,, *rugo'sum* (wrinkled). (G. Chron., 1884, xxi. 408.)
,, *serrula'tum* (saw-*edged*). ½. Brown. July. Florida. 1819.
,, *Spi'cant* (spiked) and varieties. See LOMARIA SPICANT.
,, *stria'tum* (furrowed). See B. SERRULATUM.
,, *triangula're* (three-angled). Brown. July. Mexico. 1841. Comes near *B. unilaterale*.
,, *trifolia'tum* (three-leaved). See B. LANCEOLA.
,, *unilatera'le* (one-sided). 1. September. Brazil. 1829. Syn. *B. polypodioides*.
,, *volu'bile* (twining). Yellow, brown. July. Trop. Amer. 1842.

BLE'CHUM. (From a Greek name for an unknown plant, supposed to be *Marjoram*. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Dicliptera.)

Stove herbaceous perennials. Cuttings of young, firm shoots in spring or summer; peat and loam. Summer temp., 60° to 80°; winter, 48° to 55°.

B. angustifo'lium (narrow-leaved). 1. Blue. June. Jamaica. 1824.
,, *brasilie'nse* (Brazilian). 1. Blue. June. Brazil. 1824.
,, *Bro'wnei* (Brown's). 2. June. W. Ind. 1780.
,, *laxiflo'rum* (loose-flowered). 2. White. Jamaica. 1818.

BLEEDING. See EXTRAVASATED SAP.

BLE'PHARIS. (From *blepharis*, the eyelash; in reference to the fringed bracts. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Acanthus.)

The annuals and biennials by seed in hotbed, as tender annuals; the trailers and under-shrubs by the same means, and by cuttings in heat, close frame.

B. boerhaviæfo'lia (Boerhavia-leaved). 1. Blue. July. E. Ind. 1829. Stove annual.
,, *cape'nsis* (Cape). 1. Blue. July. Cape of Good Hope. 1816. Greenhouse biennial.
,, *carduifo'lia* (Carduus-leaved). 1. Blue. August. S. Africa. 1816. Greenhouse herb.
,, *furca'ta* (fork-*spined*). 2. July. Cape of Good Hope. 1816. Greenhouse evergreen shrub.
,, *linariæfo'lia* (Linaria-leaved). 2. Blue. July. Guinea. 1823. Stove annual.
,, *procu'mbens* (procumbent). 1. July. Cape of Good Hope. 1825. Greenhouse evergreen trailer. Syn. *Acanthodium procumbens*.

BLEPHAROCA'LYX. (From *blepharis*, the eyelash, and *calyx*, in allusion to the ciliated calyx. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

A greenhouse fine foliaged plant, with exceedingly numerous, narrow leaves. Propagation by cuttings, getting firm, in pots of sand, or in close frame. Soil, loam, and leaf-mould, or peat and sand.

B. spiræoi'des (Spiræa-like). 1 to 9. Small, pale yellow. Brazil. 1907. It had been many years in gardens under the name of *Eugenia myriophylla* before it flowered. (B. M., t. 8123.)

BLEPHI'LIA. (From *blepharis*, the eyelash; in reference to the fringed bracts. Nat. ord. *Labiates* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Monarda.)

Hardy herbaceous perennials. Seeds, and dividing the roots in April and September. Common soil.

B. cilia'ta (hair-fringed). 3. Red. July. N. Amer.
,, *hirsu'ta* (hairy). Purple. August. N. Amer. 1798.

BLESSED THISTLE. *Carbe'nia benedi'cta*.

BLE'TIA. (Named after a Spanish botanist of the name of *Blet*. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove terrestrial orchids, except where otherwise specified. Division of the roots, when done flowering or starting into growth; peat, loam, and a little sand, enriched with top dressings of cow-dung or manure, watering when growing. Summer temp., 60° to 90°; winter, 48° to 58°.

B. acumina'ta (long-pointed). See LÆLIA RUBESCENS.
,, *acutipe'tala* (acute-petaled). 5. Purple. September. Central Amer. Greenhouse.
,, *campanula'ta* (bell-*flowered*). Purple and white. Mexico.
,, *capita'ta* (headed). See ELLEANTHUS CAPITATUS.
,, *catenula'ta* (linked). 1½. Purple. Peru. 1844.
,, *flo'rida* (florid). 2. Rose. February. Trinidad. 1786.
,, *Gebi'na* (*Japanese*). See B. HYACINTHINA.
,, *godseffia'na* (Godseff's). See B. ACUTIPETALA.
,, *gra'cilis* (slender-*scaped*). 1½. Yellow. July. Mexico. 1830.
,, *guinee'nsis* (Guinea). 2. Purple. Sierra Leone. 1822.
,, *havane'nsis* (Havannah). 2½. Purple. April. Havannah. 1835.
,, *hyaci'nthina* (hyacinth-like). 1. Rose and crimson. April. China. 1802. Hardy. Syn. *B. Gebina*.
,, *macula'tus* (spotted). See PHAIUS.
,, *pa'llida* (pale). See B. FLORIDA.
,, *Parkinso'nii* (Parkinson's). 1. Rose. January. Mexico. 1838.
,, *pa'tula* (spreading-*flowered*). 2. Purple. Hayti.
,, *refle'xa* (bent-back-*sepaled*). 2. Purple, green. Peru.
,, *secu'nda* (one-sided). Green, crimson. Mexico. 1840.
,, *Shephe'rdii* (Shepherd's). 2. Purple and yellow. January. Jamaica. 1825.
,, *sherrattia'na* (Sherrattian). Purple, white, yellow. New Grenada. 1867.
,, *Tankervi'llæ* (Mrs. Tankerville's). See PHAIUS GRANDIFOLIUS.
,, *verecu'nda* (modest). 3. Purple. March. W. Ind. 1733.
,, *Woodfo'rdii* (Woodford's). See PHAIUS MACULATUS.

BLI'GHIA SA'PIDA. The Akee-tree, the berry of which is so much esteemed in the West Indies. It was named after *Captain Bligh*, the introducer of the Bread-fruit from the Society Islands. Nat. ord. *Soapworts* [Sapindaceæ].

BLIND PLANTS frequently occur in the cabbage and others of the Brassica tribe. They are plants which have failed to produce central buds; and, as these are produced from the central vessels, if the top of their stems be cut away they usually emit lateral or side-buds from the edge of the wound. It is chiefly the best sorts which fail, and it is only by cutting away the central crown and allowing the side branches to grow up that seed can be obtained. See BARREN PLANTS.

BLISTERED LEAVES. See PEACH.

BLIGHT. See BLAST.

BLI'TUM. The Strawberry Blite, or Spinach, is scarcely worth growing. *B. capita'tum* and *B. mari'timum* are sometimes cultivated. Now united with Chenopodium.

BLOOD. See ANIMAL MATTERS.

BLOOD-FLOWER. *Hæma'nthus*.

BLOODWORT. *Sanguina'ria canade'nsis*.

BLOOM, or **BLOSSOM**, is the popular name for the flowers of fruit-bearing plants.

The organs of fruitfulness are absolutely necessary for the production of seeds, and are always producible by garden-plants properly cultivated, except where the stamens are developed into petals, forming what are known as double flowers, as in the double stocks and other staminate flowers. They may be deficient in leaves, or stems, or roots, because other organs may supply their places; but plants are never incapable of bearing flowers and seeds, for, without these, they can never fully attain the object of their creation—the increase of their species. Of course, we exclude the mushroom, and others which do not produce seeds.

Most flowers are composed of the following parts, viz.:—The *calyx*, which is usually green, and enveloping the flower whilst in the bud; the *corolla*, or *petals*, leaves so beautifully coloured, and so delicate in most

flowers; the *stamens*, or male portion of the flower, secreting the *pollen*, or impregnating powder; the *pistils*, or female portion, impregnatable by the pollen, and rendering fertile the seeds; and, lastly, the *pericarp*, or *seed-vessel*.

The stamens can be removed without preventing the formation of fertile seed; but their loss must be supplied by the application to the pistils of pollen from some kindred flower.

The calyx is not useless so soon as it ceases to envelope and protect the flower; for the flower-stalk continues increasing in size until the seed is perfected, but ceases to do so in those plants whose calyces remain long green, if these be removed. On the other hand, in the poppy and other flowers, from which the calyx falls early, the flower-stalk does not subsequently enlarge.

The corolla, or petals, with all their varied tints and perfumes, have more important offices to perform than thus to delight the senses of mankind. Those bright colours and their perfumed honey serve to attract insects, which are the chief and often essential assistants of impregnation; and those petals, as observed by Linnæus, serve as wings, giving a motion assisting to effect the same important process. But they have occasionally a still more essential office; for, although they are sometimes absent, yet, if removed from some of those possessing them, the subsequent processes are not duly performed.

The corolla is not always short-lived, as in the cistus; for some continue until the fruit is perfected. The duration of the petals, however, is in some way connected with the impregnation of the seed, for in most flowers they fade soon after this is completed; and double flowers, in which it occurs not at all, are always longer enduring than single flowers of the same species. Then, again, in some flowers they become green, and perform the function of leaves, after impregnation has been effected. A familiar example occurs in the Christmas rose (*Helle'borus ni'ger*), the petals of which are white, but which become green so soon as the seeds have somewhat increased in size, and the stamens and other organs connected with fertility have fallen off.

BLOOM. This term is also applied to the fine exudation on the surface of some fruit—purple on the Black Hamburgh Grape, and on some plums, and green on the cucumber.

BLOOME'RIA. (Name commemorative. Nat. ord. *Lilyworts* [Liliaceæ].

Hardy, summer-flowering bulbs allied to Brodiæa, and require similar cultural treatment. They should be planted on the rockery to succeed the spring bulbs. Well drained garden soil.

B. au'rea (golden). 1. Lemon-yellow. California. 1869.
,, *Clevela'ndi* (Cleveland's). Yellow. California. 1896.

BLUE-BELLS. *Campa'nula rotundifo'lia* (Scotch Bluebell); *Sci'lla festa'lis* (English Bluebell).

BLUE-BOTTLE. *Centau'rea Cya'nus.*

BLUE GUM TREE. *Eucaly'ptus Glo'bulus.*

BLUETS. French name for *Centau'rea Cya'nus.* In America the Bluets are *Housto'nia cæru'lea* and *Vacci'nium angustifo'lium.*

BLUMENBA'CHIA. (Named after *J. F. Blumenbach*, of Göttingen. Nat. ord. *Loasads* [Loasaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Hardy annuals. Seeds in April; rich mould.

B. chuquite'nsis (Chuquitan). Red, yellow within. September. Peru. 1863. Climbing perennial.
,, *conto'rta* (contorted). See B. GRANDIFLORA.
,, *corona'ta* (crowned). Pure white. June. Chili. 1872.
,, *grandifio'ra* (large-flowered). Orange-red, green within. July. Peru. 1874.
,, *insi'gnis* (remarkable). ½. White. July. Monte Video. 1826. Trailer. Syns. *Loasa palmata* and *L. muralis*.
,, *lateri'tia* (brick-red). See LOASA.
,, *multi'fida* (many-cleft-*leaved*). 1. Greenish-red. July. Buenos Ayres. 1826.

BOATLIP. *Scaphyglo'ttis.*

BOBA'RTIA. (Named in honour of *Jacob Bobart*, professor of botany at Oxford in the seventeenth century. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

The species in this genus are allied to Sisyrinchium. Seeds in April; divisions in autumn or spring. Sandy loam; protection of a cool greenhouse or pit in winter.

B. aphy'lla (leafless). 1. White, purple. S. Africa.
,, *auranti'aca* (orange). See HOMERIA AURANTIACA.
,, *filifo'rmis* (thread-leaved). 1. Purple. S. Africa.
,, *gladia'ta* (sword-shaped). 2. Yellow. June. Cape of Good Hope. 1816.
,, *i'ndica* (Indian). ¾. Yellow. June. S. Africa. 1798.
,, *spatha'cea* (sheathed). See B. INDICA.

BOCCO'NIA. (Named after *P. Boccone, M.D.*, a Sicilian. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

Stove evergreen shrubs. The first and last named are hardy herbaceous plants. Cuttings in sand and heat; fibrous, sandy loam. Summer temp., 60° to 80°; winter, 55° to 60°.

B. corda'ta (heart-shaped). Cream. Summer. China and Japan. 1866. Foliage handsome.
,, *frute'scens* (shrubby *celandine*). 10. White, yellow. February. W. Ind. 1739.
,, *integrifo'lia* (entire-leaved). 4. White. February. Mexico. 1820.
,, *japo'nica* (Japanese). See B. CORDATA.
,, *microca'rpa* (small-fruited). Brown and cream. N. China. 1896.

BŒ'A. (A genus of stove and greenhouse plants. Nat. ord. Gesneraceæ. Seeds. Soil, loam, leaf-mould, and sand. A little peat may be used.)

B. clarkea'na (Clarkean). Yunnan.
,, *ferrugi'nea* (rusty). Malaya.
,, *viola'cea* (violet). See CALCEOLARIA VIOLACEA.

BŒ'BERA. (Named after *Bœber*, a Russian botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

A greenhouse evergreen shrub. Cuttings of young, firmish shoots under a glass; requires a pit or a cool greenhouse in winter.

B. inca'na (hoary-*herbaged*). See DYSSODIA PUBESCENS. There are other species, but not deserving cultivation.

BŒHME'RIA. (Named after *George Rudolph Bœhmer*, a German botanist. Nat. ord. *Nettleworts* [Urticaceæ].)

B. nivea is the only species worth cultivating for the sake of its foliage. Cuttings of shoots getting firm, placed in sand under a bell-glass in the greenhouse, or by divisions. Light soil in the open ground.

B. ni'vea (snowy-leaved). 4. Green. September. Trop. Asia. "China Grass."

BŒNNINGHAUSE'NIA. (A plant closely allied to Ruta, but differing by having flat, undivided petals. Nat. ord. *Rueworts* [Rutaceæ].) It is a hardy border plant, thriving in any good garden soil. Seeds and divisions.

B. albifio'ra (white-flowered). 1½. White. August. Japan. Syn. *B. japonica*.

BOG-BEAN. *Menya'nthes trifolia'ta.*

BOG-EARTH, HEATH-MOULD, or **PEAT.** By gardeners this is understood as not meaning that mass of moss, or sphagnum, dug out of wet, fenny places for fuel, but a sharp, sandy soil, mixed with the dead, fibrous roots of heath, and usually of a dark-grey colour, such as is found upon the surface beneath the heath on Wimbledon, Bagshot, and many other dry commons. Peat of the best description is thus constituted. Of 400 parts:—

Fine silicious sand	156
Unaltered vegetable fibre	2
Decomposing vegetable matter	110
Silica (flint)	102
Alumina (clay)	16
Oxide of iron	4
Soluble, vegetable, and saline matter	4
Muriate of lime	4
Loss	2

BOG-EARTH PLANTS. See AMERICAN PLANTS.

BOG-MOSS. *Spha'gnum.*

BOILER. The vessel employed to supply the pipes or tanks with hot-water or steam, when either of these is used for heating purposes. Many are the ingenious and intricate boilers from time to time offered to the gardener; but, after much experience with boilers of all descriptions, we can confidently say the most simple is the best. The smaller the boiler and the fireplace, compatible with efficiency, the greater is the economy. We can tell the gardener, also, most decidedly, that the total size of the boiler has nothing to do with that efficiency; the only point to be secured is, *that a sufficient surface of the boiler be exposed to the fire.* The following table shows the amount of boiler-surface which must be exposed to the fire to heat given lengths of pipe, respectively 4 inches, 3 inches, and 2 inches in diameter :—

Surface of boiler exposed to the fire.	4-inch pipe. ft.	3-inch pipe. ft.	2-inch pipe. ft.
3½ square feet will heat . . .	200 or	266 or	400
5½ ,, ,, . . .	300 ,,	400 ,,	600
7 ,, ,, . . .	400 ,,	533 ,,	800
8½ ,, ,, . . .	500 ,,	666 ,,	1000
12 ,, ,, . . .	700 ,,	933 ,,	1400
17 ,, ,, . . .	1000 ,,	1333 ,,	2000

To prevent the *scale*, or limy crust, which is often so troublesome, dissolve in the water at the rate of one ounce of sal ammoniac (muriate of ammonia) to every sixty gallons. Do this twice in the year; as, in October and April.

The above given years ago still holds good, but we have had many modern improvements in all heating appliances. And in construction we find a great alteration; instead of burying the pipes under the ground, they are put above. Every one knows that growth is assisted by the warmth radiated from the sun, and it is the same in greenhouse heating. We must first have bottom-heat to induce root growth, and later it is the heat from above that develops plant growth.

In fixing Boilers it is now often arranged that a large rise is given, and the pipes have a fall from close to the Boiler; a sharp rise and a good fall to the return pipe without any possibility of air being in contact with the water is the main point in the circulation of water, and a clean Boiler of any make will give double the heat of one allowed to get covered with soot.

BOIS-PERDIX (Partridge-wood). *Heiste'ria.*

BOLBOPHY'LLUM. See BULBOPHY'LLUM.

BOLDO'A. (From *Boldu*, the Chilian name of a species formerly included under this genus. Nat. ord. Nyctaginaceæ.)

Stove evergreen shrub. Cuttings in sand in a warm case. Fibrous loam, peat and sand.

B. lanceola'ta (lance-shaped). 3. Purple. June. Mexico. 1824.

BO'LEUM. (From *bolos*, a ball; in reference to the shape of the seed-pods. Nat. ord. *Crucifers* [Cruciferæ] Linn. 15-*Tetradynamia*. Allied to Vella.)

Half-hardy evergreen under-shrub. Seed in a pot, in spring, set in a frame, or sown in the open border during summer. It requires a little protection in a cold pit during winter, but is hardly worth it.

B. a'sperum (rough). 1. Cream. June. Spain. 1818.

BOLIVA'RIA. (Named after *Bolivar*, the late Republican chief in South America. Nat. ord. *Jasmineworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Now referred to Menodora.)

Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a hand-light. Summer temp., 55° to 70°; winter, 40° to 48°.

B. tri'fida (three-cleft). See MENODORA TRIFIDA.

BO'LLEA. See ZYGOPE'TALUM.

BO'LLEO-CHONDRORHY'NCHA FRŒBELIA'NA. A supposed natural hybrid between *Bollea cœlestis* and *Chondrorhnycha Chestertoni*. Nat. ord. *Orchids* [Orchidaceæ]. New Grenada. 1902. For cultivation, see ZYGOPETALUM.

BOLTO'NIA. (Named after *J. B. Bolton*, an English professor of botany. Nat. ord. *Composites* [Compositæ]. Linn. 18-*Syngenesia*, 2-*Superflua*. Allied to Stenactis.)

Hardy herbaceous perennials. Division of the roots in March or October; common garden-soil.

B. asteroi'des (starwort-like). 3. Flesh. September. N. Amer. 1758.
,, ,, *decu'rrens* (running down the stem).
,, *glastifo'lia* (woad-leaved). See B. ASTEROIDES.
,, *inci'sa* (cut-leaved). Lilac-purple. Siberia.
,, *i'ndica* (Indian). White. Japan.
,, *latisqua'ma* (broad-scaled). Blue-violet. Autumn. N. Amer. 1879.
,, ,, *occidenta'lis.*

BOLUSA'NTHUS. (Commemorative of *Dr. Bolus*, the S. African botanist, and *anthos*, a flower. Nat. ord. Leguminosæ.)

A greenhouse tree. Seeds; cuttings in sand under a bell-glass. Loam, peat and sand.

B. specio'sus (showy). 20–25. Bright blue. September. S. Africa. 1908. " Rhodesian Wistaria."

BOMA'REA. (Name not explained; probably it is commemorative. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Alstrœmeria.)

Two features which cannot be misunderstood divide *Boma'rea* from *Alstrœme'ria*—a twining stem and a triangular seed-pod. The tubers of the *B. edu'lis* are eaten, in St. Domingo, like those of Jerusalem artichoke. It is a stove plant. The others prefer a deep, rich, light border in the open air, with a slight protection from frost. *B. acutifo'lia*, planted in a good, cold greenhouse, inside border, will twine up ten or twelve feet, and flower better than in any other way. For culture, see ALSTRŒMERIA.

B. acutifo'lia (pointed-leaved). 9. Red, yellow. September. Mexico.
,, ,, *ehrenbergia'na* (Ehrenbergian). Red, yellow, brown. Mexico. Spring. 1878.
,, ,, *puncta'ta* (dotted-*flowered*). 6. Spotted. September. Mexico. 1829.
,, *bogote'nsis* (Bogotan). Crimson, black, green. Colombia. 1872.
,, *bredemeyera'na* (Bredemeyerian). See B. MULTIFLORA.
,, *caldasia'na* (Caldasian). Orange-yellow, spotted crimson. Peruvian Andes. 1863.
,, *Carde'ri* (Carder's). Rose, purple, brown. Colombia. 1876.
,, *chontale'nsis* (Chontalese). See B. EDULIS.
,, *confe'rta* (crowded). See B. PATACOCENSIS.
,, *edu'lis* (eatable-*tubered*). 6. Red. July. Trinidad. 1820.
,, ,, *chontale'nsis* (Chontalese). Rose, yellow, brown, Nicaragua. 1871.
,, ,, *Elwe'sii* (Elwes'). Outer segments pink, inner pencilled red. 1905.
,, *fro'ndea* (leafy). Bright yellow, dotted brown on inner segments. Colombia. 1881.
,, *hirte'lla* (small-haired). See B. EDULIS.
,, *Kalbreye'ri* (Kalbreyer's). Orange. Colombia. 1882.
,, *Lehma'nni* (Lehmann's). Colombia. 1883.
,, *multiflo'ra* (many-flowered). New Granada and Venezuela.
,, *ocula'ta* (eyed). See B. SALSILLA.
,, *oliga'ntha* (few-flowered). Reddish, yellow, claret. Peru. 1877.
,, *ova'ta* (egg-shape-*leaved*). Red and green. Chili. 1824.
,, *patacoce'nsis* (Patacochan). Carmine-rose, green. Ecuador and Colombia. 1882.
,, *pudibu'nda* (modest). Pink. New Granada. 1855.
,, *Salsi'lla* (Salsilla). 5. Green, crimson. June. S. Amer. 1806. Hardy.
,, *Shuttlewo'rthii* (Shuttleworth's). See B. CARDERI.
,, *soro'ria* (sisterly). Rosy, spotted carmine, green, brown. S. Amer. 1892.
,, *tomento'sa* (felted). Peru.
,, *vitelli'na* (yolk-of-egg-coloured). Orange-yellow. Colombia. 1882.
,, *We'rcklei* (Werckle's). Vermilion-orange and orange-yellow. Costa Rica. 1909.
,, *Willia'msiæ* (Mrs. Williams'). Rose, dotted purple. Colombia. 1882.

BO'MBAX. Silk Cotton-tree. (From *bombax*, cotton; in reference to the woolly hairs which envelop the seed, like those of the cotton-plant. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Trees more remarkable for their prodigious size that for their use or beauty. Stove trees. Cuttings of rather young shoots, but firm at the base, placed in sandy peat, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 60°.

B. Ceï'ba (Ceiba). 100. White. S. Amer. 1692. "Silk Cotton-tree."
„ *Co'ngo* (Congo). See COCHLOSPERMUM GOSSYPIUM.
„ *eria'nthus* (woolly-flowered). See ERIODENDRON LEIANTHERUM.
„ *globo'sum* (globe-form). 60. Guiana. 1824.
„ *Gossy'pium* (Cotton-plant). See COCHLOSPERMUM GOSSYPIUM.
„ *grandiflo'rum* (large-flowered). See COCHLOSPERMUM GOSSYPIUM.
„ *heptaphy'llum* (seven-leaved). See B. MALABARICUM.
„ *Jenma'ni* (Jenman's). British Guiana.
„ *malaba'ricum* (Malabar). 60. Scarlet. Malabar. "Cotton-tree."
„ *penta'ndrum* (five-anthered). See ERIODENDRON ANFRACTUOSUM.
„ *quina'tum* (five-leaved). See BOMBAX CEIBA.
„ *septena'tum* (seven-*leaved*). 50. White. Carthagena. 1699.
„ *vitifo'lium* (vine-leaved). See COCHLOSPERMUM VITIFOLIUM.

BOMBYX NEUSTRIA. See LACKEY MOTH.

BONAPA'RTEA. (Named after *Napoleon Bonaparte*. Nat. ord. *Browelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Most of the species are now referred to Agave.)

Remarkable for the gracefulness of their long, rush-like leaves. They are well adapted for growing in vases, out of doors, in summer. Stove plants. Seeds in a hotbed; cuttings in sand, under a glass, in heat; well drained. Summer temp., 60° to 70°; winter, 55° to 60°.

B. gra'cilis (slender). See DASYLIRION ACROTRICHUM.
„ *ju'ncea* (rush-*leaved*). See AGAVE GEMINIFLORA.

BONA'TEA. (Named after *M. Bonat*, a distinguished Italian botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Habenaria.)

Stove orchids. Division of the roots, or semi-bulbous tubers; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

B. antenni'fera (antennæ-bearing). Green and white. Rhodesia. 1905.
„ *speció'sa* (showy). 2. Green, white. May. Cape of Good Hope. 1820.
„ *Uga'ndeæ* (Uganda). Light green, white. Uganda. 1906.

BONES are beneficial as a manure, because their chief constituent (phosphate of lime) is also a constituent of all plants; and the gelatine which is also in bones is of itself a source of food to them. The bones of the ox, sheep, horse, and pig, being those usually employed, their analyses are here given:—

	Ox.	Sheep.	Horse.	Pig.
Phosphate of lime . . .	55	70	68	52
Carbonate of lime . . .	4	5	1	1
Animal matter	33	25	31	47

The bones must be applied to the crops in very small pieces or powder; and ten pounds, at the time of inserting the seed, are enough for thirty square yards, if sown broadcast; and a much smaller quantity is sufficient if sprinkled along the drills in which the seed is sown. There is no doubt that bone-dust may be employed with advantage in all gardens and to all garden-crops; but it has been experimented on most extensively with the turnip and potato, and with unfailing benefit. Mixed with sulphur, and drilled in with the turnip-seed, it has been found to preserve the young plants from the fly. Mr. Knight found it beneficial when applied largely to stone-fruit at the time of planting; and it is quite as good for the vine. To lawns, the dust has been applied with great advantage when the grass was becoming thin. As a manure for the shrubbery, parterre, and greenhouse, it is also most valuable; and, crushed as well as ground, is employed generally to mix with the soil of potted plants. Mr. Maund finds it promotes the luxuriance and beauty of his flowers. One pound of bone-dust, mixed with twelve ounces of sulphuric acid (oil of vitriol), and twelve ounces of water, if left to act upon each other for a day, form superphosphate of lime, a wineglassful of which has been found beneficial to pelargoniums. Applied as a top-dressing, mixed with half its weight of charcoal-dust, it is a good manure for onions, and may be applied at the rate of nine pounds to the square rod. There is little doubt of this superphosphate being good for all our kitchen-garden crops, being more prompt in its effects upon a crop than simple bone-dust, because it is soluble in water, and therefore more readily presented to the roots in a state for them to imbibe. Bones broken into small pieces are generally used as drainage for pelargoniums and other potted plants.

BONGA'RDIA. (Named in compliment to *Heinrich Gustav Bongard*, a German botanist. Nat. ord. *Barberryworts* [Berberidaceæ].)

A hardy, tuberous perennial for the rockery, but as it is liable to perish from damp in winter a hand-light should be placed over the site of the tubers from October to April. Sandy soil should be used. Offsets from the tubers.

B. Rauwo'lfii (Rauwolf's). ½. Yellow. Spring. Syria. Persia. 1740. Syn. *Leontice chrysogonum*.

BONNA'YA. (Named after the German botanist *Bonnay*. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Related to Torenia.)

Stove plants. Seeds for annuals; divisions, and cuttings of creepers and trailers; rich, sandy loam.

B. brachyca'rpa (short-seed-podded). See ILYSANTHES CAPENSIS.
„ *re'ptans* (creeping). ½. Blue. July. E. Ind. 1820. Perennial trailer.
„ *veronicæfo'lia* (speedwell-leaved). ½. Pink. August. E. Ind. 1798. Biennial trailer.

BONNE'TIA. (Named after *C. Bonnet*, a distinguished naturalist. Nat. ord. *Theads* [Ternstrœmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Stove tree. Cuttings of firm young shoots in sand, under a glass, in heat; loam and peat. Summer temp., 60° to 80°; winter, 55° to 60°.

B. meridiona'lis (meridional). Red. Trop. Amer. 1819.
„ *palu'stris* (marsh). See B. MERIDIONALIS.

BONPLA'NDIA. (Commemorative of the botanist Bonpland. Nat. ord. Polemoniaceæ.)

Greenhouse perennial. Seeds. Peat, loam and sand.

B. geminiflo'ra (twin-flowered). 2. Violet. July. Mexico. 1813.

BO'NTIA. (Named after *J. Bont*, a Dutch physician. Nat. ord. *Myoporads* [Myoporaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreen shrub, requiring similar treatment to Bonnetia.

B. daphnoï'des (Daphne-like). 6. Yellow, purple. June. W. Ind. 1690.

BORAGE. (*Bora'go officina'lis*). Its young leaves, smelling somewhat like cucumber, are sometimes used in salads, or boiled as spinach. Being aromatic, its spikes of flowers are put into negus and cool tankards.

Soil and Situation.—For the spring and summer sowing, any light soil and open situation may be allotted, provided the first is not particularly rich; for those which have to withstand the winter, a light, dry soil, and the shelter of a south fence, are most suitable. A very fertile soil renders it luxuriant, and injures the flavour.

Times and Mode of Sowing.—Sow in March or April, and at the close of July, for production in summer and autumn, and again in August or September, for the supply of winter and succeeding spring, in shallow drills, twelve inches asunder. When of about six weeks' growth, the plants are to be thinned to twelve inches apart, and the plants thus removed of the spring and autumn sowing may be transplanted at a similar distance; but those of the summer sowing seldom will endure the removal, and at all times those left unmoved prosper most. At the time of transplanting, if at all

dry weather, they must be watered until established; water must also be frequently applied to the seed-bed of the summer sowing.

To obtain Seed.—Some of those plants which have survived the winter must be left ungathered from. They will begin to flower about June; and when their seed is perfectly ripe the stalks must be gathered, and dried completely before it is rubbed out.

BORA'GO. Borage. (Altered from *cor*, heart, and *ago*, to affect; referring to the cordial qualities of the herbs. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy plants. Biennials and annuals from seed; perennials by divisions; common soil.

B. crassifo'lia (thick-leaved). See CACCINIA GLAUCA.
„ *cre'tica* (Cretan). 1. Blue. May. Crete. 1823. Herbaceous perennial.
„ *laxiflo'ra* (loose-flowered). 1. Blue. June. Corsica. 1813. Trailing biennial.
„ *longifo'lia* (long-leaved). 1. Blue. July. N. Africa. 1825. Annual.
„ *officina'lis* (common). 3. Blue. August. England. Annual.
„ „ *albiflo'ra* (white-flowered). 2. White. August. England. Annual.
„ *orienta'lis* (oriental). See TRACHYSTEMON ORIENTALE.
„ *zeyla'nicum* (Cingalese). See TRICHODESMA ZEYLANICUM.

BORA'SSUS. (One of the names applied to the spathe of the date-palm. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Dioecia*, 6-*Hexandria*.)

Palm-wine, or toddy, a grateful beverage, is the juice which flows from the wounded spathe of this and some other palms. Stove tree. Seeds; peat and loam. Summer temp., 60° to 90°; winter, 60°.

B. flabe'llifer (fan-bearing). 30. White, green. India and Africa. 1771.
„ *flabellifo'rmis* (fan-leaved). See B. FLABELLIFER.
„ *pinna'tifrons* (pinnate-leaved). See CHAMÆDOREA GRACILIS.

BORBO'NIA. (Named after one of the *Bourbon* family. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Related to Scottia.)

This genus and its allies—Hovea, Lalage, Templetonia, and others of that group—have always been great favourites with gardeners. All greenhouse evergreen shrubs, from the Cape of Good Hope. Cuttings in sand, in April, under a bell-glass, and in a close place, without artificial heat; peat and loam. Summer temp., 50° to 70°; winter, 40° to 45°.

B. barba'ta (bearded). 4. Yellow. July. 1823.
„ *cilia'ta* (hair-fringed). 3. Yellow. July. 1816.
„ *corda'ta* (heart-*leaved*). 2. Yellow. August. 1759.
„ *crena'ta* (scolloped-*leaved*). 6. Yellow. July. 1774.
„ *ericifo'lia* (heath-leaved). See AMPHITHALEA ERICÆFOLIA.
„ *lanceola'ta* (lance-*leaved*). 5. Yellow. July. 1752.
„ *parviflo'ra* (small-flowered). 9. Yellow. July. 1790.
„ *perfolia'ta* (perfoliate-leaved). See RAFNIA PERFOLIATA.
„ *perfora'ta* (perforated). 3. Yellow. July. 1816.
„ *ruscifo'lia* (Ruscus-*leaved*). See B. PARVIFLORA.
„ *trine'rvia* (three-nerved). 6. Yellow. July. 1759.
„ *undula'ta* (wave-*leaved*). 4. Yellow. July. 1812.

BORDER is a name applied to that narrow division of the garden which usually accompanies each side of a walk in the kitchen-garden, and to the narrow bed which is near to the garden-wall on one side, and abuts on a walk on the other. In fact, any bed which acts as a boundary to a walk, or grass-plot, or the main quarters of a garden, may be properly described as a border.

1. *Fruit-Borders.*—Next to the wall should be a path, eighteen inches wide, for the convenience of pruning and gathering. Next to this path should be the border, eight or nine feet wide; and then the broad walk, which should always encompass the main compartments of the kitchen-garden. The whole of the breadth from the wall to the edge of this main walk should be excavated to the depth of four feet; the bottom of the excavation rammed hard; brickbats and large stones then put in, to the depth of one foot and a half; and the remaining two feet and a half filled up with suitable soil. From the under-drainage of brickbats, &c., draining-pipes should be laid with an outfall into some neighbouring ditch. No fruit-tree will be healthy if it roots deep, or if its roots are surrounded by superfluous water; that is, more water than the soil will retain by its own chemical and capillary attractions. Shallow-rooting crops do no harm to the trees grown on fruit-borders sufficient to require their total banishment. See FRUIT-TREES and STATIONS.

The above is good advice, but modern horticulturists do not take so much trouble, yet deep digging and drainage are important factors in securing good crops.

2. *Flower-Borders.*—These, like the preceding, and, indeed, like every other part of the garden not devoted to aquatic and marsh plants, should be well drained. In plotting them, it must also be remembered that, if narrow, no art will impart to them an aspect of boldness and grandeur. Indeed, narrowness of surface is inseparably connected with an impression that the grounds are of limited extent; and no disposal of the plants will remove the littleness thus suggested. If the pleasure-grounds are small, narrow borders are permissible; but, even then, the broader they are the less is the appearance of meanness. All flower-borders should be made in proportion to the size of the garden and other surroundings. Neatness must be the presiding deity over flower-borders; and no application of the hoe and rake, no removal of decayed leaves, no tying up of straggling members, can be too unremitting. See FLOWERS.

Forking-Borders.—No border, whether tenanted by the roots of fruit-trees or flowering-shrubs, should be ever dug with the spade. The surface turned up roughly with the fork, to benefit by the winter frosts, and manure as necessary, turned in with the same implement, are sufficient.

BORECOLE. *Bra'ssica olera'cea ace'phala.*

Varieties.—Of the following, 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, and 15 are the best.

1. Brussels Borecole, or Sprouts.
2. Green Borecole, German or curled Kale, or Curlies, Scotch or Siberian Kale, *Bra'ssica olera'cea seleni'sia.*
3. Purple Borecole, *B. olera'cea lacinia'ta.*
4. Variegated Borecole.
5. Chou de Milan.
6. Egyptian or Rabi Kale.
7. Ragged Jack.
8. Jerusalem Kale.
9. Buda, Russian, or Manchester Kale. This is greatly improved by blanching under a pot, like Sea-Kale.
10. Anjou Kale.
11. One-thousand-headed Cabbage, *B. olera'cea ace'phala.*
12. Palm Borecole.
13. Portugal, or Large-ribbed.
14. Woburn perennial. This, and, indeed, the whole race, may be propagated by cuttings, six inches long, planted where to remain, in March or April.
15. Barnes's Feathered Savoy.

The above are all good types, but we have since had many additions and improvements, also hybrids, which are described in most seed catalogues.

Sowing.—The first crop sow about the end of March, or early in April, the seedlings of which are fit for pricking out towards the end of April, and for final planting at the close of May, for production late in autumn and commencement of winter. Sow again about the middle of May; for final planting, during July; and, lastly, in August, for use during winter and early spring.

Prick out the seedlings when their leaves are about two inches in breadth; set them about six inches apart each way; and water frequently until established. In four or five weeks they will be of sufficient growth for final planting.

Planting.—Put them in rows two feet and a half apart each way: the last plantation may be six inches closer. They must be watered and weeded; and some of them being of large-spreading growth, the earth can only be drawn about their stems during their early growth. If, during stormy weather, any of those which acquire a tall growth are blown down, they should be supported by stakes, when they will soon firmly re-establish themselves.

To raise Seed.—Select such plants of each variety as are of the finest growth, and either leave them where

grown or remove them during open weather in November, or before the close of February (the earlier the better), into rows three feet apart each way, and planted deeply. Keep each variety as far away from each other as possible to prevent cross fertilisation. The seed ripens about the beginning of August.

BORO'NIA. (Named after *Boroni*, an Italian servant of Dr. Sibthorp's. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Cuttings, neither hard nor soft, inserted in sand, under a glass, where there is the mildest heat; pot in leaf-mould. Peat and a little fibrous loam may be added, also sharp sand. Though greenhouse plants, most of them like a little extra heat in spring. Summer temp., 60° to 70°; winter, 45° to 50°.

B. ala'ta (winged). 3. Red. May. N. Holland. 1825.
,, *anemonifo'lia* (anemone-leaved). 2. Red. May. N. Holland. 1824.
,, ,, *anethifo'lia* (dill-leaved). N. Holland. 1841.
,, ,, *varia'bilis* (variable). Tasmania.
,, *crenula'ta* (scolloped-*leaved*). 2. Red. July. King George's Sound.
,, *cymo'sa* (cymose). Pink. Swan River. Syn. *B. teretifolia*.
,, *denticula'ta* (fine-toothed). 2. Red. N. Holland. 1823.
,, *dicho'toma* (fork-branched). See B. SPATHULATA.
,, *Drummo'ndii* (Drummond's). See B. PULCHELLA.
,, *ela'tior* (taller). 3½. Red. May. W. Australia. 1874.
,, *falcifo'lia* (sickle-*leaved*). Moreton Bay. 1841.
,, *floribu'nda* (free-flowering). See B. PINNATA.
,, *Frase'ri* (Fraser's). Red. May. N. Holland. 1821.
,, *heterophy'lla* (various-leaved). 2½. Red. Australia.
,, ,, *bre'vipes* (short-stalked). 1½. Bright red. S. W. Australia.
,, *latifo'lia* (broad-leaved). Red. April. N. Holland. 1824.
,, *ledifo'lia* (Ledum-leaved). 2. Red. May. N. S. Wales. 1814.
,, *megasti'gma* (large stigma). Brown-yellow. Australia. 1873.
,, ,, *au'rea* (golden). Creamy-yellow sport. 1903.
,, *microphy'lla* (small-leaved). 2. Pink. N. Holland. 1846.
,, *mo'llis* (soft). N. Holland. 1841.
,, *ova'ta* (egg-shape-*leaved*). Crimson. May. Swan River. 1841.
,, *pinna'ta* (leafleted). 2. Purple. August. N. S. Wales. 1794.
,, *polygalæfo'lia* (Polygala-leaved). 2. Red. May. N. Holland. 1824.
,, *pulche'lla* (beautiful). 2. Pink. May. W. Australia.
,, *ramo'sa* (branched). Blue. Australia.
,, *sca'bra* (rough). Pink. Swan River.
,, *serrula'ta* (saw-edged-*leaved*). 3. Scarlet. June. N. S. Wales. 1816.
,, *spathula'ta* (spathulate-*leaved*). Pink. Swan River. 1845.
,, *te'nuis* (slender). Blue. Australia.
,, *teretifo'lia* (round-leaved). See B. CYMOSA.
,, *tetra'ndra* (four-stamened). See B. PULCHELLA.
,, *triphy'lla* (three-leaved). See B. LEDIFOLIA.
,, *vimi'nea* (twiggy). Pink. Swan River.

BORRE'RIA. (Named after *J. W. Borrer*, a British cryptogamist and excellent botanist. Nat. ord. *Cinchonads* [Cinchonaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. See SPERMACOCE.)

Stove plants. The biennials from seeds, treated like a tender annual; and the perennials from cuttings in sand, in heat, under a glass; light soil.

B. commuta'ta (changed). See SPERMACOCE VERTICILLATA.
,, *stri'cta* (upright). See S. VERTICILLATA.
,, *verticilla'ta* (whorled-*flowered*). See S. VERTICILLATA.

BORRI'CHIA. (A commemorative name. Nat. ord. Compositæ.)

Greenhouse evergreens. Cuttings in sand, in gentle heat. Fibrous loam, leaf-mould, and sand.

B. arbore'scens (tree-like). 3. Yellow. June. Trop. Amer. 1699.
,, *arge'ntea* (silvery). 2. Yellow. June. Trop. Amer. 1824.
,, *frute'scens* (shrubby). 2. July. N. Amer. 1696.

BORZICA'CTUS. (From *Borzi*, a commemorative name, and *Cactus*. Nat. ord. Cactaceæ.)

Greenhouse succulent. Seeds, cuttings. Loam, broken bricks, a little leaf-mould and sand.

B. Ventimi'gliæ (Ventimiglia). Red-violet. Ecuador. 1910.

BOSCHE'RIA MINAHA'SSÆ is a garden name for what appears to be an Artocarpad (1872).

BO'SCIA. (Named after *L. Bosc*, a French professor of agriculture. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

Cuttings of firm wood in heat, in sand, under a glass; lumpy, fibrous loam and peat. Summer temp., 60° to 80°; winter, 60°.

B. senegale'nsis (Senegal). 3. White. Senegal. 1824.

BOSSIÆ'A. (Named after *Bossier Lamartinere*, a French botanist, who accompanied La Perouse on his fatal voyage. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Hovea.)

Greenhouse evergreen shrubs and trailers; cuttings of half-ripe shoots in sand, in close frame with bottom-heat, in April; peat and loam, both fibrous, with a portion of silver-sand, and some pieces of charcoal, to keep the soil open; also seeds sown in a slight hotbed, in March. Summer temp., moderate; winter, 40° to 50°.

B. buxifo'lia (box-leaved). 4. Yellow. May. N. Holland. 1824.
,, *cine'rea* (grey). 3. Yellow. June. Van Diemen's Land. 1802.
,, *cordifo'lia* (heart-leaved). See B. CINEREA.
,, *denta'ta* (toothed). Australia. L. B. C., 1458.
,, *di'sticha* (two-rowed). 2. Yellow. May. N. Holland. 1840.
,, *ensa'ta* (sword-*branched*). See B. RIPARIA.
,, *eriocа'rpa* (woolly-podded). 1. Yellow. May. King George's Sound. 1837.
,, *folio'sa* (leafy). 4. Yellow. May. N. Holland. 1824.
,, *Henderso'nii* (Henderson's). Yellow and bronze. N. S. Wales. 1844.
,, *heterophy'lla* (various-leaved). 3. Yellow. September. N. S. Wales. 1792.
,, *lanceola'ta* (lanceolate). See B. HETEROPHYLLA.
,, *lenticula'ris* (lentil-*leaved*). See B. RHOMBIFOLIA.
,, *linnæoi'des* (Linnæa-like). See B. PROSTRATA.
,, *linophy'lla* (flax-leaved). 3. Orange. August. N. Holland. 1803.
,, *microphy'lla* (small-leaved). 3. Yellow. July. N. S. Wales. 1803.
,, *orna'ta* (adorned). 2. Yellow, or purple. March, April. Australia. 1830.
,, *ova'ta* (egg-shape-*leaved*). See B. HETEROPHYLLA.
,, *paucifo'lia* (few-leaved). See B. RUFA VIRGATA.
,, *prostra'ta* (prostrate). ½. Yellow. August. N. S. Wales. 1803.
,, *rhombifo'lia* (diamond-leaved). 1. Yellow. May. N. Holland. 1820.
,, *ripa'ria* (river-bank). Australia.
,, *rotundifo'lia* (round-leaved). See B. RHOMBIFOLIA.
,, *ru'fa* (reddish-yellow-*flowered*). 6. Orange. August. N. Holland. 1803.
,, ,, *folio'sa* (leafy). Yellow. Australia. 1843. Syn. *B. spinescens*.
,, ,, *virga'ta* (twiggy). 2. Yellow, red. June. Swan River. 1842. Syns. *B. paucifolia* and *B. virgata*.
,, *scolope'ndria* (hart's-tongue-*leaved*). 10. Yellow. June. N. S. Wales. 1792.
,, *spine'scens* (spined). See B. RUFA FOLIOSA.
,, *tenuicau'lis* (slender-stemmed). See B. CINEREA.
,, *virga'ta* (twiggy). See B. RUFA VIRGATA.

BOSTRICHUS, a class of beetles, many of which are very injurious to the crops of the garden.

B. dispar, Apple-bark beetle. The female of this insect bores into the wood of the apple-tree, and there deposits her eggs, generally in the month of May; and its perforations are so numerous and extensive, as frequently, on the Continent, to destroy the tree. In England it rarely occurs. The perforations are confined to the alburnum, or young wood.

B. typographus. Typographer-bark beetle. This attacks the pine-tribe, especially the silver-fir. A draw-

ing of this insect is given at page 329, vol. iii. of *The Cottage Gardener*.

B. Pinastri, Pinaster, or Red-bark beetle, confines its attacks to the pines, leaving the firs untouched, as the *B. larius* lives exclusively on the larch, and the *B. orthographus* on the spruce-fir.

BOSWE'LLIA. Olibanum-tree. (Named after *Dr. Boswell*, of Edinburgh. Nat. ord. *Amyrids* [Burseraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

The brittle resin of Boswellia, boiled with oil to render it soft, is used in the East as pitch for the bottoms of ships, and, in the dry state, as frankincense. Stove trees; cuttings of half-ripened shoots, in sand and peat; peat and loam. Summer temp., 60° to 80°; winter, 50° to 60°.

B. gla'bra (smooth). See B. SERRATA.
„ *serra'ta* (saw-edged-*leaved*). 20. Pale yellow. E. Ind. 1820.

BOTHRIOSPE'RMUM. (From *bothrion*, a smal pit, and *sperma*, a seed; the seeds are pitted. Nat. ord. Boraginaceæ.)

Hardy annual. Seeds. Garden soil.

B. tene'llum (very-slender). White. July. N. China. 1820.

BOTHY. The lodgings assigned to young gardeners in the northern part of the kingdom, and the same name is now applied to the lodgings of gardeners in many parts of England; and miserable hovels they often were, but they have been greatly improved within recent years.

BOTRY'CERAS. (From *botrus*, a bunch, and *keras*, a horn; in reference to the bunches of horn-like racemes. Nat. ord. *Anacards* [Anacardiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs; cuttings of ripened shoots in sand, under a hand-light, in a frame, and the hand-light tilted up at night; sandy peat and loam. Summer temp., 55° to 65°; winter, 38° to 45°.

B. lauri'num (laurel-like). 4. S. Africa. 1823.

BOTRY'CHIUM. Moonwort. (From *botrus*, a bunch; in reference to the bunch-like formation of the seed-apparatus on the special branch of the leaf. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Perennial Ferns, hardy, with but one exception; chiefly divisions; peat and loam. *B. austra'le* should be protected in winter.

B. austra'le (southern). See B. TERNATUM AUSTRALE.
„ *daucifo'lium* (carrot-leaved). 1. Himalayas. Ceylon, &c. 1862.
„ *disse'ctum* (cut-*leaved*). See B. TERNATUM DISSECTUM.
„ *fumarioi'des* (fumitory-like). ½. Brown. July. Carolina. 1806. A garden name for *B. ternatum*.
„ *Luna'ria* (*common* moonwort). ½. Brown. May. Britain.
„ *obli'quum* (twisted). See B. TERNATUM OBLIQUUM.
„ *subcarno'sum* (somewhat fleshy). See B. DAUCIFOLIUM.
„ *terna'tum* (divided into three). Hudson's Bay Territory to New Granada.
„ „ *austra'le* (southern). ½. June. Australia and New Zealand. 1823. Not quite hardy.
„ „ *disse'ctum* (cut-leaved). ½. July. Segments sharply incise-serrate. N. Amer. 1806.
„ „ *lunarioi'des* (moon-like). A smaller form. N. Amer.
„ „ *obli'quum* (oblique). ½. August. Larger and more divided. N. Amer. 1821.
„ *virgi'nicum* (Virginian). 1. Brown. August. N. Amer. 1790.

BOTRYODE'NDRUM. See MERYTA.

BOTTIONE'A. (A small-flowered Lilywort allied to Anthericum. Nat. ord Liliaceæ.)

A fibrous-rooted Lilywort for a warm, sheltered border. Seeds and divisions in spring.

B. thysanthoi'des (Thysanthe-like). 1. White. March. Chili. 1828. Syn. *Anthericum plumosum*.

BOTTLE GOURD. See LAGENARIA.

BOTTLE TREE. See STERCULIA RUPESTRIS.

BOTTOM-HEAT. Naturally the temperature of the soil always bears a due relative proportion to that of the air. When the temperature of the air decreases, that of the soil also decreases, but very slowly; and, when the atmospheric heat increases, that of the soil also gradually rises. Bottom-heat, or heat applied to the roots of plants, is the artificial mode of imitating this proceeding of nature in our hothouses and other structures of that kind. If the temperature of the soil be too cold in proportion to the temperature of the atmosphere, the roots are not stimulated sufficiently to imbibe food as fast as it is required by the branches and foliage; and, as a consequence, the leaves or fruit will fall or wither. On the other hand, if the temperature of the soil be too great in proportion to that of the atmosphere, the roots absorb food faster than it can be elaborated by the leaves; and, as a consequence, over-luxuriant shoots and an extra development of leaves are caused, instead of blossoms and a healthy progress in all the parts.

Every plant obviously will have a particular bottom-heat most congenial to it. Plants growing in open plains will require a higher bottom-heat than those growing in the shade of the South American forests, though the temperature of the air out of the shade may be the same in each country. That gardener will succeed in exotic plant-culture best, who, among his other knowledge, has ascertained the relative temperature of the air and soil in which any given plant grows naturally. At present, such information from actual observation is not obtainable; but it is not so difficult to ascertain the maximum and minimum temperature of the air of a country; and, these being obtained, the gardener may adopt this as a safe rule:—Let the bottom-heat for plants of that country be always 5° higher than the average temperature of each month; that is, if the lowest temperature of the month is 40°, and the highest 70°, the average is 55°; and, if we add 5° to that, we shall have 60° as the bottom-heat for that month. If the average maximum temperature of the air only be known, let the bottom-heat be less by 10° than the *maximum* temperature of the air. In relation to the propagation of plants bottom-heat is of the greatest advantage, for with a cool surface the sap is drawn downwards, and induces root growths and when top growth is wanted the surface temperature should be the highest. Taking ordinary subjects, we find root-growth is made during the autumn after the ground has been warmed by the summer sun and moistened by rain, and top-growth commences with spring sunshine.

BOTTOMING. A term usually applied to the *drainage* of pots, although equally applicable to any kind of horticultural drainage. (See DRAINING.) It is also applied to *mowing* grass on lawns, and signifies that the mower should take extra pains in mowing, cutting down almost to the surface of the turf, in order to facilitate future mowings by the production of an entirely fresh herbage, free from moss and the residue of former mowings.

BOUCERO'SIA. (From *boukeros*, furnished with buffalo-horns; in reference to the horns of the corona. Nat. ord. Asclepiadaceæ.) Succulent perennials allied to Stapelia and requiring similar cultural treatment.

B. crenula'ta (notched). ½. Pale yellow. India. 1829.
„ *europæ'a* (European). ½. Purple-brown, yellow. Summer. S. Europe. 1832.
„ *gussona'na* (Gussonian). ½. Red-striped. October. Algeria. 1833.
„ *incarna'ta* (flesh). 1. Flesh. June. S. Africa. 1793.
„ *mammilla'ris* (teated). ½. Brown or dark purple. Summer. S. Africa. 1774.
„ *marocca'na* (Morocco). ½. Red-purple and yellow lines. Summer. Morocco. 1875.
„ *munbya'na* (Munbyan). Algeria.
„ „ *hispa'nica* (Spanish variety). Corolla lobes narrow. Spain. 1898.
„ *tessella'ta* (tasselled). See ECHIDNOPSIS CEREIFORMIS.
„ *umbella'ta* (umbelled). Pink. India. 1804.

BOU'CHEA. (Named after two German naturalists, *C.* and *P. Bouche*. Nat. ord. VERBENACÆ.)

Stove or greenhouse, evergreen herbs or sub-shrubs. Propagated by cuttings of half-ripened wood in sand, under a hand-glass or close frame, with a gentle bottom-heat, in spring. Loam, peat, and sand.

B. cuneifo'lia (wedge-shaped-leaved). 4. White. April. S. Africa. 1821. Greenhouse shrub.
„ *Ehrenbe'rgii* (Ehrenberg's). 2. Blue. May. San Domingo. 1699.
„ *pseudoge'rvao* (false gervað). 3 to 5. Purple, white. September. Brazil. 1874. Stove perennial.

BOU'EA. (A commemorative name. Nat. ord. Anacardiaceæ.)
Stove evergreen tree. Cuttings of half mature wood in sand in a close frame, with bottom-heat. Fibrous loam, peat and sand.
B. burma'nica (Burman). Yellow. June. Burma; Malaya. 1823.

BOUGAINVI'LLEA. (Named after *de Bougainville*, a French navigator. Nat. ord. Nyctaginaceæ.)
Very showy, greenhouse climbers, especially those which flower freely every year under ordinary treatment. They flower best when planted out in a border and trained up the rafters or pillars. After the end of October they should be kept dry at the roots to thoroughly ripen the wood, and then cut hard back to the main stems early in the year. Propagated by cuttings of half-ripened shoots in sand in a close frame with bottom-heat. Plants to be flowered in pots should be started in a stove and afterwards placed in the greenhouse. Liquid manure may be given with advantage when in full growth. The soil for borders may consist of three parts turfy loam to one of leaf-mould and sufficient sand to make it porous. Give plenty of ventilation when in full growth.
B. brasilie'nsis (Brazilian). See B. SPECTABILIS.
„ *gla'bra* (smooth). 20 to 30. Yellow. Bracts large, rose. Brazil. 1861.
„ „ *sanderia'na*. A free-flowering variety even in pots. 1895.
„ *formo'sa* (beautiful). Bracts purplish-mauve. Brazil. 1905.
„ *refu'lgens* (refulgent). Bracts bright purple-mauve. Brazil. 1887.
„ *specio'sa* (showy). See B. SPECTABILIS.
„ *specta'bilis* (showy). Yellow. Bracts rosy. Brazil. 1829.
„ „ *laterí'tia* (brick-red). Bracts brick-red.
„ „ *variega'ta* (variegated). Foliage variegated. 1890.
„ *splé'ndens* (splendid). S. Amer. 1848.
„ *vitifo'lia* (vine-leaved). S. Amer. 1848.

BOURBON PALM. See LIVISTONA CHINENSIS.

BOURGEON or **BURGEON.** See BUD.

BOURRE'RIA. (A commemorative name. Nat. ord. Boraginaceæ.)
Stove shrub or small tree. Cuttings in sand in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
B. divarica'ta (spreading). 15. White. Cuba. 1820.

BOUSSINGAU'LTIA. (Named after the celebrated chemist, *Boussingault*. Nat. ord. *Basellads* [Chenopodiaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Half-hardy tuberous-rooted plant. Seeds; division of its tuberous roots; peat and rich loam. Summer temp., 60° to 70°; winter, 45° to 55°.
B. basellói'des (Basella-like). White. July. S. Amer. 1835. "Madeira Vine."
„ *corda'ta* (heart-shaped). Closely allied to *B. baselloides*. Peru. 1895.
„ *Lachau'mei* (Lachaume's). Rose. Cuba. 1872.

BOUTELOU'A. (From *boutes*, a cow-herd, and *louo*, to wash. Nat. ord. Gramineæ.)
Hardy perennial grass. Seeds; divisions. Ordinary soil.
B. racemo'sa (racemed). ½. August. Mexico. 1768.

BOUVA'RDIA. (Named after *Dr. Bouvard*, curator of the Botanic Garden at Paris. Nat. ord. Rubiaceæ. Linn. 4-*Tetrandria*, 1-*Monogynia*.)
Greenhouse evergreen under-shrubs, except where otherwise specified. Cuttings of young shoots in heat, early in the year, in close frame with bottom-heat. May be grown in the open during summer, but to flower well in winter require light and heat. Also by roots, cut into pieces, and inserted in sandy soil, and placed in a brisk heat, in spring. Light, fibrous soil. Summer temp., 50° to 70°; winter 35° to 45°.
B. angustifo'lia (narrow-leaved). 2. Red. September. Mexico. 1838.
„ *Cavanille'sii* (Cavanilles's). 1½. Scarlet. May. Mexico. 1846.
„ *Davíso'ni* (Davison's). 1. White. Autumn. 1872.
„ *fla'va* (yellow). 1½. Yellow. September. Mexico. 1844.
„ *hirte'lla* (hairy). Scarlet. Mexico.
„ *Humbo'ldtii corymbifló'ra* (Humboldt's corymb-flowered). White. Fragrant. Autumn and winter, 1873.
„ „ *grandifló'ra* (large-flowered).
„ *Jacqui'ni* (Jacquin's). See B. TRIPHYLLA.
„ *jasminiflo'ra* (Jasmine-flowered). White. S. Amer. 1869.
„ *leia'ntha* (smooth-flowered). Scarlet. July to November. Mexico. 1850.
„ *longifló'ra* (long-flowered). See HOUSTONIA LONGIFLORA.
„ *luté'ola plé'na* (double yellow). A garden variety. 1888.
„ *multifló'ra* (many-flowered). See B. CAVANILLESII.
„ *Rœ'zlii* (Rœzl's). See RONDELETIA STRIGOSA.
„ *sca'bra* (rough-leaved). Bright pink. Mexico. 1884.
„ *splé'ndens* (shining). See B. TRIPHYLLA SPLENDENS.
„ *strigillo'sa* (small-bristled). See RONDELETIA STRIGOSA.
„ *triphy'lla* (three-leaved). 2. Scarlet. July. Mexico. 1794.
„ „ *gla'bra* (smooth). 2. Scarlet. July. Mexico. 1794.
„ „ *pube'scens* (downy). 2. Scarlet. July. Mexico. 1794.
„ „ *splé'ndens* (shining). 2. Scarlet. April. Mexico. 1838.
„ *versi'color* (various-coloured). 2. Red. August. S. Amer. 1814.
„ *Vriela'ndii* (Vrieland's). White. Gardens.

BOWE'NIA. (Named in compliment to *Sir G. Bowen*, Governor of Queensland. Nat. ord. Cycadaceæ.)
A very striking Cycad, having much divided leaves, with the leaflets running down the petioles, instead of being pinnate. Cultivation similar to Zamia.
B. specta'bilis (showy). Queensland. 1863.
„ „ *serrula'ta* (saw-leaved). Rockingham Bay. 1863.

BOWER. See ARBOUR.

BOWIE'A. (Named in honour of *J. Bowie*, a collector for Kew. Nat. ord. Liliaceæ.)
A curious and interesting greenhouse or half-hardy bulb, with annual, twining stems. Seeds or offsets.
B. volu'bilis (twining). 4 to 6. Green. S. Africa. 1866.

BOWKE'RIA. (Nat. ord. Scrophulariaceæ.)
Greenhouse shrubs, propagated by cuttings of half-ripe wood in sand in a gentle heat, and under a bell-glass or case. Loam, leaf-mould, and sand.
B. gerrardia'na (Gerrardian). 8 to 10. White, dotted red. S. Africa. 1904.
„ *triphy'lla* (three-leaved). S. Africa.

BOX (*Bu'xus sempervi'rens*) is noticed by the gardener chiefly as a plant suitable for edgings. For this purpose it is neat; but it is an exhauster of the soil more than any other that can be so employed, and is a favourite lurking-place for the snail. For plants that may be substituted, see EDGING. The best months for planting Box are September and February. Small-rooted slips are employed, and are planted against the perpendicular side of a small trench, along the edge of the border or bed they are desired to bound. The best month for clipping Box is June, and it should be done in showery weather. With great attention to not injuring the roots, and to washing earth in among these in their new position, large Box-trees or bushes have been moved in May, June, and July.

BOX ELDER. See ACER NEGUNDO.

BOX THORN. See LYCIUM.

BOYKI'NIA. (Nat. ord. *Rockfoils*, Saxifragaceæ).
Hardy herbaceous perennials with the habit of *Heuchera*, and suitable for planting on the rockery. Propagated by division in spring. Ordinary garden soil of a light character.

B. aconitifo'lia (aconite-leaved). White. N. Amer.
„ *ma'jor* (greater). 1. White. The best species. California.
„ *rotundifo'lia* (round-leaved). 1. White. California.

BRABE'JUM. African Almond. (From *brabeion*, a sceptre; in reference to the flower-racemes. Nat. ord. *Proteads* [Proteaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Persoonia.)
Greenhouse evergreen trees. Cuttings of ripe shoots under a bell-glass, in sand. Sandy loam. Summer temp. 50° to 65°; winter, 35° to 45°.

B. stellatifo'lium (starry-leaved). 15. White. August. S. Africa. 1731.
„ *stella'tum* (starred). See B. STELLATIFOLIUM.

BRACHI'STUS. (From *brachustos*, superlative of *brachus*, short; the corolla lobes are very short. Nat. Ord. Solanaceæ. Allied to Capsicum.)
Greenhouse evergreen shrub. Cuttings in sand in a close frame with moderate heat. Loam, peat and sand.

B. stramonifo'lius (Stramonium-leaved). 3. Yellow. June. Mexico. 1823.

BRACHYCHI'LUM. (From *brachus*, short, and *cheilos*, a lip, in reference to the shortness of the lower petal. Nat. ord. Scitaminaceæ.)
A stove perennial requiring similar treatment to Costus and Hedychium. Propagation by division of the roots when commencing to grow. Compost sandy loam and a little peat. The name should be spelt Brachycheilum.

B. Horsfie'ldii (Horsfield's). 2. Yellow. Java. 1894.

BRACHYCHI'TON. (From *brachus*, short, and *chiton*, a tunic. Nat. ord. Sterculiaceæ. Now referred to Sterculia.)
Greenhouse shrubs of easy culture in turfy loam. Propagated by young cuttings in sand, in a close case, with bottom-heat.

B. acerifo'lium (Maple-leaved). See STERCULIA ACERIFOLIA.
„ *Bidwi'lli* (Bidwill's). See S. BIDWILLI.
„ *Delabe'chei* (Delabeche's). See STERCULIA RUPESTRIS.
„ *diversifo'lium* (various-leaved). See S. CAUDATA.

BRACHY'COME. (From *brachus*, short, and *kome*, hair. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to the Daisy.)
Annuals. Sown in a gentle hotbed in March, and transplanted as a half-hardy annual. *B. diversifo'lia* by cuttings of half-ripe shoots, in close frame; peat and loam. Winter temp., 38° to 45°.

B. cardioca'rpa (heart-shaped-fruited). Australia. Greenhouse.
„ *diversifo'lia* (various-leaved). ½. White. May. Australia. 1823 Greenhouse evergreen.
„ *iberidifo'lia* (Iberis-leaved). ½. Purple. May. Swan River. 1840. Half-hardy annual.
„ „ *albiflo'ra* (white-flowered). ½. White. Swan River.
„ *Sincla'irii* (Sinclair's). New Zealand.

BRACHYGLO'TTIS. (From *brachus*, short, and *glotta*, a tongue; the ray florets are short. Nat. ord. Compositæ. Allied to Cineraria.)
A greenhouse tree. Cuttings under a bell-glass. Loam, peat and sand.

B. repa'nda (scalloped). Yellow. New Zealand. 1895.

BRACHYLÆ'NA. (From *brachus*, short, and *læna*, a cloak, or covering; referring to the shortness of the involucre. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Tarchonanthus.)
Greenhouse evergreen shrubs. Cuttings of half-ripe shoots, same as *Brachy'come diversifo'lia*.

B. denta'ta (toothed). Yellow. S. Africa.
„ *elli'ptica* (elliptic). 8. Purple. S. Africa. 1816.
„ *nereifo'lia* (oleander-leaved). 4. White. September. Cape of Good Hope. 1752.

BRACHYLO'MA. (From *brachus*, short, and *loma*, a fringe; the corolla has a short fringe of scales. Nat. ord. Epacridaceæ.)
Greenhouse evergreen shrubs. Cuttings of the points of shoots in spring, under a bell-glass. Fibrous peat, a little loam, leaf-mould, and sand.

B. cilia'tum (eyelashed). 3. White. June. Australia. 1825.
„ *daphnoi'des* (Daphne-like). 3. White. April to June. Australia. 1818.

BRACHYO'TUM. (From *brachus*, short, and *otos*, the ear, in reference to the ear-like structure at the base of the anthers. Nat. ord. Melastomaceæ.)
A greenhouse shrub, with showy flowers and allied to Pleroma. The culture required is similar to that and Tibouchina, which see.

B. confe'rtum (crowded-flowered). Purple. Andes of Peru. 1873.

BRACHYPTERYS. (From *brachus*, short, and *pteron*, a wing. Nat. ord. Malpighiaceæ.)
Stove climber. Cuttings of partly ripened shoots in sand, in a close case, with bottom-heat. Compost, fibrous loam, leaf-mould, and sand.

B. borea'lis (northern). 6. Yellow. July. Central Amer. 1820.

BRACHYSE'MA. (From *brachus*, short, and *sema*, standard; the flowers having the standard petal short. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
Greenhouse evergreen climbers. Seeds in March, in heat; cuttings of half-ripened shoots in summer, in sand, under a bell-glass, or in close frame, in a mild bottom-heat; loam and peat, with a little sand. Summer temp., 50° to 65°; winter, 45° to 55°.

B. acumina'tum (long-pointed). Scarlet. Australia. 1866.
„ *aphy'llum* (leafless). Brownish-crimson. N. Holland. 1849.
„ *bracteolo'sum* (bracted). 3. Crimson. April. Swan River. 1843.
„ *hy'bridum* (hybrid). Crimson, cream. March.
„ *lanceola'tum* (lance-leaved). Scarlet. February. Swan River. 1848.
„ *latifo'lium* (broad-leaved). 3. Crimson. May. N. Holland. 1803.
„ *melanope'talum* (black-petaled). See B. UNDULATUM.
„ *platy'ptera* (broad-winged-*stamened*). Crimson. May. Swan River. 1844.
„ *præmo'rsum* (bitten-short). Red. N. S. Wales. 1848.
„ *subcorda'tum* (somewhat heart-shaped). Australia.
„ *undula'tum* (wave-*leaved*). 3. Green. March. N. S. Wales. 1828.
„ *villo'sum* (long-haired). 3. Crimson. March. Swan River.

BRACHYSPA'THA. (From *brachus*, short, and *spatha*, a spathe. Nat. ord. Araceæ.)
Stove perennial, with tuberous roots, and requiring similar treatment to Amorphophallus, to which it is now referred.

B. varia'bilis (variable). 2. Greenish-purple. Java. 1876.

BRACHYSTE'LMA. (From *brachus*, short, and *stelma*, a crown; referring to the coronal processes of the flowers. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
Greenhouse tuberous perennials, from the Cape of Good Hope. Cuttings in sandy soil, in heat; division of the roots; fibrous loam. Summer temp., 60° to 75°; winter, 48° to 55°.

B. Arno'ttii (Arnott's). Brown, green. S. Africa. 1868.
„ *Barbe'riæ* (Mrs. Barber's). Purple, speckled yellow. August. S. Africa. 1866.
„ *ca'frum* (Caffer). ½. Yellow. S. Africa. 1894.
„ *cri'spum* (curled-*leaved*). ½. Brown, yellow. September. 1829.
„ *ova'tum* (ovate-leaved). 1. Yellow-green. S. Africa. 1872.
„ *spathula'tum* (spathulate-*leaved*). 1. Green. June. 1826.
„ *tubero'sum* (tuberous). 1½. Purple. June. 1821.

BRACKEN or **BRAKE FERN.** See PTERIS AQUILINA.

BRACT. The small, modified leaf placed at the base of flowers or their stalks, and not inaptly called *the floral leaf*. The most familiar example is the pale green, oblong one attached to the flower-stalk of the Lime-tree (*Ti'lia vulgaris*).

BRACTEATE. Having bracts.

BRA'HEA. (Named after *Tycho Brahé*, a celebrated astronomer. Nat. ord. Palmaceæ.)

Warm greenhouse Palms of dwarf habit, with fan-shaped leaves. Propagated by seeds. Compost fibrous loam, about one-third peat, and plenty of sand. Water freely in summer.

B. calcara'ta (spurred). Mexico. 1871.
„ *du'lcis* (sweet). Peru. 1865.
„ *edu'lis* (edible). See ERYTHEA EDULIS.
„ *filamento'sa* (thready). See WASHINGTONIA FILIFERA.
„ *glau'ca* (sea-green). See ERYTHEA ARMATA.
„ *ni'tida* (shining). Mexico. 1887.
„ *Rœ'zlii* (Rœzl's). See ERYTHEA ARMATA.
„ *serrula'ta* (finely-sawed). 10. Green, white. Georgia. 1809.

BRAI'NEA. (In memory of *C. J. Braine*, of Hong-Kong. Nat. ord. *Ferns* [Filices].)

A handsome greenhouse tree fern, easily grown in a compost of turfy loam and peat in equal proportions, with plenty of sharp sand.

B. insi'gnis (remarkable). Fronds, 2 to 3 ft. Hong-Kong. 1856.

BRAMBLE. *Ru'bus.*

BRANCHING ANNUAL STOCK. *Malco'mia mari'tima.*

BRASE'NIA. (Probably commemorative. Nat. ord. Nymphæaceæ.)

A hardy water plant for the muddy margins of a pond or tank, to be protected in winter. Divisions.

B. Schrebe'ri (Schreber's). Red. July. N. Amer., Japan, &c. 1798.

BRASSAIO'PSIS. (From *Brassaia*, and *opsis*, resemblance; the species resemble Brassaia. Nat. ord. Araliaceæ.)

Greenhouse evergreen shrubs. Cuttings in sand under a bell-glass. Fibrous loam, peat and sand.

B. aculea'ta (prickly). White. Himalaya. 1816.
„ *specio'sa* (showy). 7. Yellow. April. Himalaya. 1847.

BRASSA'VOLA. (Named after *A. M. Brassavola*, a Venetian botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Stove orchids. Divisions; best grown on blocks of wood, but will do in peat, crocks, and sphagnum. Summer temp., 70° to 90°, and moist; winter, 55° to 65°, and dry.

B. acau'lis (stemless). ½. Creamy-white. June. Central Amer. 1852.
„ *amazo'nica* (Amazonian). Brazil. 1839.
„ *angusta'ta* (narrowed). Yellowish-green. June. Demerara.
„ *corda'ta* (heart-*lipped*). 1. White, green. May. Brazil.
„ *cuculla'ta* (hooded). ½. Purple and white. June. W. Ind. 1790.
„ *cuspida'ta* (spear-*lipped*). ½. White. March. Trinidad. 1839.
„ *digbya'na* (Mr. Digby's). See LÆLIA DIGBYANA.
„ *elegans* (elegant). See TETRAMICRA RIGIDA.
„ *filifo'lia* (thread-leaved). Colombia.
„ *fra'grans* (fragrant). Brazil.
„ *gibbsia'na* (Gibbsian). See B. TUBERCULATA.
„ *glau'ca* (milky-green). See LÆLIA GLAUCA.
„ *grandiflo'ra* (large-flowered). White. March. Honduras. 1838.
„ *linea'ta* (line-leaved). Light yellow. S. Amer. 1850
„ *martia'na* (Dr. Martius's). 1. White. March. Berbice. 1838.
„ *nodo'sa* (knotty). 1. Yellowish-green. October. W. Indies. 1838.
„ *odorati'ssima* (sweetest-scented). See B. CUCULLATA.
„ *Perri'nii* (Perrin's). 1. Green. September. Rio Janeiro. 1831.
B. retu'sa (end-notched). White, green. March. Maracaybo.
„ *rhopalorrha'chis* (clubbed-rachis). Guatemala. 1852.
„ *tubercula'ta* (knobbed). ½. White. July. Brazil. 1827.
„ *veno'sa* (veiny-*lipped*). 1. White. March. Honduras. 1839.

BRA'SSIA. (Named after *Mr. Brass*, a botanical traveller for Sir Joseph Banks. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Stove orchids. Divisions; rough turf, in pots, well drained. Those from Guatemala require less heat than those from the West Indies; water freely when growing, but give little when at rest. Temp. same as for *Brassa'vola*.

B. angu'sta (narrow-*flowered*). See B. LAWRENCEANA ANGUSTA.
„ *anthero'tes* (brilliant). Yellow, black. Trop. Amer. 1879.
„ *arcui'gera* (bow-bearing). Peru. 1869.
„ *arista'ta* (awned). See B. VERRUCOSA.
„ *bi"color* (two-coloured). Yellow, purple. Peru.
„ *bi"dens* (two-toothed). Brown, yellow. May. Brazil. 1842.
„ *brachia'ta* (opposite-branched). 2. Yellowish-green and brown. September. Guatemala. 1843.
„ *brachy'pus* (short-stalked). Ecuador.
„ *cauda'ta* (*long*-tailed). 1. Yellow and brown. February. W. Ind. 1823.
„ „ *hierogly'phica* (hieroglyphical). Sepals and petals with brown bars. W. Ind. 1881.
„ *chlo'rops* (green-eye). Green, black. Costa Rica. 1873.
„ *cinnamo'mea* (cinnamon-coloured). See B. KEILIANA.
„ *Clowe'sii* (Clowes's). Brown, yellow. August. Brazil. 1844.
„ *cochlea'ta* (spoon-*lipped*). See B. LAWRENCEANA COCHLEATA.
„ *cryptophtha'lma* (hidden-eyed). Yellow. Blackish-violet. Winter. Peru. 1876.
„ *elega'ntula* (elegant). Green and brown bars. Mexico. 1885.
„ *euo'des* (good-looking). Brown-red, yellow. May. Colombia. 1880.
„ *farini'fera* (meal-bearing). Red-brown. Ecuador. 1870.
„ *forgetia'na* (Forgetian). Whitish, chocolate-purple. Peru. 1910.
„ *gireoudia'na* (Gireoudian). Yellow, spotted red. Brazil.
„ *gluma'cea* (chaffy). Green-yellow, and brown rings. Venezuela. 1868.
„ *guttula'ta* (finely spotted). See B. MACULATA.
„ *gutta'ta* (blotched). See B. MACULATA GUTTATA.
„ *havane'nsis* (Havana).
„ *keilia'na* (Keilian). Orange. Venezuela. 1862.
„ „ *tri'stis* (sad). Amber-brown, lemon. Caraccas; Colombia.
„ *lancea'na* (Lancean). ½. Yellow-brown, spotted. January. Surinam. 1843.
„ „ *macrosta'chya* (large-spiked). Green, brown. Demerara.
„ „ *pu'mila* (dwarf). Yellow, purple. 1844.
„ „ *viridiflo'ra* (green-flowered). Green. March. Demerara. 1833.
„ *lawrencea'na* (Lawrencean). 1. Yellow, brown. April. Brazil. 1839.
„ „ *angu'sta* (narrow-petaled). Yellow. October. Brazil. 1839.
„ „ *cochlea'ta* (shell-formed). 1. Green, brown. April. Demerara. 1834.
„ „ *longi'ssima* (longest). Orange-yellow, purple-brown. Costa Rica. 1868.
„ *Lewi'sii* (Lewis'). Greenish-yellow, spotted brown. Lip pale yellow.
„ *macrosta'chya* (large-spiked). See B. LANCEANA MACROSTACHYA.
„ *macula'ta* (spotted). Yellow, red-spotted. April. Jamaica. 1806.
„ „ *gutta'ta* (blotched). Green, yellow. August. Guatemala. 1843.
„ *ocane'nsis* (Ocanian). Colombia.
„ *peruvia'na* (Peruvian). 1. Yellow, green. April. 1844.

B. pu'mila (dwarf). See B. LANCEANA PUMILA.
„ *signa'ta* (remarkable). Green, changing to yellow. Lip white, purple. 1881.
„ *thyrso'des* (thyrse-like). Yellow, spotted green. Peru. 1868.
„ *verruco'sa* (warted-lipped). Green and brown. March. Guatemala.
„ „ *grandiflo'ra* (large-flowered). Larger and paler.
„ *Wa'generi* (Wagener's). Colombia.
„ *Wra'yæ* (Mrs. Wray's). See B. MACULATA.

BRA'SSICA. Cabbage. (From *bresic*, the Celtic name for Cabbage. Nat. ord. *Cruciferæ* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Seeds, chiefly spring and autumn; but at all intermediate periods during summer, according as the produce is wanted young; deep, rich, loamy soil. We shall only mention the specific names of the most useful, the cultivation of each of which will be found under its common name.

B. a'lba (white). White Mustard. Britain.
„ *arve'nsis* (field). Field Mustard. Charlock. Britain.
„ *frute'scens* (shrubby). 1½. July. Madeira. 1777.
„ *insula'ris* (island). White and red veins. Sardinia. 1908.
„ *Na'pus*. Rape. England.
„ *ni'gra* (black). Black Mustard. Britain.
„ *olera'cea* (herb-like). Wild Cabbage. England and Ireland.
„ „ *ace'phala* (headless). Borecole or Kale. Gardens.
„ „ *botry'tis* (bunched). Broccoli. Gardens.
„ „ „ *cauliflo'ra* (stem-flower). The Cauliflower. Gardens.
„ „ *bulla'ta* (bullate or wrinkled). The Savoy. Gardens.
„ „ „ *gemmi'fera* (bud-bearing). Brussels Sprouts. Gardens.
„ „ *capita'ta* (headed). The Cabbage or Hearting Cabbage. Gardens.
„ „ *cau'lo-ra'pa* (stem-turnip). Kohl-Rabi. Gardens.
„ *oxyrrhi'na* (sharp-beaked). 1. June. Spain. 1818.
„ *Ra'pa*. The Turnip. England and Ireland.
„ *Rutaba'ga*. The Swede. England and Ireland.

BRASSOCATLÆ'LIA. (Garden hybrid between *Brassavola*, *Cattleya*, and *Lælia*. Nat. ord. Orchidaceæ.) For culture, see BRASSAVOLA, CATTLEYA, and LÆLIA.

B. balaruce'nsis. Hybrid. *Lælio-cattleya schilleriana* × *Brassavola digbyana*. 1906.
„ *Macka'yi*. Hybrid. *Lælio-cattleya elegans* × *Brassavola digbyana*. 1903.

BRA'SSO-CA'TTLEYA. (A series of hybrids between *Brassavola* and *Cattleya*. Nat. ord. *Orchids* [Orchidaceæ]).

They may be grown in baskets or pots, three-parts filled with crocks, using a compost of fibrous peat, sphagnum, and sand. See BRASSAVOLA and CATTLEYA.

B.-c. Alexande'ri. Hybrid between *Cattleya citrina* and *Brassavola digbyana*. 1907.
„ *chamberlai'niæ*. Hybrid. *Brassavola digbyana* × *Cattleya quadricolor*. 1902.
„ *Clifto'ni*. Hybrid. *B.-c. digbyana-Mossiæ* × *Cattleya Trianæ*. 1908.
„ *conspi'cua*. Hybrid. *Cattleya Leopoldii* × *Brassavola glauca* or *B. digbyana*. 1902.
„ *digbya'no-Forbe'sii*. Hybrid. *Brassavola digbyana* × *Cattleya Forbesii*. 1906.
„ *heatone'nsis*. Hybrid. *Brassavola digbyana* × *Cattleya hardyana*. 1902.
„ *Hy'eæ*. Hybrid. *Cattleya Loddigesii harrisonæ* × *Brassavola digbyana*. 1907.
„ *laurentia'no-glau'ca*. Hybrid.
„ *Leema'nniæ*. Hybrid. *Cattleya dowiana aurea* × *Brassavola digbyana*. 1903.
„ *lindleya'no-e'legans*. Hybrid. *Brassia lindleyana* × *Lælio-cattleya elegans*. 1898.
„ *Ma'riæ*. Hybrid. *Cattleya Warneri* × *Brassavola digbyana*. 1902.
„ *niva'lis*. Hybrid. *Brassavola fragrans* × *Cattleya intermedia*. 1900.
„ *Pee'tersiæ*. Hybrid. *Cattleya Warscewiczii* × *B.-c. Mme. Ch. Maron*. 1908.
„ *Pee'tersii*. Hybrid. *Brassavola glauca* × *Cattleya lawrenceana*. 1905.
B. Sande'ri. Hybrid. *Cattleya Schroderæ* × *Brassavola glauca*. 1905.
„ *stria'ta*. Hybrid. *Brassavola fragrans* × *Cattleya Mossiæ*. 1903.
„ *Thornto'nii*. Hybrid. *Brassavola digbyana* × *Cattleya gaskelliana*. 1907.

BRA'SSO-LÆ'LIA. (Garden hybrids between *Brassavola* and *Lælia*. Nat. ord. *Orchids* [Orchidaceæ].)

For cultural treatment, see BRASSAVOLA and LÆLIA.

B.-l. flado'sa. Hybrid. *Brassavola nodosa grandiflora* × *Lælia flava*. 1906.
„ *Jesso'pii*. Hybrid. *Lælia xanthina* × *Brassavola digbyana*. 1907.
„ *Lellieu'xii*. Hybrid. *Lælia anceps* × *Brassavola digbyana*. 1906.
„ *Ro'lfei*. Hybrid. *Lælia crispa* × *Brassavola digbyana*. 1903.
„ *Thwai'tesii*. Hybrid. *Lælia grandiflora* × *Brassavola digbyana*. 1907.
„ *westfieldie'nsis*. Hybrid. *Brassavola glauca* × *Lælia flava*. 1907.

BRAVO'A. (Named after *Bravo*, a Mexican botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Pretty Mexican small bulbs, requiring slight protection in winter, or the greenhouse-culture of Ixias. Offsets; light, rich loam. Summer temp., 60° to 80°; winter, 45° to 55°.

B. bullia'na (Bullian). 2 to 3. White, tinted greenish-purple, and yellow inside. Mexico. 1884.
„ *geminiflo'ra* (twin-flowered). Red. July. Mexico. 1841.
„ *kewe'nsis* (Kew). Garden hybrid between *B. geminiflora* and *B. bulliana*. 1899.

BRA'YA. (A commemorative name. Nat. ord. Cruciferæ.)

Hardy perennial herb. Seeds; divisions in spring. Sandy soil, mixed with leaf mould or peat, in a shady position, and protected from wet in winter.

B. alpi'na (alpine). ¼. White. Alps of Europe, &c.
„ „ *purpura'scens* (purplish). ¼. Purplish. May. Melville Island. 1827.

BRAZILIAN TEA. See ILEX PARAGUAYENSIS and STACHYTARPHETA JAMAICENSIS.

BRAZIL-NUT. *Bertholle'tia.*

BRAZIL-WOOD. *Cæsalpi'nia brasilie'nsis.*

BRAZO'RIA. (Derivation not clear. Nat. ord. Labiatæ.)

Hardy herb intermediate between Physostegia and Scutellaria. Seeds; divisions in spring. Ordinary soil.

B. scutellarioi'des (Scutellaria-like). 1½. Pale pink. Texas. 1834.

BREAD-FRUIT. *Artoca'rpus.*

BREAD-NUT. *Bro'simum.*

BREAD-ROOT. *Psora'lea escule'nta.*

BREAKING. A tulip's flower is *broken* when it has attained its permanent colours. A bulbous root is said to *break* when its foliage begins to be thrust forth; and a bud *breaks* when it bursts, to allow the expansion of the leaves or flowers.

BREAST-WOOD. The shoots which grow out directly from the front of branches trained as espaliers, or against walls.

BRE'DIA. (Named in compliment to *Professor J. G. S. van Bred*. Nat. ord. Melastomaceæ.)

A showy greenhouse shrub, propagated by cuttings of fairly firm shoots in sand, in a close case; also by seeds. Compost, turfy loam, peat, and leaf-mould, with some sharp sand.

B. hirsu'ta (hairy). Rose. Autumn. Japan. 1870.

BREMONTIE'RA. (Named after *M. Bremontier*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Hedysarum.)

Stove evergreen shrub. Cuttings in sand, under a glass, in heat; fibrous loam and peat, with a little sand. Summer temp., 60° to 75°: winter, 50° to 55°.

B. Ammo'xylon (sand-wood). 4. Purple. Mauritius. 1826.

BREVO'ORTIA. (Nat. ord. Liliaceæ.)
A curious and handsome bulbous plant, requiring to be planted in light, warm soil in a sheltered position, such as the foot of a wall. Allied to Brodiæa, and requiring similar treatment. Propagated by offsets and seeds.

B. cocci'nea (scarlet). See B. IDA-MAIA.
„ *I'da-Ma'ia* (Ida May). Crimson-red, yellow, green. California. 1870. Syn. *Brodiæa coccinea.*

BREW'ERIA. (Nat. ord. Convolvulaceæ.)
A stove plant related to Convolvulus, and may be grown in a compost of fibrous loam, leaf-mould, and sand.

B. corda'ta (heart-shaped calyx). India and Malaya. Syn. *B. Roxburghii.*
„ *humistra'ta* (ground-cover). White. June. N. Amer. 1812.

BREX'IA. (From *brexis*, rain; in reference to the protection from rain given by the large leaves of some of the species. Nat. ord. *Brexiads* [Saxifragaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen trees. Half-ripened shoots in sand, under a bell-glass, in close frame, in bottom-heat; sandy peat, and a third loam. Summer temp., moderate; winter, 50° to 55°.

B. chrysophy'lla (golden-leaved). See B. MADAGASCARIENSIS.
„ *madagascarie'nsis* (Madagascar). 30. Green. June. Madagascar. 1812.
„ „ *integrifo'lia* (entire-leaved).
„ „ *spino'sa* (thorny). 30. Green. June. Madagascar. 1812.

BRICKE'LLIA. (Nat. ord. Compositæ.)
Stove herbs and undershrubs, propagated by cuttings in pots of sandy soil, in a close case, with bottom-heat. Compost, loam, peat, and sand.

B. Cavanille'sii (Cavanilles'). 1½. Purple. August. Mexico. 1827. Shrubby.
„ *pe'ndula* (drooping). Yellow. August. Mexico. 1832.
„ *veronicæfo'lia* (Veronica-leaved). 1½. Blue. August. Mexico. 1825.

BRICKS. As the gardener often may want to know how many bricks will be needed for an intended structure, it will be a guide to know that all bricks sold in England were required by statute (17 Geo. III. c. 42) to be eight and a half inches long, four inches wide, and two and a half inches thick. Pantiles, by the same authority, were required to be thirteen and a half inches long, nine and a half inches wide, and half an inch thick. But as the duty is now taken off these articles, we hope to see them made larger, and of various forms, so as to reduce the amount of bricklayers' labour, which is one of the most costly items in the construction of garden-buildings.

They are now made nine inches long, four inches wide, and two and a half inches thick, and the clamp bricks are most in use for horticultural purposes. Walls are usually termed four inch, nine inch (this allows of some being used crosswise and others lengthwise, with space for mortar). The "clamp" has a hollow on one surface, which holds the mortar, and binds the bricks together. Fire bricks, and what are termed Kiln bricks, are made with level surfaces, the latter being used for paving or other purposes where a good facing is necessary; they are red, and have a smooth surface, and are rather larger than the ordinary clamp bricks.

BRIDGES. During recent years there has been considerable improvement in the construction of Bridges. In the Japanese gardens they are constructed of bamboo canes, and as in these gardens artificial streams and lakes are formed, the rustic bridges are effective, besides being a necessity. And in any garden where there is water to cross a bridge may be made an ornament. The plain plank and rail should be avoided. A good firm plank bottom is necessary, but in place of the straight rails above, an irregular arrangement of a rustic character is more effective. The crooked stems of oak are most effective. The construction of bridges is quite as much an art as painting a picture; for when properly constructed, they add much to the picturesque appearance of the landscape. One great point in building a bridge is to give it a good rise in the centre; this with a good foundation at each end, and strong girders beneath the woodwork, will be perfectly safe. In some instances it may be necessary to have a level bridge for crossing water but, as stated above, the bridge when properly constructed is an ornament to the garden, and when fairly well elevated in the centre a fine view may be obtained of other parts of the garden. The rustic woodwork bridges are appropriate in most parts of the garden, but in the rock-garden bridges constructed of stone are more in keeping with surroundings; and if built of rough burs some plants may be grown on the walls and supports. Opinions differ, some like strict neatness; yet in the garden horizontal lines and bareness do not appeal to the tastes of many, while a rustic, well-constructed bridge is an ornament to any garden. There are, of course, some cases where it is necessary to have a bridge as nearly level as possible for means of traffic, but even then it may be made attractive by the side structures being carried up irregularly and elevated in the centre.

BRIDGE'SIA SPICA'TA. See ERCILLA VOLUBILIS.

BRILLANTAI'SIA. (In honour of *M. Brillaint.* Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)
Stove evergreen. For culture, see BARLE'RIA.

B. owarie'nsis (Owarian). 3. Purple. March. Western Africa. 1853.
„ *vogelia'na* (Vogelian). Trop. Africa.

BRINING. See STEEPING.

BRI'ZA. (From *brizo*, to nod. Nat. ord. *Grasses* [Gramineæ]. Linn. 3-*Triandria*, 2-*Digynia*.)
This genus includes our Quaking-grass, or Lady's tresses, *B. ma'xima* and *mi'nor*. These, with the others we here enumerate, are the only ones having any pretensions to being ornamental. Seed in early spring; common soil.

B. Clu'sii (Clusius's). See B. MEDIA.
„ *ela'tior* (taller). See B. MEDIA.
„ *genicula'ta* (kneed). S. Africa.
„ *gra'cilis* (graceful). See B. MINOR.
„ *ma'xima* (greatest). 1½. Apetal. June. S. Europe. 1633.
„ *me'dia* (medium). 1. June. Britain. Perennial. Common Quaking Grass.
„ *mi'nima* (smallest). See B. MINOR.
„ *mi'nor* (smaller). ½. Apetal. July. England.
„ *rotunda'ta* (rounded). Mexico. 1887.
„ *ru'bra* (red). See B. MAXIMA.
„ *spica'ta* (spiked). ½. Greece and Asia Minor. 1882.

BROADCAST. Applies to seed sowing where the seeds are spread equally over the surface instead of being sown in drills, or rows. In most instances the rows are preferable. Grasses and other serials are sown broadcast, and also annuals, in small seed-beds. Turnips are among the few vegetables that are sown broadcast on the ground where they are to remain until ready for use, but the cabbage and others of the Brassica tribe are usually sown in beds broadcast and transplanted later, yet with all subjects rows are preferable, as the hoe can be used more effectively; even for seedlings which are to be transplanted there is an advantage in having them in rows if they are not sown too thickly.

BROCCHI'NIA. (Nat. ord. Bromeliaceæ.)

B. cordylinoi'des (Cordyline-like). 15. Yellow. Guiana. 1888. Stove tree.

BROCCOLI. (*Bra'ssica olera'cea Broty'tis.*) In the older editions of this work a long list of types and varieties are given, which it will not be necessary to enumerate here, for catalogues from all seedsmen give them in their proper order. The question frequently arises as to the distinction between the Broccoli and Cauliflower, and since we have so many hybrids it is difficult to divide them. In the first place, the Broccoli is a winter or spring vegetable, while the Cauliflower comes in during the summer and autumn, and although there is this distinction, all of those with the round,

white heads are usually called Cauliflowers, and it is only those with the sprouting heads that are known in our markets as Broccoli, yet in many catalogues we find the old name is sustained; but if you went to a market salesman and asked for Broccoli, he would offer you the sprouting sorts. The true difference is that the varieties of Cauliflower come into flower while on a soft, tender stem, while the Broccoli are strictly biennials, hardier, and do not form a head until they have made a strong hard stem, yet after all, they belong to the same species of Brassica. We get the ordinary type all the year through, and it makes a distinction to keep them under the one name "Cauliflower," to define them from the winter branching sorts. In private gardens the word, Broccoli, is made to comprise every variety capable of standing in the open ground during all, except unusually severe, winters. It is only during the winter and, early spring that we have the sprouting Broccoli; the original type.

Time and Mode of Sowing.—The time for sowing the varieties are specified under each; but we will add that, for a small family, we have found the following sowings and varieties are sufficient to keep up a supply from the beginning of October to the end of May:—

Sow Early Cauliflower Broccoli the second week in April, and the first week in June. The produce will be fit for table during October, and until the middle of December. Sow Green Close-headed the first week in April. The heads will be ready in November, and until January ends. Sow Dwarf Brown the second week in April. It will be in production from February to end of April. Sow Sulphur-coloured and Spring White the second week of April. Their heads will be ready during the April and May following.

Each variety should be sown separately, and the sowing performed thin; the beds not more than three or four feet wide, for the convenience of weeding, which must be performed as often as weeds appear, as they are very inimical to the growth of this vegetable. The seeds must not be buried more than sufficiently deep to keep them moist. After the ground has been well prepared, it may be sown on the surface and simply raked in, and the beds be netted over, to keep away the birds, which, especially in showery weather, are very destructive.

Pricking out.—The plants are fit for pricking out when they are two or three inches high. Do it during warm, showery weather, and set them six inches apart each way, and water every night until they have taken root. They must have four or five weeks' growth before they are again moved, or not until they have leaves nearly three inches in breadth.

Planting.—When planted out, they must be set, on an average, two feet asunder each way; in summer a little wider, in autumn rather closer. Water to be given at the time of planting, and occasionally afterwards until they are established. During the droughts of summer it may be given plentifully, with the greatest advantage. They must be hoed between frequently, and the mould drawn up about their stems.

Protection in Winter.—To those crops which have to withstand the winter in the open air, salt is beneficially applied, as it preserves them from being frosted in the neck. This application preserves their roots from being worm-eaten; and so does pouring soapsuds between the rows, which application is also very beneficial to the plants. The salt should be sown over the bed, in a dry day, in autumn, at the rate of ten bushels to the acre.

To preserve the winter-standing crops from destruction by severe weather, a small trench is made, in the first week of November, at the north end of each row, in which the adjoining plant is laid so low, with its head towards the north, that the centre of its stem at the top is just level with the surface of the ground, the root being scarcely disturbed; it is then immediately watered, and its roots covered with more mould. Thus every plant is in succession reclined; and, in a few days, it is scarcely perceptible that they have been thus treated, though it certainly checks their growth. Before the arrival of snow, a small hillock must be raised round each plant, to support its leaves, and prevent their being broken. If snow accompanies severe frost, advantage should be taken of it, and the plants be heaped over with it, which will afford them an effectual protection.

To obtain Seed.—Such plants of each variety must be selected, in March or April, as most perfectly agree with their peculiar characteristics, and are not particularly forward in advancing for seed. As the stems run up, some gardeners recommend the leaves to be taken away; but this must be injurious. Some growers are careful to avoid foliage overgrowing the heads, but this is not always necessary; the main point is to take the earliest possible, so that the seed will ripen before we get bad weather in the autumn. The Sulphur-coloured is always difficult to obtain seed from. As the branches spread, four or six stakes should be placed at equal distances round each plant, and hooped round with string, to support them, and prevent their breaking. When the pods begin to form, water should be given repeatedly, and occasionally some thrown over the whole plant, which tends to prevent mildew. Before the pods begin to change colour, those from the extremity of every shoot must be taken away, as these yield seeds which produce plants very apt to run to seed without heading; and, by an early removal, the others are benefited. The branches ought to be gathered as soon as the pods upon them ripen. Different kinds must never be planted near each other, or they will reciprocally be crossed. The seed ripens in August or September, and it is often recommended to preserve it in the pod until wanted; but the general practice is to beat it out, and store it as soon as perfectly dry, which is the safest and best method.

BRODIÆ'A. (Named after *J. J. Brodie*, a Scotch cryptogamist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Allium.)

Frame or half-hardy small bulbs, requiring the same treatment as Ixias. Offsets; sandy peat. Summer temp., 50° to 70°; winter, 40°.

B. Bridge'sii (Bridges'). Blue. California. 1888.
„ *califo'rnica* (Californian). Pale brown. July. California. 1848.
„ *capita'ta* (headed). 1. Violet. May. California. 1871.
„ „ *a'lba* (white).
„ *cocci'nea* (scarlet). See BREVOORTIA IDA-MAIA.
„ *conge'sta* (crowded). 1. Blue. July. Georgia. 1806.
„ „ *a'lba*. White.
„ *cro'cea* (Crocus-flowered). Yellow. Northern California. 1901.
„ *Dougla'sii* (Douglas'). White. July. British Columbia. 1826. Syn. *Triteleia grandiflora*.
„ *filifo'lia* (thread-leaved). California. 1882.
„ *grandiflo'ra* (large-flowered). 1½. Blue. N.W. Amer. 1806.
„ „ *Wa'rei* (Ware's). Lilac-rose. California. 1886.
„ *Henderso'ni* (Henderson's). Yellow with violet-purple midribs. Western N. Amer. 1890.
„ *Howe'llii* (Howell's). White or pale lilac. Western United States. 1888.
„ „ *lilaci'na* (lilac). Delicate lilac.
„ *hyaci'nthina* (Hyacinth-like). White, with green ribs. California. 1833.
„ „ *la'ctea* (milky). White, suffused lilac.
„ *ixioi'des* (Ixia-like). Bright yellow, green ribs on the back. California.
„ „ *ere'cta* (erect). Bright yellow. 1896.
„ „ *sple'ndens* (splendid). Bright yellow, in large heads.
„ *la'xa* (loose). 1 to 2. Purple-blue. California. 1832.
„ *Leichtli'nii* (Leichtlin's). White, green. Winter. Chilian Andes. 1874.
„ *multiflo'ra* (many-flowered). Blue-purple. California. 1872.
„ *Orcu'ttii* (Orcutt's). Bright lilac. California. 1896.
„ *Palme'ri* (Palmer's). Bright purple. Lower California. 1889.
„ *parviflo'ra* (small-flowered). See B. MULTIFLORA.
„ *peduncula'ris* (stalked). Porcelain-white. California. 1896.
„ *porrifo'lia* (leek-leaved). 1. Blue, white. Chili. 1868.
„ *pulche'lla* (beautiful). California.
„ *Pu'rdyi* (Purdy's). Rose-purple. California.
„ *ro'sea* (rosy). ½. Rose. California. 1896.
„ *stella'ris* (starry). ½. Deep blue. California. 1896.
„ *terre'stris* (terrestrial). California.

B. uniflo'ra (one-flowered). ¾. Porcelain white. March. Buenos Ayres. 1832.
„ „ *cæru'lea* (sky-blue). Light sky-blue.
„ „ *conspi'cua* (conspicuous). Segments broader. 1869.
„ *volu'bilis* (twining). See STROPHOLIRION CALIFORNICUM.

BROME'LIA. (Named after *Bromel*, a Swedish botanist. Nat. ord. *Bromeliads* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Related to the Pine Apple.)
Stove herbaceous perennials. Suckers; rich, lumpy soil, well drained. Summer temp., 60° to 85°, with moisture; winter, 50° to 60°, dryish.

B. agavoi'des (Agave-like). White, violet; bracts scarlet. 1881.
„ *Ana'nas* (Nanas). See ANANAS SATIVUS.
„ *antiaca'ntha* (opposite-spined). See B. FASTUOSA.
„ *argenti'na* (Argentine). Brazil.
„ *bi'color* (two-coloured). See RHODOSTACHYS BICOLOR.
„ *Bino'ti* (Binot's). See B. PINGUIN.
„ *bractea'ta* (*red*-bracted). See ÆCHMEA BRACTEATA.
„ *chrysa'ntha* (golden-flowered). 2. Blue. Caraccas. 1819.
„ *clandesti'na* (hidden). See GREIGIA SPHACELATA.
„ *commelynia'na* (Commelyne's). See B. FASTUOSA.
„ *cruen'ta* (bloody). See BILLBERGIA CRUENTA.
„ *di'scolor* (two-coloured). Pink. April. S. Amer.
„ *exsu'dans* (exuding). See ÆCHMEA EXSUDANS.
„ *fastuo'sa* (proud). 4. Purple. August. S. Amer. 1815.
„ *Ferna'ndæ* (Mrs. Fernanda's). Yellowish; bracts orange-red. Para. 1872.
„ *hu'milis* (low). See KARATAS HUMILIS.
„ *Kara'tas* (Karatas). See KARATAS PLUMIERI.
„ *lingula'ta* (tongue-*leaved*). See ÆCHMEA LINGULATA.
„ *longifo'lia* (long-leaved). 2. Pink. August. Guiana. 1852.
„ *longifo'lia*, of Lindley. See RHODOSTACHYS ANDINA.
„ *pauciflo'ra* (few-flowered). White, blue; bracts white. Trop. Amer. 1866.
„ *Pi'nguin* (Pinguin). 3. Red. March. W. Ind. 1690.
„ *scarlati'na* (scarlet). See DISTIACANTHUS SCARLATINUS.
„ *Sce'ptrum* (sceptre-like). See B. FASTUOSA.
„ *sylve'stris* (wood). 3. Crimson. July. S. Amer. 1820.
„ *tri'color* (three-coloured). Leaves edged creamy-yellow, but rose-red when young. S. Brazil. 1908.

BROMHEA'DIA. (Named after *Sir E. F. Bromhead, Bart.* Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Ansellia.)
Stove orchids. Offsets; broken pots, moss, and sandy, fibrous peat; set the pot in a pan, and keep this filled with water. Summer temp., 60° to 90°; winter, 55° to 60°.

B. finlaysonia'na (Finlaysonian). See B. PALUSTRIS.
„ *palu'stris* (marsh). 3–8. White, yellow, and purple. June. Sumatra. 1840.

BRO'MUS. (From *bromos*, a wild oat. Nat. ord. *Grasses* [Gramineæ].)
Few of the Brome grasses are cultivated in gardens, *Bromus brizæformis* being an exception. It is a highly ornamental grass for cutting. Being a biennial, seeds should be sown in the open border any time between April and July. Thin out the seedlings to eight inches apart, keep the ground clean, and they will bloom during the following summer.

B. brizæfo'rmis (Briza-formed). 2. Spikelets oblong, many-flowered. Caucasus.

BRONGNIA'RTIA. (Named after *Brongniart*, a French botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)
In relation with such plants as Colutea and Clianthus. Greenhouse evergreen under-shrubs. Cuttings in sand, in close frame, of young shoots, but firm at the base; sandy loam and fibrous peat. Summer temp., moderate; winter, 40° to 45°.

B. podalyrioi'des (Podalyria-like). 1. Flesh. September. Mexico. 1827.
„ *robinioi'des* (Robinia-like). Chili.
„ *seri'cea* (silky). Purple. Mexico. 1843.

BROOM. See BESOM.

BROOM. *Cy'tisus scopa'rius.*

BROOM (Spanish). *Geni'sta hispa'nica* and *Spa'rtium ju'nceum.*

BROOM-CYPRESS *Ko'chia scopa'ria.*

BROOM-RAPE. *Oroba'nche.*

BROOM (White or Portugal). *Cy'tisus a'lbus.*

BRO'SIMUM. Bread-nut. (From *brosimos*, edible, or good to eat; the fruit being edible. Nat. ord. *Artocarpads* [Artocarpaceæ, a tribe of Urticaceæ]. Linn. 23-*Polygamia*, 2-*Dioecia*.)
The far-famed Cow-tree of South America (*Galactode'ndron*), whose milky juice is as rich and wholesome as the milk of the cow, is *Bro'simum Galactode'ndron*. Another species, *B. Alica'strum*, produces nuts, which are roasted and eaten as bread; and a third species produces the beautifully-marked wood, called snake-wood. Its gummy juice is also made into india-rubber. Stove evergreen shrubs and tree. Cuttings of ripe wood, in a hotbed; rich, fibrous loam. Summer temp., 60° to 75; winter, 50° to 55°.

B. Alica'strum (Alicastrum). 6. Apetal. Jamaica. 1776. Bread Nut.
„ *Galactode'ndron* (Milk-tree). 50. Guiana. 1829. "Cow-tree."
„ *spu'rium* (spurious-*milkwood*). 6. Apetal. Jamaica. 1789.
„ *u'tile* (useful). See B. GALACTODENDRON.

BROTE'RA OVA'TA. See MELHANIA ABYSSINICA.

BROUGHTO'NIA. (Named after *Mr. Broughton*, an English botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids; division. These may be grown in crocks and fibrous peat, the plant raised above the pot, but best on blocks without moss, being near a roof; high, moist temperature in summer; cooler and drier in winter. Summer temp., 60° to 85°; winter, 55° to 65°.

B. au'rea (golden). See EPIDENDRUM AURANTIACUM.
„ *lilacı'na* (lilac). Lilac. San Domingo.
„ *ni'tida* (glossy). 1½. Red. June. E. Ind. 1824.
„ *sangui'nea* (blood-*coloured*). 1½. Crimson. August. Jamaica. 1793.

BROUSSONE'TIA. (Named after *Broussonet*, a French naturalist. Nat. ord. *Morads*, or *Mulberries* [Moreæ, a tribe of Urticaceæ]. Linn. 22-*Dioecia*, 4-*Tetrandria*.)
In general aspect there is nothing to distinguish it from a mulberry-tree; but it is less hardy. Hardy trees; suckers and cuttings of ripened wood, inserted in autumn, and seeds sown when ripe, or kept over to the following April; good, common soil.

B. papyrife'ra (paper-bearing). 12. June. Japan. 1751. "Paper-tree."
„ „ *cuculla'ta* (cowl-*leaved*). 12. February. French variety. 1824.
„ „ *disse'cta* (cut-*leaved*). 1847.
„ „ *fru'ctu-a'lbo* (white-fruited). 12. August.
„ „ *macrophy'lla* (large-leaved).
„ „ *variega'ta* (variegated-*leaved*). 1846.
„ *Plume'rii* and *tincto'ria*. See CHLOROPHORA TINCTORIA.
„ *spathula'ta* (spathulate-*leaved*). See B. PAPYRIFERA CUCULLATA.

BROWA'LLIA. (Named after *J. Browallius*, Bishop of Abo. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Greenhouse annuals; seeds sown in a mild heat, in March; potted and re-potted, and kept in the greenhouse during summer; light, rich soil.

B. abbrevia'ta (shortened). Pale red. Peru. 1852.
„ *america'na* (American). See B. DEMISSA.
„ *corda'ta* (heart-shaped). Peru. Syn. *B. grandiflora*, of Lindley.
„ *demi'ssa* (low). ¾. Blue. August. S. Amer. 1735.
„ *ela'ta* (tall). See B. DEMISSA.
„ *elonga'ta* (elongated). See B. DEMISSA.
„ *grandiflo'ra* (large-flowered). 2. Light yellow. June. Peru. 1829.
„ *Jameso'nii* (Jameson's). See STREPTOSOLEN JAMESONII.

B. Rœ'zlii (Rœzl's). 2. Azure blue or white. All summer. Rocky Mountains.
„ *specio'sa* (showy-*flowered*). 2. Purple. September. Quindiu. 1846.
„ „ *ma'jor* (greater). Flowers larger.
„ *visco'sa* (clammy). 2. Blue. S. Amer.

BROWNEA. (Named after *Dr. Brown*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Cæsalpinia and Amherstia.)

Stove evergreen shrubs. Cuttings of ripe wood in sand, under a glass, and placed in a strong bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

B. antioque'nsis (Antioquian). See B. MACROPHYLLA.
„ *Ari'za* (Ariza). Red. Bogota. 1843.
„ *Birsche'llii* (Birschell's). 10. Rose. Venezuela. 1872.
„ *capite'lla* (headed). Venezuela.
„ *cocci'nea* (scarlet). 6. Scarlet. July. Venezuela. 1793.
„ *Crawfo'rdii* (Crawford's). Garden hybrid (*grandiceps* × *macrophylla*).
„ *ere'cta* (erect). See TALISIA PRINCEPS.
„ *gra'ndiceps* (large-headed). 6. Red. Caraccas. 1829.
„ *hy'brida* (hybrid). Garden hybrid (*Ariza* × *grandiceps*).
„ *latifo'lia* (broad-leaved). 6. Scarlet. Venezuela. 1824.
„ *Leopo'ldii* (Leopold's).
„ *macrophy'lla* (large-leaved). Orange-scarlet. New Grenada. 1879.
„ *pri'nceps* (chief). See TALISIA PRINCEPS.
„ *racemo'sa* (clustered). 6. Rose. Caraccas. 1826.
„ *Ro'sa-de-Mo'nte*. 8. Crimson. July. S. Amer. 1820.
„ *ro'sea* (rosy). See B. ROSA-DE-MONTE.

BROWNLOW'IA. (Named after *Lady Brownlow*. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Grewia.)

Stove tree. Cuttings of ripe shoots in heat; rich, loamy soil. Summer temp., 60° to 75°; winter, 48° to 55°.

B. ela'ta (tall). 60. Yellow. E. Ind. 1820.

BROWN-TAILED MOTH. *Porthesia chrysorrhœa*.

BRU'CEA. (Named after *Bruce*, the African traveller. Nat. ord. *Quassiads* [Simarubeæ]. Linn. 22-*Diœcia*, 4-*Tetrandria*.)

This genus possesses that intense bitter, for which Quassia, the head of this small order, has long been celebrated. Stove evergreen shrubs. Ripened cuttings in sand, under a glass, in bottom-heat. Summer temp., 60° to 75°; winter, 55°.

B. antidysente'rica (antidysenteric). See B. FERRUGINEA.
„ *ferrugi'nea* (rusty-*ash-leaved*). 6. Green. April. Abyssinia. 1775.
„ *gra'cilis* (slender). See B. SUMATRANA.
„ *sumatra'na* (Sumatra). 6. Green. May. E. Ind. 1820.

BRUCHUS. A genus of small beetles, which confine their depredations chiefly to the seeds of leguminous plants.

Bruchus granarius. The Grain Beetle. Every one who is acquainted with the seeds of the pea and the bean must have noticed that in many of them were small, round holes; and these occasionally are so numerous as to spoil the sample, and, indeed, render the seeds totally valueless for sowing; for not one of those thus pierced but would produce either a weak, unhealthy plant, or not vegetate at all. Those holes in the "worm-eaten" peas and beans are made by a small beetle (*Bruchus granarius*), produced from a grub, or caterpillar, which has eaten away the vital parts of the seed; and, when it has passed through the chrysalis state, and given birth to this beetle, the latter makes the hole in order to escape into the open air, there to perpetrate more mischief upon the growing crops. The body of the beetle is a dull brown; but the elytra, or wing-covers, are black, dotted with white, but scarcely perceptibly so, unless magnified, as in our drawing. Naturally it is the size of the smaller figure; that is, scarcely two lines long. The antennæ, or feelers, are eleven-jointed, black, and thinnest near the head, where they are also tinged with red. The head droops, the eyes are prominent, the fore-legs are rusty-coloured. This little beetle may be found upon various flowers during seven months of the year. In February it may be found on the furze-blossom, in June upon the white-thorn, and in July and August upon the spiræa and rhubarb flowers. The female pierces through the pod of the pea and bean whilst very young, and often deposits an egg in each seed. Probably the best mode of destroying this insect would be to subject the seed, as soon as harvested, for some hours, until thoroughly heated, to a temperature of 150°. This, we think, would kill the grubs without injuring the seed.

Bruchus ater. The Furze Beetle. This little insect is closely related to the previous one, also found on furze. It is black, with its elytra (wing-cases) marked with lines and lighter-coloured dots; antennæ (feelers) divided into eleven joints. The females, in February, deposit their eggs in the germs, or young seed-vessels, of the winter-blooming furze; and the same insects may be found again, in June, similarly employed upon the summer-blooming furze. The grub hatched from her eggs lives upon the seeds; and every one who has noticed this plant must be aware that its ripe seed-vessels often contain nothing but a little rough powder—a powder which is the refuse of the seeds destroyed by the grub of this insect. Another member of this family of beetles, *Bruchus pisi*, is greatly destructive to the pea crops. It is a small, brownish beetle, usually found at the time the plants are in flower, and depositing eggs in the tender seeds of leguminous plants, and sometimes in different kinds of corn. In these the larva—a small, white, fleshy grub—finds both a suitable habitation and an abundance of food. It undergoes all its transformations in the seed; and the perfect insect remains in it till the spring, though in fine autumns the perfect insects appear at that season also. The larvæ possess the singular instinct of never attacking the vital part of the seed till the last. We have often observed the seed-pods of Chorizema, and other delicate and scarce leguminous plants in greenhouses, pierced by the *Bruchus pisi*. The more effectual remedy is to pull up and burn the haulm and pods altogether, and not attempt to get a crop at all.—*Cottage Gardener*, i. and iii.

BRUGMA'NSIA. (This genus is united to Datura, which see.)

BRUISE. See CANKER.

BRUNFE'LSIA. (Named in honour of *Otto Brunfels* of Mentz, a German physician. Nat. ord. *Nightshades* [Solanaceæ]. Syn. *Franciscea*.)

Very showy, free-flowering, evergreen stove shrubs. The large, blue, white, or yellow flowers are mostly deliciously scented. Propagated by cuttings of fairly firm wood, in pots of sand and placed in a close, propagating case, with a genial bottom-heat. Compost of loam, leaf-soil, peat, and sand. Repot after they have finished flowering and place them in a house kept at 60° to 65° to make fresh growth. Maintain a moist atmosphere at this stage, and give plenty of water when growing. After growth is finished keep them drier at the roots and overhead, placing them in a temperature of 48° to 50°.

B. acumina'ta (pointed-leaved). See B. RAMOSISSIMA.
„ *america'na* (American). 4. Pale yellow. June. Trop. Amer. 1735.
„ „ *angustifo'lia* (narrow-leaved). Pale yellow. July.
„ „ *latifo'lia* (broad-leaved). Pale yellow. June.
„ *augu'sta* (august). See B. CALYCINA.
„ *calyci'na* (large-calyxed). 2. Pale purple. June. Brazil. 1850.
„ *confertiflo'ra* (crowded-flowered). See B. CALYCINA.
„ *exi'mia* (choice). See B. CALYCINA.
„ *gra'cilis* (graceful). 2. Pale cream. June. 1847.
„ *grandiflo'ra* (large-flowered). 3. Green. June. Peru.
„ *hopea'na* (Hopean). 1. Blue-purple, yellow. Brazil. 1826.
„ *hydrangeæfo'rmis* (Hydrangea-formed). 4. Purple. April. Brazil. 1840.
„ *jamaice'nsis* (Jamaica). 5. Yellow. June. W. Ind. 1844.
„ *latifo'lia* (broad-leaved). 4. Purple. April. Rio Janeiro. 1840.

B. lindenia'na (Lindenian). See B. CALYCINA.
„ *Lockha'rtii* (Lockhart's). Purple. April. Trinidad. 1840.
„ *macra'ntha* (large-flowered). See B. CALYCINA.
„ *monta'na* (mountain). 4. White. July. W. Ind. 1820.
„ *ni'tida* (shining). Trop. Amer.
„ *pauciflo'ra* (few-flowered). See B. CALYCINA.
„ *pohlia'na* (Pohli's). Blue, white. April. Brazil. 1840.
„ *Sie'beri* (Sieber's). Country unknown.
„ *undula'ta* (wave-*flowered*). 4. White. June. Jamaica. 1820.
„ *uniflo'ra* (one-flowered). See B. HOPEANA.
„ *viola'cea* (violet-coloured). See B. CALYCINA.

BRU'NIA. (Named after *C. Brun*, a traveller in the Levant. Nat. ord. *Bruniads* [Bruniaceæ]. Linn., 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs and under-shrubs, from the Cape of Good Hope. Cuttings of young shoots in sand, under a hand-light, in summer; sandy peat. Summer temp., moderate; winter, 38° to 45°.

B. abrotanoi'des (southernwood-like). See BERZELIA ABROTANOIDES.
„ *cilia'ta* (ciliated). 1½. June. S. Africa. 1812.
„ *como'sa* (tufted). See BERZELIA LANUGINOSA.
„ *e'legans* (elegant). 2. White. July. 1817.
„ *ericoi'des* (heath-like). See BERZELIA SQUARROSA.
„ *formo'sa* (handsome). 2. White. 1817.
„ *globo'sa* (globe-like). See NEBELIA GLOBOSA.
„ *glutino'sa* (clammy). See STAAVIA GLUTINOSA.
„ *læ'vis* (smooth). 2. White. July. 1822.
„ *macroph'ylla* (large-leaved). 1. White. July. 1815.
„ *microph'ylla* (small-leaved). See RASPALIA MICROPHYLLA.
„ *nodiflo'ra* (knot-flowered). 6. White. July. 1786.
„ *palea'cea* (scaly). See NEBELIA PALEACEA.
„ *phylicoi'des* (Phylica-like). See RASPALIA DREGEANA.
„ *pinifo'lia* (pine-leaved). 2. White. July. 1789.
„ *plumo'sa* (feathery). See BERZELIA SQUARROSA.
„ *racemo'sa* (racemed). 1. White. October. 1801.
„ *radia'ta* (rayed). See STAAVIA RADIATA.
„ *squarro'sa* (broad-spreading). See BERZELIA SQUARROSA.
„ *supe'rba* (superb). See BERZELIA LANUGINOSA.
„ *verticilla'ta* (whorled). 3. White. July. 1794.
„ *virga'ta* (twiggy). 3. White. July. S. Africa. 1794.

BRUNNI'CHIA. (Named after *Brunnich*, a Danish botanist. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 10-*Decandria*, 2-*Trigynia*.)

Greenhouse evergreen climber. Cuttings root freely; fibrous loam, with a little sand. Summer temp., 60° to 70°; winter, 38° to 45°.

B. cirrho'sa (tendrilled). 6. Pink. July. Carolina. 1787.

BRUNO'NIA. (Named after *Dr. Brown*, the celebrated English botanist. Nat. ord. Goodenoviaceæ. Linnæan class and order uncertain.)

Dr. Brown himself, and other great authorities, have been, and still are, in doubts as to the true position and affinity of this species. Herbaceous perennial. Seeds and divisions; sandy loam and fibrous peat. It requires the protection of a frame or greenhouse in winter; it is neat and fragrant.

B. austra'lis (southern). 1. Blue. N. Holland. 1834.

BRUNSVI'GIA. (Named after the noble house of *Brunswick*. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

This genus bears the same relation to Amaryllis which Azalea does to Rhododendron. It is a well-marked section of Amaryllis itself, when divested of "the mass of discordant plants accumulated under that name."—*Herbert*. Half-hardy bulbs, from the Cape of Good Hope. Offsets; loam and fibrous peat or good sandy loam and leaf-mould; either in greenhouse or in a warm situation out of doors, where the bulbs, being planted deep, are secure from frost and from wet by coverings, such as glazed sashes or tarpauling; or the bulbs may be taken up at the approach of winter, and stored.

B. cilia'ris (hair-fringed). See BUPHANE CILIARIS.
„ *Coope'ri* (Cooper's). 1½. Yellow, red. S. Africa. 1872.
B. cora'nica (Coranic *poison-bulb*). See AMMOCHARIS FALCATA.
„ „ *pa'llida* (pale-flowered). See AMMOCHARIS FALCATA PALLIDA.
„ *di'sticha* (two-rowed). See BUPHANE DISTICHA.
„ *falca'ta* (sickle-*leaved*). See AMMOCHARIS FALCATA.
„ *gigante'a* (giant). 1. Red. July. S. Africa. 1700.
„ *grandiflo'ra* (large-flowered). 1. Pink. August. 1827.
„ *hu'milis* (dwarf). See B. MINOR.
„ *Josephi'næ* (Josephine's). 1½. Scarlet. July. 1814.
„ „ *mi'nor* (smaller). 1. Scarlet. July. 1814.
„ „ *stria'ta* (streaked). 1½. Scarlet. July. 1823.
„ *Josephi'næ* × *Amaryllis Bellado'nna*. See AMARYLLIS PARKERI.
„ *lu'cida* (shining). See NERINE LUCIDA.
„ *margina'ta* (*red*-margined). See NERINE MARGINATA.
„ *massaia'na* (Massaian). See CRINUM MASSAIANUM.
„ *mi'nor* (smaller). ½. Pink. July. 1822.
„ *multiflo'ra* (many-flowered). See B. GIGANTEA.
„ *Ra'dula* (rasp-*leaved*). ½. Red. June. 1790.
„ *slateria'na* (Slaterian). Rose-red. S. Africa. 1848.
„ *stria'ta* (channeled). ½. Pink. July. 1823.
„ *toxica'ria* (poison-*bulb*). See BUPHANE DISTICHA.

BRUSSELS SPROUTS. See BORECOLE.

BRY'A. (From *bryo*, to germinate; the seeds, at times, sprouting in the pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Hedysarum.)

Stove evergreen shrubs. Seeds and cuttings in hot-bed; rich, fibrous loam. Summer temp., 60° to 85°; winter, 50° to 55°.

B. E'benus (*Jamaica* ebony). 12. Yellow, green. July. Jamaica. 1713.
„ *leone'nsis* (Sierra Leone). 12. Yellow, green. Sierra Leone. 1824.

BRYA'NTHUS. (From *bryon*, a moss, and *anthos*, a flower. Nat. ord. *Heathworts* [Ericaceæ].)

A small genus of pretty and interesting, trailing or upright shrubs. They do best in a cool, peaty soil, such as that in which Heaths and Daboëcia are grown. A cool part of the rockery is a good place for them.

B. Brewe'ri (Brewer's). ½. Purple-red. California. 1896.
„ *empetrifo'rmis* (Crowberry-like). ½. Reddish-purple. N.W. Amer. 1829.
„ *ere'ctus* (erect). 1. Red. Hybrid between *B. empetriformis* and *Rhodothamnus Chamæcistus*. 1850.
„ *Gmeli'ni* (Gmelin's). ½. Red. Kamtschatka and Behring's Island.
„ *taxifo'lius* (yew-leaved). 2. Red. Cold Northern Regions. Britain.

BRY'ONIA. (From *bryo*, to sprout, in reference to the stems sprouting afresh from the tuber every spring. Nat. ord. Cucurbitaceæ.)

Tuberous-rooted, hardy, or tender herbaceous perennials of climbing habit. Propagated by seeds and division of the tubers. Good garden soil.

B. dioi'ca (diœcious). Yellow-green. Berries red. Summer. England. Hardy.
„ *lacinio'sa* (cut-leaved). Pale yellow. Berries scarlet. Trop. Asia., &c. 1865.

BRYONO'PSIS. See BRYONIA.

BRYOPHY'LLUM. (From *bryo*, to sprout, and *phyllon*, a leaf; in allusion to the young plants produced on the leaves. Nat. ord. Crassulaceæ.)

Warm greenhouse plants of a succulent character. A leaf laid down on a damp surface will throw out young plants all round its margin. Summer temp., 60° to 80°; winter, 50° to 60°.

B. calyci'num (large-calyxed). 2 to 3. Yellow-red. April. Mexico. 1806.
„ *crena'tum* (crenate). Yellowish. Calyx vinous-red. Madagascar. 1900.
„ *proli'ferum* (proliferous). Yellowish. S. Africa.

BUBRO'MA GUAZU'MA. See GUAZUMA ULMIFOLIA.

BU'CCO CRENA'TA. See BAROSMA CRENATA.

BU'CCO PROLIFERA. See AGATHOSMA PROLIFERA.

BUCHNE'RA VISCO'SA. See SPHENANDRA VISCOSA.

BU'CIDA. Olive Bark-tree. (From *bous*, an ox; in reference to the fruit being like an ox's horn. Nat. ord. *Myrobolans* [Combretaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Now referred to Terminalia.)

B. Bu'ceras (ox's-horn). See TERMINALIA BUCERAS.

BUCK-BEAN. *Menya'nthes.*

BUCKLA'NDIA. (Named in compliment to *Dr. Buckland*, Dean of Westminster. Nat. ord. *Witch Hazels* [Hamamelidaceæ].)

Tall, evergreen, greenhouse shrub, with fine foliage in the young state. Cuttings of mature shoots in sand, inserted in pots and placed in a close case, with gentle heat. Fibrous loam, leaf-mould, and sand.

B. popu'lnea (poplar-like). 100. Leaves large, heart-shaped, purple when young. Stipules large, red. Himalayas. 1875.

BUCKLER MUSTARD. *Biscute'lla.*

BUCKLE'YA. (A commemorative name. Nat. ord. Santalaceæ.)

A hardy shrub of slender and graceful habit, with spreading branches, furnished with light-green foliage. A plant for the shrubbery in well-drained, good garden soil.

B. distichophy'lla (two-row-leaved). 10 to 12. Flowers and fruit inconspicuous. N. Amer.

BUCKTHORN. *Rha'mnus.*

BUCKWHEAT. See *Fagopy'rum escule'ntum.*

BUCKWHEAT-TREE. *Myloca'ryum.*

BUD. The buds are organised parts of a plant, of an oval, round, or conical form, and containing the rudiments of future branches, leaves, and flowers, which remain without *breaking*, on producing them, until circumstances favour their development. The same buds, accordingly, as circumstances vary, produce either flowers or leaves. Buds spring from the alburnum, to which they are always connected by central vessels. Buds are formed, at first, only in the axils of leaves, that is, in the angle between the leaf and the branch; but, if these buds are destroyed, what are termed *adventitious* or *latent buds* are formed, yet chiefly in the neighbourhood of the regular buds, or from latent buds that were at one time truly axillary.

BUDDING is the art of making a bud unite to the stem or branch (then called the stock) of another tree or shrub, independently of its parent. The object thus attained is a rapid multiplication of that parent, and, in the case of seedlings, an earlier production of fruit than if the buds were left upon the parent. Delicate kinds are strengthened by being *worked*, as it is technically termed, upon more robust stocks, as when a tender vine is budded on the Syrian, and the Double Yellow Rose upon the common China. Variegated roses often lose their distinctive marks if grown upon their own roots. Some roses, budded upon the common briar, afford finer flowers than upon their own stems. Buds from seedling peaches and pears are earlier productive, and produce finer fruit, if budded upon a robust stock; but buds of the pear, inserted earlier than the close of August, produce branches, and not blossoms. Where the bud comes in contact with the wood of the stock, a confused line is visible, between which line and the bark of the bud new wood is produced, having solely all the characteristics of the parent of the bud. Buds of almost every species succeed with most certainty if inserted in shoots of the same year's growth; but the small walnut-buds succeed best which are taken from the base of the annual shoots, where these join the year-old wood of that from which the bud is taken. Buds are usually two years later than grafts in producing fruit; but then every bud will produce a new plant; while each graft has at least three upon it. Buds succeed more readily than grafts; and, if a graft inserted in the spring has failed, a bud may succeed in the summer of the same year. Buds are ready for removal when their shield, or bark attached to them, separates readily from the wood. This is usually in July or August, and is intimated by the buds being well-developed in the axils of the present year's leaves. Scallop-budding may be done almost at any season. Buds should be taken from the middle of the shoot; those from its point are said to make wood too freely, and those from the base to be more unexcitable, and, consequently, less prompt to vegetate.

Stocks for budding may be much smaller than for grafting, even on the same year's shoot. Several buds may be inserted on older branches, and thus a good head be obtained sooner. On stocks of long-standing, scallop-budding is to be adopted. Just after rain, and when there is no violent wind, is a time to be preferred for budding. Whatever mode of budding is adopted, quickness in the operation is indispensable; for, if the wound in the stock or that of the bud becomes dry, the budding will fail. The bark of the stock should be cut and raised first, and, if possible, on its north side. A piece of moist bast may be twisted over the wound whilst the bud is preparing; and the moment this is done it should be inserted, and the ligature put on forthwith.

The following practical details of budding fruit-trees and roses—details applicable to all other trees and flowering-shrubs capable of being thus propagated—we have copied from the pages of *The Cottage Gardener*:—

If the bark does not *rise* well, that is, does not part freely from the wood, the buds will not succeed.

A good *budding-knife* is the first thing to be provided: any respectable nurseryman will furnish this. Next, some really good matting: we prefer the new *Cuba bast;* but the finest of the ordinary Russian mats will answer equally well, perhaps better, provided the material is very fine and very tough—cotton is often used.

The bast must be cut into lengths, and adapted to the size of the stocks, be they what they may. A mere novice may soon determine the length necessary, by twisting a piece round any twig of similar size, as in the act of budding.

Before describing the process itself, it will be well to speak of the condition of *the stocks*, or subjects to be operated on. Budding, as before observed, is performed at various seasons; and in very early budding, it is considered, in the majority of cases, prudential, if not absolutely necessary, to insert the whole of the shield, or bud, with its own system of wood attached. When the summer is far advanced, however, and the buds are become individually perfect, or nearly so, in their organisation, the case alters; and the less of intervening matter there exists between the bud and its immediate appurtenances of petiole and bark, the better.

Budding, then, in spring or early summer, is generally accompanied, it may be presumed, by a copious current of sap. Not so, however, late summer-budding on all occasions; for the season may have been unusually warm and dry; the stock, or subject, may be short of sap, or, in other words, be beset with a paralysed root-action: all these are impediments. A copious watering, the evening previous to the process, will, however, promote the free rising of the bark, on which so much depends. In addition to this, a cloudy day is preferable to a sunny one.

In former days the chief criterion of the eligibility of a tree for the budding-process was the cessation of growth, or rather, of extension in point of length, in the stock. Such generally happens in fruit-trees—such as the peach, apricot, cherry, plum, &c.—about the first or second week in August; the period, of course, being liable to be modified by several circumstances, as heat, drought, &c. Instead, however, of thus waiting until the eleventh hour, it is better to make an earlier commencement; and there is little occasion to delay after the middle of July has passed, unless the stocks, or scions, are subjects of late growth and excessive luxuriance.

The exact position of the bud being determined, *the incision* is made across the stock transversely, in length sufficient to create an opening for the bud. This slit forms the head of the incision, which, when the next slit is made, will form the letter T. In making this slit, or incision, a somewhat bold cut must be made; in fact, the point of the knife must be made to reach the surface of the wood of the stock.

The perpendicular slit is made from the bottom upwards; and an experienced budder gives a peculiar flirt, or jerk, to the knife when he approaches the head of the T. This jerk at once rifts up the bark better than any slower process could do it; and the haft of the budding-knife is in a moment turned round, and

the point introduced; and, by pressing it close to the wood, right and left, the bark is, as it were, ploughed up, or liberated from the wood.

All is now ready for the reception of *the bud*, which is, indeed, by most good budders, prepared first, as follows:—The cutting, or shoot, of the kind to be inserted, being wood of the current year's growth, is generally kept in a waterpot, first cutting off all the leaves: care must, however, be taken to leave most of the petiole (leaf-stalk) to handle the bud by. This, also, doubtless assists in forming a speedy union.

The bud, with its bark and a little of the wood of the tree, is then cut off in the form of a shield; and the point of the knife and thumb-nail of the right hand, by a little nice handling, are made to remove the portion of woody matter from the centre. The bud is instantly introduced beneath the bark in the T incision of the stock, where, as before observed, it is found in the same relation to the stock, or stem, of its new parent as existed between it and the shoot whence it sprang. This done, it is carefully and closely, but not tightly, bound with the bast. The operator generally beginning to bind at the lower end, gives an extra tug with the mat when he comes tolerably close to the lower end of the petiole. This is an old practice, and not particularly intelligible; the meaning, we suppose—if meaning it have—being, that the tightness of the ligature in that precise position impedes slightly the *returning sap*, thereby concentrating it about the bud.

Some persons employ a *grafting wax* to cover the parts where air may enter. The following mixture will make a very useful kind:—Sealing-wax, one part; mutton fat, one part; white wax, one part; honey, one-eighth part. The white wax and fat are first melted, and then the sealing-wax is to be added, gradually, in small pieces, the mixture being kept constantly stirred; lastly, the honey must be put in, just before taking it off the fire. It should be poured into paper or tin moulds, and kept slightly agitated till it begins to congeal.

We before observed, that when the season is late, and the bark rises somewhat badly, it may be excited to rise. A liberal watering with liquid-manure, of the temperature of 90°, the day before the operation, will, in general, facilitate the proceeding. When the bud, or shield, after the wood is removed, appears hollow at the bud part, it is commonly rejected. Such are not always barren; but they are apt to lie dormant for a year or two.

When a choice of position offers itself, we prefer the shady side of the stock. It is of more importance, however, to select a clear portion of the stem, free from knots, although some fancy the bud takes better if placed in a position from whence a natural bud has been removed. It should be taken as a maxim, that only those buds should be selected, the leaves of which have become fully developed; the leaf, also, should, if possible, be unblemished.

Cloudy weather is, in all cases, to be preferred to sunny periods.

For budding *Roses*, and, indeed, for all budding, the best time of the day is either early in the morning, at least as early as seven o'clock A.M., or after three o'clock in the afternoon; cloudy, moist days are most suitable.

Cut off the head of the stocks, if not done previously at the time of planting, and all side branches except three, that is, for standards; unless growing very vigorously it is best to leave these side branches full length, if the season has advanced to August or September, to prevent the buds inserted from starting into growth at so late a period. In spring, if the buds are still alive, shorten the branches to three or four inches, and this will encourage the inserted buds to start into growth. Go over them again in ten days' time and remove any buds of the stock which may be growing. This will throw all the energy of the stock into the shoots of the rose budded upon it. Until these get quite strong they may be tied to the snags of the stock to guard against breakage by the wind.

In the case of dwarf roses, remove the soil from the base of the stocks so that the buds may be inserted about two inches below the ground level. Leave them uncovered till the buds inserted have made some inches of growth. In the case of tender roses the buds may be protected in winter by some dry bracken. If the buds are inserted in July they will commence growing and may even bloom in September, in which case the soil at the base may be returned. The buds should remain dormant all winter, if inserted in August or September. There is no necessity for cutting back the stocks till growth recommences in spring; indeed, the leafy branches upon them serve to keep the inserted buds dormant till spring, and injury to unripened wood in winter is thus avoided.

The process of budding is the same as for fruit-trees, but in the case of standard Roses, select a position for the cut as close to the main stem as possible, but on the base of the three young branches. In the case of dwarfs select a clean part of the bark of the main stem of the stock, as above advised. The incision should be about an inch long, lengthwise on the branch. Cut a cross just at the top of this incision, and a little wider than the bark of the bud to be inserted. Then take off the bud, previously cutting off the leaf, leaving part of the leaf-stalk. Cut away with the bud a portion of the bark from the parent stem, which is technically called *the shield of the bud*, and a portion of wood with it. This bud, and the bark and wood with it, should be, altogether, rather more than three-quarters of an inch long. Turn the bud over between your finger and thumb, and dexterously take out the greater part of the wood; but be careful to leave the wood full in the eye of the bud. Then raise one side of the bark of the incision, in the shape of a T made in the stock, and with the ivory handle of the budding-knife slip in one side of the bark attached to the bud, then turn your knife, and lift up the other side of the incision, and the bud will drop into its place. Press the bark of the bud to the farther end of the incision; and if any projects beyond the cross incision on the stock cut it off. Then tie with worsted neatly, and the operation is complete. The covering of the buds with leaves is not now practised, except in very rare cases. We feel it almost impossible to give instruction to be understood, in words only, for such a complex operation. We have, therefore, given the details minutely, to enable the reader to follow out this interesting process.

BUDDLEI'A. (Named after *A. Buddle*, an English botanist. Nat. ord. *Loganiads* [Loganiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Warm greenhouse evergreen shrubs, except where otherwise specified. *B. globo'sa*, the best hardy species, requires a dry, sheltered situation in the north of the island. Seeds are sometimes procured in the south of England, and should be sown in the spring following. Plants are also easily procured from well-ripened cuttings, placed under handlights, in September, and slightly protected during winter frosts. The greenhouse and stove species may all be propagated freely from cuttings; and, for general management, the latter merely require a higher temperature than the former.

B. albiflo'ra (white-flowered). Lilac, with yellow eye. Central China. 1902. Hardy.
„ *america'na* (American). 10. Yellow. August. S. Amer. 1826.
„ *asia'tica* (Asian). White, fragrant. E. Ind. 1874. Greenhouse.
„ *auricula'ta* (eared). Cream, in globular heads. S. Africa. 1881. Greenhouse.
„ *brasilie'nsis* (Brazilian). 10. Orange. Brazil. 1822.
„ *ca'rnea* (flesh-coloured). See B. CURVIFLORA CARNEA.
„ *Colu'mbiæ* (Columba's). White. Temperate S. Amer. (?). 1901.
„ *Colvi'llei* (Colville's). Rose-coloured. Himalayas. First flowered. 1891. Greenhouse.
„ *conna'ta* (base-joined-*leaved*). 5. Orange. May. Peru. 1826.
„ *cri'spa* (crisp-*leaved*). See B. PANICULATA.
„ *curviflo'ra* (curved-flower spiked). Rosy-violet. China. 1870. Hardy.
„ „ *ca'rnea* (flesh-coloured). Pale lilac. 1879. Hardy.
„ *diversifo'lia* (various-leaved). See NICODEMIA DIVERSIFOLIA.
„ *globo'sa* (globe-*flowered*). 15. Orange. May. Chili. 1774. Hardy shrub.
„ *heterophy'lla* (variable-leaved). See B. MADAGASCARIENSIS.
„ *insi'gnis* (remarkable). See B. JAPONICA INSIGNIS.
„ *interme'dia* (intermediate). Garden hybrid (*curviflora* × *lindleyana*). 1873.

B. japo'nica (Japanese). Japan.
„ „ *insi'gnis* (remarkable). Purple. Garden variety. 1878.
„ „ *refle'xa* (reflexed). Branches reflexed to the ground. 1879.
„ *lindleya'na* (Lindley's). 6. Violet. September. China. 1844. Greenhouse evergreen.
„ „ *hemsleya'na* (Hemsleyan). Reddish-lilac, no orange throat. Central China. 1903.
„ *madagascarie'nsis* (Madagascar). 10. Orange. Madagascar. 1824.
„ *Nee'mda* (Neemda). See B. ASIATICA.
„ *ni'vea* (snowy). Lilac or purple. China. 1905.
„ *occidenta'lis* (western). White. Peru. 1730. Greenhouse evergreen.
„ *officina'lis* (officinal). 1–8. Mauve to purple. Winter. Central China. 1911. Greenhouse.
„ *panicula'ta* (panicled). 14. White. August. Nepaul. 1823.
„ *pulche'lla* (beautiful). Natal.
„ *sali'gna* (willow-like). 6. See CHILIANTHUS OLEACEUS.
„ *salvifo'lia* (sage-leaved). 3. Crimson. August. Cape of Good Hope. 1760. Greenhouse evergreen.
„ *thyrsoi'des* (thyrse-*flowered*). Yellow. S. Amer. 1823.
„ *varia'bilis* (variable). Lilac with yellow eye. Western China. Nearly hardy.
„ „ *gigante'a* (giant). Panicle very large. 1910.
„ „ *magnifica* (magnificent). A later, robust variety with reddish-lilac flowers. 1905.
„ „ *supe'rba* (superb). Panicles larger; flowers darker than any other variety. 1908.
„ „ *veitchia'na* (Veitchian). Purple. Panicles larger and denser. 1902.
„ „ *Wilso'nii* (Wilson's). Rich, dark, and distinct shade of colour.

BUETTNE'RIA. (Named in honour of *Buettner*, a German professor. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cuttings; the first two species require the greenhouse, the others the routine of the plant-stove.

B. dasyphy'lla (thick-leaved). See RULINGIA PANNOSA.
„ *hermanniæfo'lia* (Hermannia-leaved). See RULINGIA HERMANNIÆFOLIA.
„ *microphy'lla* (small-leaved). 5. White, purple. W. Ind. 1816.
„ *sca'bra* (rough-*leaved*). 6. Purple. July. S. Amer. 1793.

BUFF-TIP MOTH. *Pygæ'ra bucé'phala.*

BUFFALO CLOVER. *Trifo'lium me'dium.*

BUGAINVILLÆ'A. See BOUGAINVI'LLEA.

BUGLE. *A'juga.*

BUGLOSS. *Anchu'sa.*

BUGWORT. *Cimici'fuga.*

BUISSON is a fruit-tree on a very low stem, and with a head closely pruned.

BULB. A bulb is really an underground bud. Its fibrous or real roots die annually; but the bulb remains stored with reserve food, and retaining the vital powers of the plant, ready for reproduction at the appropriate season. Besides root bulbs (as are the onion, lily, &c.), there are stem, or caulinary bulbs, equally efficient for propagation.

The stem-bulb consists of a number of small scales closely compacted together in an ovate or conical form, enclosing the rudiments of a future plant, and originating, sometimes in the axil of the leaves, as in *Denta'ria bulbi'fera* and several Lilyworts, and sometimes at the base of the umbel of flowers, as in *A'llium carina'tum* and others, in both which cases it is nourished by the parent plant till it has reached maturity, at which period the bond of connection is dissolved, and the bulb falls to the ground, endowed with the power of striking root in the soil by sending out fibres from the base, and so converting itself into a new individual.

Every bulbous-rooted plant has its management given in its proper place; but there are a few rules of general applicability. They should be moved, where necessary, whilst in a state of rest. This occurs to the summer-flowering bulbs in autumn, and to the autumn-flowering in spring. Many require to be taken up annually, or, at furthest, every second or third year, to remove the accumulated offsets. No bulb should be kept long out of the ground; and, even during the time it is necessarily so kept, it should be prevented from drying by burying it in sand. It is difficult to define the difference in bulbs, corms, and tubers. Yet the Gloxinias and Begonias, though the latter are termed "Tuberous," may be given as examples of corms and the Dahlias as tuberous; and those with the scales should be classed, such as Hyacinths, Liliums, Onions, &c., bulbs.

BULBI'NE. (From *bolbos*, a bulb. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

The name *Bulbine* is a misnomer; for many more have the herbaceous habit of Anthericum than that of true bulbs. Bulb species by offsets; herbaceous plants, suckers, and divisions; the shrubby species, by cuttings under a hand-glass. Sand, loam. For greenhouse species, summer temp., 50° to 70°; winter, 40° to 45°.

B. alooi'des (aloe-like). 1. Yellow. June. Cape of Good Hope. 1732.
„ *a'nnua* (annual). ½. Yellow. May. Cape of Good Hope. 1731.
„ *asphodeloi'des* (asphodel-like). 2. White. July. Cape of Good Hope. 1759.
„ *austra'lis* (southern). See B. BULBOSA.
„ *bisulca'ta* (two-furrowed). 1. Yellow. November. Cape of Good Hope. 1823.
„ *bulbo'sa* (bulbous). 1. Yellow. June. Australia. 1820.
„ *caule'scens* (stemmed). 2. Yellow. June. S. Africa. 1702.
„ *cilia'ta* (hair-fringed). See ANTHERICUM CILIATUM.
„ *floribu'nda* (many-flowered). See B. SEMIBARBATA.
„ *frute'scens* (shrubby). See B. CAULESCENS.
„ *glau'ca* (milky-green). 2. White. Chili. 1828.
„ *grami'nea* (grass-*leaved*). See B. ASPHODELOIDES.
„ *hi'spida* (bristly). See ANTHERICUM HISPIDUM.
„ *latifo'lia* (broad-leaved). 2. White. July. Cape of Good Hope. 1812.
„ *longisca'pa* (long-flower-stemmed). 1. Yellow. June. Cape of Good Hope. 1759.
„ *Macke'nii* (Macken's). See ERIOSPERMUM MACKENII.
„ *mesembryanthemoi'des* (Mesembryanthemum-like). ½. Yellow. May. Cape of Good Hope. 1822.
„ *narcissifo'lia* (Narcissus-leaved). 1½. Yellow. S. Africa.
„ *nu'tans* (nodding). 1. Yellow. July. Cape of Good Hope. 1820.
„ *præmo'rsa* (bitten-off). 1. Yellow. June. Cape of Good Hope. 1818.
„ *pugionifo'rmis* (dagger-formed). 1. Yellow. May. Cape of Good Hope. 1703.
„ *rostra'ta* (beaked). 2. Yellow. June. Cape of Good Hope. 1812.
„ *sca'bra* (rough). See ANTHERICUM SCABRUM.
„ *semibarba'ta* (half-bearded). 1. Yellow. July. Australia. 1820.
„ *sua'vis* (sweet). See B. BULBOSA.
„ *trique'tra* (three-sided). See BULBINELLA TRIQUETRA.

BULBINE'LLA. (From *bolbos*, a bulb, and *ella*, signifying diminutive. Nat. ord. *Lilyworts* [Liliaceæ]. The species have been separated from Anthericum and Bulbine.)

Hardy and greenhouse herbs with a very short rhizome or tuber and fleshy, fibrous roots, and yellow or white flowers. The best one is *B. Hookeri*, which thrives in sandy soil or peat in the more favoured parts of the British Isles. The base of the rockery is the best place for it.

B. Hooke'ri (Hooker's). 2. Bright yellow. June. New Zealand. Syn. *Chrysobactron Hookeri*.
„ „ *latifo'lia* (broad-leaved). Yellow.
„ *latifo'lia* (broad-leaved). 1. White. April. S. Africa. 1774.
„ *Ro'ssii* (Ross's). New Zealand.
„ *triqué'tra* (three-grooved). 1. White. April. S. Africa. 1774.

BULBOCO'DIUM. (From *bolbos*, a bulb, and *kodion*, wool; referring to the woolly covering of the bulbs. Nat. ord. *Melanths* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Small hardy bulbs, having the aspect of Crocus. Offsets; sandy loam, well drained.

B. Aitchiso'ni (Aitchison's). See MERENDERA PERSICA.
„ *autumna'le* (autumnal). See MERENDERA BULBOCODIUM.
„ *Eichle'ri* (Eichler's). See MERENDERA EICHLERI.
„ *ruthe'nicum* (Russian). See B. VERNUM.
„ *iri'gynum* (three-styled). See MERENDERA CAUCASICA.
„ *ve'rnum* (spring). ½. Purple. February. Spain. 1629.
„ „ *versi'color* (party-coloured). ½. Purple. March. Crimea. 1820.

BULBOPHYLLUM. (From *bolbos*, a bulb, and *phyllon*, a leaf; referring to the leaves issuing from the apex of the bastard bulbs. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Stove orchids. Division of the plant, when fresh potting; sandy, lumpy peat, potsherds, charcoal, and hard chips, raised above the pot, well drained, and the plant fixed there, or on blocks. Summer temp., 60° to 90°, and moist; winter, 55° to 65°, and dry.

B. adenope'talum (gland-petaled). Yellow, fragrant. Singapore.
„ *alopecu'rum* (fox-tailed). Dark purple. Burma. 1880.
„ *amplebractea'tum* (amply-bracted). Buitenzorg. 1866.
„ *a'nceps* (two-edged). Yellow, dotted purple. Borneo.
„ *angustifo'lium* (narrow-leaved). Java. 1866.
„ *apo'dum* (stalkless). Malaya.
„ *attenua'tum* (lengthened). Purple. Borneo. 1896.
„ *auranti'acum* (orange-coloured). Orange. N.E. Australia. 1870.
„ *auri'comum* (golden-haired). Burma. 1866.
„ *balæ'niceps* (whale-headed). See NAPELLI.
„ *barbi'gerum* (bearded). ½. Greenish-brown. June. Sierra Leone. 1835.
„ *Becca'rii* (Beccar's). Brown, violet. Borneo. 1875. A gigantic species.
„ *Berenicis* (Berenici's). A minute epiphyte. 1880.
„ *bifo'rum* (two-flowered). Java. 1866.
„ *Binnendijk'kii* (Binnendijk's). Purple-spotted. Java. 1907.
„ *birme'nse* (Burmese). Orange-yellow. Burma. 1910.
„ *bise'tum* (two-bristled). Khasia Hills.
„ *bittneria'num* (Bittnerian). Golden-yellow. Siam. 1910.
„ *Blephari'stes*. See CIRRHOPETALUM BLEPHARISTES.
„ *bowringia'num* (Bowringian). White, green, streaked purple. Assam. 1881.
„ *bracteola'tum* (small-bracted). 1. Yellow, purple. July. Demerara. 1836.
„ *cæspito'sum* (tufted). Island of Bourbon. 1858.
„ *cala'bricum* (Calabrian). Yellow green; lip red-purple. Old Calabar. 1906.
„ *Calama'rium* (reed-like). Yellow and dull purple. W. Trop. Africa. 1844.
„ *campanula'tum* (bell-shaped). Whitish-yellow, pink, reddish-purple. Sumatra. 1909.
„ *capi'llipes* (hair-stalked). Burma. 1872.
„ *capita'tum* (headed). Malaya. 1866.
„ *capituliflo'rum* (headed flowers). Whitish green; lip lurid purple. W. Trop. Africa. 1904.
„ *careya'num* (Careyan). Brown, purple. October. Himalayas. 1832.
„ *carina'tum* (keeled). Nearly related to *B. reticulatum*. Borneo. 1895.
„ *ce'rnuum* (nodding). Purple. Java. 1866.
„ *Chei'ri* (hand). Olive-green, brown. Manilla. 1844.
„ *chloroglo'ssum* (green-lipped). White or rose; lip green. Brazil. 1871.
„ *cilia'tum* (ciliated). Java. 1866.
„ *clandesti'num* (clandestine). Malaya. 1841.
„ *claptone'nse* (Clapton). See B. LOBBII CLAPTONENSE.
„ *cocoi'num* (cocoa-nut). 1. Flesh. October. Sierra Leone. 1835.
„ *como'sum* (hairy). White. Burma. 1892.
„ *compre'ssum* (compressed). Sumatra. 1866.
„ *conchi'ferum* (shell-bearing). Sikkim.
„ *crenula'tum* (crenulate). Purplish. Madagascar. 1905.
„ *cro'ceum* (Crocus-flowered). Java. 1866.
„ *cu'preum* (copper-*flowered*). Copper-coloured. Burma. 1837.
„ „ *fla'vum* (yellow).
„ *cylindra'ceum* (cylindrical). Himalayas.
„ *daya'num* (Dayan). Green, yellow, purple. Burma. 1865.
B. Dea'rei (Deare's). Borneo and Philippines. 1883. Syn. *Sarcopodium Dearei*.
„ „ *godseffia'num* (Godseffian). Philippines. 1890.
„ *delite'scens* (lying hid). See CIRRHOPETALUM DELITESCENS.
„ *densiflo'rum* (dense-flowered). India.
„ *de'nsum* (dense). Madagascar.
„ *denticula'tum* (finely-toothed). A small plant; habit of *B. flavidum*. Sierra Leone. 1891.
„ *dichro'mum* (two-coloured). Yellow; lip dark purple. Annam. 1907.
„ *disciflo'rum* (disc-flowered). See TRIAS DISCIFLORA.
„ *Dixo'ni* (Dixon's). Greenish-yellow, spotted brown. Siam. 1908.
„ *Dra'llei* (Dralle's). Trop. Africa. 1885.
„ *e'legans* (elegant). Rosy-purple. Ceylon. 1892.
„ *ere'ctum* (upright). Madagascar. 1834.
„ *Ericsso'ni* (Ericsson's). Yellowish-white, brown spots. Madagascar. 1893.
„ *exalta'tum* (lofty). Light green, brown; lip blackish-purple. Guiana, Brazil. 1910.
„ *fa'llax* (deceiving). Dark purple. Assam. 1889.
„ *fascina'tor* (fascinating). Pale green, crimson markings. Annam. 1908.
„ *flave'scens* (yellowish). Java. 1866.
„ *fla'vidum* (yellowish). Yellow. March. Sierra Leone. 1840.
„ *fuscopurpu'reum* (fuscous-purple). Dull reddish-brown. S. India. 1907.
„ *fu'scum* (brown-*flowered*). Chocolate. April. Sierra Leone. 1837.
„ *galbi'num* (greenish-yellow). Yellow, with reddish lines and crimson dots. Perak. 1907.
„ *Genti'lii* (Gentil's). Straw-coloured, purple. Congo Free State. 1904.
„ *gibbo'sum* (gibbous). Java. 1866.
„ *glutino'sum* (clammy). Green, white; lip red. Brazil. 1910.
„ *gra'cile* (slender). Green, brown. July. Burma. 1874.
„ *grandiflo'rum* (large-flowered). Lateral sepals pale green, 4 in. long. New Guinea. 1866.
„ *grandiflo'rum* (L. iii., t. 108). See B. LONGISEPALUM.
„ *Hameli'ni* (Hamelin's). Madagascar. 1893.
„ *herminiosta'chys* (bed-foot-spiked). Trop. Africa.
„ *hi'rtum* (hairy). Whitish. Himalayas. 1846.
„ *hookeria'num* (Hookerian). Small, yellow. Trop. W. Africa. 1894.
„ *imbrica'tum* (imbricated). Purple. March. Sierra Leone. 1841.
„ *inæqua'le* (unequal). Orange; lip dark purple. Java. 1866.
„ *ine'rs* (inert). Small, white flowers. Assam. 1880.
„ *infla'tum* (inflated). Greenish-yellow. Allied to *B. comatum*. Sierra Leone. 1891.
„ *ino'ps* (worthless). Greenish and purple lip. Similar to *B. recurvum*. 1880.
„ *interle'xtum* (interwoven). W. Trop. Africa. 1862.
„ *inu'nctum* (anointed). Dotted purple on light ground. Boreno. 1907.
„ *java'nicum* (Javanese). Java. 1866.
„ *Joha'nnis* (John's). White. Madagascar. 1894.
„ *Ke'rrii* (Kerr's). Dull yellow. Siam. 1906.
„ *khasya'num* (Khasyan). Ochre, chocolate-brown, purple. Khasia Hills. 1878.
„ *kindtia'num* (Kindtian). Purple hairs of lip not clubbed. Congo Free State. 1904.
„ *lasia'nthum* (woolly-flowered). Purple. Sumatra. 1855.
„ *lemniscatoi'des* (ribbon-like). Differs from *B. lemniscatum* in habit. Java. 1890.
„ *lemnisca'tum* (ribboned). Purple, green. Moulmein. 1872.
„ *leopardi'num* (leopard-spotted). Yellowish-green. Himalayas. 1837.
„ *leysia'num* (Leysian). Yellow, pink, and purple. India. 1894.
„ *Lichena'strum* (lichen-star). 1/12. Yellow, white, lined purple. Queensland. 1905.
„ *lilaci'num* (lilac). Lilac, spotted purple. Siam. 1908.
„ *limba'tum* (bordered). 1. Purple. February. Singapore. 1840.
„ *Lo'bbii* (Lobb's). 1. Yellow, brown. March. Java. 1845.
„ „ *claptone'nse* (Clapton).

B. Lo'bbii Hensha'lli (Henshall's).
„ „ *siame'nse* (Siamese). Yellowish, purple. Siam. 1867.
„ *longisca'pum* (long-scaped). Light green and red-purple. Fiji. 1896.
„ *longise'palum* (long-sepaled). Netted brown on a paler ground. New Guinea. 1895.
„ *macra'nthum* (large-flowered). ½. Lemon. March. Burma. 1844.
„ *macula'tum* (spotted). Purple, spotted. Philippine Islands.
„ *mandibula're* (mandibled). Brown, light green, purple. N.W. Borneo. 1882.
„ *Medu'sæ* (Medusa's). Malaya. (B. M., t. 4977.)
„ *membrana'ceum* (membranous). Java. 1866.
„ *micra'nthum* (small-flowered). Penang. (Ic. Pl., t. 2046.)
„ *micrope'talum* (small-petaled). Transparent-green, purple. Brazil. 1904.
„ *minia'tum* (vermilion). Like *B. barbigerum*, but with white clubbed hairs. Congo Free State. 1904.
„ *minuti'ssimum* (very minute). N. E. Australia.
„ *mi'rum* (wonderful). Whitish or buff, spotted red-brown. Malaya. 1908. Syn. *B. vibrans*.
„ *morphologo'rum* (form of words). Greenish-yellow, spotted purple. Siam. 1908.
„ *mucrona'tum* (mucronate). Pale yellow. Java. 1866.
„ *Nape'lli* (Napell's). Brazil. 1842.
„ *nasu'tum* (nosed). Sulphur, purple, orange. Burma. 1871.
„ *neilgherre'nse* (Neilgherrian). Green, brown. January. Neilgherries. 1849.
„ *nigre'scens* (blackish). Blackish-purple. Siam. 1910.
„ *nigripe'talum* (black-petaled). Yellowish and purple-black. W. Trop. Africa. 1891.
„ *nudisca'pum* (naked-scaped). Green, purple. Sierra Leone; Congo. 1909.
„ *obrienia'num* (O'Brienian). Yellow and red-purple spots. Himalaya. 1892.
„ *occu'ltum* (hidden-*flowered*). Sierra Leone.
„ *ocula'tum* (eyed). Java. 1866.
„ *odorati'ssimum* (sweetest-scented). Himalayas.
„ *odora'tum* (scented). Java. 1866.
„ *oligoglo'ssum* (few-lipped). Yellowish, white. Burma. 1865.
„ *orthoglo'ssum* (straight-lipped). Yellow-green, brown, purple. Sarangui Island. 1896.
„ *oxy'odon* (sharp-toothed). See MEGACLINIUM OXYODON.
„ *pachyrha'chis* (thick-scaped). W. Ind.
„ *Pahu'di* (Pahud's). Brownish-red and red. Java. 1877.
„ *palea'ceum* (scaly). Yellowish-green, purple-brown.
„ *papillo'sum* (papillose). Dark purple. French Congo. 1903.
„ *pa'rvulum* (small). Orange. Java. 1866.
„ *pavimenta'tum* (pavemented). Dark red. Trop. Africa. 1862.
„ *Pe'chei* (Peche's). Moulmein. (B. M., t. 7286.)
„ *pe'ndulum* (pendulous). Mascarene Islands.
„ *perpusi'llum* (very small). A very slender species; stems like thread. Madagascar. 1894.
„ *pilea'tum* (pilose). Ochre-yellow. Malaya.
„ *Pi'pio* (Pipio). Trop. Africa. 1877.
„ *polyble'pharon* (many-eye-lashed). ½. Dark purple. New Guinea. 1910.
„ *propi'nquum* (related). Green, netted purple. Siam. 1908.
„ *psittacoglo'ssum* (parrot-tongued). Yellow, purple. Burma. 1863.
„ *Psycho'on* (Psychoon). Flowers green, nearly transparent. Assam. 1878.
„ *pteri'philum* (fern-loving). White. Tenasserim. 1894.
„ *ptiloglo'ssum* (beardless-tongued). Green and purple. Madagascar. 1897.
„ *purpu'reum* (purple). Ceylon.
„ *quadri'fidum* (four-fid). Flowers inconspicuous. Madagascar. 1905.
„ *racemo'sum* (racemose). Yellow and purple. Borneo. 1893.
„ *radia'tum* (rayed). Brownish-yellow. March. India. 1836.
„ *recu'rvum* (bent-back). Green, white. September. Sierra Leone. 1822.
„ *reticula'tum* (netted). Cream, purple. Borneo. 1866.
B. retusiu'sculum (bluntish). See CIRRHOPETALUM RETUSIUSCULUM.
„ *Rhizo'phoræ* (of the Mangrove). Purplish. Trop. Africa. 1861.
„ *ri'gens* (stiff). Burma. 1865.
„ *rufi'num* (reddish). Burma. 1881.
„ *saltato'rium* (dancing). ½. Greenish-brown. December. Sierra Leone. 1835.
„ *sanderia'num* (Sanderian). Green, spotted brown. Pernambuco, Brazil. 1893.
„ *saurocе'phalum* (saurus-headed). Ochre, brown, white. Philippine Islands. 1886.
„ *schilleria'num* (Schillerian). See B. SHEPHERDI.
„ *seti'gerum* (bristle-bearing). Purple. Demerara.
„ *Shephe'rdi* (Shepherd's). Australia.
„ *siame'nse* (Siamese). See B. LOBBII SIAMENSE.
„ *sillemia'num* (Sillemian). Orange, mauve, white. Burma. 1884.
„ *so'rdidum* (dirty). See B. BRACTEOLATUM.
„ *spatha'ceum* (spathaceous). Light straw-yellow. Burma. 1893.
„ *specta'bile* (showy). Pale green, spotted brown. Assam. 1898.
„ *stria'tum* (striated). Khasia Hills.
„ *suavi'ssimum* (sweetest). Pale yellow, small. Upper Burma. 1889.
„ *sulca'tum* (furrowed). Java. 1866.
„ *tene'llum* (slender). Pale orange, lip purple. Java. 1866.
„ *tenuifo'lium* (thin-leaved). Java. 1866.
„ *tetrago'num* (four-sided). Sierra Leone.
„ *tre'mulum* (tremulous). White and red-purple lines. Nilghiri Hills. 1896.
„ *tridenta'tum* (three-toothed). Dull yellow-green, brown. British New Guinea. 1907.
„ *trifa'rium* (three-rowed). Lurid-purple. Madagascar. 1910.
„ *tri'ste* (dull-coloured). Greenish, purple. Burma. 1864.
„ *tubercula'tum* (tubercled). New Zealand. 1884.
„ *umbella'tum* (umbelled). See CIRRHOPETALUM GUTTULATUM.
„ *vagina'tum* (sheathed). See CIRRHOPETALUM VAGINATUM.
„ *variega'tum* (variegated). Mascarene Islands.
„ *vi'brans* (vibrating). See B. MIRUM.
„ *vire'scens* (greenish). Green, purple, yellow. Malaya. 1904.
„ *vi'ride* (green). Green, with two purple spots on the lip. W. Trop. Africa. 1893.
„ *vitie'nse* (Fijian). Whitish and pink. Fiji. 1893.
„ *vitta'tum* (striped). Java. 1862.
„ *watsonia'num* (Watsonian). Hong-Kong.
„ *Wedde'lii* (Weddel's). Green, white, purple. Brazil. 1904.

BULBO'STYLIS. (From *bolbos*, a bulb, and *stylos*, the style. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Brickellia.)
Stove plants. Cuttings in sand, with bottom-heat, under a bell-glass or close frame; loam and peat.

B. Cavanille'sii (Cavanille's). See BRICKELLIA CAVANILLESII.
„ *pe'ndula* (hanging-down). See BRICKELLIA PENDULA.
„ *veronicæfo'lia* (speedwell-leaved). See BRICKELLIA VERONICÆFOLIA.

BULI'MUS GOODA'LLII. This name has been given to a small snail that was accidentally introduced to stoves and other warm houses from the West Indies. It is about half an inch long, with a narrowly conical and spiral shell. It feeds by night on various plants, sometimes doing considerable damage, and should be looked for at night with a lantern, in the same way as is done with the garlic snail among Orchids. Where it gets a footing and is difficult to exterminate, the soil in such houses should be removed from the garden and replaced by fresh material. This will be effective in removing the pest, with any eggs that may be in the soil.

BULLACE-TREE. *Pru'nus insiti'tia.*

BULL GRAPES. *Vi'tis rotundifo'lia.*

BUNCHO'SIA. (From *bunchos*, coffee; the seeds resembling coffee-berries. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove shrubs and tree; cuttings of ripe shoots under a glass, in moist bottom-heat; sandy loam and peat. Summer temp., 70° to 85°; winter, 50° to 55°.

B. argentea (silvery). 10. Yellow. July. Caraccas. 1810.
„ *canescens* (hoary). 20. Yellow. July. W. Ind. 1742.
„ *glanduliflora* (gland-bearing). 10. Yellow. April. Venezuela. 1806.
„ *nitida* (shining). 10. Red. July. St. Domingo. 1800.
„ *odorata* (scented). 10. Yellow. July. Carthagena. 1806.
„ *paniculata* (panicled). See TRIOPTERIS OVATA.

BUPHANE. (From *bous* an ox, and *phone*, slaughter; cattle are said to be poisoned when they eat the bulbs. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Allied to Brunsvigia.)

Greenhouse bulbs from South Africa. Offsets in sandy loam and fibrous peat. They are nearly hardy, but succeed best under glass. As the bulbs get too large for the pots, give a larger size in spring before they commence growing, and pot firmly.

B. ciliaris (ciliated). Dull purple. S. Africa. 1795. Syn. *Brunsvigia ciliaris*.
„ „ *guttata* (spotted). Leaves narrower.
„ *disticha* (two-ranked leaved). 1 to 1½. Red. S. Africa. Syns. *Brunsvigia disticha* and *B. toxicaria*.

BUPHTHALMUM. (From *bous*, an ox, and *ophthalmos*, eye; the large disc resembling the eye of an ox, hence the common name, Ox-eye. Nat. ord. *Compositæ* [Compositæ]. Allied to Inula.)

Perennial herbs of a showy character and mostly hardy. Division in spring, and seeds. Ordinary garden soil will suit the hardy species.

HARDY.

B. aquaticum (aquatic). See ODONTOSPERMUM AQUATICUM.
„ *cordifolium* (heart-shaped-leaved). See B. SPECIOSUM.
„ *grandiflorum* (large-flowered). See B. SALICIFOLIUM.
„ *salicifolium* (willow-leaved). 1½. Yellow. September. S. Europe. 1759.
„ *speciosissimum* (showiest). Yellow. Europe. 1826.
„ *speciosum* (showy). 4. Yellow. July. Europe. 1739.
„ *spinosum* (spiny). See PALLENIS SPINOSA.

GREENHOUSE.

B. læviga'tum (smooth). See JASONIA LÆVIGATA.
„ *maritimum* (maritime). See ODONTOSPERMUM MARITIMUM.
„ *sericeum* (silky). See ODONTOSPERMUM SERICEUM.
„ *stenophyllum* (narrow-leaved). See ODONTOSPERMUM STENOPHYLLUM.

BUPLEURUM. Hare's-Ear. (From *bous*, an ox, and *pleuron*, a side; the leaves, if eaten, are supposed to swell cattle. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Hardy annuals and herbaceous perennials, except where otherwise specified. Seed of the annuals in common soil, in March and April; divisions of herbaceous plants in autumn or spring; cuttings, or divisions of greenhouse species, in March and April; and kept moderately dry, sandy loam.

HARDY ANNUALS.

B. glaucum (milky-green). ½. Green, yellow. July. S. Europe. 1819.
„ *gracile* (slender). ½. Green, yellow. July. Caucasus. 1820.
„ *junceum* (rush-*leaved*). 1. Green, yellow. July. S. Europe. 1772.
„ *lancifolium* (lance-leaved). See B. PROTRACTUM.
„ *Odontites* (Odontites). Yellow. July to October. Austria.
„ *oppositifolium* (opposite-leaved). 1. Green, yellow. July. Pyrenees. 1819.
„ *Polli'chii* (Pollich's). See B. TENUISSIMUM.
„ *protra'ctum* (protracted). ½. Yellowish. July. Mediterranean Region. 1820. Twiner.
B. rotundifolium (round-leaved). 2. Green, yellow. June. Spain.
„ *semicompositum* (semi-compound). ½. Green, yellow. July. Spain. 1778.
„ *subovatum* (rather oval-*leaved*). See B. PROTRACTUM.
„ *tenuissimum* (slenderest). ½. Green, yellow. July, England.
„ *trifidum* (three-cleft). See B. JUNCEUM.

HARDY PERENNIALS.

B. arista'tum (awned). Blush. June. Britain.
„ *aureum* (golden). 1. Yellow. May. Eastern Europe. 1820.
„ *coriaceum* (leathery). See B. GIBRALTARICUM.
„ *croceum* (Crocus-yellow). Bright yellow. Asia Minor. 1901.
„ *falcatum* (sickle-*leaved*). ½. Green, yellow. August. Germany. 1739.
„ *frutescens* (*small*-shrubby). See B. FRUTICOSUM.
„ *graminifolium* (grass-leaved). ½. Green, yellow. June. Switzerland. 1768.
„ *longifolium* (long-leaved). 3. Green, yellow. June. Switzerland. 1713.
„ *longiradiatum* (long-rayed). Siberia.
„ *marschallia'num* (Marschallian). See B. GRACILE.
„ *mucronatum* (mucronate). Eastern India.
„ *multinerve* (many-nerved). 3. Yellowish. Altai.
„ *paniculatum* (panicled). 1½. Yellow. July. Spain. 1824.
„ *petræum* (rock). 1½. Green, yellow. June. Switzerland. 1768.
„ *polyphyllum* (many-leaved). 1. Green, yellow. May. Caucasus. 1823.
„ *ranunculoides* (Ranunculus-like). Yellow. Europe, &c.
„ *rigidum* (rigid). France.
„ *sachalinense* (Sachalin). Amurland.
„ *scorzoneræfolium* (scorzonera-leaved). See B. FALCATUM.
„ *spinosum* (spined). Yellow. July. Spain. 1752. Evergreen shrub.
„ *stellatum* (starry). S. Europe.

GREENHOUSE.

B. canescens (hoary). 5. Yellow. August. Barbary. 1809. Evergreen shrub.
„ *fruticescens* (shrubby). 3. Yellow. Western Mediterranean region.
„ *frutico'sum* (shrubby). 3. Yellow. July. S. Europe. 1596. Evergreen, hardy on a wall.
„ *gibralta'ricum* (Gibraltar). Yellow. June. Gibraltar. 1784. Evergreen half-hardy.
„ *plantagi'neum* (plantain-*leaved*). 3. Yellow. July. Mount Atlas. 1810. Evergreen half-hardy.

BURBIDGEA. (Named in compliment to *F. W. Burbidge*, a traveller in N.W. Borneo, and author of "Gardens of the Sun," &c. Nat. ord. *Gingerworts* [Scitaminaceæ]. Allied to Hedychium.)

Stove, herbaceous perennials. Divisions of the rootstock in spring. Sandy loam, leaf-mould, and a little fibrous peat, well drained. A moist atmosphere is essential, and light shade. They are of easy cultivation.

B. nitida (shiny). 2 to 4. Bright orange-scarlet, large. Summer. N.W. Borneo. 1872.
„ *schizochei'la* (cut-lipped). 2. Orange-yellow. Malaya. 1904.

BURCHARDIA. (Named after *H. Burchard, M.D.* Nat. ord. *Melanths* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Veratrum.)

Greenhouse herbaceous perennial; offsets and divisions; sandy peat and loam. Winter temp., 38° to 40°.

B. umbella'ta (umbellate). 2. White, green. August. N. Holland. 1820.

BURCHELLIA. (Named after *Burchell*, an African traveller. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Gardenia.)

Stove evergreen shrubs, from Cape of Good Hope. Cuttings of young shoots, getting firm at the base, in April and May; fibrous loam and sandy peat. Summer temp., moderate; winter, 50° to 55°.

B. bubali'na (buffalo). See B. CAPENSIS.
„ *capensis* (Cape). 3. Scarlet. March. (B. M., t. 2339.)

BURLINGTO'NIA. (Named after the *Countess of Burlington*. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Now united with Rodriguezia.)

Stove orchids. Divisions fastened to blocks of wood, with a little moss attached. High temperature and moist atmosphere when growing; cool and dry when in a state of rest. Summer temp., 70° to 90°; winter, 55°.

B. ca'ndida (*snow*-white). See RODRIGUEZIA CANDIDA.
„ *deco'ra* (neat). See RODRIGUEZIA DECORA.
„ *macula'ta* (spotted). See LEOCHILUS ONCIDIOIDES.
„ *perpusi'lla* (very small). See RODRIGUEZIA PERPUSILLA.
„ *ri'gida* (stiff-*stemmed*). See RODRIGUEZIA RIGIDA.
„ *venu'sta* (beautiful). See RODRIGUEZIA VENUSTA.

BUR MARIGOLD. See BIDENS.

BUR REED. See SPARGANIUM.

BURN ONION. See POTATO ONION.

BURNET. (*Pote'rium Sanguiso'rba.*) Small, or Upland Burnet. Used in cool tankards, soups, and salads.

Soil and Situation.—It delights in a dry, unshaded, poor soil, abounding in calcareous matter, with a dressing of bricklayers' rubbish, or fragments of chalk. A small bed will be sufficient for the supply of a family.

Propagation is either by seed or by cuttings and partings of the roots. The seed sown March until May, as weather permits. But the best time is in autumn, as soon as it is ripe; for, if kept until the spring, it will often fail entirely, or lie in the ground until the same season of the following year, without vegetating. Sow in drills, six inches apart, thin, and not buried more than half an inch. Keep clear of weeds. When two or three inches high, thin to six inches apart, and those removed place in rows at the same distance, in a poor, shady border, water being given occasionally until they have taken root, after which they will require no further attention until the autumn, when they must be removed to their final station, in rows a foot apart. When established, the only attention requisite is to cut down their stems occasionally in summer, to promote the production of young shoots, and, in autumn, to have the decayed stems and shoots cleared away.

If propagated by partings of the roots, the best time is in September and October. They are planted at once where they are to remain, and only require occasional watering until established.

To obtain Seed some of the plants must be left ungathered from, and allowed to shoot up early in the summer. They flower in July, and ripen abundance of seed in the autumn.

BURNING BUSH. *Euo'nymus america'nus*, and *E. atropurpu'reus.*

BURRIE'LIA GRA'CILIS. See BÆRIA GRACILIS.

BURSA'RIA. (Named from *bursa*, a pouch. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

Greenhouse evergreen shrub. Cuttings of young shoots in sand, under a bell-glass or close frame; sandy peat and fibrous loam. Winter temp., 40° to 45°.

B. spino'sa (thorny). 10. White. October. N. S. Wales. 1793.

BU'RSERA. (Named after *Burser*, an Italian botanist. Nat. ord. *Burserads* [Burseraceæ]. Linn. 23-*Polygamia*, 2-*Dicœcia.*)

Stove trees; cuttings under a glass, with bottom-heat; loam and peat. Summer temp., 60° to 85°; winter, 50° to 55°.

B. australa'sica (Australasian). Australia.
„ *gummi'fera* (gum-bearing). 20. White, green. W. Ind. 1690.
„ *microphy'lla* (small-leaved). Mexico.
„ *serra'ta* (saw-edged-*leaved*). See PROTIUM SERRATUM.

BURTO'NIA. (Named after *D. Burton*, a collector for the Kew Gardens. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia.* Allied to Pultenæa.)

Greenhouse evergreen under-shrubs; seeds in March and April, in sandy peat; cuttings of half-ripened shoots in sand and loam, in close frame; fibrous peat, sandy loam, and pieces of charcoal, mixed with soil and drainage. Summer temp., 60° to 70°; winter, 45° to 50°.

B. brunioi'des (Brunia-like). 1½. Yellow. June. N. Holland. 1844.
„ *conferta* (clustered-*flowered*). 2. Violet. July. N. Holland. 1830.
„ *Henderso'ni* (Henderson's). Yellow. August. Australia. 1840.
„ *mi'nor* (smaller). See GOMPHOLOBIUM MINUS.
„ *polyzy'ga* (many-pair-leaved). Australia.
„ *pulche'lla* (beautiful). See B. SCABRA.
„ *sca'bra* (rough-*leaved*). 1. Yellow. June. N. Holland. 1803.
„ *sessilifo'lia* (stalkless-leaved). See B. SCABRA.
„ *villo'sa* (long-haired). 2. Purple. May. Swan River. 1844.

BUSHEL. See BASKET.

BUTCHER'S BROOM. *Ru'scus aculea'tus.*

BU'TEA. (Named after *John, Earl of Bute.* Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 1-*Pentandria.* Allied to the Coral-tree.)

Stove evergreen trees; cuttings of shoots, young, but firm, in sand, in a moist bottom-heat, under a glass, removed, or air given, during the night; loam and peat. Summer temp., 60° to 75°; winter, 50° to 55°.

B. frondo'sa (leafy). 30. Scarlet. E. Ind. 1796.
„ *parvifo'ra* (small-flowered). See SPATHOLOBUS ROXBURGHII.
„ *supe'rba* (superb). 30. Scarlet. E. Ind. 1798.

BUTOMO'PSIS. (From *Butomus* and *opsis*, like. Nat. ord. Alismaceæ. Allied to Butomus.)

B. lanceola'ta (lanceolate). 1. White. June. Australia. 1823.

BU'TOMUS. Flowering Rush. (From *bous*, an ox, and *temno*, to cut; in reference to its acrid juice, causing the mouth to bleed. Nat. ord. *Butomads* [Butomaceæ]. Linn. 9-*Enneandria*, 3-*Hexagynia.*)

Hardy perennial aquatics; divisions; rich loam, in water.

B. latifo'lius (broad-leaved). See BUTOMOPSIS LANCEOLATA.
„ *umbella'tus* (umbelled). 2. Pink. June. Britain.

BUTTER AND EGGS. *Narci'ssus incompara'bilis aura'ntius.*

BUTTER AND TALLOW TREE. *Pentade'sma.*

BUTTER-BUR. See PETASITES OFFICINALIS.

BUTTERCUP. See RANUNCULUS.

BUTTERFLY ORCHIS. See HABENARIA BIFOLIA and H. VIRESCENS.

BUTTERFLY PLANT. See ONCIDIUM PAPILIO.

BUTTER NUT. *Ca'ryocar* and *Ju'glans cine'rea.*

BUTTER-TREE. *Ba'ssia.*

BUTTERWORT. *Pingui'cula.*

BUTTON FLOWER. *Go'mphia.*

BUTTON-TREE. *Conoca'rpus.*

BUTTON WEED. *Spermaco'ce.*

BUTTON WOOD. *Cephala'nthus.*

BU'XUS. Box-tree. (From *puknos*, dense; referring to the hardness of the wood. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria.*)

Hardy and greenhouse shrubs and trees; seed sown in light, well-drained soil, as soon as ripe; cuttings, from four to six inches in length, of the young shoots, inserted in a shady place in August and September; layers of either old or young wood; division of the variety *suffrutico'sa*, generally used as edgings to walks; cuttings of *balea'rica* will require protection in winter. Chinese and New Holland species require a cold pit or greenhouse in winter.

B. austra'lis (southern). 6. N. Holland. 1820.
„ *balea'rica* (Balearic). 8. Yellow, green. July. Balearic Islands. 1780.
„ *chine'nsis* (Chinese). 3. Yellow, green. October. China. 1802.
„ *Fortu'nei* (Fortune's). Spring. China. 1871.

B. Harla'ndi (Harland's). China.
„ *Hildebra'ndtii* (Hildebrandt's). Somaliland and Socotra. Stove.
„ *japo'nica* (Japanese). Japan.
„ „ *au'rea* (golden variegated).
„ *longifo'lia* (long-leaved). Spring. Syria. 1871.
„ *sempervi'rens* (*common* evergreen). 8. Yellow, green. April. England.
„ „ *angustifo'lia* (narrow-leaved). 8. Yellow, green. April.
„ „ *arbore'scens* (tree-like). 30. Yellow, green. May. Britain.
„ „ *arge'ntea* (silver-*variegated*). 30. Yellow, green. May. Britain.
„ „ *au'rea macula'ta* (golden-*variegated*). 30. Yellow, green. May. Britain.
„ „ *au'reo-margina'ta* (*yellow*-edged). 30. Yellow. green. April. Britain.
„ „ *decussa'ta* (decussate). Leaves narrowed at the base. 1878.
„ „ *eleganti'ssima* (very elegant).
„ „ *himalaye'nsis* (Himalayan). Leaves like those of Myrtle. Himalaya. 1907.
„ „ *latifo'lia* (broad-leaved).
„ „ *latifo'lia bulla'ta* (wrinkled broad-leaved).
„ „ *latifo'lia macrophy'lla* (large-leaved).
„ „ *latifo'lia macula'ta* (blotched broad-leaved).
„ „ *longifo'lia* (long-leaved).
„ „ *myosotifo'lia* (Myosotis-leaved).
„ „ *myrtifo'lia* (myrtle-leaved). 8. Yellow, green. April. Britain.
„ „ *pe'ndula* (pendulous).
„ „ *Po'nteyi* (Pontey's).
„ „ *prostra'ta* (prostrate).
„ „ *pyramida'lis* (pyramidal).
„ „ *rosmarinifo'lia* (rosemary-leaved).
„ „ *salicifo'lia ela'ta* (tall willow-leaved).
„ „ *suffrutico'sa* (sub-shrubby). Dwarf or Edging Box.
„ „ *undulifo'lia* (wavy-leaved).
„ *wallichia'na* (Wallichian). Himalaya.

BY'BLIS. (A classical name, after *Byblis*, daughter of Miletus. Nat. ord. *Sundews* [Droseraceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*.)
Greenhouse aquatic; seeds; fibrous, black peat immersed in water. Summer temp., 50° to 70°; winter, 45° to 55°.

B. gigante'a (giant). Western Australia. 1899.
„ *linifo'ra* (flax-flowered). ½. Blue. May. N. Holland. 1800.

BYRSO'NIMA. (From *byrsa*, a hide; in reference to the tanning properties of the genus. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)
In Brazil the bark of these trees is in common use by the tanners, under the name of *murice*. The fruit of some of them is eaten in the West Indies. Stove evergreens; cuttings of half-ripened shoots in sandy peat, under a bell-glass or in close frame, and in a moist bottom-heat; loam and peat. Summer temp., 70° to 80°; winter, 55° to 60°.

B. alti'ssima (tallest). 60. White. July. Guiana. 1820.
„ *chrysophy'lla* (golden-leaved). 10. Yellow. August. Orinoco. 1823.
„ *coria'cea* (leathery-*leaved*). See B. SPICATA.
„ *crassifo'lia* (thick-leaved). 20. Yellow. July. Guiana. 1793.
„ *laurifo'lia* (laurel-leaved). 10. Yellow. July. Cumana. 1824.
„ *lu'cida* (shining-*leaved*). 6. Pink. July. W. Ind. 1759.
„ *Moureï'la* (Moureila). See B. CRASSIFOLIA.
„ *nervo'sa* (*full*-nerved). 8. Yellow. July. Brazil. 1820.
„ *pa'llida* (pale). 4. Pale. Cayenne. 1820.
„ *reticula'ta* (netted). See HETEROPTERIS PLATYPTERA.
„ *spica'ta* (spiked). 6. Yellow. August. Antilles. 1810.
„ *verbascifo'lia* (Verbascum-leaved). 6. Pale red. July. Guiana. 1810.
„ *volu'bilis* (twining). See HIRÆA SIMSIANA.

BYSTROPO'GON. (From *byo*, to close, and *pogon*, a beard; in reference to the throat of the flower being closed up with hairs. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Thyme.)
Greenhouse evergreen under-shrubs; cuttings of stubby side-shoots in sandy soil, under a glass; peat and loam. Summer temp., 60° to 70°; winter, 40° to 48°.

B. canarie'nsis (Canary). 1½. Pale purple. July. Canaries. 1714.
„ *origanifo'lius* (Origanum-leaved). 1½. Pale purple. July. Canaries. 1815.
„ *plumo'sus* (feathery-*flowered*). 1½. Pale purple. June. Canaries. 1779.
„ *puncta'tus* (dotted). 1½. Pale purple. June. Madeira. 1775.

BYTTNE'RIA. See BUETTNE'RIA.

C

CABARET. See A'SARUM.

CABBAGE. *Bras'sica olera'cea.*
The ordinary cabbage of commerce is too well known to need any description, and varieties are now too varied to enumerate. Most of the leading seedsmen have their own special names, but we may say that the old type of the variety "Enfield Market" is still grown; yet there may be some improvement in what we see now compared with the original type. In referring to catalogues we find the Americans appear to favour the round-headed sorts, yet we prefer those of a more conical shape, that is, the smooth-leaved sorts for ordinary culinary purposes, but with some of the growers the round-headed find favour. Then we have the drum-head varieties, which are largely grown for feeding cattle. The Savoy cabbages are another different type, and in commerce are simply known as "savoys." All are classed as varieties of *Brassica oleracea*, but at one time there was a wide difference between an ordinary cabbage and a brussels sprout; yet we get autumn varieties with shorter stems, and some sprouts beneath a good cabbage head. And the Savoys also produce the same kind of growth. When one tries to divide them it becomes difficult. Messrs. Sutton & Sons on one occasion exhibited about fifty varieties of the cabbage tribe (or varieties of *Brassica oleracea*), and it would have puzzled the best authorities to say where the divisions should be made. The Red Cabbage, which is grown chiefly for pickling, is a very distinct type, of which we have some improved varieties.

In the older editions of this work long cultural directions are given, but it is not necessary here; for almost every cottager now has his weekly paper, which tells him what to do. The only point to add is that early in August is a good time to sow for the early spring crops. A great thing is to prepare the ground properly and be careful not to sow the seed too thickly. For summer and autumn use, seed sown on a half-spent hotbed under glass will make good plants; and will not be so liable to run to seed as the late autumn sown. They also grow freely, without being so liable to club-root and other troubles. Yet there can be no definite time given for sowing, for some make periodical sowings all the year through; the one thing is to avoid going on the ground when it is too wet. And when planting out, manure may be used liberally, but no strong manure should be used for the seed-beds.

Cutting Cabbages.—If young sprouts are required, the side-leaves should be left on for about five days after the principal head is cut. The side-sprouts will be found to put forth very much the stronger and quicker for the leaves being thus left.

Planting.—Plant in rows, from one and a half to two and a half feet asunder each way, the smaller, early kinds being planted the closest. The Red Cabbage, the principal plantation of which should be made in March, for pickling in September, is benefited by having the distances enlarged to three feet. They must be well watered at the time of removal, and until fully established.

To obtain Seed.—In October, which is the preferable season, and from thence until the close of February, select some of the finest and best cabbage-plants. Have

the large, outer leaves removed, and then insert them up to their heads in rows, three feet asunder each way. Each variety must be planted as far from any other as possible, as, indeed, from every other species of cabbage-wort; and this precaution applies equally to the whole tribe.

Frame Seedlings.—The heat must never exceed 60°, nor sink more than two or three degrees beneath 50°, which is the most favourable minimum. Air should be admitted freely in the day, and the glasses covered, as necessity requires, at night with matting.

Coleworts or *Collets* merely signify cabbages eaten young, or previous to their hearts becoming firm, the genuine Colewort, or Dorsetshire Kale, being nearly extinct.

The cabbage is liable to the MILDEW and AMBURY, which see, and to many insects, as the *Aphis, Mamestra*, and those next enumerated.

CABBAGE BUTTERFLY. See PIERIS.

CABBAGE FLY. See ANTHOMYIA.

CABBAGE-GARDEN PEBBLE-MOTH. *Pyralis.*

CABBAGE MOTH. *Mamestra.*

CABO'MBA. (Derivation not explained. Nat. ord. *Watershields* [Nymphæaceæ]. Linn. 6-*Hexandria*, 2-*Digynia*.)

Small water-plants, with floating shield-like leaves, and small yellow flowers, which look, at a distance, like so many Crowfoot-flowers. Interesting species, propagated by root division, requiring only greenhouse culture in summer, and to rest in a cool part of the stove in winter. A shallow pan of water, with three inches deep of rich loam in the bottom, will suit them well.

C. aqua'tica (aquatic). Yellow. May. Mexico. 1823.
„ *carolinia'na* (Carolinian). Yellow. N. Amer.

CACA'LIA. (From *kakos*, pernicious, and *lian*, exceedingly; supposed to be hurtful to the soil. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Senecio.)

Hardy species are propagated by dividing the plant, and dividing the root when tuberous. *C. coccinea* may be sown in the borders, in April; other annuals require a hotbed; Cape and East Indian species require the greenhouse and stove respectively. Cuttings should have their juicy ends dried before inserting them in sandy soil; sandy loam, fibrous peat, equal parts; lime-rubbish and very rotten cow-dung, half a part of each.

HARDY HERBACEOUS.

C. alpi'na (alpine). See ADENOSTYLES VIRIDIS.
„ *atriplicifo'lia* (Atriplex-leaved). See SENECIO ATRIPLICIFOLIUS.
„ *cocci'nea* (scarlet-*flowered*). See EMILIA FLAMMEA.
„ *cordifo'lia* (heart-leaved). See MIKANIA CORDIFOLIA.
„ *hasta'ta* (halbert-*leaved*). See SENECIO SAGITTATUS.
„ *renifo'rmis* (kidney-formed). See SENECIO MUEHLENBERGII.
„ *suave'olens* (sweet-scented). See SENECIO SUAVEOLENS.
„ *tubero'sa* (tuberous). 1. August. N. Amer. 1812. Tuberous-rooted.

GREENHOUSE EVERGREENS.

C. articula'ta (jointed). See KLEINIA ARTICULATA.
„ *carno'sa* (fleshy-*leaved*). See SENECIO ELEGANS.
„ *cyli'ndrica* (cylindrical). See OTHONNA CYLINDRICA.
„ *Hawo'rthii* (Haworth's). See KLEINIA HAWORTHII.
„ *Klei'nia* (Klein's). See KLEINIA NERIIFOLIA.
„ *longifo'lia* (long-leaved). See KLEINIA PUGIONIFORMIS.
„ *papilla'ris* (pimpled-*stalked*). See KLEINIA PAPILLARIS.
„ *pugionifo'rmis* (dagger-formed). See KLEINIA PUGIONIFORMIS.
„ *radi'cans* (rooting). See KLEINIA RADICANS.
„ *reticula'ta* (netted). 2. Yellow. Bourbon. 1823.
„ *sca'ndens* (climbing). See SENECIO VOLUBILIS.

STOVE.

C. bi'color (two-coloured). See GYNURA BICOLOR.
„ *ova'lis* (oval-*leaved*). See GYNURA PSEUDO-CHINA.

CA'CHRYS. (A native name. Nat. ord. Umbelliferæ.)

Hardy perennial herb. Seeds; divisions. Ordinary soil.

C. odonta'lgica (tooth-pain). 1. Yellow. July. Siberia. 1820.

CACOU'CIA. (The Indian name. Nat. ord. *Myrobolans* [Combretaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Combretum.)

A fine stove climber, requiring the same treatment as *Combre'tum purpu'reum*. Cuttings of stiff side-shoots in sand, close frame, with bottom-heat. Peat and loam, both sandy and fibrous. Summer temp., 60° to 85°; winter, 50° to 60°.

C. cocci'nea (scarlet). Scarlet. May. Guiana.

CACTUS DAHLIA. See DAHLIA JUAREZII.

CA'CTUS. Melon Thistle. (A name applied by Theophrastus to some spiny plant. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

This extensive genus of Indian Fig, Melocactus, &c., has been very properly divided into several and well-marked genera: here we gather them under one general title.

ANHALO'NIUM.

C Engelma'nni (Englemann's). Mexico.
„ *prisma'ticum* (prismatic). Mexico.
„ *Willia'msii* (Williams's). White. June. Mexico. 1845.
„ „ *Lewi'nii* (Lewin's).

CE'REUS (Torch Thistle).

C. abno'rmis (abnormal). See C. PERUVIANUS.
„ *acuta'ngulus* (sharp-angled). Yellow. September. Mexico. 1835.
„ *erina'ceus* (rough). July. W. Ind. 1818.
„ *Eyrie'sii* (Eyries's). White, yellow. September. Argentina. 1829.
„ „ *crista'tus* (crested).
„ „ *ro'seus* (rosy).
„ „ *ru'ber* (red).
„ *flagellifo'rmis* (whip-formed). Rat's-tail Cactus.
„ *glau'cus* (sea-green). Brazil.
„ *Le'cchii* (Lecche's). Yellow. July. 1833.
„ *leea'nus* (Lee's). Mexico.
„ *oxygo'nus* (sharp-angled). Pale rose. May. Brazil. 1831.
„ *Pentla'ndi* (Pentland's). Rose. July.
„ *peruvia'nus* (Peruvian). White. July. S. Amer. 1818.
„ *polyaca'nthus* (many-spined). Texas.
„ *pulche'llus* (beautiful). White. August. Mexico. 1831.
„ *rhodaca'ntha* (red-spined). Scarlet. September. Argentina. 1835.
„ *se'nilis* (old). 20. S. Amer. 1823.
„ *speciosi'ssimus* (showiest). Crimson. July. Mexico. 1836.

ECHINOCACTUS (Hedgehog Thistle).

C. acua'tus (arched). Yellow. September. Monte Video. 1836.
„ *agglomera'tus* (heaped). See C. SPIRALIS.
„ *arcua'tus* (arch-ribbed). See C. ACUATUS.
„ *centete'rius* (many-spined). Yellow. July. Mexico. 1840.
„ *chlorophtha'lmus* (green-eyed). Purple. June. Rio del Monte.
„ *conci'nnus* (neat). Yellow. March. Monte Video. 1828.
„ *corni'gerus* (horn-bearing). White. July. Mexico. 1830.
„ *corruga'tus* (ribbed). Chili. 1824.
„ *coryno'des* (club-shaped). Yellow. October. S. Amer. 1837.
„ *crispa'tus* (curled). Purple. Mexico. 1826.
„ *cyli'ndricus* (cylindrical). Mexico. 1836.
„ *de'nsus* (dense). Mexico. 1829.
„ *De'ppei* (Deppe's). Mexico. 1829.
„ *depre'ssus* (depressed). S. Amer. 1798.
„ *echina'tus* (hedgehog-like). April. Mexico. 1830.
„ *edu'lis* (eatable). Yellow. Mexico.

C. exscu'lptus (carved). White. July. Chili. 1830.
„ *folio'sus* (leafy). Chili. 1824.
„ *gibbo'sus* (swollen). White. July. Jamaica. 1808.
„ „ *no'bilis*.
„ *Gillie'sii* (Gillie's). See C. FORMOSUS.
„ *gladia'tus* (sword-*spined*). July. Mexico. 1826.
„ *hamatoca'nthus* (tongue-spined). Yellow. July. Mexico. 1851.
„ *hexædro'phorus* (six-sided). White. June. Tampico.
„ *infla'tus* (inflated). Chili. 1828.
„ *i'ngens* (huge). Mexico. 1838.
„ *into'rtus* (twisted-*spined*). Purple. June. Antigua. 1768.
„ *intrica'tus* (intricate). April. Monte Video. 1828.
„ *leca'nus* (Lee's). Pale sulphur. May. Buenos Ayres. 1840.
„ *Li'nkii* (Link's). Yellow. July. Mexico. 1828.
„ *longihama'tus* (long-hooked). See C. HAMATOCANTHUS.
„ *mackiea'nus* (Mackie's). Yellow. Chili. 1836.
„ *mammillarioi'des* (Mammillaria-like). See C. PFEIFFERI.
„ *meonaca'nthus* (oblong-spined). Jamaica. 1835.
„ *montevide'nsis* (Monte Video). Yellow. Monte Video. 1835.
„ *multiflo'rus* (many-flowered). White. June.
„ *myriosti'gma* (many-spotted). Pale-striped. July. Mexico. 1843.
„ *no'bilis* (noble). See C. GIBBOSUS NOBILIS.
„ *obvalla'tus* (fenced-round). Purple. Mexico.
„ *pectini'ferus* (comb-like). Pale green, rose. April. Mexico. 1844.
„ *Pfeiffe'ri* (Pfeiffer's). Yellow. Mexico. 1836.
„ *pilo'sus* (thinly hairy). Mexico.
„ „ *Steine'sii* (Steines's). Pink. Mexico. 1844.
„ *redu'ctus* (restored). 2. Mexico. 1796.
„ *rhodophtha'lmus* (red-eyed). ½. Crimson. August. Potosi. 1850.
„ *Sco'pa* (broom). Yellow. April. Brazil. 1838.
„ „ *spi'nis-a'lbis* (white-spined). Yellow. June. Brazil. 1836.
„ *spira'lis* (spiral). June. Mexico. 1838.
„ *Steine'sii* (Steines's). See C. PILOSUS STEINESII.
„ *streptocau'lon* (spiral-stemmed). 1½. Yellow. August. Bolivia. 1845.
„ *subgibbo'sus* (slightly-swollen). See C. EXSCULPTUS.
„ *tubiflo'rus* (tube-flowered). White. Mexico. 1836.
„ *Visna'ga* (tooth-pick-spined). See C. INGENS.

EPIPHY'LLUM (Leaf-flowering).

C. trunca'tum (abrupt-ended). Pink. June. Brazil. 1818.
„ „ *cocci'neum* (scarlet). Scarlet. June. 1818.
„ „ *russellia'num* (Duke of Bedford's). Pink. May. Brazil. 1839.
„ „ *viola'ceum* (violet-colour-*flowered*). Violet. May.

MAMMILLA'RIA (Nipple-bearers).

C. bi'color (two-coloured). Red. Mexico. 1823.
„ *chrysaca'ntha* (golden-spined). Yellow. S. Amer. 1827.
„ *cocci'nea* (scarlet-flowered). Scarlet. June. Chili. 1827.
„ *columna'ris* (column-like). See C. POLYTHELE.
„ *co'nica* (cone-*headed*). July. S. Amer. 1808.
„ *corona'ria* (garland). Scarlet. July. Mexico. 1817.
„ *de'nsa* (dense). See C. ECHINATA.
„ *depre'ssa* (depressed). See C. DISCOLOR.
„ *di'scolor* (two-coloured). Red, green. July. S. Amer. 1800.
„ *echina'ria* (hedgehog). See C. ECHINATA.
„ *echina'ta* (spiny). Pale pink. Mexico. 1830.
„ *flave'scens* (yellow-spined). Yellow. 1811.
„ *floribu'nda* (many-flowered). Pink. Chili.
„ *fulvispi'na* (brown-spined). Red. Brazil. 1829.
„ *geminispi'na* (twin-spined). See C. BICOLOR.
„ *glomera'ta* (tufted). Red. St. Domingo. 1825.
„ *Heli'cteres* (twisted). Rose. June. Mexico. 1827.
„ *lani'fera* (wool-bearing). Red. Mexico. 1823.
„ *Lehma'nnii* (Lehmann's). Yellow. Mexico. 1836.
„ *missouri'nsis* (Missouri). White. July. Missouri. 1818.
„ *polythe'le* (many-ribbed). Mexico. 1838.
„ *proli'fera* (proliferous). Whitish. July. S. Amer. 1800.

C. pu'lchra (pretty). Yellow. June. Mexico. 1826.
„ *pussi'lla* (small). Pale red. S. Amer. 1820.
„ *pyramida'lis* (pyramidal). See C. RHODANTHA.
„ *quadra'ta* (four-sided). Chili. 1827.
„ *quadrispi'na* (four-spined). Mexico. 1838.
„ *rhoda'ntha* (red-flowered). Mexico. 1835.
„ *specio'sa* (showy). Red. Chili. 1827.
„ *stella'ta* (starry). Pink. May. S. Amer. 1815.
„ *strami'nea* (straw-coloured). See C. FLAVESCENS.
„ *te'nuis* (slender). Pale yellow. May. Mexico. 1830.
„ *tetraca'ntha* (four-spined). Rose. July. Mexico.
„ *turbina'ta* (top-shaped). Striped. July. Mexico. 1838.
„ *ve'tula* (oldish). Light scarlet. 1835.
„ *vivi'para* (viviparous). Red. Louisiana. 1811.

MELOCA'CTUS (Turk's-Cap-Cactus).

C. amœ'nus (lovely). Light scarlet. 1835.
„ *commu'nis* (common). Red. July. W. Ind. 1788.
„ „ *vi'ridis* (green). 1836.
„ *depre'ssus* (depressed). Scarlet. Pernambuco.
„ *macroca'nthus* (large-spined). White, red. S. Amer. 1820.
„ *placentifo'rmis* (placenta-shaped). Red. Brazil.
„ *pyramida'lis* (pyramidal). Red. Curacoa. 1824.
„ „ *spi'nis-ru'bris* (red-spined).

PHYLLOCA'CTUS (Leaf-flowering Cactus).

C. Ackerma'nni (Ackermann's). Scarlet. June. Mexico. 1829.
„ „ *ma'jor* (larger-*flowered*). Scarlet. June.
„ *crena'tus* (scolloped). Pale cream. May. Honduras. 1839.
„ *Hooke'ri* (Sir Wm. Hooker's). White. June. S. Amer.
„ *la'tifrons* (broad-stemmed). White. August. Mexico. 1820.
„ *Phylla'nthus* (leaf-flowering). White. June. S. Amer. 1810.

RHI'PSALIS (Willow-branch Cactus).

C. Cassy'tha (Cassytha). 2. Yellow. September. S. Amer.
„ „ *ro'sea* (rosy).
„ *mesembryanthoi'des* (Mesembryanthemum-like). White. S. Amer. 1817.
„ *pachy'ptera* (thick-winged). White. June. W. Ind. 1810.
„ *rho'mbea* (diamond-leaved). Pale yellow. June. Brazil. 1835.

There are many more species in all the above subdivisions of *Cactus* mentioned in botanical works; but they are recorded under their respective names in the body of the dictionary.

Culture.—It is possible that under the different names of *Epiphy'llum*, *Mamilla'ria*, and *Meloca'ctus* we may see occasion to detail a few extra points of culture; but we may observe here, that there are features of cultivation common to them all, namely, a high temperature and a somewhat moist atmosphere when growing in summer; a dry atmosphere when ripening their growth; under natural conditions they have a very dry period, and when the rainy season commences they flower and make growth. Though a temperature of from 80° to 95° will not be too high in the one case, one not below 40° will suffice in the other.

Echinocactus culture.—This group is propagated, at times, by seed, which should be sown as soon as ripe in shallow pans, and plunged in a hotbed; by offsets, which should be well dried at the base before planting, and then plunged into bottom-heat. This method of propagating should only be resorted to in spring or summer; all changing of the soil, or re-potting, should also be done at that time, as, if done in winter, stagnation and decay are apt to ensue. Good drainage constitutes an essential feature. Soil, equal portions of sandy loam and peat, and half parts of clear river or silver-sand, leaf-mould, or dried, old cow-dung, and brick-rubbish, consisting, however, more of the brick broken than the lime. In addition to this compost, when potting offsets without roots, a little silver-sand may be advantageously placed round them, and firmness be secured by placing some slight pins of wood

round their base. In re-potting, it is well to use a thick, soft glove, to save alike hands and spines; and then it is advisable to remove most of the soil, as well as drainage, and any faulty roots, holding the plant well up, and shaking the compost with the other hand carefully among the roots. Water at all times must be given with care; but, when growing in fine weather in summer, they will require a considerable supply both at the roots and as vapour in the atmosphere, with a high temperature. As soon as the spines change colour, moisture must be gradually withheld, the temperature lowered, and more air given. Summer temp., 60° to 90°; winter, 40° to 50°.

Insects.—The Red Spider seizes them at times; and he must be started immediately, either by covering the surface of the pot, and then placing your hand over it, turning it topsy-turvy, and drawing the plant rapidly several times through water at 120°; or by dusting the plants with flowers of sulphur; or, as alike prevention and cure, fuming the house by placing sulphur on the hot-water pipes, or on a hot-water plate kept on purpose. The most remarkable are the *E. pilosus Steinesii* and *ingens*, the monsters for size lately introduced to Kew Gardens.

CADA'LVENA. (Nat. ord. Scitaminaceæ.)
A stove, herbaceous plant resembling a Maranta. For cultivation, see MARANTA.

C. specta'bilis (showy). Large golden-yellow. Trop. Africa. 1905.

CA'DIA. (Nat. ord. Leguminosæ.)
A dwarf shrub, notable for its regular flowers. It requires stove treatment. Cuttings of shoots, getting firm, in pots of sandy soil, placed in a close case with bottom-heat.

C. ellisia'na (Ellisian). Rosy-red. December. Madagascar. 1870.

CÆLESTI'NA. (From *cælestis*, celestial; in reference to their sky-blue colour. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Ageratum.)
Propagate from seed and cuttings which germinate or root freely. Greenhouse and cold pit in winter, and the flower-border in summer. They grow most compactly in loamy soil.

C. ageratoi'des (ageratum-like). See AGERATUM CORYMBOSUM.
„ *cæru'lea* (sky-blue). See AGERATUM CORYMBOSUM.
„ *micra'ntha* (small-flowered). See AGERATUM CORYMBOSUM.

CÆNO'PTERIS. (From *kainos*, new, and *pteris*, a fern. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Divisions, like most Ferns; peat and loam. Summer temp., 60° to 70°; winter, 38° to 50°.

GREENHOUSE EVERGREENS.

C. appendicula'ta (appendaged). ½. Brown. July. N. Holland. 1822.
„ *Odonti'tes* (Odontites). ½. Brown. July. N. Holland. 1822.

STOVE HERBACEOUS.

C. myriophy'lla (myriad-leaved). See ASPLENIUM RHIZOPHYLLUM MYRIOPHYLLUM.
„ *rhizophy'llum* (rooting-leaved). See ASPLENIUM RHIZOPHYLLUM.
„ *thalictroi'des* (Thalictrum-like). 1. Brown. September. Jamaica.

CÆSALPI'NIA. Brasiletto. (Named after *Cæsalpinus*, physician to Pope Clement VIII. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. In alliance with Poinciana.)
"As hard as Brazils" refers to the Brazil-wood—that of *Cæsalpi'nia brasilie'nsis*. Stove evergreens, except where otherwise mentioned. Seeds and cuttings in sand and in bottom-heat. Peat and loam. Summer temp., 60° to 75°; winter, 50° to 55°.

C. alternifo'lia (alternate-leaved). Orange. Trop. Amer. 1868.
„ *bahame'nsis* (Bahama). See C. CRISTA.
C. bi'color (two-coloured). 20. Red-purple. S. Amer. 1896.
„ *bi'juga* (two-paired). 20. W. Ind.
„ *Bo'nduc* (Bonduc). Tropics.
„ *Bonduce'lla* (Small Bonduc). Tropics.
„ *brasilie'nsis* (Brazilian). 20. Orange. Jamaica. 1739. Brazil-wood.
„ *cassioi'des* (Cassia-like). 6. Yellow. S. Amer. 1821.
„ *chine'nsis* (China). See C. NUGA.
„ *coria'ria* (leathery). S. Amer. "Divi-Divi."
„ *Cri'sta* (Crista). 15. White. W. Ind. 1820.
„ *di'gyna* (two-fruited). 15. Yellow. E. Ind. 1820.
„ *fe'rrea* (rusty). Brazil.
„ *Gillie'sii* (Gillies's). Red, yellow. Mendoza. 1829. Deciduous.
„ *ho'rrida* (very spiny). 12. Orange. New Grenada. 1824.
„ *insi'gnis* (noble). 15. Copper. Amazon region. 1823.
„ *japo'nica* (Japanese). Bright yellow. Japan. Hardy. First flowered outside in 1887. Syns. *C. crista*, Thunb., and *C. sepiaria*, of Miquel.
„ *mexica'na* (Mexican). 12. Yellow. Mexico. 1820.
„ *Mi'nax* (Minax). White, purple. April. China.
„ „ *burma'nica* (Burmese).
„ *Nu'ga* (Nuga). 10. Yellow. Trop. Asia. 1820.
„ *oleospe'rma* (oil-seeded). See C. DIGYNA.
„ *panicula'ta* (panicled). See C. NUGA.
„ *pauciju'ga* (few-pair-leaved). W. Ind.
„ *pectina'ta* (combed). See C. TINCTORIA.
„ *pro'cera* (tall). 30. Yellow. Cuba. 1824.
„ *pulche'rrima* (most beautiful). 12. Red and yellow tip. Tropics. 1691.
„ *puncta'ta* (dotted). 6. Yellow. Brazil. 1820.
„ *Sa'ppan* (Sappan). 20. Yellow. E. Ind. 1773.
„ *sca'ndens* (climbing). 20. Yellow. E. Ind. 1800. Climber.
„ *sepia'ria* (hedge). 60. Yellow. April. India. 1857.
„ *tincto'ria* (dyer's). 12. Orange. New Grenada. 1822.
„ *verna'lis* (spring). Lemon-yellow, with scarlet blotch. China. 1907.
„ *vesica'ria* (bladdered). 12. Yellow. Brazil. 1820.

CÆ'SIA. (Named after *F. Cæsia*. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anthericum.)
Greenhouse tuberous-rooted perennial. Seeds in March, in heat; division of the roots; loam and peat. Summer temp., 60° to 70°; winter, 40° to 45°.

C. vitta'ta (riband). 1. Pale blue. July. N. S. Wales. 1816.

CAIO'PHORA. See BLUMENBACHIA and LOASA.

CAJA'NUS. Pigeon Pea. (From its Malabar name, *Catjang*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 1-*Pentandria*. Allied to Phaseolus.)
Stove evergreen shrubs. Seeds in spring; sandy loam and peat. Summer temp., 60° to 75°; winter, 50° to 55°.

C. i'ndicus (Indian). 6 to 10. Yellow or purple-spotted. India.
„ „ *bi'color* (two-coloured). India. 1800.
„ „ *fla'vus* (yellow). India. 1687.

CA'JEPUT OIL and **CAJEPUT-TREE.** See MELALEU'CA LEUCADE'NDRON.

CAKI'LE. (The Arabic name. Sea Rocket. Nat. ord. *Crucifers* [Cruciferæ].)
A pretty annual found on our sandy seashores, and might be sown in sandy borders or on the rockery. Seeds in April.

C. mari'tima (maritime). 1. Lilac. Summer and autumn. Britain.

CALABASH NUTMEG. *Monodo'ra Myri'stica.*

CALABASH, SWEET. *Passiflo'ra malifo'rmis.*

CALABASH-TREE. *Cresce'ntia Cuje'te.*

CALABA-TREE. *Calophy'llum Cala'ba.* "Calaba Oil."

CALADE'NIA. (From *kalos*, beautiful, and *aden*, a gland. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Limodorum.)
New Holland, half-hardy, terrestrial orchids. Division of the roots; loam, peat, sand, and broken pots in equal portions. A cool greenhouse in winter.

C. ala'ta (winged). See C. CARNEA ALATA.
„ *a'lba* (white). See C. CARNEA ALBA.
„ *cæru'lea* (sky-blue). Blue. N. Holland. 1804.
„ *ca'rnea* (flesh-*coloured*). Flesh. July. N. Holland. 1826.
„ „ *ala'ta* (winged). 1823.
„ „ *a'lba* (white). 1810.
„ *clavi'gera* (club-*lipped*). June. N. S. Wales.
„ *defo'rmis* (deformed). Yellow. August. Swan River.
„ *denticula'ta* (toothed). See C. FILAMENTO'SA.
„ *dilata'ta* (broad-*lipped*). See C. PATERSONII DILATATA.
„ *elonga'ta* (elongated). See C. LATIFOLIA.
„ *filamento'sa* (thready). Yellow. Swan River.
„ *fimbria'ta* (fringed). Yellow. May. Australia.
„ *gemma'ta* (budded). Purple. May. Swan River.
„ *gra'cilis* (slender). See C. TESTACEA.
„ *hi'rta* (hairy). Yellow. May. Swan River.
„ *ixioi'des* (Ixia-like). Yellow. May. Swan River.
„ *latifo'lia* (broad-leaved). Yellow. May. Swan River.
„ *longicau'da* (long-spurred). See C. PATERSONII DILATATA.
„ *margina'ta* (bordered). See C. LATIFOLIA.
„ *Menzie'sii* (Menzies). Yellow. May. Australia.
„ *mo'llis* (soft). See C. LATIFOLIA.
„ *Paterso'nii* (Paterson's). N. S. Wales.
„ „ *dilata'ta* (dilated). Yellow. Lip broad. Swan River.
„ *pili'fera* (hairy). Purple. September. Swan River.
„ *re'ptans* (creeping). Purple. August. Swan River.
„ *testa'cea* (light-brown). July. N. Holland. 1824.
„ *unguicula'ta* (clawed). See C. DEFORMIS.

CALA'DIUM. (A word of uncertain derivation, perhaps from *kaladion*, a cup. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*. Allied to Colocasia.)

The ginger-like roots of *C. bi'color*, &c., are used as common food in tropical countries, under the name cocoa-roots; but the roots of others are very acrid. Stove plants, with the exception of *C. virgi'nicum*. Interesting chiefly on account of their stems and leaves. Herbaceous kinds by division of the plants, and suckers; sub-shrubs, cuttings, and dividing the roots; rich, lumpy soil, and abundance of water. Summer temp., 60° to 85°; winter, 50° to 55°.

We may add that in recent years there has been considerable improvement in the highly coloured hybrid varieties, and they are much appreciated for decorations both as plants and cut leaves. We find that growers who do them for decorative purposes start them in heat early in the season, but gradually harden them off and expose them to the sun and light before using them. It requires some care to keep the tubers through the winter. They should be gradually ripened off in the autumn by withholding water. When properly ripened off, they may be stored in any dry place where the temperature does not fall below 50°. If convenient they may be left in the pots, but if turned out and put into dry sand they will keep well. They must not be placed where the heat will dry the tubers too much. When starting the tubers in the spring, the offsets should be taken off, started in small pots in light, sandy soil; and later on they may be potted several together in each pot, using rough, fibrous loam, peat, and some well-rotted stable manure, with some sand added, and when well established liquid manure may be given freely.

STOVE EVERGREENS.

C. aculea'tum (pricked). See MONTRICHARDIA ACULEATA.
„ *arbore'scens* (tree-like). See MONTRICHARDIA ACULEATA.
„ *arbo'reum* (tree). 9. White. Cumana. 1820.
„ *auri'tum* (ear-*leaved*). See SYNGONIUM AURITUM.
„ *cuculla'tum* (hood-*leaved*). See ALOCASIA CUCULLATA.
„ *fragranti'ssimum* (most fragrant). See PHILODENDRON FRAGRANTISSIMUM.
„ *helleborifo'lium* (hellebore-leaved). See XANTHOSOMA HELLEBORIFOLIUM.
„ *la'cerum* (torn). See PHILODENDRON LACERUM.
„ *macula'tum* (spotted). See DIEFFENBACHIA SEGUINE.
„ *Segui'num* (Seguin *Dumb-cane*). See DIEFFENBACHIA SEGUINE.
„ *triparti'tum* (three-parted-*leaved*). See PHILODENDRON TRIPARTITUM.
„ *xanthorrhi'zum* (yellow-rooted). See XANTHOSOMA SAGITTÆFOLIUM.

STOVE DECIDUOUS.

C. adama'ntinum (adamantine). Leaves green with white veins. Peru. 1891.
„ *argyri'tes* (silver-leaved). See C. HUMBOLDTII.
„ *argyroneu'rum* (silver-nerved). 2. S. Amer.
„ *Belleyé'nei*. See C. PICTURATUM BELLEYE'NEI.
„ *bi'color* (two-coloured). 1. White. June. S. Amer. 1773. Many varieties and mere forms of *C. bicolor* have been described and figured as species, including the following: Albo-maculatum, albo-punctatissimum, amœnum, argyrospilum, Baraquinii, Brongniartii, Cannartii, Chantinii, Connærtii, Curwadlii, devosianum, discolor, Duchartrei, Eckhartii, enkeanum, firmulum, Gærdtii, griseo-argenteum, haageanum, hæmatostigma, Hardii, Hendersonii, houbyanum, Houlletii, Ketteleri, Kochii, krameri-anum, laucheanum, Leopoldi, Lindeni, macrophyllum, marginatum, martersteigianum, mirabile, mooreanum, Neumanni, Ottonis, pallidinervium, pellucidum, Perrieri, pictum, pœcile, punctatissimum, purdieanum, pusillum, regale, reichenbachianum, rubellum, rubricaule, rubrovenium, sagittæfolium, of Sieber, Sieboldii, splendens, splendidissimum, splendidum, spruceanum, stangeanum, surinamense, Thelemanni, transparens, vellozianum, Verschaffeltii, Wagneri, Wallisi, and Wightii.
„ *cardina'le* (scarlet). 1882.
„ *cu'preum* (copper). See ALOCASIA CUPREA.
„ *edu'le* (edible). See XANTHOSOMA EDULE.
„ *erythræ'a* (red). 1. S. Amer.
„ *escule'ntum* (esculent). See COLOCASIA ANTIQUORUM.
„ *hasta'tum* (hastate). See C. PICTURATUM HASTATUM.
„ *Humbo'ldtii* (Humboldt's). Leaves silvery. Para. 1858. Syn. *C. argyrites*.
„ „ *myriosti'gma* (myriad-spotted).
„ *Jenni'ngsii* (Jennings's). See COLOCASIA AFFINIS.
„ *lemairea'num* (Lamairean). See C. PICTURATUM LEMAIREANUM.
„ *lilliputia'num* (lilliputian). Apparently a variety of *C. argyrites*. Venezuela. 1895.
„ *li'vidum* (livid). See STAUROSTIGMA CONCINNUM.
„ *Lo'wii* (Low's). See ALOCASIA LOWII.
„ *lu'ridum* (lurid). See STAUROSTIGMA CONCINNUM.
„ *marmora'tum* (marbled). Yellow. Guayaquil.
„ *medioradia'tum* (middle-rayed). Leaves with the central veins silvery. Colombia. 1891.
„ *myriosti'gma* (myriad-spotted). See C. HUMBO'LDTII MYRIOSTIGMA.
„ *nymphææfo'lium* (Nymphæa-leaved). See COLOCASIA ANTIQUORUM NYMPHÆÆFOLIUM.
„ *odora'tum* (fragrant). See ALOCASIA MACRORRHIZA.
„ *ova'tum* (egg-shaped). See LAGENANDRA TOXICARIA.
„ *peda'tum* (pedate). See PHILODENDRON LACINIATUM.
„ *petiola'tum* (stalked). See ANCHOMANES DIFFORMIS.
„ *pictura'tum* (ornamented). Greenish. S. Amer.
„ „ *hasta'tum* (hastate). 1858.
„ „ *lemairea'num* (Lemairean). Leaves with whitish venation. S. Amer. 1861.
„ „ *Troubetzko'yi* (Troubetzkoy's).
„ *pinnati'fidum* (deeply-cut-leaved). See PHILODENDRON PINNATIFIDUM.
„ *pu'milum* (dwarf). See GONATANTHUS SARMENTOSUS.
„ *Rougie'ri* (Rougier's). Leaves spotted white and central veins red. Brazil. 1864.
„ *rube'scens* (reddish). Leaves red and green, small. Brazil. 1893.
„ *sagittæfo'lium* (arrow-leaved). See XANTHOSOMA SAGITTÆFOLIUM.
„ *sagitta'tum* (arrow-shaped). Leaves feathered red in the centre. Brazil. 1891.
„ *sanguineole'ntum* (blood-coloured). Leaves white in centre, blotched red. Amazons. 1872.
„ *sca'ndens* (climbing). See CULCASIA SCANDENS.
„ *Schombu'rgkii* (Schomburgk's). Leaves with white veins. Guiana. 1861.
„ „ *Schmi'tzii* (Schmitz's). Centre of leaf white, with red veins. Brazil. 1861.
„ „ *subrotu'ndum* (roundish). Leaves roundish, spotted red and white. Brazil. 1858.
„ *Si'msii* (Sims's). See PHILODENDRON SIMSII.
„ *smaragdi'num* (emerald green). White. Trop. Amer. 1853.

C. specta'bile (showy). Leaves blotched pink and white. Brazil. 1861.
„ *stria'tipes* (lined-stalked). Brazil.
„ *subrotu'ndum* (roundish). See C. SCHOMBURGKII SUBROTUNDUM.
„ *Troubetzko'yi* (Troubetzkoy's). See C. PICTURATUM TROUBETZKOYI.
„ *veno'sum* (veiny). Leaves with yellow veins and red margin. Brazil. 1893.
„ *virgi'nicum* (Virginian). See PELTANDRA VIRGINICA.
„ *vivi'parum* (viviparous). See REMUSATIA VIVIPARA.
„ *zamiæfo'lium* (Zamia-leaved). See ZAMIOCULCAS LODDIGESII.

CA'LAIS LI'NDLEYI. See MICROSERIS LINDLEYI.

CALAMAGRO'STIS. (From *calamos*, a reed, and *agrostis*, a grass. Nat. ord. Gramineæ.)
Beautiful plumy grasses that may be used for mixing with cut flowers. Being perennial and perfectly hardy, seeds may be sown in the open in September, and the seedlings thinned out in spring. Any good garden soil.

C. epige'ios (terrestrial). 3. Purple. Britain. Common Wood Reed.
„ *lanceola'ta* (lance-shaped). 3. Purple. Britain.

CALAMINT. See CALAMINTHA.

CALAMI'NTHA. Calamint. (From *kalos*, beautiful, and *mintha*, mint. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Angiospermia*. Allied to Melissa.)
Hardy herbaceous perennials, except where otherwise mentioned. Suckers and divisions; common soil.

C. A'cinos (Acinos). ½. Purple and white. July. Britain. "Basil Thyme." Annual.
„ *a'lba* (white). See MICROMERIA RUPESTRIS.
„ *alpi'na* (alpine). ½. Purplish. July to September. S. Europe. 1731.
„ *arve'nsis* (field). See C. ACINOS.
„ *carolinia'na* (Carolina). 1. Flame. June. Carolina. 1804.
„ *chine'nsis* (Chinese). China.
„ *Clinopo'dium* (Clinopodium). 1. Rose. July to September. Britain.
„ *cocci'nea* (scarlet). Scarlet. June to September. S. United States. 1834.
„ *co'rsica* (Corsican). ½. Purple. June. Corsica. 1829.
„ *cre'tica* (Cretan). ½. Purple. June. S. Europe. 1596. Half-hardy evergreen.
„ *croa'tica* (Croatian). See MICROMERIA CROATICA.
„ *fructico'sa* (shrubby). See MICROMERIA MARIFOLIA.
„ *grandiflo'ra* (large-flowered). 1. Red. July. Italy. 1596.
„ „ *variega'ta* (variegated-*leaved*). 1. Red. July. Gardens.
„ *grave'olens* (strong-smelling). 1. Purple. June. S. Europe. 1820.
„ *menthæfo'lia* (Mint-leaved). See C. OFFICINALIS.
„ *marifo'lia* (marum-leaved). See MICROMERIA MARIFOLIA.
„ *mimuloi'des* (Mimulus-like). 1. Yellow. September. California. 1849.
„ *officina'lis* (medicinal). 1. Purple. July to September. Britain. Medicinal "Calamint."
„ *patavi'na* (Paduan). ½ to ¼. Purple-red. June. S. Europe. 1776.
„ *rotundifo'lia* (round-leaved). ½. Purple. June. Spain. 1829.
„ *suave'olens* (sweet-smelling). 1. Red, purple. Greece. 1817.
„ *sylva'tica* (wood). See C. GRANDIFLORA.

CALA'MPELIS. See ECCREMOCARPUS SCABER.

CA'LAMUS. (From *kalom*, the Arabic word for a reed. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
The dark-coloured resin called Dragon's-blood is the natural secretion of the fruit of *C. Dra'co*. Stove palms. Seed; sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

C. acanthospa'thus (spiny-spathed). Himalayan Regions.
„ *acce'dens* (approaching). See DÆMONOROPS DRACO.
„ *adspe'rsus* (scattered). See DÆMONOROPS ADSPERSUS.
„ *a'lbus* (white). 50. E. Ind. 1812.
„ *aspe'rrimus* (roughest). Java. 1877. A climber.
„ *austra'lis* (Australian). Australia. 1861.
C. calica'rpus (beautiful-fruited). See DÆMONOROPS CALICARPUS.
„ *calole'pis* (beautiful-scaled). See C. MELANOLOMA.
„ *Caro'li* (Charles's). A twining Palm. 1898.
„ *caryotoi'des* (Caryota-like). Australia.
„ *cilia'ris* (ciliated). Malaya. 1869.
„ *cinnamo'mea* (cinnamon). 1870.
„ *delica'tulus* (somewhat delicate). Ceylon.
„ *Dra'co* (dragon). See DÆMONOROPS DRACO.
„ *ere'ctus* (erect). Himalaya.
„ *farino'sus* (mealy). Sumatra. 1872.
„ *fi'ssus* (split). See DÆMONOROPS FISSUS.
„ *Flag'ellum* (whip). Himalaya.
„ *floribu'ndus* (free-flowering). Himalayan Regions.
„ *graci'llimus* (most graceful). Leaflets wide apart. 1893.
„ *gra'ndis* (great). See DÆMONOROPS GRANDIS.
„ *guinee'nsis* (Guinean). Sikkim. Bull. Cat., 1884.
„ *heteroi'deus* (like various plants). See C. REINWARDTII.
„ *huegelia'nus* (Huegelian). Malabar.
„ *Hy'strix* (hedgehog). See DÆMONOROPS HYSTRIX.
„ *jenkensia'nus* (Jenkensian). See DÆMONOROPS JENKENSIANUS.
„ *kentiæfo'rmis* (Kentia-formed). 1884.
„ *læ'vis* (smooth). See ANCISTROPHYLLUM LÆVE.
„ *latifo'lius* (broad-leaved). Burma.
„ *leptospa'dix* (slender-spiked). Himalayan Regions.
„ *lewisia'nus* (Lewisian). See DÆMONOROPS LEWISIANUS.
„ *Linde'ni* (Linden's). Malaya. 1883.
„ *margina'tus* (margined). Borneo.
„ *melanochæ'tes* (black-spathed). See DÆMONOROPS MELANOCHÆTES.
„ *melanolo'ma* (black-fringed). Java.
„ *micra'nthus* (small flowered). Malaya.
„ *monta'nus* (mountain). See C. ACANTHOSPATHUS.
„ *Muelle'ri* (Mueller's). Trop. Australia.
„ *Nicola'i* (Nicola's). Kerch. Palm, p. 237.
„ *ni'ger* (black). See DÆMONOROPS NIGER.
„ *oblo'ngus* (oblong). Java. 1857.
„ *orna'tus* (adorned). Malaya. 1875.
„ *ovoi'deus* (egg-shaped). Ceylon. 1885.
„ *oxleya'nus* (Oxleyan). Malaya.
„ *pachyste'monus* (thick-stamened). Ceylon.
„ *palemba'nicus* (Palembanian). See DÆMONOROPS PALEMBANICUS.
„ *periaca'nthus* (spine-surrounded). See DÆMONOROPS PERIACANTHUS.
„ *pisica'rpus* (pea-fruited). 20. Cochin-China. 1812.
„ *pri'nceps* (chief). Java. 1872.
„ *Pseu'do-Ro'tang* (false Rotang). See C. VIMINALIS.
„ *Re'gis* (King's). New Guinea. 1886.
„ *Reinwa'rdtii* (Reinwardt's). Malaya.
„ *robu'stus* (robust). Borneo. 1893.
„ *Ro'tang* (Rotang Cane). India.
„ *Roxbu'rghii* (Roxburgh's). See C. ROTANG.
„ *roylea'nus* (Roylean). See C. TENUIS.
„ *rude'ntum* (cable). 200. Green. E. Ind. 1812.
„ *schizospa'thus* (split-spathed). See C. ERECTUS.
„ *specta'bilis* (showy). Sumatra. 1886.
„ *subangula'tus* (somewhat angled). E. Ind. 1882.
„ *te'nuis* (slender). India and Cochin-China.
„ *trichro'us* (hairy). See DÆMONOROPS TRICHROUS.
„ *trine'rvis* (three-nerved). E. Ind. 1883.
„ *Verschaffe'ltii* (Verschaffelt's). See ACANTHOPHŒNIX CRINITA.
„ *verticilla'ris* (whorled). See DÆMONOROPS VERTICILLARIS.
„ *ve'rus* (true). See C. PISICARPUS.
„ *vimina'lis* (twiggy). India and Malaya.
„ *volontea'nus* (Volontean). Hort. Linden.
„ *Wi'ghtii* (Wight's). See C. HUEGELIANUS.
„ *Zala'cca* (Zalacca). See ZALACCA WALLICHIANA.

CALA'NDRA GRANA'RIA. Granary Weevil. Seeds of many kinds when stored away are liable to be destroyed by this small and beautiful but destructive weevil, which is about two lines long and black-brown, spotted on the shoulders, and spotted and striped on the wing-cases. It has a long, slender beak like some other destructive weevils. The female lays one egg in each seed, and the grub feeds in the interior. Here it undergoes all its changes from the egg to the weevil stage in the course of six or seven weeks, when it is ready to go through the whole process again, and thus gives rise to several generations during the year. The destruction they cause in a

short time is great if not checked. Every weevil seen should be destroyed, and traps set where it abounds. The perfect weevil may be trapped by soaking bread in milk and placing pieces on slates, tiles, or saucers. A little milk alone in the saucers will act as a bait, and the weevils should be destroyed.

CALANDRI'NIA. (Named after *Calandrini*, a German botanist. Nat. ord. *Purslanes* [Portulaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

When grown from seeds, the hardy, as well as the greenhouse and stove kinds, like a little protection, such as may be given by a slight hotbed, in April, and a hand-light over it. Cuttings, also, strike freely; light, sandy soil, well drained, suits them well.

HARDY.

C. arena'ria (sand-*inhabiting*). ½. Orange, red. July. Valparaiso. 1831. Herbaceous perennial.
„ *caule'scens* (stemmed). Rose. August. Peru. 1827. Annual.
„ *chroma'ntha* (chrome-yellow-fruited). 1. Rose. Fruits orange-yellow. Argentina. 1908.
„ *compre'ssa* (flattened). ½. Rose. August. Chili. 1826. Annual.
„ *corymbo'sa* (corymbose). Chili.
„ *lea'na* (Leaian). California.
„ *longisca'pa* (long-stalked). Chili.
„ *Menzie'sii* (Menzies'). 1. Purple. June. N.W. Amer. 1831. Perennial.
„ *mona'ndra* (one-stamened). See MONOCOSMIA CORRIGIOLOIDES.
„ *oppositifo'lia* (opposite-leaved). Pearly white. Summer. California and Oregon. 1888.
„ *pilosiu'scula* (thinly hairy). Chili.
„ *procu'mbens* (lying-down). ½. Rose. August. Peru. 1827. Annual.
„ *specio'sa* (showy). See C. MENZIESII.
„ *Twee'dyi* (Tweedy's). See LEWISIA TWEEDYI.
„ *umbella'ta* (umbel-*flowered*). ½. Rose. July. Chili. 1826. Annual.

GREENHOUSE.

C. Andre'wsii (Andrews'). Rose. August. W. Ind. 1800. Deciduous shrub.
„ *di'scolor* (two-coloured-*leaved*). 1½. Rose. July. Chili. 1834. Herbaceous perennial.
„ *glau'ca* (milky-green). Rose. August. Chili. 1827. Annual.
„ *lindleya'na* (Lindleyan). See C. DISCOLOR.
„ *Lockha'rti* (Lockhart's). Rose. June. Trinidad. 1825. Deciduous shrub.
„ *ni'tida* (shining). ½. Red. August. Chili. 1837, Annual.
„ *phacospe'rma* (lentil-seeded). Red. August. Chili. 1837. Biennial.
„ *polya'ndra* (many-stamened). Purple. August. Australia. 1853.

STOVE.

C. asce'ndens (ascending). ½. Purple. Brazil. Herbaceous perennial.
„ *ciliа'ta* (hair-fringed). ½. Purple. August. Peru. 1823. Annual.
„ *grandiflo'ra* (large-flowered). 1. Purple. July. Chili. 1826. Herbaceous perennial.
„ *lla'vea* (La Llave's). See CUPHEA LLAVEA.
„ *panicula'ta* (panicled). 1½. Purple. July. S. Amer. 1816. Herbaceous perennial.

CALA'NTHE. (From *kalos*, beautiful, and *anthos*, a flower. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Terrestrial orchids, all evergreens except *C. vesti'ta*. Divisions and suckers; loam and peat, lightened with sand and charcoal, and enriched by top-dressings of old cow-dung; extra well-drained, constantly moist, and the plants well exposed to light. Summer temp., 60° to 80°; winter, 50° to 55°.

GREENHOUSE.

C. bi'color (two-coloured). See C. STRIATA.
„ *di'scolor* (discoloured). White. Japan. 1837.
„ „ *specio'sa* (showy). 1. Green, brown; lip pink. Japan. 1904.
C. furca'ta (forked). White. Luzon Isles. 1836.
„ „ *japo'nica* (Japanese). Japan.
„ *stria'ta* (striated). 1½. Yellow. Japan. 1837.

STOVE.

C. alba'ta (whitish). Hybrid between *C. veratrifolia* and *C. Cooksonii*. 1896.
„ *anchori'fera* (anchor-bearing). Pale ochre. December. Polynesia. 1882.
„ *atroru'bens* (dark red). Hybrid between *C. bella* and *C. burfordiense*.
„ *austra'lis* (southern). See SPIRANTHES AUSTRALIS.
„ *barberia'na* (Barberian). White, yellow. Hybrid between *C. vestita* and *C. v. Turneri*. 1881.
„ *be'lla* (pretty). Lilac, lip carmine. Hybrid between *C. Veitchii* and *C. vestita Turneri*. 1881.
„ *bi'loba* (two-lobed). Purplish; lip purple. Himalayan Regions.
„ *bracteo'sa* (bracteated). White. Samoa. 1882.
„ *brevico'rnu* (short-horned). Rose. White. August. Nepaul. 1838.
„ *burfordie'nse* (Burfordian). Supposed hybrid between *C. Veitchii* and *C. vestita rubro-oculata*.
„ *burma'nica* (Burmese). Mauve-purple, yellow crest. Burma. 1907.
„ *Ceci'liæ* (Cecilia's). Light ochre, tinted purple. Malaya. 1883.
„ *Chapma'nii* (Chapman's). Hybrid between *C. burfordiense* and *C. Oakwood Ruby*. 1905.
„ *colo'rans* (colouring). G. Chr. 1885, ii. 360. White; lip at length ochre.
„ *Cookso'nii* (Cookson's). White. Garden hybrid. 1896.
„ *curculigoi'des* (Curculigo-like). 2. Orange. October. Malacca. 1844.
„ *Curti'sii* (Curtis's). Rose outside, white within; lip yellow. Sunda Islands. 1884.
„ *darblaya'na* (Darblayan). Hybrid between *C. Regnieri* and *C. vestita gigantea*. 1889.
„ *densiflo'ra* (dense-flowered). Yellowish. September. India. 1837.
„ *Di'pteryx* (two-winged). Purple. Sunda Islands. 1884.
„ *Domi'nii* (Dominy's). Lilac-purple; lip red. Hybrid between *C. Masuca* and *C. furcata*. The first hybrid Orchid raised. Seed obtained, 1854; flowered, 1855.
„ *emargina'ta* (notched). Violet-orange. Java. 1866.
„ *Eyerma'nii* (Eyerman's). Hybrid between *C. vestita* and *C. Veitchii*. 1891.
„ *fla'vicans* (yellowish-*flowered*). White, blue. April. E. Ind. 1838.
„ *Fœrsterma'nni* (Fœrstermann's). Yellow. Burma. 1883.
„ *furca'ta* (forked). White. Islands of Luzon. 1836.
„ *gi'gas* (giant). Hybrid between *C. sanderiana gigantea* and *C. vestita gigantea*. 1893.
„ *gra'cilis* (slender). Greenish-yellow. September. Khasya. 1851.
„ *Ha'lli* (Hall's). Garden hybrid. 1888.
„ *Henni'sii* (Hennis'). White, tinted sulphur. Philippines. 1909.
„ *labro'sa* (large-lipped). Yellow-brown, purple. Burma. 1879.
„ *labro'sior* (larger-lipped). White and blush lip. 1898. Garden hybrid.
„ *La'ngei* (Lange's). Deep yellow. New Caledonia. 1885.
„ *lauchea'na* (Lauchean). Hybrid between *C. sanderiana* and *C. veratrifolia*.
„ *lentigino'sa* (finely spotted). White; lip spotted purple. Hybrid between *C. labrosa* and *C. Veitchii*.
„ *lilaci'na* (lilac). 1½–2. Sepals and petals lilac; lip white changing to orange. Luzon. 1910.
„ *madagascarie'nsis* (Madagascar). Rosy mauve, magenta, white. Madagascar. 1900.
„ *Masu'ca* (Masuca). 2. Violet, purple. June. E. Ind. 1838.
„ *masu'co-tricarina'ta* (3-keeled-Masuca). A hybrid between the parents named. 1895.
„ *Myle'sii* (Myles's). Pure white. Hybrid between *C. vestita nivalis* and *C. Veitchii*. 1890.
„ *natale'nsis* (Natalese). Pale lilac; lip salmon. Natal, 1885.

C. ochra'cea (ochre-coloured). Pale yellow. April. Japan. 1836.
„ *Pe'tri* (Peter's). White, yellow. Polynesia. 1880.
„ *plantagi'nea* (plantain-*leaved*). Lilac. February. Nepaul. 1839.
„ *pleiochro'ma* (full-coloured). White, purple, ochre, orange. Japan. 1871.
„ *porphy'rea* (purple). Purple, and yellow base to lip. Garden hybrid between *C. labrosa* and *C. vestita rubro-oculata*. 1884.
„ *proboscı'dea* (proboscis). White and vermilion Calli. Sunda Islands. 1884.
„ *Regnie'ri* (Regnier's). See C. VESTITA REGNIERI.
„ „ *fau'sta*, purple. See C. VESTITA FAUSTA.
„ *ro'sea* (rosy). Pale rose, white. Burma. 1851. Syn. *Limatodes rosea*.
„ „ *a'lba* (white).
„ *ru'bens* (reddening). Rose. Malay Peninsula. 1890.
„ *sanderia'na* (Sanderian). See C. VESTITA SANDERIANA. William's Cat., 1887, 21.
„ *sanderia'na* (Sanderian). Larger than *C. natalensis*, with darker lip. E. Trop. Africa. 1892.
„ *sandhurstia'na* (Sandhurstian). A variety or hybrid of *C. Veitchii*, with an eye-spot on the lip. 1881.
„ *sanguina'ria* (blood-coloured). Blood-red, purple. Garden hybrid. 1886.
„ *Sede'ni* (Seden's). Garden hybrid between *C. vestita rubro-oculata* and *C. Veitchii*. 1878.
„ *Siebo'ldii* (Siebold's). See C. STRIATA.
„ *stevensia'na* (Stevensian). White, with rosy-purple spot on the lip. Cochin-China. 1883.
„ *stria'ta* (striated). Yellow-brown. Japan. 1837.
„ *sylva'tica* (wood). White, changing to yellow. Madagascar. 1823.
„ *Texto'ri* (Textor's). Cream, white, violet, red. Japan. 1879.
„ *triu'mphans* (triumphant). Hybrid, and *C. vestita rubro-oculata* is one supposed parent.
„ *Turne'ri* (Turner's). See C. VESTITA TURNERI.
„ *Vei'tchii* (Veitch's). White, with rose-coloured eye. Garden hybrid between *C. vestita* and *C. rosea*.
„ „ *a'lba* (white). Pure white. 1890.
„ „ *la'ctea* (milky). Milk white.
„ „ *sple'ndens* (splendid). Dark rose.
„ „ *supe'rba* (superb). Carmine-rose.
„ *veratrifo'lia* (Veratrum-leaved). 2. White. April. Java. 1819.
„ „ *macro'loba* (large-lobed). Pacific Islands.
„ *versi'color* (various-coloured). See C. MASUCA.
„ *vesti'ta* (clothed). 2½. White and pink. November. Burma, Malaya. This has bulbs. No water given between December and March, its time of rest.
„ „ *fau'sta* (purple).
„ „ *Fournie'ri* (Fournier's). Flowers smaller than the type. Borneo. 1892.
„ „ *i'gneo-ocula'ta* (fire-eyed). Fire-coloured blotch on column and lip. Borneo. 1876.
„ „ *niva'lis* (snowy). Pure white. Java. 1868.
„ „ *ocula'ta gigante'a* (giant-eyed). White, with fiery-red eye, large. Borneo.
„ „ *owenia'na* (Owenian). Hybrid between *C. vestita* and *C. Veitchii*.
„ „ *Regnie'ri* (Regnier's). White; lip ochre. Cochin-China. 1887.
„ „ *ro'sea* (rosy). Rose.
„ „ *ru'bro-ocula'ta* (red-eyed). White, with crimson eye. October to February.
„ „ *sanderia'na* (Sanderian). Deep rose, and bright crimson lip. Cochin-China. 1887.
„ „ *Turne'ri* (Turner's). Large, pure white, with rose eye. Java.
„ „ *Willia'msii* (Williams's). Sepals and petals white, striped and edged crimson; lip magenta-crimson. 1884.
„ *Victo'ria-regi'na* (Queen Victoria). Supposed to be a hybrid between *C. Veitchii* and *C. rosea*.
„ *vi'ridi-fu'sca* (greenish-brown). See TAINIA LATIFOLIA.
„ *Warpu'ri* (Warpur's). White; lip dull purple. Madagascar. 1900.

CALA'THEA. (From *kalathos*, a basket; in reference to the leaves being worked into baskets in South America. Nat. ord. *Maranths* [Marantaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Stove herbaceous perennials; may be increased by divisions. During the summer many of them will do well in the greenhouse, but the winter temperature should not fall below 55° to 60°. Potted in rough, lumpy loam, peat, and well-rotted manure, they make good growth. When established, liquid manure made from cow-dung may be used freely. They succeed best in a moist, warm atmosphere and require plenty of pot room. If kept free from insect pests, most of them make very handsome foliage. There has been some confusion in the naming of this genus. Several of the Marantas have been included. We give the correct names.

C. affi'nis (related). 1879.
„ *Allou'ya* (Allouya). Guiana.
„ *ama'bilis* (lovely). See MARANTA AMABILIS.
„ *angustifo'lia* (narrow-leaved). Trop. Amer. 1879.
„ *applica'ta* (inclined). White. Brazil. 1875.
„ *argyræ'a* (silvery). 1. Brazil. 1859.
„ *arre'cta* (erect). Ecuador. 1872.
„ *bachemia'na* (Bachemian). Leaves silvery, with green lines and blotches. Brazil. 1875.
„ *baraquinia'na* (Baraquinian). Leaves with two silvery bands. Amazons. 1868.
„ *be'lla* (beautiful). Leaves grey-green, with the edges and central patches deep green. Brazil. 1875.
„ *be'llula* (pretty). Leaves deep green, with rosy-white arches. Amazons. 1872.
„ *Bino'ti* (Binot's). See C. ZEBRINA BINOTI.
„ *chimborace'nsis* (Chimboran). Ecuador. 1870.
„ *cine'rea* (grey). Amazons. 1872.
„ *colora'ta* (coloured). 2. Orange. May. Brazil. 1828.
„ *como'sa* (long-haired). 3. July. W. Ind. 1828.
„ *croca'ta* (saffron-coloured). Orange. Brazil. 1875.
„ *cyclo'phora* (ring-bearing). White. Leaves green. British Guiana. 1895.
„ *de'nsa* (dense). Brazil. 1865.
„ *exi'mia* (choice). Trop. Amer. 1857.
„ *fascia'ta* (banded). 1. Brazil. 1859.
„ *flave'scens* (pale yellow). 1½. Yellow. August. Brazil. 1822.
„ *gi'gas* (giant). 8. Leaves violet-purple when young. Trop. Amer. 1903.
„ *Goule'tii* (Goulet's). White. Leaves with white-green centre, purple beneath. 1906.
„ *grandifo'lia* (large-leaved). 2. Yellow. July. Rio Janeiro. 1826.
„ *hierogly'phica* (hieroglyphical). Leaves with two white lines between every two veins. New Grenada. 1873.
„ *illu'stris* (bright). Leaves creamy-zoned, red beneath. Ecuador. 1866.
„ *inscri'pta* (written upon). Leaves with curved, silvery lines. Brazil. 1875.
„ *insi'gnis* (remarkable). Leaves with dark velvety blotches above, purple beneath. Brazil (?). 1908.
„ *Kegelja'ni* (Kegeljan's). Trop. Amer.
„ *kerasi'na* (horned). Trop. Amer.
„ *kerchovea'na* (Kerchovean). See MARANTA BICOLOR KERCHOVEANA.
„ *kœrnickia'na* (Kœrnickian). White. Brazil. 1874.
„ *kummeria'na* (Kummerian). See MYROSMA KUMMERIANA.
„ *legrellia'na* (Legrellian). Ecuador. 1867.
„ *leopardi'na* (leopard-spotted). 2. Yellow. Brazil. 1875.
„ *leuconeu'ra* (white-nerved). See MARANTA LEUCONEURA.
„ *leucosta'chys* (white-spiked). 1. White. October. Costa Rica. 1874.
„ *Lie'tzei* (Lietze's). Leaves deep green with short yellow-green bands. Brazil. 1875.
„ *lindenia'na* (Lindenian). Leaves banded with pale and dark green. Peru. 1866.
„ *longibractea'ta* (long-bracted). 1. Purple. July. Brazil. 1826.
„ *Lowi'sæ* (Louisa's). 3. Leaves with whitish-green blotches. Country unknown. 1908.
„ *Lucia'ni* (Lucian's). Midrib of leaves festooned with silvery white. Trop. Amer. 1872.
„ *makoya'na* (Makoyan). See MARANTA BICOLOR MAKOYANA.
„ *massange'ana* (Massangean). See MARANTA BICOLOR MASSANGEANA.

C. me'dio-pi'cta (median-spotted). Purple. Leaves with feathered white midrib. Brazil. 1878.
„ *meta'llica* (metallic). Violet. New Grenada. 1855.
„ *mi'cans* (glittering). White. Peru. 1854.
„ „ *ama'bilis* (lovely). See MARANTA AMABILIS.
„ *ni'gricans* (blackening). 5 to 7. Purple and white. Leaves purple beneath. Trop. Amer. 1903.
„ *ni'gro-costa'ta* (black-ribbed). New Grenada. 1873.
„ *ni'tens* (shining). Brazil. 1880.
„ *oppenheimia'na* (Oppenheimian). Leaves deep green, with white bands. Brazil. 1875.
„ *orbicula'ta* (round-*leaved*). 2. Yellow. August. W. Ind. 1830.
„ *orna'ta* (ornamented). 1. Colombia. 1849.
„ „ *a'lbo-linea'ta* (white-lined). Colombia. 1848.
„ „ *maje'stica* (majestic). Rio Purus. 1866.
„ „ *rega'lis* (royal). Peru. 1856.
„ „ *ro'seo-linea'ta* (rose-lined). 1. 1848.
„ *paci'fica* (pacific). Leaves emerald green, purple beneath. Peru. 1871.
„ *pardi'na* (pard-spotted). See C. VILLOSA.
„ *pavoni'na* (peacock-like). Brazil. 1865.
„ *pictura'ta* (painted). Brazil. 1863.
„ *poly'tricha* (many-haired). Flowers in a rosette hidden by the green leaves. Trinidad. 1894.
„ *porphyrocau'lis* (purple-stemmed). Colombia, 1875.
„ *prasi'na* (leek-green). See C. MEDIO-PICTA.
„ *pri'nceps* (prince). Leaves metallic green, with two yellow bands, purple beneath. Brazil. 1869.
„ *propi'nqua* (related). Peru. 1862.
„ *pruina'ta* (hoary). Nicaragua. 1872.
„ *pulche'lla* (pretty). Leaves with two series of deep green blotches. Brazil. 1858.
„ *riedelia'na* (Riedelian). See C. KŒRNICKIANA.
„ *ro'seo-pi'cta* (rose-spotted). Leaves rose-banded, red beneath. Trop. Amer. 1866.
„ „ *Wagne'ri* (Wagner's).
„ *rotundifo'lia* (round-leaved). 1857.
„ *rufiba'rba* (red-bearded). Brazil. 1879.
„ *sanderia'na* (Sanderian). Brazil.
„ *Seema'nni* (Seemann's). See MARANTA SEEMANNI.
„ *smaragdi'na* (emerald-green). See ISCHNOSIPHON SMARAGDINUS.
„ *splе'ndida* (splendid). Leaves green banded, purple beneath. Brazil. 1864.
„ *tæni'osa* (banded-leaved). White. Brazil. 1876.
„ *trifascia'ta* (three-banded). Guiana. 1858.
„ *tubispa'tha* (tube-spathed). Yellow. Leaves brown-blotched. Bolivia. 1865.
„ *undula'ta* (waved). Leaves bright green, with central silvery stripe. Ecuador. 1871.
„ *Va'ndenhe'ckei* (Van den Hecke's). Leaves deep green, marked with gray. Brazil. 1865.
„ *varia'ns* (varying). Trop. Amer. 1855.
„ *variega'ta* (variegated). 1½. Trop. Amer. 1857.
„ *veitchia'na* (Veitchian). White; leaves with crescent-shaped blotches on either side of the midrib, purple beneath. W. Trop. Amer. 1865.
„ *vesti'ta* (clothed). 1½. Whitish. Brazil. 1872.
„ *villo'sa* (shaggy). 3. April. Brazil. 1825.
„ *viola'cea* (violet-coloured). 1½. Purple. July. Brazil. 1815.
„ *virgina'lis* (virginal). Brazil. 1868.
„ „ *ma'jor* (greater). Peru. 1869.
„ *vitta'ta* (striped). Brazil. 1857.
„ *Walli'sii* (Wallis's). Amazons. 1867.
„ „ *di'scolor* (discoloured). Leaves velvety green, with grey rib and edges. 1871.
„ *Warscewi'czii* (Warscewicz's). 1. White. February. Trop. Amer. 1879.
„ *wiotia'na* (Wiotian). Leaves with two series of olive-green blotches. Brazil. 1875. Syn. *Maranta Wioti.*
„ *zebri'na* (zebra-*plant*). 2. Red, yellow. Brazil. 1815.
„ „ *Bino'ti* (Binot's).

CALATHIAN VIOLET. See GENTIA'NA PNEUMONA'NTHE.

CALCAREOUS SOIL is a soil in which chalk (carbonate of lime) predominates. The colour approaches to white, in proportion. No soil is productive which does not contain some chalk, or in which it exceeds nineteen parts out of twenty. From one to five per cent. is the usual proportion in fertile soils. Calcareous soils are rarely productive; they are so feebly retentive of moisture, that the crops upon them are burnt up in summer; and they reflect the sun's rays so fully, that they remain unheated, and vegetation is late upon them in spring. The best addition to such soils, to improve their staple, is clay.

CALCEA'RIA PI'CTA. See CORYSA'NTHES PI'CTA.

CALCEOLA'RIA. Slipperwort. (From *calceolus*, a slipper; in reference to the shape of the flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. *2-Diandria*, *1-Monogynia.*)

Herbaceous kinds, to bloom early, sow seeds early in July, or not later than the first week in August. Shrubby kinds, for flower-garden decoration, by cuttings of firm young shoots, under glass, in September; and again, in heat, in March. Soil for pots, light and rich compost, well drained; for beds, a good loam should preponderate. Summer temp., 50° to 60°; winter, 35° to 45°.

ANNUALS.

C. chelidonioi'des (Celandine-like). 1. Yellow. June. Peru. 1852.
„ *pinna'ta* (leafleted). 2. Yellow. July. Peru. 1773.

HERBACEOUS PERENNIALS.

C. amplexicau'lis (stem-clasping). 1½. Yellow. June. Peru. 1845.
„ *arachnoi'dea* (cobweb-like). 1. Purple. June. Chili. 1827.
„ „ *a'lba* (white-*flowered*). 1. White. June.
„ *arachnoi'deo-crenatiflo'ra*. Garden hybrid. 1888.
„ *bellidifo'lia* (daisy-leaved). ½. Yellow, red. Chili. 1861.
„ *Burbi'dgei* (Burbidge's). 2 to 4. Yellow. Autumn. 1882. Hybrid between *C. amplexicaulis* and *C. Pavonii.*
„ *Clibra'ni* (Clibrans). 3. Yellow. Hybrid. 1909.
„ *conna'ta* (base-joined-*leaved*). See C. PETIOLA'RIS.
„ *corymbo'sa* (corymbose). 1. Yellow. May. Chili. 1822.
„ *crenatiflo'ra* (scolloped-*lipped*). 1½. Yellow-spotted. June. Chili. 1831.
„ *cuneifo'lia* (wedge-shaped-leaved). See C. CUNEIFORMIS.
„ *cuneifo'rmis* (wedge-shaped). 1½. Pale lemon. Bolivia. 1846.
„ *flexuo'sa* (zigzag). 3. Yellow. Peru Mountains. 1847.
„ *Fothergi'lli* (Fothergill's). ½. Orange. April. Falkland Isles. 1777.
„ *herbertia'na* (Herbert's). See C. RACEMOSA.
„ *Ka'yii* (Kay's). Tall. Yellow. 1882.
„ *kewe'nsis* (Kew). Hybrid between Jefferies' hybrid and a herbaceous variety.
„ *loba'ta* (lobed). ¾. Yellow, spotted purple-red. Peru; Bolivia. 1877. Half-hardy.
„ *mimuloi'des* (Mimulus-like). Chili. 1908.
„ *Pavo'nii* (Pavon's). 2. Yellow. July. Peru.
„ *petiola'ris* (stalked). 3. Yellow. Chili. 1824. Biennial.
„ *plantagi'nea* (plantain-*leaved*). 1. Yellow. August. Chili. 1827.
„ *polifo'lia* (poly-leaved). 1. Yellow. July. Chili. 1827.
„ *polyrrhi'za* (many-rooted). ½. Yellow. Patagonia. 1901.
„ *profu'sa* (profuse). See C. CLIBRANI.
„ *purpu'rea* (purple-*flowered*). 1. Purple. July. Peru. 1827.
„ „ *e'legans* (elegant). 1. Pale purple. June. Chili. 1832.
„ „ *pi'cta* (painted). 1. White, purple. June. Chili. 1832.
„ *racemo'sa* (racemed). ½. Yellow. June. Chili. 1820.
„ *sua'vis* (sweet-scented). 1. Purple. Chili.
„ *tene'lla* (slender). ½. Yellow. Chili. 1873. Hardy.
„ *virga'ta* (twiggy). 1–1½. White. Summer and autumn. Andes of Peru and Bolivia. 1910.

SHRUBBY EVERGREENS.

C. adsce'ndens (ascending). 1. Yellow. July. Cordilleras. 1826.
„ *a'lba* (white-*flowered*). 1½. White. June. Chili. 1844.
„ *andi'na* (Andesian). Yellow. Chilian Andes. 1893.

C. angustiflo'ra (narrow-flowered). Bot. Mag., t. 3094. See C. VERTICILLATA.
„ *bi'color* (two-coloured). 2. Yellow. August. Peru. 1829.
„ *chiloe'nsis* (Chilian). See C. DENTATA.
„ *crena'ta* (crenate). See C. ADSCENDENS.
„ *defle'xa* (deflexed). See C. FUCHSIÆFOLIA.
„ *denta'ta* (toothed). 2. Yellow. August. Chiloe. 1830.
„ *diffu'sa* (diffuse). See C. BICOLOR.
„ *ericoi'des* (heath-like). 2. Yellow. Chili. 1853.
„ *floribu'nda* (many-flowered). Bot. Mag., t. 4154. See C. CRENATA.
„ *floribu'nda* (many-flowered). Bot. Reg., t. 1214. See C. PETIOLARIS.
„ *fuchsiæfo'lia* (Fuchsia-leaved). Yellow. Peru. 1878.
„ *Henri'ci* (Anderson-Henry's). 2. Yellow. Ecuador. 1865.
„ *herbertia'na parviflo'ra* (Herbert's small-flowered). 2. Yellow. April. Valparaiso. 1836.
„ *hyssopifo'lia* (hyssop-leaved). 2. Yellow, white. Summer. Ecuador. 1852.
„ *integrifo'lia* (entire-leaved). 2. Yellow. August. Chili. 1822.
„ „ *angustifo'lia* (narrow-leaved). 2. Yellow. August. Chili. 1822.
„ „ *viscosi'ssima* (clammiest). 3. Yellow. August. Chili. 1832.
„ *kellya'na* (Kellyan). Orange, spotted red-brown. 1883.
„ *mexica'na* (Mexican). Yellow. Mexico.
„ *pe'ndula* (hanging). See C. CRENATIFLORA.
„ *pisacome'nsis* (Pisacoman). Orange-red. Peru. 1868.
„ *puncta'ta* (spotted). 3. Purple, yellow. Peru. 1863.
„ *rugo'sa* (wrinkled). See C. INTEGRIFOLIA.
„ *scabiosæfo'lia* (scabious-leaved). 2. Yellow. May. Chili. 1822. Trailer.
„ *se'ssilis* (stalkless-*leaved*). 1½. Yellow. September. Valparaiso. 1832.
„ *Sinclai'rii* (Sinclair's). 1 to 2. Lilac, spotted red-purple. New Zealand.
„ *stri'cta* (upright). 3. Yellow. September. New Grenada. 1852.
„ *tetrago'na* (four-angled). Yellow. July. Peru. 1852.
„ *thyrsiflo'ra* (thyrse-flowered). 1½. Yellow. June. Chili. 1827.
„ *verticilla'ta* (whorled). 1½. Yellow. June. Peru. 1830.
„ *viola'cea* (violet). 2 to 3. Mauve-purple. June. Chili. 1853.

CALCEOLARIAS AS DECORATIVE PLANTS. Few true species are grown for decorative purposes. Those known as herbaceous Calceolarias are the most showy for the greenhouse or conservatory; formerly they ranked high among florists' flowers, and named varieties were grown. These were propagated from cuttings. Considerable improvement has been made in the selection for seeding, and we get the very finest types from carefully selected varieties for seed, and the named varieties have ceased to exist, except that there is a yellow variety which comes true from seed and is known as "Cloth of Gold," under which name it gained a first-class certificate from the Royal Horticultural Society. Seedlings may vary a little, yet with careful selection of plants to seed from, it may be improved rather than otherwise, and it is the same with the ordinary type as grown for market. Here it is that market-growers have an advantage, for they have large quantities to select from, and only seed from the very best, while those who grow for seed discard the inferior types only.

Saving Seed.—Fertilisation should be done by the aid of a camel's-hair pencil, selecting the best habited plants with well-formed flowers, and taking the pollen from bright or distinct colours. The males have most influence on colour, and the females, or seed-bearing, on habit and form of flowers.

Sowing Seed.—For early spring flowering the seed should be sown early in July, clean, sandy loam should be used; for the surface some should be sifted through a fine sieve, and the seed spread evenly over the surface. No surface covering should be given, but the seeds may be lightly pressed down, and a very light sprinkling given with a fine rosed water-can. The seed pots may be placed in a shady position, but over-shading is liable to cause damping. As soon as large enough to handle, the seedlings should be pricked off. During the autumn they will do well in a cold frame. And through the winter they require only sufficient heat to keep out frost, in fact, they will stand a few degrees of frost. In the south it is only for spring flowering that the herbaceous types are grown, but in the north they are sown early in the spring for autumn flowering.

In 1907 Messrs. Veitch & Sons of Exeter introduced some fine hybrids. These were of tall growth, with medium-sized flowers in several distinct colours; they make fine plants for the conservatory and may be treated similarly to the herbaceous varieties, except that being more of a shrubby habit they may be propagated from cuttings which should be taken in the autumn after the plants have done flowering and before the lateral shoots have attained more than about three inches in length. Short cuttings always make the best plants.

Culture.—As soon as properly established they should be potted into three-inch pots and potted on into larger sizes as they require it, using good fibrous loam with some manure and leaf-mould added; pot only moderately firm. Be careful not to over-water, but they must not be let to get very dry, and they like a moist, humid atmosphere.

The ordinary bedding varieties of which *floribunda* (a variety of *C. crenata*) is one of the best types, need but little skill to succeed well with them. Cuttings taken during the autumn may be put in a cold frame in a shady position. After they are rooted plenty of air should be given, except when it is freezing. The early struck cuttings may be stopped, and will make nice bushy plants for window-boxes, &c., and the tops may be used for cuttings for a later batch. If kept well exposed they will stand some frost, but when they have soft, tender growth they will suffer from a few degrees of frost, and if frost should penetrate the frames, they should be kept covered with mats or other material until the frost is out. (See FROST.)

C. Burbidgei may be referred to as one of the finest yellow greenhouse plants we have for winter flowering. It may be grown as a bush or trained against a wall, and will flower all through the winter. *C. amplexicaulis* is a distinct species of rather tall growth with soft yellow flowers; for flower-beds associated with *Lobelia cardinalis* it is very effective. It is not quite so hardy as some, and though it has been neglected for some years it is worth attention, now that the taller plants are more appreciated.

Diseases.—The herbaceous varieties are subject to a disease very like that which has attacked the potato of late years. They appear quite healthy, until dark-brown spots appear on the leaves and stems; and in a week's time the disease spreads, and the plants are dead. No cure is known. As soon as it appears on any plant, remove it at once and throw it away, because the disease is contagious, and soon spreads to the healthy plants. Too much wet at the root, or damp in the house, will accelerate the disease.

Insects.—The most destructive is the green-fly (*Aphis*). Whenever it appears, fill the house with tobacco-smoke. Red spider (*Acarus*) will sometimes appear, if the house be kept hot and dry. Dust the leaves with sulphur where it is observed.

CALDA'SIA. (Named after *G. Caldas*, a naturalist at Bogota. Nat. ord. *Phloxworts* [Polemoniaceæ].)

Stove annual; seeds in hotbed, in spring; sandy peat. Temp., 50° to 60°.

C. heterophy'lla (variable-leaved). See BONPLANDIA GEMINIFLORA.

CALDCLU'VIA. (Named after *A. Caldcleugh, F.R.S.*, who collected botanical specimens in Chili. Nat. ord. *Rockfoils* [Saxifragaceæ]. Linn. 8-*Octandria*, 2-*Digynia*. Allied to Cunonia.)

The principal character of this and other Cunoniads is the leaves growing opposite, with stipules between the leaf-stalks. The panicles of little white flowers have a pretty appearance. Greenhouse evergreen shrub; cuttings of half-ripened wood in sand, under glass, and a little bottom-heat; peat and loam. Winter temp., 40° to 45°.

C. panicula'ta (panicled-*flowered*). White. June. Chili. 1831.

CA'LEA. (From *kalos*, beautiful; referring to the flowers. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Galinsoga.)

Stove evergreen shrubs; seed in March; side-shoots strike freely at any time, in sand, and placed in bottom-heat, under a glass. Summer temp., 60° to 75°; winter, 55° to 60°.

C. cordifo'lia (heart-leaved). See C. JAMAICENSIS.
„ *jamaice'nsis* (Jamaica). 3. Purple. June. W. Ind. 1739.
„ *loba'ta* (lobed). See NEUROLÆNA LOBATA.
„ *pinnati'fida* (leafleted). Yellow. June. Brazil. 1816.
„ *scopa'ria* (broom). See BACCHARIS SCOPARIA.
„ *solidagi'nea* (solidago-like). 4. Caraccas. 1817.
„ *urticæfo'lia* (nettle-leaved). 2. Yellow. July. Vera Cruz. 1740.

CALEA'CTE. See CALEA.

CALEA'NA. (Named in compliment to *G. Caley*, superintendent of the Botanical Garden, St. Vincent. Nat. ord. *Orchids* [Orchidaceæ].)

Terrestrial Orchids that may be grown in the greenhouse. Divisions. Compost, fibrous loam, peat, and sand, with good drainage.

C. ma'jor (larger). Green, brown. N. S. Wales. 1810.
„ *mi'nor* (smaller). Green, brown. Australia. 1822.
„ *ni'grita* (blackish). Dark in colour. Australia.

CALECTA'SIA. (From *kalos*, beautiful, and *stachus*, a spike. Calectasias are branched herbs, with dry, permanent, starry flowers, of a bright violet. Nat. ord. *Rushes* [Juncaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Baxteria.)

Unless we had it on authority, we should not take this for a rush, but a lilywort. Greenhouse herbaceous perennial; divisions; peat and loam, or common soil. Winter temp., 35° to 45°.

C. cya'nea (blue-*flowered*). Blue. June. Australia. 1840.

CALE'NDULA. Marigold. (From *calendæ*, the first day of the month; its flowers produced almost all the year round. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria*.)

Hardy annuals may be sown in the border, in April; tenderer ones in a slight hotbed, and transplanted in May. Greenhouse varieties by cuttings; sandy loam, and loam and peat for the greenhouse ones. See MARIGOLD.

GREENHOUSE EVERGREENS.

C. arbore'scens (tree-like). See TRIPTERIS ARBORESCENS.
„ *chrysanthemifo'lia* (chrysanthemum-leaved). See DIMORPHOTHECA CHRYSANTHEMIFOLIA.
„ *denta'ta* (toothed). See C. DENTICULATA.
„ *denticula'ta* (small-toothed). 1½. Yellow. December. Barbary. 1821.
„ *fla'ccida* (feeble). See DIMORPHOTHECA AURANTIACA.
„ *frutico'sa* (shrubby). See DIMORPHOTHECA FRUTICOSA.
„ *murica'ta* (prickled). See TRIPTERIS ARBORESCENS.
„ *oppositifo'lia* (opposite-leaved). See DIMORPHOTHECA OPPOSITIFOLIA.
„ *suffrutico'sa* (sub-shrubby). 1. Yellow. December. West Mediterranean Regions. 1823.
„ *Tra'gus* (goat-*rush*). See DIMORPHOTHECA TRAGUS.
„ *visco'sa* (clammy). See DIMORPHOTHECA CUNEATA.

HARDY ANNUALS.

C. ægypti'aca (Egyptian). Yellow. Eastern Mediterranean Regions.
„ *arve'nis* (corn-field). 2. Yellow. June. Europe. 1597.
„ *Aste'rias* (star). See C. STELLATA.
„ *Dalge'sirum* (Dalgesirum). See C. SUFFRUTICOSA.
„ *gra'cilis* (slender). See C. PERSICA.
„ *graminifo'lia* (grass-leaved). See DIMORPHOTHECA NUDICAULIS GRAMINIFOLIA.
„ *hispa'nica* (Spanish). See C. SUFFRUTICOSA.
„ *hy'brida* (hybrid). See DIMORPHOTHECA PLUVIALIS.
„ *inca'na* (hoary). See C. SUFFRUTICOSA.
„ *madere'nsis* (Madeirese). 2. Orange. Madeira. 1795.
„ *margina'ta* (margined). See C. SUFFRUTICOSA.
„ *microphy'lla* (small-leaved). Yellow. Spain.
„ *noëa'na* (Noëan). See C. SUFFRUTICOSA.
C. nudicau'lis (naked-stalked). See DIMORPHOTHECA NUDICAULIS.
„ *officina'lis* (officinal. *Common marigold*). 3. Orange. June. South of Europe. 1573.
„ „ *flo're-ple'no* (double-*flowered*). 3. Orange. June.
„ „ *ochroleu'ca* (yellow-white). Heads yellowish-white. 1882.
„ „ *proli'fera* (proliferous). Hen-and-Chicken Marigold.
„ *pe'rsica* (Persian). Yellow. June. Persia. 1830.
„ *pluvia'lis* (rainy. *Small Cape marigold*). See DIMORPHOTHECA PLUVIALIS.
„ *sa'ncta* (holy). 2. Yellow. June. Levant. 1731.
„ *si'cula* (Sicilian). See C. ÆGYPTIACA.
„ *stella'ta* (starred). 2. Yellow. July. Barbary. 1796.

CALE'YA. See CALEA'NA.

CALICO BUSH. See KALMIA LATIFOLIA.

CALIFORNIAN MAYBUSH. *Photi'nia arbutifo'lia.*

CALIFORNIAN PEPPER-TREE. *Schi'nus Mo'lle.*

CALIFORNIAN POPPY. *Platyste'mon califo'rnicum.*

CALIME'RIS. See ASTER.

CALIPHRU'RIA. (From *kalos*, beautiful, and *phroura*, enclosure; referring to the spathe enclosing the flowers. Nat. ord. Amaryllidaceæ.)

Beautiful greenhouse bulb, related to Eucharis. Fibrous loam, a little peat, or leaf-soil and sand. Offsets. Repot firmly when starting into fresh growth.

C. hartwegia'na (Hartwegian). Greenish-white. New Grenada. 1843.
„ *subedenta'ta* (scarcely toothed). See EUCHARIS SUBEDENTATA.

CALISAYA-BARK. *Cincho'na Calisa'ya.*

CA'LLA. (From *kalos*, beautiful. Nat. ord. *Arads* [Araceæ]. Linn. 7-*Heptandria*, 1-*Monogynia*.)

All greenhouse plants; division of the plants and roots; rich loam and peat; the marshy one does well as an aquatic, and frequently stands out of doors; yet it is safer to give all the protection of the greenhouse in winter.

C. æthio'pica (Ethiopian). See RICHARDIA AFRICANA.
„ „ *Nicola'i* (Nicola's). See RICHARDIA AFRICANA NICOLAI.
„ *aroma'tica* (aromatic). See HOMALOMENA AROMATICA.
„ *elliottia'na* × *albomacula'ta*. See RICHARDIA ELLIOTTIANA × ALBOMACULATA.
„ *leucoza'ntha* (white-yellow). See RICHARDIA LEUCOXANTHA.
„ *occu'lta* (hidden-*spiked*). See HOMALOMENA AROMATICA.
„ *palu'stris* (marsh). ½. White. July. Europe, Northern Asia, and N. Amer. 1768. Perennial aquatic.
„ *pertu'sa* (perforated). See MONSTERA PERTUSA.

CALLIA'NDRA. (From *kalos*, beautiful, and *aner*, a man; referring to the stamens, or male organ; literally, beautiful-stamened. The long, silky, purple or white stamens of this genus are very beautiful. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Inga.)

Stove evergreen shrubs; cuttings of rather firm young wood in sand, under a glass, in heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. bi'color (two-coloured). Brazil.
„ *bre'vipes* (short-stalked). 5. Pink. October. Brazil.
„ *caracasa'na* (Caracasan). Trop. Amer.
„ *como'sa* (tufted). 30. Pink. Trop. Amer. 1818.
„ *diadema'ta* (diademed). See C. BICOLOR.
„ *formo'sa* (beautiful). 10. White. Trop. Amer. 1825.
„ *fu'lgens* (shining). Bright crimson. Mexico. 1898.
„ *gra'cilis* (graceful). Yellowish-white. Trop. Amer. 1870.
„ *grandiflo'ra* (large-flowered). 10. Red. June. Trop. Amer. 1729.
„ *hæmatoce'phala* (blood-red-headed). 30. Crimson. February. Mauritius.
„ *hæmato'mma* (blood-cut). 30. White. Trop. Amer. 1800.
„ *Harri'sii* (Mr. Harris's). 20. Rose. Mexico. 1845.

C. Housto'ni (Houston's). 10. Purple. July. Mexico. 1729.
„ *hymenæoi'des* (Hymenæa-like). 20. Pink. Trop. Amer. 1823.
„ *lambertia'na* (Lambertian). Purple. May. Mexico. 1818.
„ *portorice'nsis* (Portorican). 6. White. July. N. Amer. and W. Ind. 1824.
„ *pulche'rrima* (fairest). 20. Mexico. 1822.
„ *purpu'rea* (purple). 6. Purple. April. Trop. Amer. 1733. "Soldier Wood."
„ *quadrangula'ris* (four-angled). See C. TETRAGONA.
„ *terge'mina* (triple). White; filaments tipped with red. Trop. Amer. 1820.
„ *tetrago'na* (square-stemmed). 4. White. August. Trop. Amer. 1825.
„ *Twee'diei* (Tweedie's). 6. Scarlet, crimson. Brazil. 1845.

CALLIA'NTHEMUM. (From *kallos*, beauty, and *anthemon*, a flower. Nat. ord. Ranunculaceæ).

Hardy alpine herbs. Seeds, divisions. Ordinary soil, or loam, leaf mould, and sand in pots.

C. anemonoi'des (Anemone-like) of Endlicher. See C. RUTÆFOLIUM.
„ *anemonoi'des* (Anemone-like) of Prantl. ½–½. White, tinted pink and pale rose. Styria. 1882.
„ *rutæfo'lium* (rue-leaved). ½. White. June. Europe; Siberia. 1818.
„ „ *anemonoi'des* (Anemone-like). See C. ANEMONOIDES.
„ *rutæfo'lium* (rue-leaved) of Reichenbach. See C. ANEMONOIDES.

CALLICA'RPA. (From *kalos*, beautiful, and *carpos*, fruit; referring to the beautiful berries. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Petræa.)

The leaves of *C. lana'ta* are eaten by the Cingalese as a substitute for betel-leaves. Stove evergreens, except where otherwise specified; cuttings in sandy soil, in bottom-heat; loam and peat. Summer temp., 60° to 75°; winter, 50° to 55°. The best known is *C. purpurea*, which is grown for its berries, which are of a rich, deep purple and produced freely on long, drooping branches.

C. america'na (American). 6. Red. June. N. Amer. 1724. Greenhouse deciduous shrub.
„ *arbo'rea* (tree). 12. Purple. August. E. Ind. 1820.
„ *ca'na* (hoary). 3. Purple. E. Ind. 1799.
„ *ferrugi'nea* (rusty). 2. Blue. June. Jamaica. 1794.
„ *inca'na* (*very* hoary). See C. MACROPHYLLA.
„ *intege'rrima* (quite entire). China.
„ *integrifo'lia* (entire leaved). See ÆGIPHILA ARBORESCENS.
„ *japo'nica* (Japanese). 3. Pink. August. Japan. 1861.
„ *lana'ta* (woolly). 4. Purple. June. E. Ind. 1788.
„ *lanceola'ria* (spear-*leaved*). See C. LONGIFOLIA.
„ *longifo'lia* (long-leaved). 3. White. April. China. 1825.
„ „ *subglabra'ta* (nearly smooth). White, edged pink. March.
„ *macrophy'lla* (large-leaved). 6. Pink. India. 1808.
„ *mo'llis* (soft). Japan.
„ *purpu'rea* (purple). 3. Purple. China. 1822.
„ *reticula'ta* (netted). 4. Red. July. Jamaica. 1820.
„ *rube'lla* (reddish). 2. Red. May. China. 1822.
„ *wallichia'na* (Wallichian). See C. LANATA.

CALLICHLA'MYS. (From *kalos*, beautiful, and *chlamus*, a covering; in allusion to the large, tubular-bell-shaped, coloured calyx. Nat. ord. *Bignoniads* [Bignoniaceæ]. Allied to Bignonia.)

Beautiful stove climbers requiring to be planted out in borders and trained up the pillars or rafters. Soil, turfy loam with a little peat and sand. Water liberally in summer. Temp., 60° in winter; 70° to 80° with sun-heat in summer.

C. ripa'ria (river-bank). 10 to 20. Golden yellow. Trop. Amer. 1823.

CALLI'CHROA. (From *kalos*, beautiful, and *chroa*, colour; referring to the bright yellow colour of the flowers. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Layia, which see.)

Hardy annual; seed sown in March on a slight hotbed, under a hand-light, and transplanted in patches, in the open border, at the end of April, or beginning of May; or it may be sown in the front of the border in the end of April, and it will flower later.

C. platyglo'ssa (broad-rayed). See LAYIA PLATYGLOSSA.

CALLI'COMA. (From *kalos*, beautiful, and *come*, hair; in reference to the tufted heads of its yellow flowers. Nat. ord. *Cunoniads* [Saxifragaceæ]. Linn. 11-*Dodecandria*, 2-*Digynia*. Allied to Weinmannia.)

Greenhouse evergreen shrub; cuttings of half-ripened wood, in close frame, in sandy peat. Summer temp., 50° to 70°; winter, 40° to 45°.

C. serratifo'lia (saw-leaved). 4. Yellow. June. N. S. Wales. 1793.

CALLI'GONUM. (From *kalos*, beautiful, and *gonu*, a joint; in reference to its leafless joints. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 11-*Dodecandria*, 4-*Tetragynia*. Allied to Polygonum.)

This is a curious, leafless shrub, a native of Siberia, where the Calmucks, in times of scarcity, pound and boil the roots, from which they obtain a nutritious gum resembling tragacanth, to allay their hunger; while, by chewing the acrid branches and fruit, they quench their thirst. Hardy evergreen shrub; cuttings under a hand-glass, in spring and autumn; sandy loam.

C. Palla'sia (Pallas's). 4. Green, white. August. Caspian Sea. 1780.

CALLIO'PSIS. Synonym of *Coreo'psis*, which see.

CALLIPHRU'RIA. See CALIPHRURIA.

CALLIO'PSIS BI'COLOR. See COREOPSIS TINCTORIA.

CALLIPRO'RA LUTEA. See BRODIÆA IXIOIDES.

CALLIPSY'CHE. (From *kalos*, beautiful, and *psyche*, a butterfly; in allusion to the beautiful flowers. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Allied to Eucrosia.)

Showy greenhouse bulbs, requiring a compost of good fibrous loam, a little leaf-mould, and sufficient sand to make it porous, and good drainage. Give plenty of water when making growth, and gradually withhold it as the leaves begin to turn yellow. They should not get dust dry when at rest, but just kept moist to prevent the bulbs from shrivelling. Propagated by offsets and by seeds. Shade when in bloom.

C. auranti'aca (orange). 2. Rich golden yellow. Andes of Ecuador. 1868.
„ *eucrosioi'des* (Eucrosia-like). 2. Scarlet and green. Mexico. 1843.
„ *mira'bilis* (wonderful). 3. Greenish yellow. Peru. 1868.

CALLI'PTERIS. See ASPLENIUM.

CALLIRHO'Ë. (*Callirhoë*, a mythical divinity, daughter of the river-god Achelous. Nat. ord. Malvaceæ. Allied to Malva.)

Annual or perennial herbs of considerable beauty, easily cultivated in light, rich, sandy soil. Propagated by seeds and the perennial species by cuttings in very sandy soil in pots in a cold frame or under a hand-light in summer.

C. alcæoi'des (Alcea-like). Rosy purple. N. Amer.
„ *digita'ta* (fingered). 2 to 3. Reddish-purple. Summer. N.W. Amer. 1824. Perennial.
„ *involucra'ta* (involucrate). 6. Crimson. N.W. Amer. 1861. Perennial.
„ *linearilo'ba* (linear-lobed). N. Amer. 1883.
„ *macrorrhi'za* (large-rooted). See C. ALCÆOIDES.
„ *Papa'ver* (Poppy-like). 3. Violet-red. N.W. Amer. 1833. Perennial.
„ *peda'ta* (pedate-leaved). 2 to 3. Cerise. August. N.W. Amer. 1824. Annual.
„ „ *compa'cta* (compact). A dwarf variety.
„ *spica'ta* (spicate). See SIDALCEA SPICATA.
„ *triangula'ta* (triangulate). Pale purple. August. N. Amer. 1836. Perennial.

CALLI'SIA. (From *kalos*, beautiful. A pretty species. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Tradescantia.)

Stove evergreen trailers; division of their creeping shoots; sandy loam and a little peat. Summer temp. 60° to 70°; winter, 45° to 55°.

C. martensia'na (Martensian). 1. White. Mexico. Violet-scented. Mexico.
„ *re'pens* (creeping). ½. Blue. June. S. Amer. 1776.

CALLI'STA AMA'BILIS. See DENDROBIUM VEXANS.

CALLISTA'CHYS. (From *kalos*, beautiful, and *stachus*, a flower-spike. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Oxylobium.)

Greenhouse evergreen shrubs, except where otherwise specified. Cuttings of half-ripened side-shoots in April, in sand, in close frame, sandy peat, fibrous loam, and a little charcoal. Summer temp., 55° to 70°; winter, 40° to 45°.

C. cunea'ta (wedge-*leaved*). See ISOTROPIS STRICTA.
„ *lanceola'ta* (spear-*leaved*). See OXYLOBIUM CALLISTACHYS.
„ *linariæfo'lia* (toad-flax-leaved). See OXYLOBIUM LINEARE.
„ *linea'ris* (narrow-*leaved*). See OXYLOBIUM LINEARE.
„ *longifo'lia* (long-leaved). See OXYLOBIUM CALLISTACHYS.
„ *ova'ta* (egg-shaped-*leaved*). See OXYLOBIUM CALLISTACHYS.
„ *retu'sa* (jagged-ended-*leaved*). See OXYLOBIUM CALLISTACHYS.

CALLISTE'MMA. See CALLI'STEPHUS HORTENSIS. China-Aster.

CALLISTE'MON. (From *kalistos*, most beautiful, and *stemon*, a stamen; referring to the graceful, long, scarlet stamens. Bottle-brush Tree. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Leptospermum.)

Greenhouse evergreen shrubs, from New Holland, with pea-like blossoms. Seeds sown in a hotbed, in March; cuttings of firm, but not solid, wood, in sandy loam, under a bell-glass or close frame, in April or May; turfy peat, sandy and fibrous loam, and a few pieces of charcoal. Summer temp., 50° to 70°; winter, 40° to 45°.

C. brachya'ndrus (short-stamened). 3. Yellow. October Australia. 1848.
„ *cocci'neus* (scarlet). Scarlet. Australia.
„ *Cunningham'ii* (Cunningham's). Australia.
„ *formo'sus* (beautiful). 5. 1824.
„ *fu'lgens* (shining). See C. SALIGNUS.
„ *i'ndicus* (Indian). See BOLTONIA INDICA.
„ *læ'vis* (smooth). Australia.
„ *lanceola'tus* (lanceolate). 10. Crimson. June. Australia. 1788.
„ *lanugino'sus* (woolly). See C. SALIGNUS.
„ *leptosta'chyus* (slender-spiked). See C. SALIGNUS.
„ *linearifo'lius* (linear-leaved). See C. RIGIDUS LINEARIFOLIUS.
„ *linea'ris* (linear). 6. Scarlet. June. 1728.
„ *longifo'lius* (long-leaved). See C. SALIGNUS.
„ *lopha'nthus* (crest-flowered). See C. SALIGNUS.
„ *macrosta'chyus* (small-spiked). See KUNZEA BAXTERI.
„ *margina'tus* (margined). See C. LANCEOLATUS.
„ *microphy'llus* (small-leaved). 5. 1824.
„ *pa'llidus* (pale). See C. SALIGNUS.
„ *pe'ndulus* (pendulous). Australia. 1859.
„ *phœni'ceus* (purple). 3. Purplish. March. Australia. 1843.
„ *pinifo'lius* (Pine-leaved). 6. Green. June. Australia.
„ *pithyoi'des* (Pine-like). Australia.
„ *pu'ngens* (prickly). 6. May. Australia. 1827.
„ *ri'gidus* (rigid). 5. Cream. April. Australia. 1800.
„ „ *linearifo'lius* (linear-leaved). 10. Red. May. Australia. 1820.
„ „ *rugulo'sus* (finely wrinkled). 6. Pink. May. Australia. 1821.
„ *ro'seus* (rosy). See C. SALIGNUS.
„ *rugulo'sus* (wrinkled). See C. RIGIDUS RUGULOSUS.
„ *sali'gnus* (Willow-leaved). 6. June. Australia. 1788.
„ „ *a'lbus* (white).
„ „ *hi'rtus* (hairy).
„ „ *viridiflo'rus* (green-flowered). 5. Green. July. Australia. 1818.
„ *sca'ber* (rough). See C. LANCEOLATUS.
„ *semperflo'rens* (ever-flowering). See C. LANCEOLATUS.
„ *Sie'beri* (Sieber's). See C. SALIGNUS.
„ *specio'sus* (showy). 10. Crimson. April. Australia. 1822.
C. vimina'lis (twiggy). See C. RIGIDUS.
„ *viola'ceus* (violet). See C. SALIGNUS.
„ *viridiflo'rus* (green-flowered). See C. SALIGNUS VIRIDIFLORUS.

CALLI'STEPHUS. (From *kallistos*, most beautiful, and *stephanos* or *stephos*, a crown. Nat. ord. *Composites* [Compositæ]. Syn. *Callistemma*.)

The China-Aster. Hardy annual. Seeds sown in a gentle hotbed in March, hardened off, and transplanted in May. If pricked out in a similar way to celery, they will well repay the labour. Seeds may also be sown from early in March to the end of April, where the plants are to bloom; an open situation and a rich, loamy soil will answer best.

C. chine'nsis. See C. HORTENSIS.
„ *horte'nsis* (garden). 1½. Blue. July. China. 1731.
„ „ *a'lbus* (white). 1½. White. July. China. 1731.
„ „ *brachya'nthus* (short-flowered). 1½. Blue. July. China. 1731.
„ „ *mu'ltiplex* (double). 1½. Variegated. July. China. 1731.
„ „ *ru'ber* (red). 1½. Red. July. China. 1731.
„ „ *variega'tus* (variegated). 1½. Variegated. July. China. 1731.
„ *i'ndicus* (Indian). See BOLTONIA INDICA.

Culture.—Propagation.—Being annuals, they must be increased by seed every year. It should be saved from the best-formed and most double flowers. Those with quilled flowers are most esteemed. The colours should also be taken into consideration in saving seed. The self-colours should be clear, distinct, and bright; such as have striped blooms ought to have the colours well defined, not run into each other, but distinctly separated. There are a large number of garden varieties of *C. hortensis*. They are almost invariably known as Asters, and most seedsmen catalogue them as Asters, yet it is as well to use the proper name "Callistephus" to prevent confusion with the true Asters (Michaelmas Daisies), which have become very popular during recent years.

The term Chinese Asters might be retained perhaps. The name Callistephus seems to have been revived when the single mauve or pale blue form was reintroduced to culture. We depend chiefly on Germany for seed, the seasons here in England being too changeable. It is not necessary to enumerate varieties, except to say that the Ostrich plume and Comet varieties are among the best of recent introductions.

Soil.—The soil should be light and moderately rich; and the situation where they are to bloom should be fully exposed to the sun. They make beautiful beds in the parterre, but are not so lasting as some other flowers.

Culture.—Sow the seeds in March, on a gentle hotbed, either in pots or on a bed of earth laid upon the heating material at least six inches thick; transplant the seedlings as soon as the frosts are over, either in beds of separate colours, in mixtures, or in patches, in the general flower-border. Whichever way is determined upon, the soil should be prepared by the addition of a portion of fresh loam and very much decayed dung, well mixed with the original soil.

Diseases.—China-Asters are subject to die off suddenly. There is no remedy, when this occurs, but to pull up the sickly plants, and remove the soil; put in some fresh, and replant from the reserve stock—a stock that ought always to be kept ready for such occasions.

Insects.—The green fly sometimes during a dry season attacks these plants. Either sprinkle with tobacco-water or Scotch snuff, to destroy them. Do this in the evening of a fine day, and wash it off in the morning with the syringe.

CALLITHAU'MA. (From *kalos*, beauty, and *thauma*, a wonder; in reference to the wonderful green colour of the flowers. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Now referred to Stenomesson, which see.)

C. angustifo'lium (narrow-leaved). See STENOMESSON VIRIDIFLORUM ANGUSTIFOLIUM.
„ *viridiflo'rum* (green-flowered). See STENOMESSON VIRIDIFLORUM.
„ „ *angustifo'lium* (narrow-leaved).
„ „ *Elwe'sii* (Elwes' variety).

CALLITRIS. (From *kalos*, beautiful; referring to the whole plant. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 13-*Polyandria*. Allied to Thuja.)

The wood of *C. quadriva'lvis* is in great demand by the Turks, who use it for the ceilings and floors of their mosques, as they believe it to be indestructible. Greenhouse, evergreen, cypress-like trees. Seeds and cuttings, under a hand-light, in autumn, and protected by a cold pit; sandy loam, generally protected under a glass in winter, though there seems reason to believe they would flourish out of doors, in the warmer parts of England, nearly as well as several of the Cypresses. In sheltered positions on light, sandy soil, it is quite safe to plant most species out. Soil has a great effect; in cold, heavy soil they rarely survive the winter.

C. arbo'rea (tree-like). 6. April. S. Africa. 1836. "Cypress Broom."
„ *austra'lis* (southern). Australia.
„ *calcara'ta* (spurred). Australia.
„ *cupressifo'rmis* (Cypress-formed). See C. RHOMBOIDEA.
„ *cupressoi'des* (Cypress-like). 10. S. Africa. 1799.
„ *Parlato'rei* (Parlatore's). Australia.
„ *quadriva'lvis* (four-valved). 20. September. N. Africa. 1815.
„ *rhomboi'dea* (rhomboid). 20. Australia. 1826.
„ *robu'sta* (robust). Australia.
„ „ *verruco'sa* (warted). Australia.
„ *trique'tra* (triquetrous). April. S. Africa. 1820.

CALLI'XENE POLYPHY'LLA. See LUZURIAGA ERECTA.

CALLO'PSIS. (From *Calla*, the Marsh Calla, and *opsis*, resemblance, the spathe being somewhat similar. Nat. ord. Araceæ.)

A stove perennial of semi-epiphytic habit, and requiring treatment similar to that given to Philodendron and Anthurium; shade in summer and water liberally when growing. A compost of fibrous loam, peat, sphagnum, sand, and some nodules of charcoal will suit. Propagation by division or cuttings.

C. Volke'nsii (Volkens'). Snow-white. Spadix yellow. German East Africa. 1904.

CALLU'NA. (From *kalluno*, to adorn; in reference both to the beauty of the Heather, and to its use as a scrubbing-brush or broom. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Callu'na vulga'ris, the common Heather, and all its varieties, are the best bee-flowers of our native Flora. The *C. vulga'ris* is a native of many parts of the British Islands, and its flowers are purple, opening in August; but there are the double-blossomed, the white, the scarlet, the red, the decumbent, the spiked, the downy, and variegated varieties. See ERI'CA.

C. vulga'ris (common). 1 to 2. Purple. August and September. Britain.
„ „ *a'lba* (white).
„ „ *a'lba Se'rlei* (Serle's white).
„ „ *a'lba tene'lla* (slender-stemmed white).
„ „ *Alpo'rti* (Alport's). Red.
„ „ *arge'ntea* (silvery). Silver variegation.
„ „ *au'rea* (golden-leaved).
„ „ *cu'prea* (copper-coloured-leaved).
„ „ *flor'e ple'no* (double-flowered). Pale purple.
„ „ *Hammo'ndi* (Hammond's). White.

CALLUS is the matter exuded from the edges of the wound of a plant in the process of healing. It is exuded from the horizontally communicating cells of the plant; and, in cuttings, it is from and through this exuded matter that the roots and the perpendicular vessels connected with them proceed.

CALOCE'PHALUS. (From *kalos*, beautiful, and *kephale*, a head; in allusion to the beautiful clusters of flower-heads. Nat. ord. Compositæ.)

The only species in cultivation is a small, much-branched greenhouse shrub, wholly covered with white hairs, and much used in carpet and other bedding in summer. Cuttings in sand in a gentle heat. Loam, peat, and plenty of sand.

C. Brow'nii (Brown's). 1-2. White. August. Australia.

CALOCHI'LUS. (From *kalos*, beautiful, and *cheilos*, a lip; referring to the beauty of the labellum, or lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Listera and Neottia.)

Orchids are only *apparently* monandrous. There are, in fact, three filaments, firmly grown together in the column, the centre one bearing the pollen, and the other two are barren. Greenhouse terrestrial orchids. Divisions of the plant; sandy loam and turfy peat, enriched with a little lumpy, old cow-dung. Encouraged to grow, when done flowering, by heat and moisture; kept cool and dry after they are pretty well matured, and heat given again when to be started into bloom. Summer temp., 50° to 75°; winter, 45° to 50°.

C. campe'stris (field). ½. Green, brown. Australia. 1824.
„ *paludo'sus* (marsh). ½. Brown. Australia. 1823.

CALOCHO'RTUS. Mariposa Lily, Star Tulip. (From *kalos*, beautiful, and *chortus*, grass; referring to the leaves. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to the Tulip and Fritillaria.)

The gayest of our hardy or half-hardy bulbs, introduced by the unfortunate and intrepid Douglas from N.W. America. Half-hardy bulbs. Offsets; sandy loam and peat, in equal proportions. If planted out, the bulbs should be taken up and dried before winter; if in pots, keep in a cold pit, and re-pot in new soil when the bulbs begin to grow.

C. a'lbus (white). 1. White. August. California. 1832.
„ *ama'bilis* (lovely). Small, golden-yellow. California. 1875.
„ *amœ'nus* (pleasing). Rosy pink. N.W. Amer. 1892.
„ *barba'tus* (bearded). See C. FLAVUS.
„ *Bentha'mi* (Bentham's). ½. Yellow, red-brown. June. California. 1877.
„ *cæru'leus* (blue). Petals bearded with long, bluish hairs. California. 1879.
„ *Catali'næ* (Cataline's). White, tinted lilac or purple. California. 1895.
„ *citri'nus* (lemon). See C. WEEDII.
„ *clava'tus* (clubbed). Golden-yellow. California. 1897.
„ *e'legans* (elegant). 1. White, purple. N.W. Amer. 1826.
„ *fla'vus* (yellow). Yellow, bearded with purple hairs. Mexico. 1827.
„ *Go'ldyi* (Goldy's). Old gold. Supposed hybrid between *C. Benthami* and *C. amabilis*. 1904.
„ *Gunniso'ni* (Gunnison's). Lilac, yellowish. N.W. Amer.
„ „ *Krela'gei* (Krelage's). Yellow, white, green, black. California. 1873.
„ *Howe'llii* (Howell's). White, and violet black blotch. Oregon. 1890.
„ *Kenne'dyi* (Kennedy's). Bright scarlet, and black blotch. California. 1892.
„ *Leichtli'nii* (Leichtlin's). See C. NUTTALLII LEICHTLINII.
„ *lilaci'nus* (lilac). Lilac to pale purple. California. 1868.
„ *longebarba'tus* (long-bearded). Pale mauve with purple zone. N.W. Amer. 1890.
„ *lu'teus* (yellow). Deep orange, with brown spots. California. 1831.
„ „ *co'ncolor* (one-coloured). Buttercup yellow. 1895.
„ „ *ocula'tus* (eyed). Bright yellow, with an eye-spot to each petal.
„ *Lyo'ni* (Lyon's). See C. CATALINÆ.
„ *macroca'rpus* (large-fruited). 2. Purple. August. California. 1826.
„ *madre'nsis*. Orange-yellow. Northern Mexico. 1890.
„ *mawea'nus* (Mawean). 1. White, purple. California. 1875.
„ *monophy'llus* (one-leaved). ½. Bright yellow. California. 1848.
„ *ni'tidus* (shining). Mauve, indigo blotch. California. 1896.
„ *Nutta'llii* (Nuttall's). 1 to 2. White, purple. N.W. Amer. 1869.
„ „ *Leichtli'nii* (Leichtlin's). Smoky white, with dark spot at the base, dwarf.
„ *obispoe'nsis* (Obispoan). Lemon-yellow, orange base. California. 1889.
„ *pa'llidus* (pale). See C. FLAVUS.
„ *Palme'ri* (Palmer's). White to pale purple. California. 1902.
„ *Plumme'ræ* (Plummer's). Delicate shade of lilac. California. 1894.
„ „ *au'rea* (golden). Golden-yellow, with a scarlet blotch across the petal. California. 1897.
„ *pulche'llus* (beautiful). 1 to 1½. Yellow. California. 1832.

C. pulche'llus parviflo'rus (small-flowered). See C. AMABILIS.
„ *Pu'rdyi* (Purdy's). ¾. Silvery white, purple base. California. 1898.
„ *purpu'reus* (purple). 3. Purple. August. Mexico. 1827. Partly *C. bonplandianus*.
„ *sple'ndens* (splendid). White, deep lilac or purple. California. 1832.
„ *uniflo'rus* (one-flowered). See C. LILACINUS.
„ *venu'stus* (handsome). 1½. Whitish or pale lilac. California. 1836.
„ „ *brachyse'palus* (short-sepalled). White, yellow, red. California. 1876.
„ „ *lilaci'nus* (lilac). Lilac, reddish, yellow. California. 1877.
„ „ *pi'ctus* (spotted). Pure white, with central red blotch. California. 1895.
„ „ *purpu'reus* (purple). Rich purple-lilac. California. 1877.
„ „ *ro'seus* (rosy). Purple-rose, white inside, with red blotch. 1886.
„ „ *Ve'stus* White, tinted lilac, with red blotch on the petals.
„ *Wee'dii* (Weed's). Rich yellow, covered with brown hairs. California. 1875.

CALODE'NDRON. (From *kalos*, beautiful, and *dendron*, a tree. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Diosma.)

One of those beautiful Diosma-looking genera which abound in our Cape Colony, remarkable alike for their pretty flowers and for their powerful and generally offensive odour. The settlers call them Bucku-plants. Greenhouse tree. Cuttings of half-ripened wood in sand, under a bell-glass, or in close frame, and with a little bottom-heat; sandy loam. Summer temp., 50° to 75°; winter, 40° to 50°.

C. cape'nsis (Cape). 40. Pink. Cape of Good Hope. 1789.

CALO'DRACON. (From *kalos*, beautiful, and *dracon*, a dragon; the allusion being to *Dracæna Draco*, the Dragon-tree. Nat. ord. Liliaceæ. It is now referred to Cordyline.)

Greenhouse, shrubby plant of easy culture and requiring similar treatment to Dracæna or *Cordyline australis*.

C. no'bilis (noble). Japan. 1852.

CALONY'CTION PSEUDOMURICA'TUM. See IPOMŒA GRANDIFLORA.

CALOPE'TALON RI'NGENS. See MARIANTHUS RINGENS.

CALO'PHACA. (From *kalos*, beautiful, and *phake*, a lentil; in reference to the lentil-like flowers. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Cytisus.)

Loudon says of it, "Grafted standard high on the common Laburnum, it forms an object at once singular, picturesque, and beautiful." Hardy deciduous shrubs. Seeds sown in March; or cuttings, under a hand-light; common, light loam.

C. grandiflo'ra (large-flowered). Bright yellow. Turkestan. 1886.
„ *wolga'rica* (Wolga). 2. Yellow. May. S. Russia. 1786.

CALO'PHANES. (From *kalos*, beautiful, and *phaino*, to appear. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Ruellia.)

Hardy herbaceous perennial. Dividing the roots in March; light, sandy loam.

C. oblongifo'lius (oblong-leaved). 1. Blue. August. Carolina. 1832.

CALOPHY'LLUM. (From *kalos*, beautiful, and *phyllon*, a leaf. Nat. ord. *Guttifers* [Guttiferæ]. Linn. 15-*Tetradynamia*.)

Stove evergreen trees; cuttings of half-ripened shoots in sand, under a glass, and in bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. Cala'ba (calaba-*tree*). 30. White. Trop. Amer. 1780.
„ *Inophy'llum* (fibrous-leaved). 90. White. E. Ind. 1793.
„ *specia'bile* (showy). Trop. Asia.
„ *spu'rium* (spurious). See C. INOPHYLLUM.
„ *Tacamaha'ca* (Tacamahaca). 30. White. Bourbon. 1822.

CALOPO'GON. (From *kalos*, beautiful, and *pogon*, a beard; in reference to the fringe on the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Pogonia.)

Greenhouse orchids. Division of its tuberous roots; peat and loam. Summer temp., 55° to 75°; winter, 45° to 50°.

C. multiflo'rus (many-flowered). Purple, with golden plates on the lip. N. Amer. 1884.
„ *pulche'llus* (pretty). 1½. Purple. July. N. Amer. 1771.

CALORHA'BDOS. (From *kalos*, beautiful, and *rhabdos*, a rod or wand; in allusion to the long, terminal raceme of flowers. Nat. ord. Scrophulariaceæ.)

A slender, upright herb with the habit of a Veronica, and requiring greenhouse treatment. Propagated by seeds and cuttings in sandy soil under glass. Fibrous loam, leaf-mould, and sand.

C. caulo'ptera (winged-stemmed). Red-purple in long racemes. China. 1901.

CALOSA'NTHES INDICA. See OROXYLUM INDICUM.

CALOSCO'RDUM. (From *kalos*, beautiful, and *scordon*, garlic. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Nothoscordum.)

Half-hardy little bulb. Offsets; common soil. Though a native of Chusan, it is likely to require but little protection in winter.

C. nerinefio'rum (nerine-flowered). See NOTHOSCORDUM NERINIFLORUM.

CALOSTE'MMA. (From *kalos*, beautiful, and *stemma*, a crown. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Coburgia.)

Greenhouse bulbs. Offsets; sandy loam and a little leaf-mould; a cold pit, or the greenhouse in winter.

C. a'lbum (white). 1. White. May. N. Holland. 1824.
„ *ca'rneum* (flesh-coloured-*flowered*). See C. PURPUREUM CARNEUM.
„ *Cunningha'mi* (Cunningham's). May. Moreton Bay.
„ *lu'teum* (yellow). 1. Yellow. November. N. Holland. 1819.
„ *purpu'reum* (purple). 1. Purple. November. N. Holland. 1819.
„ „ *ca'rneum* (flesh-coloured). 1. Flesh. Australia. 1837.

CALOTHA'MNUS. (From *kalos*, beautiful, and *thamnos*, a shrub. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*. Allied to Melaleuca.)

Greenhouse evergreen shrubs, natives of Australia. Cuttings of young wood, firm at the base, in sand, under glass; sandy peat and fibrous loam. Summer temp., 55° to 75°; winter, 38° to 45°.

C. Baxte'ri (Baxter's). See KUNZEA BAXTERI.
„ *clava'tus* (club-shaped). See C. QUADRIFIDUS.
„ *gra'cilis* (slender). 3. Scarlet. July. 1803.
„ *Kni'ghtii* (Knight's). See C. ROBUSTUS.
„ *latera'lis* (lateral). Red. June. Australia.
„ *Prei'ssii* (Preiss's). Australia.
„ *quadri'fidus* (four-cleft). 3. Scarlet. July. 1803.
„ *robu'stus* (robust). Blooms all the year.
„ *rupe'stris* (rock). Filaments crimson; anthers yellow. W. Australia. 1903.
„ *sangui'neus* (blood-coloured). Red. May. Australia.

CALO'TIS. (From *kalos*, beautiful, and *ous*, an ear; in reference to the chaffy scales of the pappus, or seed-head. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Bellium.)

Greenhouse herbaceous perennial. Divisions; sandy loam. Summer temp., 55° to 70°; winter, 35° to 45°.

C. cuneifo'lia (wedge-leaved). 1. Blue. June. N. Holland. 1819.

CALO'TROPIS. (From *kalos*, beautiful, and *tropis*, a keel; referring to the flower. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Schubertia.)

C. giga'ntea is the Akund-yercum, or Mudar-plant of India, whose thick, milky juice is a powerful purgative. Stove evergreen shrubs. Seeds in a slight hotbed, in

March; cuttings of half-ripened shoots in sand, under a glass, in April; good, common, fibrous loam and a little sand. Summer temp., 50° to 80°; winter, 40° to 50°.

C. gigante'a (gigantic). 6. White. August. E. Ind. 1690.

„ *pro'cera* (tall). 10. White. April. Persia. 1714.

CALPICA'RPUM. (From *kalpis*, an urn, and *karpos*, a fruit. Nat. ord. Asclepidaceæ.)

Stove evergreen shrubs. Propagated by cuttings of the young shoots getting firm, in a close, propagating case, with bottom-heat. Fibrous loam, peat, and sand.

C. albiflo'rum (white-flowered). White, crimson. Malaya. 1864.

„ *orna'tum* (adorned). Ceram.

CALPI'DIA. See PISONIA.

CALPU'RNIA. (Named in honour of *T. Jul. C. Calpurnius*. Nat. ord. Leguminosæ.)

A greenhouse tree with the habit and general aspect of a Laburnum, and may be treated like a Cytisus.

C. au'rea (golden). Yellow. S. Africa. 1777. Natal Laburnum.

„ *lasio'gyne* (woolly ovary). See C. AUREA.

„ *robinioi'des* (Robinia-like). 8. Yellow. August. S. Africa. 1818.

„ *sylva'tica* (wood). 4. Yellow. August. S. Africa. 1816.

CA'LTHA. Marsh Marigold. (A contraction of *kalathos*, a goblet; referring to the form of the flower. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Hellebore.)

Hardy herbaceous perennials. Seeds, or divisions, in March or April; common soil of the border. A moist place, near a running stream, is where they flourish most.

C. a'rctica (arctic). See C. PALUSTRIS.

„ *asarifo'lia* (asarum-leaved). See C. PALUSTRIS.

„ *biflo'ra* (two-flowered). ½. White. June. N. Amer. 1827.

„ *ela'ta* (tall). 1½–2½. Golden-yellow, with black anthers. Himalaya. 1904.

„ *flabellifo'lia* (fan-leaved). See C. PALUSTRIS.

„ *govania'na* (Gowan's). See C. PALUSTRIS.

„ *intege'rrima* (entire-*leaved*). Yellow. May. See C. PALUSTRIS.

„ *leptose'pala* (small-sepalled). 1. White. May. N. Amer. 1827.

„ *na'tans* (floating). Yellow. May. Siberia. 1816.

„ *palu'stris* (marsh). 1. Golden-yellow. April and May. Britain.

„ „ *a'lba* (white).

„ „ *flo're ple'no* (double-flowered.).

„ „ *Guerange'rii* (Gueranger's). Flowers starry, with narrow sepals.

„ „ *mi'nor* (smaller). Stem one-flowered.

„ „ *monstro'sa ple'na* (monstrous double). Flowers large, double.

„ „ *pa'llida ple'na* (pale, double). Pale yellow, double.

„ „ *parnassifo'lia* (Parnassus-leaved). Yellow. April. N. Amer. 1815.

„ „ *purpura'scens* (purplish). Shoots purplish.

„ „ *Tyerma'ni* (Tyerman's). ½. Golden-yellow. 1909.

„ *polype'tala* (many-petaled). Yellow. May. Asia Minor.

„ *radi'cans* (rooting). ½. Yellow. April. Scotland.

„ *sagitta'ta* (arrow-leaved). ½. Green, yellow. November. Magellan. 1840.

CALTROPS. *Tri'bulus.*

CALTROPS, WATER. *Tra'pa na'tans.*

CALUMBA, FALSE. *Cosci'nium fenestra'tum.*

CALUMBA ROOT. *Jateorrhi'za Calu'mba.*

CALUMBA WOOD. *Cosci'nium fenestra'tum.*

CALVO'A. (A commemorative name. Nat. ord. Melastomaceæ.)

Evergreen stove shrub. Cuttings in sand in a close case, with bottom-heat. Equal parts loam and peat, both fibrous, and sand.

C. orienta'lis (eastern). 3½. Red, afterwards violet. E. Trop. Africa. 1904.

CALYCA'NTHUS. Allspice. (From *kalyx*, a calyx, and *anthos*, a flower; in reference to the coloured calyx. Nat. ord. *Calycanths* [Calycanthaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*.)

The bark of *C. flo'ridus*, from its aromatic fragrance, is used as a substitute for cinnamon in the United States of North America. Hardy deciduous shrubs. Layers, as fruit, is seldom produced; rich, sandy loam, in a shady situation. It is said, that by pulling out the terminal bud of a shoot two flower-buds are produced; and thus the flowering season is prolonged.

C. fe'rtilis (fertile). See C. GLAUCUS.

„ *flo'ridus* (flowery). 6. Brown. June. Carolina. 1726.

„ „ *asplenifo'lius* (asplenium-leaved). Brown. July.

„ „ *fe'rax* (fertile-*flowered*). See C. GLAUCUS.

„ „ *inodo'rus* (*nearly*-scentless). See C. GLAUCUS.

„ „ *longifo'lius* (long-leaved). See C. GLAUCUS.

„ „ *ova'tus* (egg-shape-*leaved*). See C. GLAUCUS.

„ „ *variega'tus* (variegated-*leaved*). 6. Brown. July.

„ *glau'cus* (milky-green-*leaved*). 6. Brown. May. Carolina. 1726.

„ „ *oblongifo'lius* (oblong-leaved). Leaves ovate-lanceolate.

„ *læviga'tus* (smooth-*leaved*). See C. GLAUCUS.

„ *macrophy'llus* (large-leaved). See C. OCCIDENTALIS.

„ *oblongifo'lius* (oblong-leaved). See C. GLAUCUS OBLONGIFOLIUS.

„ *occidenta'lis* (western). 7½. Scarlet. September. California. 1831.

„ *pennsylva'nicus* (Pennsylvanian). 4. Brown. May. Pennsylvania. 1820.

CALYCIFORM. In a form resembling a calyx.

CALYCOCA'RPUM. (From *kalux*, *kalukos*, the calyx, and *carpos*, a fruit; the sepals of the calyx are long. Nat. ord. Menispermaceæ.)

A hardy deciduous twiner. Division of the root-stock; cuttings in spring under a hand-light. Ordinary garden soil.

C. Lyo'nii (Lyon's). 10. Purple. June. N. Amer. 1823.

CALYCOPHY'LLUM. (From *kalux*, calyx, and *phullon*, a leaf; referring to a division of the calyx expanding into the form of a leaf. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Bouvardia.)

Stove evergreen shrub. Cuttings of half-ripe shoots in sand, under glass, in heat; loam, peat, and a little sand and charcoal. Summer temp., 60° to 85°; winter, 50° to 55°.

C. candidi'ssimum (whitest). 20. White. Cuba. 1830.

CALYCOTHRIX. See CALYTHRIX.

CALYCO'TOME. (From *kalux*, a calyx, and *tome*, a cut portion; the tips of the calyx fall away. Nat. ord. Leguminosæ.)

A hardy, spiny shrub with leafy clusters of yellow flowers, that may be grown in any good garden soil.

C. spino'sa (spiny). 5. Yellow. June, July. Portugal. Corsica. 1846.

CALY'CULATE, having bractes so placed as to resemble an outer or additional calyx.

CALYDO'REA. (From *kalos*, beautiful, and *doru*, a spear. Nat. ord. Iridaceæ.)

Greenhouse bulb, the bulbs being edible. Seeds; offsets. Fibrous loam, leaf-mould, and sand.

C. specio'sa (showy). ½. Blue, with yellow base. June. Chili. 1836. "Tahay."

CALYME'NIA ANGUSTIFO'LIA. See OXYBAPHUS ANGUSTIFOLIUS.

CALY'PSO. (From *kalypto*, to conceal; in reference to its place of growth. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Liparis.)

Half-hardy terrestrial orchid. Offsets from the bulbs; sandy loam and peat. Cold pit and frame, or close to the side of a wall.

C. borea'lis (northern). ½. Rose, brown. January. N. Amer. 1820.

CALYPTRA'NTHES. (From *kaluptra*, a veil, and *anthos*, a flower; referring to the way the flower-bud is hid by the cohesion of the tips of the calyx, which falls off like a cap when the flower expands. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Pimento.)

The dried flower-buds of *C. aroma'ticus* are a good substitute for cloves. Stove evergreen trees. Layers and cuttings in heat; loam and peat. Summer temp., 60° to 85°; winter, 50° to 55°.

C. caryophyllifo'lia. See EUGENIA JAMBOLANA.
„ *Chytracu'lia* (Chytraculia). 20. White. April. Jamaica. 1778.
„ *Jambola'na*. See EUGENIA JAMBOLANA.
„ *Syzy'gium* (Syzygium). 20. White. June. W. Ind. 1778.

CALYPTRA'RIA HÆMA'NTHA. See CENTRONIA HÆMANTHA.

CALYPTRION. See CORYNOSTYLIS.

CALYPTRO'CALYX. (From *kaluptra*, a covering, and *kalux*, a cup. Nat. ord. *Palms* [Palmaceæ]. Allied to Areca.)

For cultivation, see PALMS.

C. spica'tus (spicate). 12. Amboyna.

CALYPTRO'GYNE. (From *kaluptra*, a covering, and *gyne*, the ovary. Nat. ord. *Palms* [Palmaceæ]. Allied to Areca.)

Stove Palms of an ornamental character. Propagation by seeds. For cultivation, see PALMS.

C. ghiesbreghtia'na (Ghiesbreghtian). 2 to 5. Mexico.
„ *sarapigue'nsis* (Sarapiguan). 6. Leaves 6 ft. long, pinnate. Costa Rica. 1901.
„ *spice'gera* (spike-bearing). 5. Guatemala.
„ *Swa'rtzii* (Swartz's). See GEONOMA SWARTZII.
„ *te'res* (terete). British Guiana. 1882.

CALYPTRONO'MA. See CALYPTROGYNE.

CALYSTE'GIA. Bearbind. (From *kalux*, a calyx, and *stege*, a covering; in reference to the calyx being hid by two bractes, as is the case with a section of Bindweeds. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Convolvulus.)

C. pube'scens, received from China as a double flower, has become single with Mr. Beaton.—*Cottage Gardener*, iv. 302. Hardy deciduous plants, except where otherwise mentioned. Both the creeping and twining species may be propagated by divisions of the plant and roots. Common soil.

C. affi'nis (related). A geographical form of *C. sepium*. Norfolk Island. 1898.
„ *catesbia'na* (Mr. Catesby's). Rose. July. Carolina. 1816. Twiner.
„ *dahu'rica* (Dahurian). Pink. July. Dahuria. 1823. Twiner.
„ *hedera'cea* (ivy-like). Rose. June. Nepaul. 1826. Half-hardy twiner. Double.
„ *margina'ta* (bordered). 3. Pink. July. N. Holland. 1824. Twiner.
„ *pube'scens* (downy). See C. HEDERACEA.
„ *renifo'rmis* (kidney-shaped). See C. SOLDANELLA.
„ *se'pium* (*great*-hedge. Common Bindweed). 6. White. July. Britain.
„ „ *dahu'rica* (Dahurian). Siberia.
„ „ *incarna'ta* (red-flowered). 6. Red. July. England.
„ *silva'tica* (wood). 18. White. July. Hungary. 1815. Twiner.
„ *Soldane'lla* (Soldanella-*leaved*. Sea Bindweed). Flame. June. Britain. Evergreen trailer.
„ *spithamæ'a* (span). See CONVOLVULUS SPITHAMÆUS.
„ *sylve'stris* (wood). See C. SILVATICA.
„ *tomento'sa* (woolly). See CONVOLVULUS SPITHAMÆUS.

CA'LYTHRIX. (From *kalux*, a calyx, and *thrix*, hair; in reference to the divisions of the calyx ending in long, bristly hairs. Nat. ord. *Fringe-myrtles* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

The calyx, in this small order, ends in awn-like hairs, or bristles, or is broken up into fringes: hence the name of Fringe-myrtles. They are beautiful little bushes, often not unlike Heaths, with the fragrance of Myrtle-blooms. Greenhouse evergreen shrubs. Cuttings of points of shoots, in April or May, in sand, under glass. Summer temp., 50° to 70°; winter, 35° to 45°.

C. angula'ta (sharp-cornered). Yellow. May. Swan River. 1842.
„ *au'rea* (golden-*flowered*). Bright yellow. Swan River.
„ *brevise'ta* (short-bristled). Pale lilac. May. Swan River. 1843.
„ *ericoi'des* (heath-like). See C. TETRAGONA.
„ *floribu'nda* (many-flowered). 4. White. N. Holland. 1820.
„ *gla'bra* (smooth). See C. TETRAGONA.
„ *glutino'sa* (clammy). Yellow, purple. May. Swan River.
„ *pube'scens* (downy). See C. TETRAGONA.
„ *sapphiri'na* (sapphire-coloured). 2. Blue. May. Swan River. 1843.
„ *sca'bra* (rough-*leaved and bracted*). See C. TETRAGONA.
„ *Sulliva'nti* (Sullivant's). Australia. 1899.
„ *tetrago'na* (four-angled). 4. White. Australia. 1810.
„ *varia'bilis* (changeable). Lilac. May. Swan River. 1842.
„ *virga'ta* (twiggy-*branched*) See C. TETRAGONA.

CAMARI'DIUM. (From *camara*, an arched roof; in reference to the arched tip of the stigma. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Maxillaria.)

Stove orchid; division; shallow basket, or raised above the surface of the pots, with sphagnum, moss, and broken pots. Summer temp., 60° to 90°; winter, 55° to 65°.

C. a'lbum (white), See C. OCHROLEUCUM.
„ *lawrencea'num* (Lawrencean). Yellow-white, purple. 1894.
„ *ochroleu'cum* (yellowish-white). 1. White. July. Trop. Amer. 1823.

CAMARO'TIS. (From *camara*, an arched roof; in reference to the form of the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Sarcanthus.)

Stove orchid; divisions; block of wood, or shallow pot, with plant raised above it, and the lower part fastened with moss, peat, &c. Summer temp., 66° to 90°, with moisture; winter, 55° to 65°.

C. cochinchine'nsis (Cochin-China). Yellow, brown. Cochin-China. 1877.
„ *obtu'sa* (blunt-*leaved*). See SARCOCHILUS OBTUSUS.
„ *purpu'rea* (purple-*flowered*). See SARCOCHILUS PURPUREUS.

CAMA'SSIA. (From *Quamash*, so called by the North American Indians, who eat the bulbs. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Scilla, or Squill.)

Beautiful hardy bulbs; offsets and seeds, which may be sown when ripe; sandy loam and peat, in a shady situation.

C. Bro'wnii (Brown's). Blue. Origin unknown.
„ *Cusi'ckii* (Cusick's). 2. Light purple. May. California. 1888.
„ *Engelma'nni* (Engelmann's). 1. Bright blue. Rocky Mountains. 1889.
„ *escule'nta* (eatable). 2. Purple. July. N.W. Amer. 1827. "Quamash."
„ „ *flo're a'lbo* (white-flowered). 1½. White. N.W. Amer. 1826.
„ *Frase'ri* (Fraser's). 1½. Pale blue. May. N. Amer. Wild Hyacinth.
„ *Leichtli'nii* (Leichtlin's). 2. Creamy-white. May and June. British Columbia. 1853.
„ „ *a'lba* (white). Pure white.
„ „ *atroviola'cea* (dark violet). Deep purple. 1906.

CAMBESSEDE'SIA. (Named in compliment to *James Cambessedes*, a botanist. Nat. ord. *Melastomads* [Melastomaceæ].)

A beautiful stove shrub of herbaceous habit. Fibrous peat, loam, and sand. Cuttings of shoots getting firm at the base in a close case with heat.

C. paraguaye'nsis (Paraguayan). 1½. Rose-red. July. Paraguay. 1874. First flowered in 1881.

CA'MBIUM. A thin layer of cells just inside the bark, which, by the division of its cells, produces new bark on its outside and new wood on its inside, by which Dicotyledons and Conifers increase in thickness every year. In winter it is quiescent, and is the only layer of cells capable of further growth when plants and trees recommence growing after their season of rest.

CAME'LLIA. (Named after *Camellus*, a Moravian Jesuit. Nat. ord. *Theads*, or *Teaworts* [Ternströmiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

A good table-oil is extracted from the seeds of *C. olei'fera*. Greenhouse evergreen shrubs. Inarching and grafting, the latter mode entailing least trouble, using a slight, sweet hotbed, and shading from bright sun until the scions have taken: March and April is the best time. Cuttings of ripened shoots; every joint, if necessary, will form one, inserted firmly in the sand; set in a close, shady situation, and, after a time, placed in mild bottom-heat; peat and loam, with a little cow-dung, dried, and charcoal. Summer temp., 50° to 70°, with shade; winter, 35° to 45°. By bringing forward in a vinery they may be induced to flower at almost all seasons. It is by giving heat and a moist atmosphere, after they have done flowering, to induce early growth, and ripening them off later, that induces early flowering. See GENERAL CULTURE.

C. axilla'ris (axillary). See GORDONIA ANOMALA.
„ *Bohe'a* (Bohea). See C. THEIFERA.
„ *Donckelaa'ri* (Donckelaar's). Crimson, marbled white.
„ *drupi'fera* (drupe-bearing). 10. White. May. Himalaya, China, &c. 1818.
„ *euryoi'des* (Eurya-like). 4. White. May. China. 1824.
„ *Guiseppi'na-Mercate'lli* (Josephina Mercatelli's). White, with a few red stripes. 1881.
„ *hongkonge'nsis* (Hongkongese). China. 1859.
„ *japo'nica* (Japanese). 10. Red. May. China. 1739.
„ „ *a'lba semidu'plex* (white semi-double). 10. White. March. China. 1822.
„ „ *Albe'rti* (Prince Albert's). Red. White. May. China. 1839.
„ „ *ela'ta* (tall). Bright crimson. May.
„ „ *imbrica'ta* (imbricated). 10. Crimson. March. China. 1824.
„ „ *pæoniæflo'ra a'lba* (pæony-flowered-white). 10. White. February. China. 1820.
„ „ *Pa'rksii* (Park's). 10. Bright rose. February. China.
„ „ *reevesia'na* (Reeves's). 10. Crimson. September. China. 1829.
„ „ *ro'sea* (rosy-*flowered*). 10. Rose. February. China. 1821.
„ „ *sabinia'na* (Sabine's). 10. White. February. China. 1824.
„ „ *specio'sa* (showy). 10. Deep red. March. China. 1824.
„ *Kis'si* (Kiss'). See C. DRUPIFERA.
„ *maliflo'ra* (apple-flowered). See C. ROSÆFLORA.
„ *muta'bilis* (changeable). See C. JAPONICA.
„ *olei'fera* (oil-yielding). See C. SASANQUA.
„ *reticula'ta* (netted). 6. Red. April. China. 1824.
„ „ *flo're ple'no* (double-flowered). China. 1820.
„ *rosæflo'ra* (rose-flowered). 3. Pink. China.
„ *Sasa'nqua* (*Lady Bank's*-Sasan). 4. White. February. China. 1811.
„ „ *anemonæflo'ra* (Anemone-flowered). Yellow, white. China.
„ „ *ple'na-a'lba* (double-white). 4. White. February. China. 1824.
„ „ *ple'na-ru'bra* (double-red). Red. February. China. 1818.
„ „ *se'mi-ple'na* (semi-double). 4. Red. February. China. 1811.
„ *specta'bilis* (showy). See C. RETICULATA.
„ *The'a* (Tea). See C. THEIFERA.
„ *thei'fera* (tea-bearing). 3 to 10. White. China. 1768. "China Tea."
„ „ *assa'mica* (Assamese). 3 to 15. White. Assam. 1846. "Assam Tea."

CAMELLIA CULTURE.—*Propagation.*—The old single red (*C. japonica*) and many of the double varieties may be propagated from cuttings, but it is a general practice to graft the best double varieties on established plants of the *C. japonica*, which is of very free growth. The ordinary double white will do well from cuttings. The best time to take cuttings is as soon as the new spring growth is fairly well matured, and before it gets too hard. Cuttings should be about four inches long, cut off quite close below a leaf, and two or three of the lower leaves removed. The cutting pots should have good drainage and filled firmly with a compost consisting of equal parts of loam, peat, and sand, with a little extra sand on the surface; plunged in a close frame where there is a moderate bottom-heat and a cool surface, they will soon callus, and a little later on make roots. Some water will be necessary, but avoid over-watering. A slight sprinkling overhead will be all that is necessary for the first few days. Pot off singly as soon as they are well rooted, using fibrous loam with some leaf-mould and sand added; if the loam is heavy, some peat may be used. When first potted water moderately, and syringe lightly once a day. They may be kept close and given a little heat to start them, and later on gradually exposed, when they will soon be ready to be placed under the ordinary treatment of the older plants.

By Grafting.—This may be done any time during the dormant season, that is, usually from September until February. It is, perhaps, preferable that the grafting should be done in January, or just before new growth commences; and if placed in warmth for a short time before using them it will be an advantage. It has been recommended that one-year-old stocks are suitable, yet those two years old or even older are much more satisfactory. The scions (or grafts) should be taken from well-ripened shoots of moderate size. Of the various methods of grafting, what is known as side-grafting is most generally in practice. Tongue-grafting is also favoured by some growers (see GRAFTING). In performing the operation, the first thing is to have a thin, sharp knife, which should be kept quite clean, also wipe the stems of the stock plants to remove any grit or dirt. Make the incision in the stock first, then cut the scion to fit as near as possible. If the stock is larger than the scion, the latter must be so placed that the bark of each meet on one side, but a neater joint is made where the stock and scion are of equal size. After grafting, they should be placed in a close frame, or under hand-glasses in the greenhouse. If a little bottom-heat has been given to the stock plants to induce root action before the grafting, a warmer surface may be given to draw the sap upwards after the grafting is done. Where the tops of the stocks are left on when grafting, they should be cut off close to where the scion is united, as the callus is formed, and this requires some care. Pitch is sometimes used to cover the cuts. It is by careful attention to small details that success is attained.

General Culture.—In the old editions of this work it is stated that by bringing forward in a vinery they may be induced to flower at any season. We have seen them in flower early in September, and up to quite late in the spring. It would be fatal to put plants in heat to induce them to flower early; when given too much warmth to induce early flowering the buds almost invariably fall off. We have seen the same effect in a conservatory. With changeable weather there may be a few days of frost, and heat is given; then a sudden change comes and the house gets warm, and a little later the temperature falls; then when a rise of temperature occurs again the buds fall—this is caused through the sap becoming congested at the base of the buds, and when circulation should start again the sap cannot flow. It may take a few years to get Camellias to flower early. If desired to have them in flower before their natural period (which may be given as from January to April), as soon as the plants have done flowering they should be given heat and moisture to hasten on growth. When they have made good growth, they should be gradually hardened off and will set their buds early. This treatment year by year will cause them to flower earlier each successive season. During the summer well-established plants may be placed out in the open, and remain until late in the autumn. When taken under glass again care is necessary to keep them well supplied with water, and avoid a rise in temperature.

Potting.—This should be done as soon as possible after the buds are set. The compost for potting should consist of good fibrous loam, leaf-mould, with sand and a little bone meal added. Give good drainage, pot firmly,

and be careful not to bruise the roots, or to leave them in tangled masses. During the growing season liquid manure may be used for plants that are well rooted.

Camellias are not so popular for cut flowers as formerly, but they make splendid plants for the cool greenhouse, and on dry, sandy soil are found to be hardy. At the Royal Horticultural Society's Gardens, Wisley, they have many of the choice sorts planted out, and when we saw them they had been out two winters and were looking well. The original *C. japonica* was grown in the old gardens at Chiswick and remained unharmed by frost for many years, flowering profusely every spring.

Insects.—Scale gives the greatest trouble. Cold water is a good remedy. During the autumn the large specimens may have an occasional cleansing by giving them a thorough drenching with quite cold water. Smaller plants in pots may be cleansed by sponging with warm water, adding soft soap at the proportion of 4 oz. to the gallon of water. The soap first being thoroughly dissolved in boiling water. There are also many special preparations which may be used effectively. Green-fly, also black-fly, may make their appearance during the growing season, but are easily eradicated by fumigation. Few diseases affect Camellias; sometimes the roots suffer from a kind of canker, the tips turning a reddish-brown. This is caused chiefly by stagnation, and may cause the plants to die off. The "Camellia Blotch" (*Pestalozzia Guepinii*) may make its appearance. All affected leaves should be removed and burnt, and a good dusting of lime and sulphur well distributed over the plants.

Varieties.—The doubles are not so popular as in former years, but the singles and semi-doubles are great favourites. Numerous improved varieties have been added. They flower freely, and are certainly more effective than the formal double varieties. Messrs. W. Paul and Sons have given special attention to these plants, and have introduced some fine varieties. The large groups shown at the R.H.S. meetings has brought them back into favour again.

CAMERA'RIA. (Named in compliment to *Joachim Camerarius*, a botanical author of the sixteenth century. Nat. ord. *Dogbanes* [Apocynaceæ].)

C. du'bia (doubtful). See WRIGHTIA DUBIA.
„ *lu'tea* (yellow). See MALOUETIA TAMAQUARINA.

CAMOË'NSIA. (So named in commemoration of *Luis Camoëns*, a Portuguese bard of considerable note. Nat. ord. *Leguminous Plants* [Leguminosæ].)

A striking and showy stove shrub, but unfortunately it is difficult to flower, and has only bloomed once or twice in this country. May be raised from imported seeds when obtainable. Cuttings of half-ripe wood in sand and placed in a close case with bottom-heat. Good fibrous loam, leaf-mould, and sand.

C. ma'xima (largest-flowered). Cream and yellow. Trop. Africa. 1878.

CAMOMILE, or **CHAMOMILE.** *A'nthemis no'bilis.*

Varieties.—There are two kinds, the common single species and the double-flowering.

Soil and Situation.—They require a poor, dry soil, otherwise they are less powerful in their medicinal qualities. They will grow in almost any situation, but the more open the better.

Time and Mode of Propagation.—Generally by parting the roots, and by offsets, planted from the close of February until the end of May; the earlier, however, the better, though they may be planted in the autumn. Seed-sowing may be in any of the early spring months; but, as parting the roots gives much less trouble, it is generally pursued. Still, after a lapse of several years, raise fresh plants, the old ones often then declining, and we recommend the raising of some seedlings every year.

Cultivation.—They should not be planted nearer to each other than eighteen inches. Water must be given moderately at the time of planting, if dry weather. If raised from seed, the seedlings require no further cultivation than to be kept free from weeds in the seed-bed, and when three or four inches high to be thinned out, and may remain thus until the following spring, when they should be transplanted, giving the same space as for the divisions. A very small bed will supply the largest family.

Gathering.—In July the flowers are generally in perfection for gathering. The period for performing it, however, must be governed by the flowers themselves, as the best time is when they are just opened. Particular care must be taken to dry them thoroughly before they are stored, otherwise they will become mouldy. If seed be required, the only attention necessary is to leave some of the first-opening flowers ungathered: the seed will ripen early in September, when it may be dried and rubbed out.

CAMPA'NEA. (Named from *campana*, a bell; in allusion to the form of the corolla. Nat. ord. *Gesnerads*, or Gesneraceæ.)

C. grandiflo'ra (large-flowered). White and crimson. New Grenada. 1851.
„ *Humbo'ldtii* (Humboldt's). 3. Green, purple. Costa Rica. 1853.
„ *Oerste'dii* (Oersted's). 2. Green, purple. Costa Rica. 1852.

CAMPA'NULA. Bell-Flower. (The diminutive of *campana*, a bell; literally, a little bell. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The *annuals* are chiefly pretty, low-growing plants, the seed of which may be sown in the common border, at the end of March. The *biennials* may be sown in April or May; many of them will bloom the same year. By cuttings, a perennial habit will be given to many of them. *Perennials*, chiefly by division of the plant and roots. Those from the South of Europe require the protection of a greenhouse, or cold pit, in winter. Even the well-known beautiful window-plant, *C. pyramida'lis*, makes a poor show in the open air in most places. Common soil for most of them; a little peat and dung for those in pots.

Campanulas may be divided into three sections—those suitable for the herbaceous border, for the rock-garden, and those for the greenhouse. For the latter purpose *C. isophylla* and the white variety (*alba*) have become general favourites; there are also several improved varieties nearly allied, *hispida* (or *Mayii*) being among the best. Grown in suspended pots or baskets they are very effective in the conservatory, and also succeed well as window-plants. They are easily propagated from cuttings; but to make an effective show the first season, three or four should be grown together in each pot and more for larger baskets; pot in good loam with a liberal addition of manure, grow on in a cold frame, and transfer to the greenhouse early in the autumn. They are equally effective as erect pot plants; for this purpose they should be tied up early, or before the shoots begin to fall over.

C. pyramidalis makes a grand plant for the conservatory; two-year-old plants will grow from 3 to 5 feet, making grand pyramids of bloom. The white and the blue varieties are equally effective, and flower early in the autumn.

Campanula Medium is a biennial of which there are several distinct varieties in various shades of colours, from white, pink, to deep purple; there are single and double varieties, also those known as *C. M. calycanthema*, or cup-and-saucer. This section is better known in gardens as "Canterbury Bells"; sown in the spring they make fine plants for flowering the following season. It is the dwarf varieties which should be selected for pots, and with the protection of a frame during the winter they come into flower early. They are quite hardy, and are among the most showy plants for the flower garden. Other varieties may also be grown as pot plants, the improved varieties of *C. persicifolia* being specially adapted for the purpose. They must, however, be grown under cool treatment, but may be taken in the greenhouse for flowering. The herbaceous species are numerous and varied in habit. The dwarf spreading sorts are suitable for the rock-garden, and the taller sorts are among our most showy border-plants. All succeed well in ordinary garden soil; if enriched with manure they make more vigorous growth. All the herbaceous sorts may be propagated from cuttings or divisions, or many may be raised from seeds, which if sown early in the spring will make good plants for flowering the following year.

HARDY ANNUALS.

C. broussonetia'na (Broussonet's). See C. LŒFLINGII.
„ *dicho'toma* (forked-*branched*). 1. Blue. July. Sicily. 1820.

C. drabæfo'lia (Draba-leaved). 1. Pale blue. June. Athens. 1823.
„ „ *a'lba* (white).
„ „ *a'ttica* (Attic).
„ *erinoi'des* (Erinus-like). 1. Pale blue. July. Africa. 1823.
„ *Eri'nus* (Erinus). 1. Pale blue. July. South of Europe. 1768.
„ *Hermi'nii* (Hermini's). 1. Blue. July. Portugal. 1823.
„ *hispi'dula* (rather bristly). See MICROCODON DEPRESSUM.
„ *Lœfli'ngii* (Lœfling's). 1. Blue. July. South of Europe. 1818.
„ *Lo'reyi* (Lorey's). 2. Purple. June. Italy. 1824.
„ *macro'styla* (long-styled). 1. Pale violet, lined purple. August. Mount Taurus. 1877.
„ *phry'gia* (Phrygian). ¼ to ½. Blue-violet. July. Mount Olympus. 1820.
„ *ramosi'ssima* (branchiest). 1. Blue. July. Greece. 1820.
„ *Spe'culum* (Speculum). See SPECULARIA SPECULUM.
„ *sulphu'rea* (sulphur-coloured). Pale yellow. Palestine. 1900.
„ *sylva'tica* (wood-*inhabiting*). 1½. Blue. June. Nepaul. 1840.

HARDY BIENNIALS.

C. Ada'mi (Adam's). See C. BELLIDIFOLIA.
„ *affi'nis* (allied). 2. Blue. July. South of Europe. 1824.
„ *america'na* (American). 1. Blue. July. Pennsylvania. 1763.
„ *armé'na* (Armenian). See SYMPHYANDRA ARMENA. 1826.
„ *bellidifo'lia* (daisy-leaved). 1. Blue. July. Caucasus. 1823.
„ *betonicæfo'lia* (betony-leaved). 1. Blue. May. Greece. 1820.
„ *Cervica'ria* (throatwort). 3. Light blue. July. Germany. 1808.
„ *corymbo'sa* (corymbose). See C. VERSICOLOR.
„ *dive'rgens* (spreading). See C. SIBIRICA.
„ *lacinia'ta* (jagged-leaved). 2 to 3. Pale blue. Grecian Archipelago. 1906.
„ *lanugino'sa* (woolly-*leaved*). 2. Blue. May. 1814.
„ *lyra'ta* (lyre-formed). 2. Violet. July. Asia Minor, &c. 1823.
„ *macrosta'chya* (large-spiked). See C. MULTIFLORA.
„ *Me'dium* (middle-sized). 4. Blue. July. Germany. 1597.
„ „ *a'lbum* (white-flowered). 3. White. July.
„ „ *flo're-a'lbo-ple'no* (double-white-flowered). 3. White. July. Germany.
„ „ *flo're-purpu'rea-ple'no* (double-purple-flowered). 3. Purple. July. Germany.
„ „ *imperia'lis* (imperial). Very free-flowering.
„ „ *purpu'rea* (purple). Purple. July. Germany.
„ „ *Wiega'ndi* (Wiegand's). Leaves golden-yellow. 1903.
„ *multiflo'ra* (many-flowered). 2. Blue. June. Hungary. 1814.
„ *obli'qua* (twisted). See C. AMERICANA.
„ *parviflo'ra* (small-flowered). See C. ERINUS.
„ *Pentago'nia* (Pentagonia). See SPECULARIA PENTAGONIA.
„ *peregri'na* (diffuse). 2. Blue. June. Asia Minor. 1794.
„ *petræ'a* (rock). ½ to 1. Pale yellow. Northern Italy. 1907.
„ *sibi'rica* (Siberian). 1. Blue. July. Siberia. 1783.
„ „ *dive'rgens* (diverging). Hungary. 1814.
„ „ *exi'mia* (choice). Pale blue or violet. N. Europe. 1881.
„ *spathula'ta* (spathulate-*leaved*). See C. SPRUNERIANA.
„ *spica'ta* (spiked). 1. Blue. July. Switzerland. 1786.
„ *sprunería'na* (Sprunerian). 1. Blue. July. Greece. 1817.
„ *stri'cta* (upright). 2. Blue. June. Syria. 1819.
„ *thyrsoi'dea* (thyrse-*flowered*). 2. Blue. June. Switzerland. 1785.
„ *tomento'sa* (felted). 1 to 2. White or blue. June. Greece. 1790.
C. versi'color (variable coloured). 2. Blue. May. Italy and Greece. 1788.
„ *violæfo'lia* (violet-leaved). 1. Blue. July. Siberia. 1817.

HARDY PERENNIALS.

C. abieti'na (fir-wood). 1. Dark purple. July. Europe. 1900.
„ *acumina'ta* (long-pointed). See C. AMERICANA.
„ *aggrega'ta* (crowded-*flowered*). See C. GLOMERATA.
„ *alliariæfo'lia* (Alliaria-leaved). 1. Blue. July. Caucasus. 1803.
„ *Allio'nii* (Allioni's). 1. Blue. July. South of France. 1820.
„ *alpi'na* (alpine). 2. Blue. July. Switzerland. 1799.
„ *Alpi'ni* (Alpinus's). See ADENOPHORA COMMU'NIS.
„ *ama'bilis* (lovely). See C. PHYCTIDOCALYX.
„ *angustifo'lia* (narrow-leaved). See C. LINIFOLIA.
„ *azu'rea* (blue). See C. RHOMBOIDEA.
„ *balchinia'na* (Balchinian). Leaves edged creamy-white. Hybrid between *C. fragilis* and *C. isophylla*, or a sport of *C. fragilis*. 1896.
„ *barba'ta* (bearded). 2. Light blue. June. Italy. 1752.
„ „ *cya'nea* (dark blue). 1. Blue. July. 1836.
„ *Barrilie'ri* (Barrilier's). See C. FRAGILIS.
„ *Barrilie'ri* (Barrilier's) of Marnock. ¼. Blue. July. Italy. 1836.
„ *beauverdia'na* (Beauverdian). 2. Blue. Transcaucasia; N. Persia. 1910.
„ *Bella'rdi* (Bellard's). See C. CÆSPITOSA.
„ *betulæfo'lia* (Birch-leaved). Creamy white. Armenia. 1898.
„ *biebersteinia'na* (Biebersteinian). 1. Blue. June. Caucasus. 1820.
„ *bononie'nsis* (Bononian). 2. Blue. August. Italy. 1773.
„ „ *a'lba* (white).
„ *cæspito'sa* (tufted). 1. Blue. July. Austria. 1819.
„ „ *a'lba* (white).
„ *calyci'na* (large-calyxed). See C. RAPUNCULUS.
„ *capilla'ris* (hair-like). See WAHLENBERGIA CAPILLARIS.
„ *capita'ta* (headed). See C. LINGULATA.
„ *ca'rnica* (Carniolan). Transsylvania.
„ *carolinia'na* (Carolinian). Blue. August.
„ *carpa'tica* (Carpathian). 1. Blue. July. Carpathian Alps. 1774.
„ „ *al'ba* (white).
„ „ *cœlesti'na* (sky-blue). Sky-blue. 1904.
„ „ *pelvifo'rmis* (pelvis-formed). Lilac. July, August. Gardens.
„ „ *turbina'ta* (top-shaped). ½. Dark purple-blue. Gardens.
„ *cauca'sica* (Caucasian). 1. Purple. July. Caucasus. 1804.
„ *ceni'sia* (Mount Cenis). 1. Blue. June. Switzerland. 1775.
„ *Cephalo'tes* (headed). See C. GLOMERATA.
„ *cephala'ntha* (headed). See C. GLOMERATA.
„ *cervicarioi'des* (Cervicaria-like). See C. GLOMERATA.
„ *cichora'cea* (Chicory-like). See C. LINGULATA.
„ *colli'na* (hill). 1. Blue. July. Caucasus. 1803.
„ *colora'ta* (coloured). 2. Purple. September. India, Afghanistan. 1849.
„ *conge'sta* (crowded). See C. GLOMERATA.
„ *corona'ta* (crowned). See ADENOPHORA MARSUPIIFLORA.
„ *coronopifo'lia* (Buck-horn-leaved). See ADENOPHORA CORONOPIFOLIA.
„ *crena'ta* (round-toothed). See C. RAPUNCULOIDES.
„ *Ela'tines* (Elatines). 1. Pale blue. July. South of Europe. 1823. Trailer.
„ *elatinoi'des* (Elatines-like). Italy.
„ *e'legans* (elegant). 1. Pale blue. July. Siberia. 1811.
„ *elli'ptica* (elliptic). See C. GLOMERATA.
„ *elonga'ta* (elongated). See WAHLENBERGIA CAPENSIS.
„ *erioca'rpa* (woolly-fruited). See C. LATIFOLIA ERIOCARPA.
„ *escule'nta* (esculent). Abyssinia.
„ *exci'sa* (cut). 1. Blue. June. Switzerland. 1820.
„ *expa'nsa* (expanded). Thessaly and Macedonia.
„ *Ferguso'ni* (Ferguson's). Hybrid between *C. pyramidalis alba* and *C. carpatica*. 1904.

C. Fisché'ri (Fischeri). See ADENOPHORA COMMU'NIS.
„ *flexuo'sa* (flexuous). See C. WALDSTEINIANA.
„ *folio'sa* (leafy). 1. Blue. July. Italy. 1826.
„ *fra'gilis* (fragile). Blue. July. Italy. 1826.
„ *frutico'sa* (shrubby). See LIGHTFOOTIA SUBULATA.
„ *garga'nica* (Garganic). ½. Blue. July. Italy. 1830.
„ „ *a'lba* (white).
„ *hirsu'ta* (hairy). 1. Blue. August. Italy. 1833.
„ *glomera'ta* (clustered). 2. Violet. May. Britain.
„ „ *acau'lis* (stemless). 3 to 5 inches high. 1904.
„ „ *a'lba* (white).
„ „ *dahu'rica* (Dahurian). Dwarf. Dark purple.
„ „ *flo're ple'no* (double).
„ „ *flo're-ple'no-a'lbo* (double white).
„ *graminifo'lia* (grass-leaved). See WAHLENBERGIA GRAMINIFOLIA.
„ *grandiflo'ra* (large-flowered). See PLATYCODON GRANDIFLORUM.
„ *gra'ndis* (large). See C. LATILOBA.
„ „ *pa'llida* (pale).
„ *Grosse'kii* (Grossek's). 2½. Violet. August. Eastern Europe. 1886.
„ *gummi'fera* (gum-bearing). See C. SARMATICA.
„ *haylodge'nsis* (Hay Lodge). Garden origin. Hybrid from *C. pusilla* and *C. pulla*.
„ *hedera'cea* (Ivy-leaved). See WAHLENBERGIA HEDERACEA.
„ *Henderso'ni* (Henderson's). 1½. Blue. July. Hybrid between *C. alliariæfolia* and *C. carpatica*.
„ *heterodo'xa* (heterodox). See C. LINIFOLIA.
„ *hy'brida* (hybrid). See SPECULARIA HYBRIDA.
„ *imereti'na*. 1. Violet-blue. Caucasus. 1906.
„ *incu'rva* (incurved). See C. LEUTWEINII.
„ *infundi'bulum* (funnel-shaped). See C. SILENIFOLIA.
„ *infundibulifo'rmis* (funnel-formed). See C. RAPUNCULOIDES.
„ *interme'dia* (intermediate). See ADENOPHORA COMMU'NIS.
„ *isophy'lla* (equal-leaved). Pale blue. July. August. Apennines. 1868.
„ „ *a'lba* (white).
„ *kitaibelia'na* (Kitaibelian). 1. Blue. June. Hungary. 1820.
„ *kolenatia'na* (Kolenatian). ¾. Bluish-violet. Caucasus. 1907.
„ *lactiflo'ra* (milk-flowered). 4 to 6. Whitish. August. Caucasus. 1816.
„ „ *cæru'lea* (blue). Sky-blue.
„ *Lama'rckii* (Lamarck's). See ADENOPHORA LAMARCKII.
„ *lamiifo'lia* (Lamium-leaved). See C. ALLIARIÆFOLIA.
„ *lanceola'ta* (lanceolate). 1. Blue. July. Pyrenees. 1819.
„ *langsdorffia'na* (Langsdorffian). See C. LINIFOLIA.
„ *latifo'lia* (broad-leaved). 4. Blue. July. Britain.
„ „ *Burgha'lti* (Burghalt's). Pale purple.
„ „ *erioca'rpa* (woolly-fruited).
„ „ *flo're a'lbo* (white flowered).
„ „ *macra'ntha* (large flowered). Purple. August. Russia. 1822.
„ „ *Van Hou'ttei* (Van Houtte's). 2 to 3. Dark blue.
„ „ *versi'color* (changing-coloured). Purple and white.
„ *latilo'ba* (broad-lobed). 3. Purple. August. Bithynia. 1842.
„ „ *a'lba* (white).
„ „ *pa'llida* (pale). Heliotrope-coloured. 1902.
„ *Leutwei'nii* (Leutwein's). Greece.
„ *liliifo'lia* (Lily-leaved). See ADENOPHORA COMMU'NIS.
„ *lingula'ta* (tongue-leaved). 1. Violet. July. Hungary. 1804.
„ *linifo'lia* (flax-leaved). 1. Blue. July. Switzerland. 1819.
„ *lobelioi'des* (Lobelia-like). See WAHLENBERGIA LOBELIOIDES.
„ *longifo'lia* (long-leaved). See C. SPECIOSA.
„ *longi'styla* (long-styled). 2 to 2½. Blue-purple. Caucasus. 1906.
„ *macra'ntha* (large-flowered). See C. LATIFOLIA MACRANTHA.
„ *macrophy'lla* (large-leaved). See C. ALLIARIÆFOLIA.
„ *macrorrhi'za* (large-rooted). France.
„ *Ma'yi* (May's). A green-leaved sport from *C. balchiniana*. Grey-blue. 1899.
„ *michauxioi'des* (Michauxia-like). 5. Bluish-white. Asia Minor. 1901.
„ *microphy'lla* (small-leaved). See C. KITAIBELIANA.
C. mira'bilis (wonderful). 1. Light blue. Caucasus. 1895.
„ *moorcroftia'na* (Moorcroftian). See C. COLORATA.
„ *morettia'na* (Morettian). Tyrol, Dalmatia.
„ *mura'lis* (wall). See C. PORTENSCHLAGIANA.
„ *negle'cta* (neglected). See C. RAPUNCULOIDES.
„ *nicæ'nsis* (Nice). See C. GLOMERATA.
„ *ni'tida* (shining). See C. PLANIFLORA.
„ *no'bilis* (noble). See C. PUNCTATA.
„ *Nutta'llii* (Nuttall's). 1. Blue. July. N. Amer. 1829.
„ *obliquifo'lia* (twisted-leaved). See C. BONONIENSIS.
„ *pa'tula* (spreading). 1. Violet. July. Britain.
„ *pe'ndula* (drooping). See SYMPHYANDRA PENDULA.
„ *pereskiæfo'lia* (Pereskia-leaved). See ADENOPHORA LATIFOLIA.
„ *perfolia'ta* (perfoliate-leaved). See SPECULARIA PERFOLIATA.
„ *periplocifo'lia* (Periploca-leaved). See ADENOPHORA PERIPLOCÆFO'LIA.
„ *persicifo'lia* (Peach-leaved). 3. Blue. July. Europe. 1596.
„ „ *a'lba* (white). Europe. 1596.
„ „ *a'lba corona'ta* (white crowned). Semi-double white.
„ „ *a'lba grandiflo'ra* (large-flowered white).
„ „ *a'lba ple'na* (double white). 1596.
„ „ *cæru'lea corona'ta* (crowned). Semi-double blue.
„ „ *cæru'lea ple'na*. Semi-double blue.
„ „ *grandiflo'ra* (large-flowered). Blue.
„ „ *gra'ndis* (large). Blue. 1596.
„ „ *ma'xima* (largest). Blue. 1596.
„ „ *Moerhei'mi* (Moerheim's). Large, semi-double white. 1900.
„ *phyctidoca'lyx* (open-calyxed). 2½. Dark blue. July, August. Armenia. 1905.
„ *planiflo'ra* (flat-flowered). 2. Blue. August. N. Amer. 1817.
„ „ *a'lba* (white).
„ „ *a'lba ple'na* (double white).
„ „ *ple'na* (double). Blue, double.
„ *poro'sa* (porous). See SAMOLUS VALERANDI.
„ *portenschlagia'na* (Portenschlagian). ½. Blue. June to August. S. Europe. 1835.
„ *prenanthoi'des* (Prenanthes-like). ¾. Blue. California. 1873.
„ *primulæfo'lia* (Primula-leaved). 2. Blue-purple. July. Portugal. 1855.
„ *psilosta'chya* (bare-spiked). Cilicia.
„ *pube'scens* (downy). See C. CÆSPITOSA.
„ *pulche'rrima* (prettiest). Native country unknown.
„ *pu'lla* (russet). ½. Purple. June. Europe. 1779.
„ *pulloi'des* (pulla-like). Garden origin. (*C. pulla* × *C. carpatica turbinata*). 1904.
„ *pu'mila* (dwarf). See C. CÆSPITOSA.
„ *Pumi'lio* (Pumilio). See WAHLENBERGIA PUMILIO.
„ *puncta'ta* (dotted). White, dotted red. May. Siberia, Japan. 1813.
„ *pusi'lla* (dwarf). ½. Blue. June. Europe. 1821.
„ „ *a'lba* (white). 1882.
„ „ *pa'llida* (pale).
„ *pyramida'lis* (pyramidal). 4. Blue. July. Europe. 1594.
„ „ *a'lba* (white).
„ „ *compa'cta* (compact). 2–3. Blue or white. 1900.
„ *quadri'fida* (four-cleft). See WAHLENBERGIA GRACILIS.
„ *raddea'na* (Raddean). 1. Purple. Caucasus. 1906.
„ *Raine'ri* (Rainer's). 1. Blue. July. Italy. 1826.
„ *Rapu'nculus* (rampion). 3. Blue. July. Britain.
„ *rapunculoi'des* (rampion-like). 3. Blue. June. England.
„ „ *purpu'rea ple'na* (double purple).
„ *Regi'na* (queen). See C. MIRABILIS.
„ *reuteria'na* (Reuterian). Asia Minor.
„ *rhomboi'dalis* (diamond-shaped). 1. Blue. July. Europe. 1775.
„ „ *ru'bra* (red-*flowered*). 1. Reddish-lilac. July, Switzerland.
„ *rige'scens* (stiff). See C. SILENIFOLIA.
„ *Rœ'zlii* (Rœzl's). See C. PRENANTHOIDES.
„ *rotundifo'lia* (round-leaved). 3. Blue. June. Britain.
„ „ *alaska'na* (Alaskan). Large, pale blue flowers.
„ „ *a'lbo* (white-flowered). 1. White. June. Britain.
„ „ *Baumga'rtenii* (Baumgarten's).
„ „ *Ho'stii* (Host's). Blue. July, August.
„ „ „ *a'lba* (white).

C. rotundifo'lia soldanellæflo'ra ple'na (double Soldanella-flowered).
„ *rupe'stris* (rock). See C. BIEBERSTEINIANA.
„ *ruthe'nica* (Russian). See C. BONONIENSIS.
„ *sarma'tica* (Sarmatian). 2. Blue. June. Caucasus. 1803.
„ *saxa'tilis* (rock). 1. Blue. May. Candia. 1768.
„ *Saxi'fraga* (Saxifraga). Caucasus.
„ *Scheuchze'ri* (Scheuchzer's). 1. Blue. July. Pyrenees. 1813.
„ *Scoule'ri* (Scouler's). 1. Pale blue. July, August. N.W. Amer. 1876.
„ *silenifo'lia* (Silene-leaved). 2. Purple. July. Siberia. 1825.
„ *si'mplex* (simple). See C. BONONIENSIS.
„ *soldanellæflo'ra ple'na* (double Soldanella-flowered). See C. ROTUNDIFOLIA SOLDANELLÆFLORA PLENA.
„ *specio'sa* (showy). 1 to 2. Purple. May. Pyrenees. 1880.
„ *spre'ta* (despised). See ADENOPHORA COMMU'NIS.
„ *Stansfie'ldi* (Stansfield's). Hybrid, probably *C. carpatica* and *C. waldsteiniana*.
„ *Steve'ni* (Steven's). Caucasus.
„ *strigo'sa* (stiffly hairy). Cilicia, Syria.
„ *Teno'rii* (Tenore's). See C. VERSICOLOR.
„ *tenuifo'lia* (slender-leaved). See WAHLENBERGIA TENUIFOLIA.
„ *thyrsoi'des* (thyrse-like). Whitish. Europe.
„ *tommasinia'na* (Tommasinian). Lilac. August. Istria. 1856.
„ *Trache'lium* (throatwort). 4. Blue. June. Britain.
„ „ *a'lba* (white-*flowered*). 3. White. July. Britain.
„ „ *a'lba-ple'na* (double-white-*flowered*). 3. White. July. Britain.
„ „ *ple'na* (double-*blue-flowered*). 3. Blue. July. Britain.
„ *trachelioi'des* (throatwort-like). See C. RAPUNCULOIDES.
„ „ *flo're-purpu'rea-ple'na* (double-purple-flowered).
„ *trichocalyci'na* (hairy-calyxed). See PHYTEUMA AMPLEXICAULE.
„ *tridenta'ta* (three-toothed). Blue. Asia Minor.
„ „ *Saxi'fraga* (Saxifraga). See C. SAXIFRAGA.
„ *turbina'ta* (top-shaped). See C. CARPATICA TURBINATA.
„ *urticifo'lia* (nettle-leaved). See C. TRACHELIUM.
„ *Vande'si* (De Vande's). 1. Cream. June.
„ *Van Hou'ttei* (Van Houtte's). See C. LATIFOLIA VAN HOUTTEI.
„ *veluti'na* (velvety). See C. MOLLIS.
„ *ve'sula* (small-fruited). Piedmont.
„ *virga'ta* (twiggy). 1. Blue. June. N. Amer. 1823.
„ *waldsteinia'na* (Waldstein's). 1. Blue. June. Hungary. 1824.
„ „ *Freye'ri* (Preyer's). See C. TOMMASINIANA.
„ *Wanne'ri* (Wanner's). See SYMPHYANDRA WANNERI.
„ *Warle'yi* (Warley Place). 1. Semi-double blue.
„ *Zo'ysii* (Zoys's). 1. Dark blue. June. Carniola. 1813.

GREENHOUSE.

C. au'rea (golden-*flowered*). See MUSSCHIA AUREA.
„ *cape'nsis* (Cape). See WAHLENBERGIA CAPENSIS.
„ *ce'rnua* (nodding-*flowered*). See WAHLENBERGIA CERNUA.
„ *dehi'scens* (gaping). See WAHLENBERGIA GRACILIS.
„ *gra'cilis* (slender). See WAHLENBERGIA GRACILIS.
„ *Jacobæ'a* (Jacobæa). Greenish-yellow to deep blue. Cape Verd Islands. 1883.
„ *littora'lis* (shore). See WAHLENBERGIA GRACILIS.
„ *mo'llis* (soft). 1. Purple. June. Sicily. 1788. Herbaceous perennial.
„ *ottonia'na* (Otto's). See LIGHTFOOTIA OXYCOCCOIDES.
„ *Vida'lii* (Vidal's). 2. White. August. Azores. 1853.

CAMPANUMŒ'A. (A variation upon the word Campanula. Nat. ord. Campanulaceæ.)
Herbaceous perennials requiring greenhouse protection. Propagated by seeds, divisions, or small pieces of the tuberous root, with a bud to it. Loam, peat, and a free use of sand.
C. java'nica (Javanese). Yellow, veined red. Java. 1863. Climber.
„ *lanceola'ta* (lance-shaped). See CODONOPSIS LANCEOLATA.

CAMPE'LIA. (From *kampe*, bending, and *helios*, the sun; in reference to the flowers bending round to the sun. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Tradescantia.)
Stove herbaceous perennial; seeds in spring; rich loam; common stove treatment.
C. Zano'nia (Zanonia-*leaved*). 2. Blue. July. W. Ind. 1759.
„ „ *glabra'ta* (smooth-leaved). Costa Rica.

CA'MPHORA. Camphor-tree. (From *camphor*, commercial name of its chief product. Nat. ord. *Laurels* [Lauraceæ]. Linn. 9-*Enneandria*, 1-*Monogynia*.)
C. officina'lis (officinal). See CINNAMOMUM CAMPHORA.
„ *officina'rum* (officinal). See CINNAMOMUM CAMPHORA.

CAMPOMANE'SIA. (Named after *Campomanes*, a Spanish naturalist. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Psidium.)
Its yellow, sweet-scented fruit, called *palillo*, is eaten by the natives. Greenhouse evergreen shrub; cuttings of rather ripe shoots in sand, in close frame. Summer temp., 50° to 70°; winter, 40° to 45°.
C. lineatifo'lia (lined-leaved). White. April. Peru. 1824.

CAMPSI'DIUM. See TECOMA.

CAMPTE'RIA. (Stove Ferns, now united to Pteris. Nat. ord. *Ferns* [Filices]. Linn. 23-*Cryptogamia*, 1-*Filices*.)
Divisions; peat and loam. Summer temp., 60° to 75°; winter, 45° to 55°.
C. biauri'ta (two-eared). See PTERIS BIAURITA.
„ *nemora'lis* (grove). See PTERIS BIAURITA.

CA'MPTOPUS. (From the Greek *kamptos*, curved, and *pous*, a foot; referring to the curvature of the flower-stalk. Nat. ord. Rubiaceæ.)
C. Ma'nnii (Mann's). See CEPHAELIS MANNII.

CAMPTOSE'MA. (From the Greek *kamptos*, curved, and *sema*, standard; in allusion to the two curved appendages at the base of the standard. Nat. ord. Leguminosæ.)
Showy greenhouse climbers requiring similar treatment to Kennedya. Seeds and cuttings in sand under a hand-light. Fibrous loam, leaf-mould, and sand.
C. grandiflo'rum (large-flowered). Brazil.
„ *pinna'tum* (pinnate). Brazil. Bot. Mag., t. 7582.
„ *rubicu'ndum* (red). Red. Argentine. Bot. Mag., t. 4608.
„ *sple'ndens* (splendid). Scarlet. S. Amer.

CAMPYLANTHE'RA E'LEGANS. See MARIANTHUS CÆRULEO-PUNCTATUS.

CAMPYLA'NTHUS. (From *campylos*, a curve, and *anthos*, a flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Gerardia.)
Greenhouse evergreen shrubs; cuttings in sand, of half-ripened shoots, under glass; sandy peat and fibrous loam. Summer temp., 65° to 70°; winter, 40° to 50°.
C. re'pens (creeping). Trop. Amer. 1810.
„ *salsoloi'des* (salsola-like). 1. Purple. March. Teneriffe. 1825.

CAMPY'LIA. A section of the genus Pelargonium.

CAMPYLO'BOTRYS. See HOFFMANNIA.

CAMPYLONEU'RON. See POLYPODIUM.

CANADA BALSAM. A resin extracted from *Abies balsamea*.

CANADA RICE. *Ziza'nia aqua'tica*.

CANA'NGA. (Probably a native name. Nat. ord. Anonaceæ.)
Stove evergreen shrub. Cuttings in sand in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
C. odora'ta (sweet-scented). 4–6. Brown. Burma; Malaya. 1804.

CANARI'NA. (So named from being a native of the *Canary Islands*. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Lightfootia.)
Greenhouse herbaceous perennial; cuttings of small side-shoots in sandy loam, under a hand-light, but

rather difficult to manage; division of the roots in spring, just as they begin to grow; and at that time, for a month or two, they like the assistance of a hot-bed; at other times the common treatment of the greenhouse will suit them; fibrous loam, turfy peat, and a good portion of sand; pots, well drained.

C. Campa'nula and *C. laviga'ta*. See C. CAMPANULATA.
„ *campanula'ta* (bell-shaped). 3. Orange. January. 1696.

CANA'RIUM. (From the native name *Canari*. Nat. ord. Burseraceæ.)

Trees requiring stove heat. Cuttings of half-mature wood in pots of sand plunged in cocoanut fibre in close frame with bottom-heat. Fibrous loam, peat, and sand.

C. commu'ne (common). White. Moluccas.
„ *molucca'num* (Moluccan). Moluccas.
„ *stri'ctum* (erect). India. "Black Dammar."
„ *vitie'nse* (Fijian). Yellowish white. Fiji. 1887.
„ *zeyla'nicum* (Cingalese). 30. Ceylon.

CANARY CREEPER. See TROPÆOLUM ADUNCUM.

CANARY GRASS. *Pha'laris*.

CANAVA'LIA. (From *Canavali*, its native name in Malabar. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Dioclea.)

Stove perennial twiners, except where otherwise specified; seeds and cuttings in sandy soil, and in heat, in close propagating pit, sandy loam. Summer temp., 60° to 75°; winter, 50° to 55°.

C. bonarie'nsis (Buenos Ayrean). 10. Purple. July. Buenos Ayres.
„ *ensifo'rmis* (sword-shaped). 6. White, red. June. All Tropical countries. 1790.
„ *gladia'ta* (sword-*podded*). See C. ENSIFORMIS.
„ *Lunare'ti* (Lunaret's). 3. Pale rose. Japan. 1881. Japanese Haricot Bean.
„ *obtusifo'lia* (twisted-leaved). 6. Purple. July. E. Ind. 1820.
„ „ *emargina'ta* (end-notched-*leaved*). 6. Purple. July. E. Ind. 1800.
„ *parane'nsis* (Paraian). See C. BONARIENSIS.
„ *ro'sea* (rose-*coloured*). See C. OBTUSIFOLIA.
„ *ru'tilans* (shining). See C. OBTUSIFOLIA.

CA'NBIA. (Named after *W. M. Canby*, of Delaware. Nat. ord. Papaveraceæ.)

Herbaceous perennial for the greenhouse. Seeds. Loam, leaf-mould, and sand.

C. ca'ndida (white). White, very dwarf. Petals do not fall off. California. 1876.

CANDELABRUM or **CHANDELIER TREE.** *Panda'nus Candela'brum*.

CANDLEBERRY MYRTLE. *My'rica ceri'fera*.

CANDLEBERRY TREE. *Aleuri'tes tri'loba*.

CANDLE TREE. *Parmentie'ra ceri'fera*.

CANDO'LLEA. (Named after the great botanist, *Decandolle*. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Greenhouse evergreen shrubs, from Australia; cuttings in sandy peat, under a glass; sandy peat and fibrous loam. Summer temp., 55° to 70°; winter, 40° to 45°.

C. Bruno'nis (Brown's). See STYLIDIUM BRUNONIANUM.
„ *cuneifo'rmis* (wedge-shaped). 7. Yellow. July. 1824.
„ *Cunningha'mii*. See HIBBERTIA CUNNINGHAMII.
„ *Huege'lii* (Huegel's). 6. Yellow. May. 1837.
„ *tetra'ndra* (four-stamened). 7. Yellow. June. 1842.

CANDY CARROT. *Athama'nta Matthi'oli*.

CANDY-TUFT. *Ibe'ris*.

CANELLA. (From *canna*, a reed; the form of the inner bark when peeled off. Nat. ord. *Canellads* [Canellaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

This is the wild cinnamon of the West Indies, so called on account of its aromatic fragrance. Canella, or white wood bark, yields, by distillation, a warm, aromatic oil, which is often mixed with the oil of cloves in the West Indies. Stove evergreen trees; cuttings of ripe shoots in sand, under a glass, and in bottom-heat, in April or May; sandy loam and fibrous peat. Summer temp., 60° to 80°; winter, 50° to 55°.

C. a'lba (white-*wood-bark*). 40. White. W. Ind. 1735.
„ *laurifo'lia* (laurel-leaved). See C. ALBA.

CANKER. This disease is accompanied by different symptoms, according to the species of the tree which it infects. In some of those whose true sap contains a considerable quantity of free acid, as in the genus Pyrus, it is rarely accompanied by any discharge. To this dry form of the disease it would be well to confine the term *canker*. In other trees, with sap abounding in astringent or gummy constituents, it is usually attended by a discharge. In such instances it might strictly be designated *ulcer*. This disease has a considerable resemblance to the tendency to ossification, which appears in most aged animals, arising from their marked tendency to secrete the calcareous saline compounds that chiefly constitute their skeletons. The consequence is, an enlargement of the joints and ossification of the circulatory vessels and other parts—phenomena very analogous to those attending the cankering of trees. As in animals, this tendency is general throughout their system; but, as is observed by Mr. Knight, "like the mortification in the limbs of elderly people," it may be determined, as to its point of attack, by the irritability of that part of the system.

This disease commences with an enlargement of the vessels of the bark of a branch or of the stem. This swelling invariably attends the disease when it attacks the apple-tree. In the pear the enlargement is less, yet is always present. In the elm and the oak sometimes no swelling occurs; and in the peach we do not recollect to have seen any. The swelling is soon communicated to the wood, which, if laid open to view on its first appearance by the removal of the bark, exhibits no marks of disease beyond the mere unnatural enlargement. In the course of a few years, less in number in proportion to the advanced age of the tree, and the unfavourable circumstances under which it is vegetating, the swelling is greatly increased in size, and the alburnum has become extensively dead; the bark above it cracks, rises in discoloured scales, and decays even more rapidly than the wood beneath. If the canker is upon a moderately sized branch, the decay soon completely encircles it, extending through the whole alburnum and bark. The circulation of the sap being thus entirely prevented, all the parts above the disease perish.

Trees injudiciously pruned, or growing upon an ungenial soil, are more frequently attacked than those which are advancing under contrary circumstances. The oldest trees are always the first attacked of those similarly cultivated. The Golden Pippin, the oldest existing variety of the apple, is more frequently and more seriously attacked than any other. The Ribston Pippin is another which in recent years has been more subject to canker than any other apple we have grown. The soil has a very considerable influence in inducing the disease. If the sub-soil be an irony gravel, or if it is not well-drained, the canker is almost certain to make its appearance amongst the trees they sustain, however young and vigorous they were when first planted.

Bruises and wounds of all kinds usually are followed by canker in the wounded part, if the tree is in any way liable to the disease.

One of the chief causes of *canker* may be attributed to bad pruning. Having given careful attention to the matter, we find that with almost all subjects if a clean cut is made close above a wood bud, a callus will be formed, and in many instances there will hardly be any trace of where the cut has been made; while if a portion of the stem is left above the wood bud, that portion will gradually die down. After recently examining some trees we find evidence of canker from bad pruning which had been done years ago. With apples there would be far less trouble if more care was taken to cut quite close to the main stem when removing a branch; and when pruning young trees cut quite close above a wood bud.

The same remarks apply even more forcibly to Plums and Cherries, also Peaches; bad pruning is even worse than bruises. We have seen Camellias badly cankered through bad pruning. We recently noted some strong growing Zonal Pelargoniums, which had been stopped, and a portion of the stem left, above a leaf. And with some that had previously been stopped the canker was

penetrating into the main stems. Clean pruning prevents many evils.

Another cause of canker may be traced to trees becoming stunted and bark-bound, and then started into growth again by more liberal treatment. The use of wire instead of the soft woollen shreds for fixing trees against walls is another cause; for as growth advances the ties tighten, or the wind may cause the shoots to rub against the wires. It has been attributed to over-luxuriant growth. Soft wood is more easily bruised; otherwise luxuriant growth, if it is sustained, should be a preventative rather than a cause for canker, except in cases of bad pruning, as referred to above. Trees or plants which exude sap will heal up better if some warm, dry sand is applied as soon as the cut is made. This, of course, would not apply to fruit-trees and others with hard, firm wood.

Soil may also have much to do with causing canker. A cold, wet sub-soil will induce late, unripened growth, and frost frequently injures or kills it.

When it is apparent that canker arises from stunted growth a good washing with soapy water, to which a little paraffin is added, will soften the bark. In cases where it is evident that it is caused through the wood dyeing black, the branches should be cut back to where there is no stain, or sign of decay in the stem. For bruises the damaged portion may be cut away and some pitch put over the wounds, or cow-dung and clay may be used.

Root canker is caused by various worms and parasites damaging the roots, and fungoid diseases soon spread and cause further trouble. The liberal use of lime is one of the best preventatives.

The term *canker* is sometimes applied to the trouble caused by Eelworms on the base of the stems of Cucumbers and Melons, also to succulent plants when they show signs of disease through being bruised or eaten by insects. The older authorities adopted a wider application of the word than is done by modern writers. Good soil that has been well cleansed and laid up in ridges for frost to penetrate is one great preventative both for root and stem canker.

CANI'STRUM. See ÆCHMEA.

CA'NNA. (The Celtic name for a cane or reed. Nat. ord. Scitaminaceæ.)

Stove herbaceous perennials. Divisions of the root; seed sown in hotbed; rich, open, loamy soil. Summer temp., 60° to 80°; winter, 50° to 55°.

Indian Shot is a common name for the ordinary *Canna indica*, on account of the round, hard seeds having been used in place of the ordinary leaden shot. When well ripened the seeds are almost as hard as iron.

In the older dictionaries the Cannas are described as stove herbaceous perennials, and were formerly grown under glass; but for some years past they have been found to be among the most showy plants we have for the flower garden. And in regard to hardiness it will be fair to compare them with Dahlias; for though frost will have its effect on the foliage, the underground stems may live through the winter with the protection of some bracken, or other light material over them. It is, however, safer to take up the tubers and store them in a similar way as Dahlias are treated.

They are a great feature in many of the public parks and gardens, both in this country and in America, and they are also useful for greenhouse culture. Varieties are numerous, and very greatly improved varieties have been raised in recent years. The Royal Horticultural Society have long given them special attention. In the old Chiswick days they were well looked after, being well grown in pots under glass, and also planted out; and more recently at Wisley, where in 1906 and 1907 upwards of 200 varieties were tested, and something over fifty sorts have been selected for awards of merit, or have been highly commended; but this list would not represent all that deserve the distinction, for some of the best may not have been in flower at the time of the inspection by the committee. Of sorts which were selected as among the most free-flowering, those with dark foliage included Dr. Marcus (orange-red) and Wm. Saunders (deep red). Of those with light foliage Elizabeth Hoss (yellow spotted with red), Fürst Wied (fiery red), L. E. Bally (yellow spotted red), and Météore (rich orange). To these may be added Königin Charlotte, William Bofinger, Paul Lorenz, Pillar of Fire, Hesperide, Juanita, Jean Tissot, General Merkel, Grossherzog, Ernst Ludwig, Comte de Bouchard, Buttercup (the finest yellow), Brandywine, Duke of York, Aurore, and Blanch Wintzer. Of taller growing sorts—Oscar Darmecker, Mrs. Kate Gray, S. F. Wright, Karl Kirsten, and Hofgarten-Director Wendland. The above all belong to what are now termed the Gladiolus-flowered section, but they chiefly originated from what were first known as "Crozy Cannas" (Mme. Crozy being one of the first of the large-flowered hybrids), but considerable improvements have been made since. The varieties originated by intercrossing *C. iridiflora*, *C. Warszewiczii*, and *C. glauca*. It is stated in the R.H.S. report, January 1908, that the first of these hybrids was raised fifty years ago, yet it was considerably later that Madame Crozy, which may be taken as the foundation of the showy flowered varieties, was generally known. The first of the large-flowered varieties that came under our notice was *C. iridiflora Ehemanni*; this gained a certificate in June 1880, but had been in cultivation for some time previous. Then in 1893 we had what were known as the Orchid-flowered varieties. These came from C. Madame Crozy crossed with *C. flaccida*, and Austria and Italia were the first and most distinct varieties; these were of tall growth. In later years there has been so much intercrossing that it is difficult to divide the varieties into sections. In the R.H.S. list we find some included in the Orchid-flowered section which might equally belong to the Gladiolus, or Crozy section.

Culture.—The most ready means of increasing stock of the named varieties is by divisions of the rhizomes, or underground stems. If planted out in rich ground during the summer they make strong growth. Taken up and stored in the same manner as Dahlias, they may be divided and potted up early in the year. It is the early starting of strong crowns that ensures success; good loam with leaf-mould, and stable manure added, will ensure strong growth. Weak rhizomes are of no use for flowering the same season, yet may be useful for growing on to flower the next year.

From Seed.—We have experimented in various ways with seed and find the best practice is to sow it as soon as collected. And seed that does not appear to be fully ripe will germinate quicker than the very hard, fully ripe seeds. With the latter they should be soaked until they swell, and a slight cut made to allow of the hard shell to open. Seedlings must be kept in warmth and in a growing condition through the winter. They may be partially dried off after a good crown is formed.

When grown under glass red-spider may be troublesome, also green-fly, but with the syringe and fumigating there is little difficulty in keeping these troubles off.

C. Achi'ras (Achiras). 5. Dark red. August. Isle of Mendoza. 1829.
„ *angustifo'lia* (narrow-leaved). 2. Scarlet. April. S. Amer. 1824.
„ *aurantia'ca* (orange). See C. LUTEA.
„ *ca'rnea* (flesh-coloured). 4. Flesh. December. Brazil. 1822.
„ *chine'nsis* (Chinese). See C. ORIENTALIS.
„ *cocci'nea* (scarlet). 2. Scarlet. December. S. Amer. 1731.
„ *compa'cta* (compact). 2. Red. April. E. Ind. 1820.
„ *cro'cea* (saffron-coloured). 2. Red. May. 1823.
„ *curviflo'ra* (curved-flowered). 4. Pale red. Central Amer.
„ *denuda'ta* (naked). 2. Scarlet. June. Brazil. 1818.
„ „ *latifo'lia* (broad-leaved). 3. Red. May. Brazil. 1818.
„ *di'scolor* (two-coloured-*leaved*). 10. Scarlet. November. Trinidad. 1827.
„ *edu'lis* (eatable). 3. Red. September. Peru. 1820.
„ *Ehema'nni* (Ehemann's). See C. IRIDIFLORA EHEMANNI.
„ *escule'nta* (esculent). See C. EDULIS.
„ *exce'lsa* (lofty). 16. Scarlet. January. Brazil. 1820.
„ *Fintelma'nni* (Fintelmann's). Trop. Amer.
„ *fla'ccida* (weak). 5. Red. July. S. Carolina. 1788.
„ *gigante'a* (gigantic). 5. Red, yellow. December. S. Amer. 1809.
„ *glau'ca* (milky-green). 2. Yellow. January. W. Ind., Mexico. 1730.

C. glau'ca ru'bro-lu'tea (yellow and red). 4½. Yellowish-red. August. Jamaica. 1834.
„ „ *ru'fa* (reddish-brown). 2. Brown. July. Mexico.
„ *heliconiæfo'lia* (Heliconia-leaved). 8. Red, yellow. Mexico.
„ *i'ndica* (Indian). 3. Scarlet. December. Tropics. 1570.
„ *iridiflo'ra* (Iris-flowered). 6. Red. December. Peru. 1816.
„ „ *Ehema'nni* (Ehemann's). 6. Scarlet. 1880.
„ *ju'ncea* (rush-like). 1. Red. May. China. 1820.
„ *lagune'nsis* (Laguna). See C. LUTEA.
„ *Lambe'rti* (Lambert's). 4. Scarlet. May. Trinidad. 1819.
„ *lanceola'ta* (spear-*leaved*). 3. Red. December. Brazil. 1825.
„ *lanugino'sa* (woolly). 6. Scarlet. April. Trop. Amer. 1823.
„ *latifo'lia* (broad-leaved). See C. GIGANTEA.
„ *liliiflo'ra* (Lily-flowered). 8 to 9. Yellow, rose. Panama. 1884.
„ *limba'ta* (bordered). 3. Red. December. Brazil. 1818.
„ *lu'tea* (yellow). 2. Yellow. October. Trop. Amer. 1820.
„ *macula'ta* (spotted). 2. Reddish-yellow. December. Trop. Amer.
„ *ma'xima* (largest). See C. LAMBERTI.
„ *mexica'na* (Mexican). See C. GLAUCA RUFA.
„ *occidenta'lis* (western). 3. Reddish-yellow. June. W. Ind. 1822.
„ *orienta'lis* (eastern). 4. Red. June. E. Ind. 1820.
„ „ *fla'va* (yellow). 4. Yellow. June. E. Ind. 1820.
„ „ *macula'ta* (spotted). Scarlet, yellow. August. E. Ind. 1570.
„ *pa'llida* (pale-*flowering*). See C. LUTEA.
„ „ *latifo'lia* (broad-leaved). See C. LUTEA.
„ *panicula'ta* (panicled). Peru.
„ *pa'tens* (spreading). 2. Reddish-yellow. May. Rio Janeiro. 1778.
„ *pedunicula'ta* (*long*-flower-stalked). 6. Orange. October. 1820.
„ *polymo'rpha* (many-formed). 3. Red. December. S. Amer. 1825.
„ *Ree'vesii* (Reeve's). 5. Yellow. May. China. 1835.
„ *roscoëa'na* (Roscoëan). 4. Yellow, spotted red. Trop. Amer.
„ *rubicu'nda* (red). Red. Trop. Amer.
„ *ru'bra* (red). See C. COCCINEA.
„ *rubricau'lis* (red-stemmed). See C. EDULIS.
„ *sangui'nea* (bloody). See C. SPECIOSA.
„ *specio'sa* (showy). 3. Red. August. S. Amer. 1820.
„ *sulphu'rea* (sulphur). See C. LUTEA.
„ *sylve'stris* (wild). 5. Scarlet. December. S. Amer. 1820.
„ *varia'bilis* (variable). See C. CARNEA.
„ *Warszewi'czii* (Warszewicz's). 3½. Scarlet. Costa Rica. 1849.
„ *xalape'nsis* (Xalapian). See C. PATENS.

CA'NNABIS. Hemp. (An old name used by *Dioscorides* for some plant or other. Nat. ord. Urticaceæ.)

A hardy annual valued for its ornamental foliage in sub-tropical gardening and bedding generally. Seeds in heat in March, and the seedlings to be planted out at the end of May.

C. sati'va (cultivated). 4 to 8. Green. Central Asia and N.W. Himalayas.

CANNON-BALL TREE. *Couroupi'ta guiane'nsis.*

CANSCO'RA. (Derived from the Malabar *Kansjan-Cora*, the name for *C. perfoliata*. Nat. ord. Gentianaceæ.)

A greenhouse annual requiring treatment similar to that given garden Balsams. Seeds; loam, leaf-mould, sand and lime rubble in small pieces.

C. decussa'ta (decussate). ½. White. E. Ind.; Trop. Africa.
„ *Pari'shii* (Parish's). 2. White. Moulmein. 1864.

CANTERBURY BELLS. *Campa'nula Me'dium.*

CA'NTHIUM. (From *Cantix*, its Malabar name. Nat. ord. Rubiaceæ. Linn. 5-*Pentandria*, 1-*Monogynia*. Most species are now referred to the genus Plectronia.)

Besides its beauty, *C. dubium* is one of those remedial agents for which Cinchonads are so much celebrated. A stove evergreen shrub. Cuttings of half-ripened shoots in sandy soil, under a glass; rich, fibrous, sandy loam. Summer temp., 60° to 70°; winter, 40° to 45°.

C. chine'nse (Chinese). See RANDIA DUMETORUM.
„ *corona'tum* (crowned). See RANDIA DUMETORUM.
„ *du'bium* (doubtful). See DIPLOSPORA VIRIDIFLORA.

CA'NTUA. (*Cantu* is the Peruvian name. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Cuttings in sand, under glass; sandy loam and peat. Winter temp., 40° to 45°.

C. aggrega'ta (crowded). See GILIA AGGREGATA.
„ *bi'color* (two-coloured). 4. Reddish-yellow. May. Peru. 1846.
„ *buxifo'lia* (box-leaved). 4. Rosy. April. Peruvian Andes. 1849.
„ *depe'ndens* (drooping). See C. BUXIFOLIA.
„ *ligustrifo'lia* (privet-leaved). See VESTIA LYCIOIDES.
„ *ova'ta* (ovate). Peru.
„ *parviflo'ra* (small-flowered). See GILIA PARVIFLORA.
„ *pyrifo'lia* (pear-leaved). 3. Cream. March. Peru. 1846.

CAPE GOOSEBERRY. *Physa'lis peruvia'na.*

CAPE JASMINE. *Garde'nia flo'rida.*

CAPE PHILLYRÆA. *Elæode'ndron capе'nse.*

CAPERO'NIA. (From *capero*, to be wrinkled; the leaves are wrinkled beneath. Nat. ord. Euphorbiaceæ.)

Stove perennial herb. Cuttings or divisions. Loam, leaf-mould, sand.

C. castanæfo'lia (chestnut-leaved). **Java.**

CAPER-TREE. *Ca'pparis.*

CAPNO'DIUM AUSTRA'LE. A fungus that occasionally attacks Conifers. The hyphæ consist of fine black threads.

CA'PPARIS. Caper-tree. (From *kabar*, the Arabic name for capers. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

The flower-buds of *C. spino'sa*, when preserved, form what is known as "Capers," and used as Caper Sauce to be eaten with boiled mutton. Stove evergreen shrubs, except where otherwise specified. Cuttings of ripe shoots in sand, under a glass, in moist heat; sandy loam and fibrous peat. All require protection, and most of them the usual treatment of the plant-stove.

C. acumina'ta (long-pointed-*leaved*). See C. ACUTIFOLIA.
„ *acutifo'lia* (acute-leaved). 4. White. July. China. 1822.
„ *ægypti'aca* (Egyptian). See C. SPINOSA.
„ *amygdali'na* (almond-like). See C. BREYNIA.
„ *angustifo'lia* (narrow-leaved). Mexico.
„ *aphy'lla* (leafless). 4. White. E. Ind. 1822.
„ *arbore'scens* (becoming a tree). See C. PULCHERRIMA.
„ *auricula'ta* (eared). 6. White.
„ *Bra'ssii* (Brass's). 4. White. Gold Coast. 1793.
„ *Bre'ynia* (Breynius's). 11. White. W. Ind. 1752.
„ *chine'nsis* (Chinese). See C. ACUTIFOLIA.
„ *cynophallo'phora* (dog-phallus-bearing. *Bay-leaved*). 8. Green, white. W. Ind. 1752.
„ *eustachia'na* (St. Eustach's). 6. Striped. St. Eustach. 1822.
„ *ferrugi'nea* (rusty). 4. White. Jamaica.
„ *flexuo'sa* (flexuous). Java.
„ *Fontane'sii* (Fontanes'). 3. White. July. Mauritius.
„ *frondo'sa* (leafy). 7. Green. Carthagena. 1806.
„ *herba'cea* (herbaceous). See C. SPINOSA.
„ *jamaice'nsis* (Jamaica). 4. White. Jamaica. 1752.
„ *linea'ris* (narrow-*leaved*). 15. White. W. Ind. 1793.
„ *Loddige'sii* (Loddiges'). 6. White.
„ *maria'na* (Marianne Island). See C. SPINOSA.
„ *Mitche'llii* (Mitchell's). Australia.
„ *no'bilis* (noble). Australia.
„ *odorati'ssima* (sweetest-scented). 6. White. Caracas. 1814.
„ *ova'ta* (egg-shape-*leaved*). See C. FONTANESII.
„ *pelta'ta* (shield-*leaved*). 6. White. Trinidad. 1827.
„ *pulche'rrima* (fairest). 10. White. Carthagena. 1700.
„ *Roxbu'rghii* (Roxburgh's). India.
„ *sali'gna* (willow-*leaved*). See C. CYNOPHALLO'PHORA.

C. sepia'ria (hedge). 4. White. E. Ind. 1823.
„ *spino'sa* (*common*-spiny). 3. White. June. South of Europe. 1596. Half-hardy. deciduous.
„ *tenuisi'liqua* (slender-podded). 6. White. Caraccas. 1823.
„ *torulo'sa* (twisted-*podded*). See C. JAMAICENSIS.
„ *trifio'ra* (three-flowered). See C. FRONDOSA.
„ *trifolia'ta* (three-leafleted). See CRATÆVA TAPIOIDES.
„ *undula'ta* (waved). See C. LODDIGESII.
„ *uncina'ta* (hooked). See C. JAMAICENSIS.
„ *verruco'sa* (warty-*podded*). 8. White. Carthagena. 1820.
„ *zeyla'nica* (Ceylon). 6. White. Ceylon. 1819.

CAPRIFO'LIUM. Honeysuckle. (From *caper*, a goat, and *folium*, a leaf; poetically, goat-leaf, for its climbing habit. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. All now united to Lonicera.)

All deciduous and twiners, except where otherwise specified. Cuttings of ripened shoots taken off in autumn, and inserted in a shady border; tender and scarcer kinds should have the assistance of a hand-light, as the wood is generally pithy. The most successful mode of propagating out of doors is by layers in autumn, after the leaves have commenced falling. Common soil.

HARDY.

C. dioi'cum (dicœcious). See L. DIOICA.
„ *Douglas'sii* (Douglas's). See L. HIRSUTA.
„ *etru'scum* (Etruscan). See L. ETRUSCA.
„ *fla'vum* (yellow). See L. FLAVA.
„ *gra'tum* (pleasant). See L. GRATA.
„ *hirsu'tum* (hairy-*leaved*). See L. HIRSUTA.
„ *hispi'dulum* (rather bristly). See L. HISPIDULA.
„ *horte'nse* (garden). See L. CAPRIFOLIUM.
„ *ita'licum* (Italian). See L. CAPRIFOLIUM.
„ „ *ru'brum* (red). See L. CAPRIFOLIUM RUBRA.
„ *longiflo'rum* (long-flowered). See L. LONGIFLORA.
„ *occidenta'le* (western). See L. CILIOSA.
„ *parviflo'rum* (small-flowered). See L. DIOICA.
„ *Periclymenum* (woodbine). See L. PERICLYMENUM and its varieties, *belgica*, *quercifolia*, *serotina*, and *variegata*.
„ *pube'scens* (downy). See L. HIRSUTA.
„ *sempervi'rens* (evergreen). See L. SEMPERVIRENS and its varieties, *Brownii*, *major*, and *minor*.
„ *tubulo'sum* (cylindrical). Mexico. 1846.

HALF-HARDY.

C. chine'nse (China). See L. JAPONICA.
„ *cilio'sum* (hair-fringed). See L. CILIOSA.
„ *imple'xum* (interwoven). See L. IMPLEXA.
„ „ *balea'ricum* (Balearic). See L. IMPLEXA BALEARICA.
„ *japo'nicum* (Japanese). See L. MACRANTHA.
„ *nepale'nse* (Nepaul). See L. MACRANTHA.
„ *sple'ndidum* (splendid). See L. SPLENDIDA.

CA'PSICUM. Chili Pepper. (From *kapto*, to bite; referring to its pungency. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cayenne pepper is the ground fruits of Capsicum. Seeds sown in a hotbed, in March, and, after being picked off finally, potted, to be grown in a house, such as a vinery, or transplanted against a wall, or any sheltered place out of doors.

ANNUALS.

C. angulo'sum (angular-*fruited*). 1. White. June. India.
„ *a'nnuum* (annual). 1. White. June. India. 1548. "Red Pepper." "Chilies."
„ *cerasiflo'rum* (Cherry-flowered). 2. White. June. 1823.
„ *cerasifo'rme* (Cherry-formed). 1. Red, yellow. June. W. Ind. 1739.
„ *co'nicum* (conical). 2. White. June. Guiana. 1820.
„ *cordifo'rme* (heart-shaped). 1. White. June. India.
„ *lo'ngum* (long-*fruited*). 1. White. June. India. 1548.
„ *tetrago'num* (four-angled). 1. White. June. India.
„ *ustula'tum* (scorched). 2. White. June. Chili.

STOVE EVERGREEN SHRUBS.

C. bacca'tum (berried). 2. White. June. 1731.
„ *bi'color* (two-coloured). See C. MINIMUM.
C. cærule'scens (bluish). Purple. June. S. Amer. 1827.
„ *cere'olum* (waxy). See C. MINIMUM.
„ *chine'nse* (Chinese). 2. White. July. China. 1807.
„ *conoi'des* (cone-like). See C. MINIMUM.
„ *du'lce* (sweet). 1½. Whitish. July. Biennial.
„ *frute'scens* (shrubby). See C. MINIMUM.
„ „ *tortulo'sum* (rather-twisted). See C. MINIMUM TORTULOSUM.
„ *globi'ferum* (globe-bearing). 2. White. June. Guiana. 1824.
„ *gro'ssum* (large). 1. White. July. India. 1752. Biennial.
„ „ *bi'fidum* (two-cleft). White. May. E. Ind. 1758.
„ „ *globo'sum* (globe-*fruited*). 1. White. July. E. Ind.
„ *havane'nse* (Havanah). White. May. Havanah. 1826.
„ *lu'teum* (yellow-*fruited*). 1. White. July. E. Ind. 1820.
„ *micra'nthum* (small-flowered). 3. White. May. Brazil. 1820.
„ *microca'rpum* (small-fruited). 2. White. May.
„ *Mille'rii* (Miller's). 1. White. June. W. Ind. 1824. Annual.
„ *mi'nimum* (smallest). White. May. E. Ind. 1728. "Cayenne Pepper." "Bird Pepper."
„ „ *tortulo'sum* (slightly twisted). 2. White. E. Ind. 1820.
„ *ova'tum* (egg-fruited). 3. White. July. 1824.
„ *pe'ndulum* (pendulous). 2. White. May. 1750.
„ *pyramida'le* (pyramidal). 2. White. May. Egypt. 1750.
„ *sine'nse* (Chinese). See C. CHINENSE.
„ *sphæ'ricum* (globular-*fruited*). 2. White. May. 1807.
„ *tomatifo'rme* (tomato-shaped). See C. DULCE.

CAPSICUM. For pickling purposes the following are the species and varieties usually employed:—

Ca'psicum annuum (red pepper), the long-podded, short-podded, and oval short-podded. *C. cerasifo'rme* (cherry pepper), cherry-shaped red and yellow-podded. *C. gro'ssum* (bell pepper).

Soil and Situation.—They do best in a light, rich loam, and against a fence or wall. Hence they are often grown within an enclosure devoted to hotbed-forcing.

Time and Mode of Sowing.—Sow towards the end of March or beginning of April. Sow in pots or pans, and place in a hotbed, with the shelter of a frame; give only a slight covering, and one good watering will be all that is required until the seeds germinate. Prick off as soon as the seedlings are large enough to handle, and pot singly as soon as well established, later they may be grown in the open, but are more satisfactory under glass.

To obtain Seed.—A plant bearing some of the forwardest and finest fruits of each variety must be preserved, that it may be ripe before the frost commences, the first of which generally kills the plants. When completely ripe, cut the pods, and hang up in the sun, or in a warm room, until completely dry, when the seeds may be cleaned out of the pods, care being taken not to get any of the pulp or pods on the hand, or a great irritation will be set up. The seed should be kept in a tin box until required for sowing.

CARAGA'NA. Siberian Pea-tree. (From *Caragan*, the name of *C. arbore'scens* among the Mogul Tartars. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Colutea.)

These handsome shrubs inhabit the whole of north-eastern Asia, from Pekin in China, westward, to the banks of the Volga. They are increased principally in the nurseries, by grafting on *C. arbore'scens*, which is a deciduous tree; but all the others are deciduous shrubs. The larger-growing species are best propagated by seeds sown in spring, or by cuttings of the roots. Shrubby, low plants by seed and layers; and the rarer, Chinese, Siberian, and drooping kinds by grafting in spring; sandy loam.

C. Altaga'na (Altagana). See C. MICROPHYLLA.
„ *arbore'scens* (tree-like). 15. Yellow. May. Siberia. 1752.
„ „ *iné'rmis* (unarmed). 10. Yellow. May. Siberia. 1820.
„ „ *Lorbe'rgi* (Lorberg's). Flowers smaller. 1906.
„ „ *na'na* (dwarf).

C. abore'scens pe'ndula (pendulous). A weeping variety.
„ „ *præ'cox* (early). 3. Yellow. April.
„ „ *pulverule'nta* (dusty).
„ „ *Redow'skii* (Redowski's).
„ *arena'ria* (sand). See C. CUNEIFOLIA.
„ *arge'ntea* (silvery). See HALIMODENDRON ARGENTEUM.
„ *auranti'aca* (orange). Orange. Central Asia.
„ „ *ere'cta* (erect). Upright in habit.
„ *Boi'si* (Bois'). 2–5. Yellow. May. W. China. 1904.
„ *brevispi'na* (short-spined). Greenish-yellow. Himalaya. 1847.
„ *Chamla'gu* (Chamlagu). 4. Yellow. May. China. 1773.
„ *cuneifo'lia* (wedge-shaped-leaved). 1. Yellow. June. Siberia. 1802. B.M., t. 1886.
„ *deco'rticans* (bark-casting). 6 to 8. Bright yellow. Afghanistan. 1903.
„ *fe'rox* (fierce). See C. SPINOSA.
„ *frute'scens* (shrubby). 2. Yellow. April. Siberia. 1752.
„ „ *angustifo'lia* (narrow-leafleted) 6. Yellow. April. Odessa.
„ „ *grandiflo'ra* (large-flowered).
„ „ *latifo'lia* (broad-leafleted). 6. Yellow. April.
„ „ *mo'llis* (soft).
„ „ *pe'ndula* (pendulous). A weeping variety.
„ „ *sylva'tica* (wood).
„ *grandiflo'ra* (large-flowered). 1. Yellow. June. Iberia. 1823.
„ *gerardia'na* (Gerard's). Himalayas. 1839.
„ *juba'ta* (maned). 2. Pink. April. Siberia. 1796.
„ *macraca'ntha* (large-thorned). 2. Yellow. June. Siberia.
„ *microphy'lla* (small-leaved). 2. Yellow. May. Russia. 1819.
„ „ *cra'sse aculea'ta* (thick-spined). See C. BOISI.
„ *mo'llis* (soft). See C. FRUTESCENS MOLLIS.
„ *mongo'lica* (Mongolian). Yellow. April. Tartary. 1826.
„ *pygmæ'a* (pigmy). 1. Yellow. May. Siberia. 1751.
„ „ *arena'ria* (sand). 1. Yellow. April.
„ *Redo'wski* (Redowski's). See C. ARBORESCENS REDOWSKI.
„ „ *præ'cox* (early). See C. ARBORESCENS PRÆCOX.
„ *spino'sa* (thorny). 6. Yellow. May. Siberia. 1775.
„ *tragacanthoi'des* (goat's-thorn-like). 4. Yellow. May. Siberia. 1816.
„ *trifloʹra* (three-flowered). See C. BREVISPINA.

CARAGUA'TA. (A South American name for several of this order and adopted by Lindley. Nat. ord. *Bromeliads* [Bromeliaceæ].)

Epiphytic plants requiring stove treatment; with a moist atmosphere, and not too much moisture at the roots. Similar treatment to that recommended for Billbergias will suit them.

C. andrea'na (Andrean). 2. Yellow. Bracts carmine. Colombia. 1881.
„ *angustifo'lia* (narrow-leaved). Pale yellow, scarlet. Colombia. 1882.
„ *belea'na* (Belean). 2. White. 1891.
„ *cardina'lis* (scarlet). 1½. White. Bracts brilliant scarlet-red. Colombia. 1880.
„ *coni'fera* (cone-bearing). Yellow. Bright scarlet bracts. Ecuador.
„ *devansaya'na* (Devansayan). Ecuador. 1882.
„ *fuerstenbergia'na* (Fuerstenbergian). July. Ecuador. 1883.
„ *Linde'ni* (Linden's). Leaves with purple-brown bands. Peru. 1878.
„ *lingula'ta* (tongued). White. Bracts scarlet. Trop. Amer. 1856.
„ *lingula'ta cardina'lis* (tongued scarlet). See C. CARDINALIS.
„ *Melino'nis* (Melinon's). French Guiana.
„ *morrenia'na* (Morrenian). 1½. Yellow. Bracts red. Colombia. 1887.
„ *musa'ica* (mosaic). Orange, white. Bracts orange-red. Colombia. 1873.
„ *osya'na* (Osyan). Yellow. Bracts bright red. Ecuador. 1875.
„ *Peaco'cki* (Peacock's). White. Bracts bright purple. Leaves rose-purple. S. Amer. 1885.
C. sangui'nea (blood-red). Pale yellow. Leaves rose. Colombia. 1883.
„ *Schlumberge'rii* (Schlumberger's). 3. Yellow. S. Amer. 1882.
„ *serra'ta* (serrate). See TILLANDSIA SERRATA.
„ *sple'ndens* (splendid). See C. LINGULATA.
„ *Van Volxe'mii* (Van Volxem's). 3. Yellow. Bracts bright rose. Colombia. 1878.
„ *vitta'ta* (striped). S. Amer.
„ *Za'hnii* (Zahn's). 1½. Yellow. Bracts scarlet. Leaves striped red. Chiriqui. 1870.

CARA'LLIA. (From *Caralli*, its name in India. Nat. ord. *Mangroves* [Rhizophoraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

This, like the rest of the Mangroves, grows only along the tropical shores, where they form impenetrable thickets, and send down roots from the branches, like the Banyan-tree. In time such roots raise the main trunks high above their original level; hence the usual name of the order—Rhizophoraceæ, or root-bearers. Cuttings and treatment as for Canthium.

C. lancæfo'lia (lance-leaved). 20. Yellow. India. 1820.
„ *lu'cida* (shining). See C. LANCÆFOLIA.

CARALLU'MA. (Its Indian name. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Stapelia.)

Stove evergreen shrubs, natives of East Indies. Cuttings well dried, and laid, rather than fastened, among gravelly and limy, rubbishy soil, until they strike; sandy loam, broken pots, and lime-rubbish; little water given, unless when growing freely. Summer temp., 60° to 85°; winter, 48° to 55°, and dry.

C. affi'nis (allied). Red-purple, striped yellow. W. Mediterranean Region. 1904.
„ *asce'ndens* (ascending). 2. Pink. July. 1804.
„ *campanula'ta* (bell-shaped). India. B.M., t. 7274.
„ *commuta'ta* (changed). ½. Brown. S. Arabia (?). 1910.
„ *crenula'ta* (scolloped). See BOUCEROSIA CRENULATA.
„ *fimbria'ta* (fringed). ½. Pale yellow. Burma. 1829.
„ *inve'rsa* (inverted). White and dark purple-brown. S. Africa. 1903.
„ *Luga'rdii* (Lugard's). Yellow, brown, velvety. German S.W. Africa. 1904.
„ *Lu'ntii* (Lunt's). S. Arabia.
„ *Marlo'thii* (Marloth's). Green, dotted violet-brown. S. Africa. 1903.
„ *Nebrow'nii* (N. E. Brown's). Purple clubbed hairs on margin of flowers. German S.W. Africa. 1907.
„ *Simo'nis* (Simon's). Closely allied to *C. europæa*. Syn. *Boucerosia Simonis*.
„ *Sprenge'ri* (Sprenger's). Gold-bronze, with white eye. Abyssinia. 1893.
„ *to'rta* (twisted). Brown-purple. S. Arabia or Socotra. 1902.
„ *umbella'ta* (umbelled). See BOUCEROSIA UMBELLATA.

CARAMBO'LA-TREE. *Averrho'a Carambo'la.*

CARA'NDAS. *Cari'ssa Cara'ndas.*

CARA'PA. (From *Caraipe*, its name in South America. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

The flowers are small, but numerous; and, like the rest of the Meliads, this genus possesses bitter astringent and tonic qualities. Stove trees. Cuttings of ripened shoots in sand, under a glass, and in bottom-heat; loam and peat. Summer temp., 60° to 85°; winter, 55° to 60°.

C. guiane'nsis (Guiana). 20. Yellow. Guiana. 1824.
„ *guinee'nsis* (Guinea). See C. PROCERA.
„ *moluccе'nsis* (Moluccas). 20. Yellow. E. Ind. 1820.
„ *pro'cera* (tall). 40. Yellow. Asia and Trop. Africa.

CA'RAWAY. *Ca'rum Ca'rvi.*

CARBE'NIA. (Probably commemorative. Nat. ord. Compositæ. Allied to Centaurea.)

A hardy, spiny annual. Seeds in the open ground in April. Ordinary soil.

C. benedi'cta (praised). 2. Yellow. July to October. Mediterranean Region. 1548. "Blessed Thistle."

CARDAMI'NE. Lady's Smock. (From *kardamon*, watercress; referring to the acrid flavour. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Arabis.)

Like the rest of the Crucifers, *Cardami'ne* is antiscorbutic and stimulant. All that we describe are hardy herbaceous perennials, except *C. thalictroi'des* and *C. græca*, which are annuals; seeds in any common soil, provided it be moist; the herbaceous and marshy plants by division; marshy, peaty soil.

C. alpi'na (Alpine). 1. White. April. Europe. 1658.
„ *ama'ra* (bitter). 1. White. April. Britain. Aquatic.
„ *asarifo'lia* (Asarum-leaved). 1. White. June. Italy. 1710.
„ *bellidifo'lia* (daisy-leaved). 1. White. April. Northern and Arctic regions.
„ „ *alpi'na* (alpine). See C. ALPINA.
„ *bulbi'fera* (bulb-bearing). 1 to 2. Purple. Britain. "Coral Root."
„ *carno'sa* (fleshy). 1. White. June. Thessaly. 1824.
„ *Chelido'nia* (celandine-*leaved*). 1. White. June. Italy. 1739.
„ *dasy'loba* (thick-lobed). See C. MACROPHYLLA.
„ *digita'ta* (fingered). 2. Dark purple. S. Europe. 1656.
„ *diphy'lla* (two-leaved). 1. White, purple. May. N. Amer. "Tooth Cress."
„ *enneaphy'lla* (nine-leaved). 1. Yellow. May. Europe. 1656.
„ *glandulo'sa* (glandular). 1. Pale purple. May. Hungary. 1815.
„ *glauca* (milky-green). 1. White. June. Calabria. 1827.
„ *græca* (Greek). ½. White. June. Eastern Mediterranean Regions. 1710. Hardy annual.
„ *Killia'sii* (Killias'). A hybrid between *D. digitata* and *D. polyphylla*. Switzerland. 1889.
„ *lacinia'ta* (jagged-leaved). 1. White. May. N. Amer. 1822.
„ *latifo'lia* (broad-leaved). 2. Purple. June. Spain. 1710. Marsh-plants.
„ *macrophy'lla* (large-leaved). 1. Purple. May. Siberia. 1824.
„ *ma'xima* (largest). 2. Light purple. May. N. Amer. 1823.
„ *pentaphy'lla* (five-leaved). 1. Pale rose. Early summer. Chili.
„ *pinna'ta* (pinnate). 1½. Light purple. May. Europe. 1683.
„ *pinna'to-digita'ta* (pinnate-fingered). Natural hybrid. Switzerland. 1889.
„ *polyphy'lla* (many-leaved). 1. Purple. May. Hungary. 1818.
„ *prate'nsis* (meadow-*cuckoo-flower*). 1. Purple. April. Britain. Marsh-plant.
„ „ *ple'na* (double-flowered). 1. Purple. April. Marsh-plant.
„ „ *ple'na-a'lba* (double-white-*flowered*). 1. White. April. Marsh-plant.
„ *quinquefo'lia* (five-leaved). 1. Purple. May. S. Russia. 1820.
„ *rhomboi'dea* (diamond-shaped). White. Spring. N. Amer.
„ *rotundifo'lia* (round-leaved). White. March. N. Amer. 1884.
„ *thalictroi'des* (Thalictrum-like). 1. White. June. Piedmont. 1818. Annual.
„ *tene'lla* (slender). 1. Pale purple. May. N. Amer. 1826.
„ *tenuifo'lia* (slender-leaved). See C. TENELLA.
„ *trifo'lia* (three-leaved). ½. White. May. Switzerland. 1629.
„ *uligino'sa* (bog). 1. White. April. Tauria. 1819. Marsh-plant.

CARDAMOM. *Eletta'ria Cardamo'mum.*

CARDIA'NDRA. (From *kardios*, the heart, and *aner*, an anther; in reference to the heart-shaped anther. Nat. ord. Saxifragaceæ.)

Shrubs requiring treatment like *Hydrangea hortensis*, and protection in severe weather.

C. alternifo'lia (alternate-leaved). White and lilac. Japan. 1866.
„ *sine'nsis* (Chinese). Flowers like those of Hydrangea. Herbaceous. Central China. 1903.

CARDINAL FLOWER. *Lobe'lia cardina'lis.*

CARDOON. (*Cy'nara Cardu'nculus.*) The stalks of the inner leaves, when rendered tender by blanching, are used in stews, soups, and salads.

Soil and Situation.—A light, rich, unshaded soil, dug deep, and well pulverised, suits it best.

Time and Mode of Sowing.—Sow at the close of April, those plants raised from earlier sowing being apt to run; for a late crop, a sowing may be performed in June. Best practice is to sow in patches of three or four, six inches apart, in rows four feet apart, to be thinned finally to one in each place, the weakest being removed. If, however, they are raised in a seed-bed, they will be ready for transplanting in about eight or ten weeks from the time of sowing, and must be set at similar distances.

The seed must be covered about half an inch. When about a month old, thin the seedlings to four inches apart, and those removed may be pricked out at a similar distance. When of the age sufficient for their removal, they must be taken up carefully, and the long, straggling leaves removed. The bed for their reception must be dug well, and laid out in trenches, as for celery, or a hollow sunk for each plant; but, as they are liable to suffer from excessive wet, the best mode is to plant on the surface, and form the necessary earthing in the shape of a ridge. Water abundantly at the time of planting, as well as subsequently, until the plants are established; and also in August, if dry weather occurs, regularly every other night, as this is found to prevent their running to seed. When advanced to about eighteen inches in height, which, according to the time of sowing, will be in August, and thence to October, the leaves must be closed together. Hay bands were formerly used, but any old woollen material is better, and then earthed up like celery. It must be done on a dry day. As the plants grow, use more binding and more earthing, until blanched about two feet high. The blanching is completed in about eight or ten weeks. If litter is thrown over the tops during severe weather, the plants will continue good through the winter.

To obtain Seed.—Being a native of Candia, seed in this country seldom comes to maturity; but, in dry seasons, a few plants may be set in a sheltered situation of the April sowing, not earthed up, but allowed the shelter of mats or litter in frosty weather. The flowers make their appearance about the beginning of July, and the seed should ripen in September.

CARDOPA'TIUM. (Nat. ord. Compositæ.)

A nearly hardy, perennial Thistle for the back line of borders. It should have some dry leaves placed round or over the crown in winter to protect it from severe frost.

C. corymbo'sum (corymbose). Blue. East Mediterranean Regions. 1871.

CARDUNCE'LLUS. (The diminutive of *Carduunculus*, the Cardoon. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Carthamus.)

Hardy herbaceous perennials, natives of France. Division of the roots; common soil.

C. cæru'leus (blue). ½. Blue. Mediterranean Regions.
„ *miti'ssimus* (most gentle). ½. Blue. June. 1776.
„ *monspelie'nsium* (Montpelier). ½. Blue. May. 1734.
„ *vulga'ris* (common). See C. MONSPELIENSIUM.

CA'RDUUS. Thistle. (Derivation obscure. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Notwithstanding the proverbial weediness of Thistles, there are some handsome garden-species among them. All hardy. Seeds or divisions; common soil. There are many which may be grown in what is termed the "wild garden," and they make a most effective display.

ANNUALS.

C. a'lbidus (whitish). 2. Purple. July. Tauria. 1816.
„ *ara'bicus* (Arabian). ½. Purple. July. Arabia. 1789.
„ *argenta'tus* (silvered). 1. Purple. July. Egypt. 1789.
„ *cine'reus* (grey). 3. Purple. July. Caucasus. 1818.
„ *clavula'tus* (club-shaped). 2. Purple. July. Canaries. 1827.
„ *leuca'nthus* (white-flowered). See SERRATULA FLAVESCENS.

C. leuco'graphus (white-painted). See TYRIMNUS LEUCOGRAPHUS.
„ *peregri'nus* (diffuse). 2. Purple. July. 1816.
„ *volge'nsis* (Volga). See COUSINIA WOLGENSIS.

BIENNIALS.

C. ala'tus (winged). See JURINEA ALATA.
„ *ca'ndicans* (hoary). See C. COLLINUS.
„ *carlinæfo'lius* (Carline-leaved). 2. Purple. July. Pyrenees. 1804.
„ *carlinoi'des* (Carline-like). 1. Purple. July. Pyrenees. 1784.
„ *colli'nus* (hill). 3. Purple. July. Hungary. 1805.
„ *corymbo'sus* (corymbose). 4. Purple. July. Naples. 1824.
„ *cri'spus* (curled). 2. Purple. July. Europe. 1804.
„ *hamulo'sus* (hooked-spined). 5. Purple. June. Hungary. 1802.
„ *Kerne'ri* (Kerner's). 2 to 3. Rose-purple. Bulgaria. 1906.
„ *lanugino'sus* (woolly). 3. Purple. July. Armenia. 1820.
„ *monto'sus* (mountain). 3. Purple. July. South of Europe. 1820.
„ *myriaca'nthus* (myriad-spined). Purple. July. N. Africa. 1836.
„ *nigre'scens* (blackish). 4. Purple. July. South of France. 1819.
„ *Persona'ta* (burdock). 4. Purple. July. Austria. 1776.
„ *seminu'dus* (half-naked). 3. Purple. Caucasus. 1819.
„ *uncina'tus* (hooked). 6. Purple. July. Tauria. 1817.
„ *Ve'rdii* (Verd's). 2. Red. Spain. 1871.

HERBACEOUS PERENNIALS.

C. affi'nis (allied). Pink. July. Naples. 1830.
„ *alpe'stris* (alpine). 1½. Purple. July. Croatia. 1805.
„ *arctioi'des* (burdock-like). 2. Purple. July. Carniola. 1804.
„ *Argemo'ne* (Argemone-leaved). 1½. Purple. July. Pyrenees. 1810.
„ *atriplicifo'lius* (atriplex-leaved). See SERRATULA ATRIPLICIFOLIA.
„ *auro'sicus* (eared). 3. Purple. July. France. 1819.
„ *crassifo'lius* (thick-leaved). 2. Purple. July. 1805.
„ *deflora'tus* (unflowered). 6. Red. August. Austria. 1570.
„ *du'bius* (doubtful). 2. Purple. July. 1816.
„ *macroce'phalus* (large-headed). 2. July. Numidia. 1827.
„ *me'dius* (intermediate). 2. Purple. June. Piedmont. 1819.
„ *onopordioi'des* (Onopordum-like). 1½. Purple. July. Iberia. 1818.
„ *orienta'lis* (eastern). See COUSINIA CARDUIFORMIS.
„ *parvifl'rus* (small-flowered). See CNICUS PARVIFLORUS.
„ *podaca'nthus* (foot-spined). See C. AUROSICUS.
„ *pycnoce'phalus* (dense-headed-*Italian*). See C. TENUIFLORUS.
„ *tenuiflo'rus* (slender-flowered). 4. Purple. July. Britain.

CA'REX. Sedges. (From *keiro*, I cut; in reference to the sharp, hard edges of the leaves, which cut the hands when pulling them. Nat. ord. Cyperaceæ.)

All are hardy, except where otherwise mentioned. They are grass-like herbs with narrow leaves, and include a large number of species, but only the more ornamental or useful are mentioned here. The hardy ones are of easy cultivation in ordinary garden soil, but *C. pendula* is most useful for the edges of ponds. The greenhouse ones are grown chiefly for their ornamental foliage. The variety known in nurseries as *Carex japonica variegata* is extensively grown for market, and makes a neat little plant for the small fancy pots. The ordinary green form is also appreciated, although the proper name is *C. brunnea*. It is always known in nurseries as *C. japonica*.

C. ba'ccans (berried). Fruit coral red to purple. Trop. Asia. Greenhouse.
„ *bru'nnea* (Brownian). Foliage graceful. India, Japan. 1892. Greenhouse.
C. bru'nnea variega'ta (variegated). Foliage plant. Greenhouse.
„ *Gra'yi* (Gray's). 1. Brown. July. N. Amer.
„ *japo'nica* (Japanese). See C. BRUNNEA.
„ *Morro'wii* (Morrow's). 1. Brown. Japan.
„ „ *variega'ta* (variegated). Foliage plant.
„ *paludo'sa* (marshy). 3. Brown. June. Britain. Aquatic.
„ „ *variega'ta* (variegated).
„ *pe'ndula* (drooping). 3. Brown. July. Britain. Aquatic.
„ *ripa'ria* (river-bank). 3 to 5. Brown. June. Britain. Aquatic.
„ *scapo'sa* (scaped). Brownish-red fruits. S. China. 1887. Greenhouse.
„ *trista'chya* (three-spiked) 1. Brown or green. Japan. Greenhouse.
„ *Vilmori'ni* (Vilmorin's). Leaves long, narrow, graceful. New Zealand. 1897. Greenhouse.

CA'REYA. (Named after *Dr. Carey*, a celebrated divine and Indian linguist, who devoted his leisure hours to gardening and botany. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

These splendid plants are fit associates to Barringtonia and Gustavia. Stove-plants, from the East Indies; cuttings, and dividing the roots; sandy loam one part, to two parts fibrous peat, with pieces of charcoal, and plenty of drainage, and careful watering. Summer temp., 60° to 85°; winter, 55° to 60°.

C. arbo'rea (tree). 8. Red and yellow. 1823.
„ *herba'cea* (herbaceous). 1. Red and white. July. 1808. Herbaceous perennial.
„ *sphæ'rica* (round-*fruited*). 3. Red. 1803. Evergreen shrub.

CA'RICA. Papaw-tree. (Named from an erroneous idea that it was a native of *Caria*. Nat. ord. *Papayads* [Passifloraceæ]. Linn. 22-*Diœcia*, 9-*Decandria*.)

One of the tropical fruits grown in our stoves, more for curiosity than for use. The Papaw fruit (*C. Papa'ya*) is eaten, when cooked, in some parts of South America, but not much esteemed by Europeans. Stove trees; cuttings of ripe shoots in sandy soil, in close case, with bottom-heat, and in sweet, rich, loamy soil. Summer temp., 60° to 85°; winter, 50° to 60°.

C. auranti'aca (orange). Colombia. 1873.
„ *candamarce'nsis* (Candamarcan). 6. Green. Fruit yellow. Ecuador. 1874.
„ *cauliflo'ra* (stem-flowering). 20. Green. Caraccas. 1806.
„ *citrifo'rmis* (orange-formed). 20. Yellowish. Lima. 1820.
„ *cundinamarce'nsis* (Cundinamarcan). See C. CANDAMARCENSIS.
„ *erythroca'rpa* (red-fruited). 4. White. Ecuador. 1871.
„ *gra'cilis* (graceful). 6. Colombia. 1879.
„ *hastæfo'lia* (halbert-leaved). See C. QUERCIFOLIA.
„ *microca'rpa monoi'ca* (small-fruited-monœcious). 20. Whitish-green. 1818.
„ *Papa'ya* (*common* papaw). 20. Green. July. Trop. Amer. 1690.
„ *Poso'pora* (Posopora). 20. Pinkish. Peru. 1823.
„ *pyrifo'rmis* (pear-shaped). See C. POSOPORA.
„ *quercifo'lia* (oak-leaved). S. Amer.
„ *senega'mbica* (Senegambic).
„ *spino'sa* (prickly). 20. Whitish-green. Guiana. 1821.

CARICATURE PLANT. *Graptophy'llum horte'nse.*

CARI'SSA. (The derivation is not ascertained; but *krishna-pakphula* is the Sanscrit name of *C. Cara'ndas*. Nat. ord. a section of *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The milky juice of this and others in this order of Dogbanes is manufactured into india-rubber. The fruit of *C. Cara'ndas* furnishes a substitute for red-currant jelly. That of *C. grandiflora* is used for making jam, tarts, &c., in South Africa. Stove trees and shrubs; cuttings of ripe wood in sand, under a glass, in bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. acumina'ta (pointed-leaved). White. S. Africa.
„ *Ardui'na* (Arduina). 2. White. June. S. Africa. 1760.

C. Cara'ndas (Carandas). 15. White. July. E. Ind. 1790.
„ *edu'lis* (edible). White. Egypt.
„ *fe'rox* (spiny, literally fierce). White. S. Africa.
„ *grandiflo'ra* (large-flowered). White. Natal. 1862. "Amatungula."
„ *lanceola'ta* (spear-*leaved*). 6. White. July. N. Holland. 1822.
„ *ova'ta* (egg-*leaved*). 15. White. August. N. Holland. 1819.
„ *spina'rum* (spiny). 20. White. July. E. Ind. 1819.
„ *Xylopi'cron* (bitter-wooded). 12. White. July. Mauritius. 1820.

CARLI'NA. (Named after *Charlemagne*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous perennials, except where otherwise specified. Seeds of annuals in April; seeds and divisions of perennials. The Cape species requires protection. Common soil.

C. acanthifo'lia (acanthus-leaved). 2. White. June. Carniola. 1818.
„ *acau'lis* (stemless). ½. White. June. Italy. 1640.
„ „ *caule'scens* (short-stemmed). 1. White. June. Switzerland. 1819.
„ *aggrega'ta* (clustered). See C. ACAULIS.
„ *bieberstei'na* (Bieberstein's). 2. Purple. August. Caucasus. 1816.
„ *corymbo'sa* (corymbose). 3. Yellow. July. South of Europe. 1640.
„ *lana'ta* (woolly). 3. Purple. June. South of Europe. 1683. Hardy annual.
„ *lyra'ta* (lyre-shaped-*leaved*). 1. June. Cape of Good Hope. 1816. Greenhouse biennial.
„ *racemo'sa* (racemed-*flowered*). 3. Yellow. July. Spain. 1658. Hardy biennial.
„ *si'cula* (Sicilian). 1. July. Sicily. 1827. Hardy biennial.
„ *si'mplex* (unbranched). See C. ACAULIS.
„ *vulga'ris* (common). 1. Yellow. August. Britain.

CARLUDO'VICA. (Named after *Charles IV.*, of Spain, and *Louisa*, his queen. Nat. ord. Cyclanthaceæ. Linn. 21-*Monœcia*, 9-*Polyandria*.)

The leaves of all the Screw-Pines are set spirally round the stem, which gives it a cork-screw appearance; hence the name of this order. Stove perennials; suckers; sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

C. acau'lis (stemless). See CAPUT-MEDUSÆ.
„ *angustifo'lia* (narrow-leaved). See CYCLANTHUS PLUMIERII.
„ *atrovi'rens* (dark green). Colombia.
„ *Ca'put-Medu'sæ* (Medusa's head). White, thready. Leaves 5 to 7 ft. long. 1887.
„ *Dru'dei* (Drude's). 4. Cream. Colombia. 1877.
„ *e'legans* (elegant). Leaves fan-shaped, 3 ft. across. 1889.
„ *ensifo'rmis* (sword-shaped). 2. White. Costa Rica. 1875.
„ *funi'fera* (rope-bearing). 4. White. Guiana. 1824. Evergreen climber.
„ *Gardne'ri* (Gardner's). Brazil.
„ *Gœbe'lii* (Gœbel's). Similar to but much taller than *C. latifolia*. 1903.
„ *hu'milis* (dwarf). Peru. 1869.
„ *jamaice'nsis* (Jamaica). 4. White. Jamaica. 1825. Evergreen climber.
„ *lancæfo'lia* (lance-leaved). Pale yellow. Guiana. 1862.
„ *latifo'lia* (broad-leaved). 3. Green. July. Peru. 1818.
„ *lauchea'na* (Lauchean). Antioquia, Colombia. 1893.
„ *microce'phala* (small-headed). 1½. Pale yellow, with long, white threads. Costa Rica.
„ *moritzia'na* (Moritzian). Colombia.
„ *palma'ta* (palmate). 3. White. July. S. Amer. 1818.
„ *palmifo'lia* (Palm-leaved). See C. PLUMERII.
„ *plica'ta* (plaited). Colombia.
„ *Plume'rii* (Plumer's). W. Ind. 1889.
„ *purpura'ta* (purple). 2 to 4. Leaf-stalks reddish-purple. Trop. Amer.
C. rotundifo'lia (round-leaved). Similar to *C. palmata*, but larger. Costa Rica.
„ *Walli'sii* (Wallis's). 1½. Cream. Colombia. 1879.

CARMICHAE'LIA. (Named after *Capt. H. Carmichael*, author of the *Flora of Tristan da Acunha*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Indigofera.)

Greenhouse evergreen shrubs; cuttings of side-shoots under glass, in sand, in April or May; sandy peat, and a very little fibrous loam. Summer temp., 55° to 65°; winter, 40° to 45°.

C. austra'lis (southern). 2. Light blue. June. New Zealand. 1800.
„ *Eny'sii* (Enys's). ½. New Zealand. 1884.
„ *flagellifo'rmis* (whip-formed). New Zealand.
„ *grandiflo'ra* (large-flowered). New Zealand.
„ *Ki'rki* (Kirk's). New Zealand.
„ *muelleria'na* (Muellerian). White, lined purple. New Zealand. 1887.
„ *odora'ta* (sweet-scented). White. New Zealand. 1902.
„ *uniflo'ra* (one-flowered). ½. New Zealand. 1884.

CARNATIONS. (*Dianthus Caryophyllus*.) The Carnations may be divided into several groups, but with so much cross fertilisation it becomes a little difficult to draw distinctions, yet we may take some of the most distinct as examples. In the older editions of the *Gardeners' Dictionary* most attention is given to what are known as Border varieties, but we now have American varieties, our English Tree varieties, Malmaisons, Marguerite varieties, and other sub-divisions, such as Picotees, &c.

Taking the various types we may first refer to the English border sorts, of which the old English clove is a good type, but there are many others of various colours. The chief characteristic of the type is that they flower from the previous year's growth, and it is rarely that the side-shoots throw up flower spikes until the following year. Dealing with these separately, the best method of propagating is by layering. This should be done any time from the middle of July to the end of August, or when the side-shoots are long enough to handle properly. All the lower leaves should be cleared off, and a cut made from the underside of the shoot, being careful to make the incision through a joint. Some old potting soil, or light, sandy loam should be put round the plants, the layers pegged down into it. The cut should be opened, so that the soil gets into the wound. If the weather is dry, surface watering may be necessary, but it should not be given too liberally. In years gone by a good many were grown and layered in pots, and for Show purposes they were distinguished as Selfs, Shows, Flakes, Bazarres, and Picotees, the last are the most distinct, and are often catalogued as Picotees, without adding Carnations. We have often been asked to give the distinction. The true Picotees have a narrow regular edge to the petals. The ground colour may be white or yellow, and the edging pink, red, purple, or other shades, but the colour must not run down in stripes. Those with irregular markings are termed Fancies; those with broad stripes are termed Flaked varieties, and the Bazarres are those with two broad distinct colours running down the petals. All of the above are of similar habit of growth, and should be propagated by layering, yet in a few instances, where the growths are numerous, cuttings may be taken, which will root in a cold, closed frame in the autumn. All layers or cuttings should be potted singly as soon as rooted, and kept in a closed frame during the winter, the lights being taken off in mild weather, and those intended for planting out may be put into the ground as soon as the weather permits after the middle of February. See that the ground is free from wire-worms; give a good dressing of well-rotted manure with which may be incorporated some soot, and press the soil fairly firm, but do not plant while the ground is very wet. Much depends upon the condition of the soil when planting, and care should be taken that the plants should not dry in the pots at the time of putting them in. The same instructions should be observed for those grown in pots, care being taken that the soil is not cold when potting in the winter time.

Malmaisons.—These are a distinct race, of which the original Souvenir de la Malmaison was the first type. This was introduced somewhere about fifty years ago;

and is distinguished by having short and sturdy growth; the flowers are large, with a very short calyx, and in the true type they are remarkable for producing a secondary lot of petals, from where the ovary should be. The original variety is still grown, the colour being of a soft flesh pink. Later we had several sports of a deeper shade of colour, and a good many seedlings have been raised. Some that are classed with the Malmaisons can hardly be recognised as belonging to the true form. Those of Hybrid origin may be propagated from cuttings, and we have had good results from cuttings of the true old variety, but layers are more reliable, and make better plants. All of this section should be grown under glass, and flower from May until July. Plenty of pot room with good drainage should be given, and if the loam is heavy, some peat may be added.

Perpetual flowering Carnations.—Originally this type came from the Continent, and after growing them for some time we had English varieties added. These were of dwarfer habit, but not such consistent flowerers, yet we had some good dwarf sorts, which flowered well through the winter, of which Miss Joliffe and Winter Cheer are good examples. There were also other good sorts, while the tall-growing continental varieties were neglected, and it was not until the Americans, who had worked on the old stock, and sent over some improved varieties, that we went back to those with the fringed edged petals. All who know the value of Carnations now recognise the merits of this type. Mrs. T. W. Lawson was the first of the American varieties to gain favour; since then we have had many others added. We must leave the above as the forerunner of the most useful class we have, yet Enchantress, White Perfection, Robert Craig, President Roosevelt, and Harlowarden may be given as examples of the best of the early types, and to these we may now add English varieties, Britannia being one of the finest scarlets, Carola the finest crimson; there are also a good many others, but as we get so many new varieties added from year to year, it will be better to only refer to distinct types.

In the culture of all the winter-flowering sorts, strong, short-jointed cuttings are of the first consideration. These may be had any time from October until March. There are various methods of treating cuttings. Some growers root them in sand only, but it takes longer to re-establish the plants afterwards; we prefer loam and sand, or if loam is not fibrous, some peat may be added. Cuttings succeed best where there is a good bottom-heat, and a cool surface. We hear of damp causing trouble, and so it does, if cuttings are allowed to get withered and then kept moist, but with ventilation given early in the mornings, and the cuttings kept constantly moist, they will do well. It is a stagnant atmosphere that causes harm. And one more point is that they should be removed from the close frame as soon as rooted.

Marguerite Carnations.—This is another distinct type; they are useful for summer or autumn bedding, and are also grown for flowering in pots late in the autumn. They are Hybrids, and are probably connected with the Indian Pink; they should certainly be treated as Annuals. One of the greatest faults is that they seed freely, and as soon as fertilisation takes place the petals wither. We have found this to be the case when fertilising other Carnations.

Seeding.—Careful cross-fertilisation will usually produce satisfactory results. Take a plant of good habit, and fertilise with the pollen from another of a better colour, of a similar but brighter shade, and good results will follow. Indiscriminate crossing of colours will be sure to result in failure. Seed from the first flowers that open where possible, and cut all others off as soon as they appear. Sow seed early in January, and place the seed pots where they get plenty of light, but not the direct blaze of the sun. Prick off as soon as large enough to handle, and pot singly before the roots get much matted together.

Insect Pests and Diseases.—Green-fly (or aphis) give some trouble, but the frequent syringing with clear, soot water while the plants are outside, and a thorough fumigating as soon as they are taken under glass, will go a great way towards keeping them clean through the winter. Red Spider is sometimes troublesome in spring, but by using the syringe freely at night, and ventilating early in the morning, it may be kept down; this also will do much towards keeping other troubles off. It is the dry nights and hot mornings that cause much mischief. These conditions also encourage the development of rust, spot, mildew, &c. Regular attention to watering, ventilating, and good soil are the chief essentials towards success in Carnation culture.

CAROLI'NEA. Pachira. (Named after *Sophia Caroline*, Margravine of Baden. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Adansonia.)

Stove trees. Cuttings of ripened wood in sand, under glass, in heat; rich, loamy soil. Summer temp., 60° to 85°; winter, 50° to 55°.

C. a'lba (white). See PACHIRA ALBA.
„ *insi'gnis* (showy). See PACHIRA INSIGNIS.
„ *mi'nor* (less). See PACHIRA MINOR.
„ *Pri'nceps* (princely). See PACHIRA AQUATICA.

CARPENTE'RIA. (Named in compliment to *Professor Carpenter* of Louisiana, a botanist of that state. Nat. ord. Saxifragaceæ.)

A handsome, evergreen shrub, hardy in the more favoured parts of the south and west of the British Isles, and against a wall inland and farther north. It is also suitable for the greenhouse or conservatory, either in pots or planted out. Seeds and cuttings in a gentle heat. Ordinary soil.

C. califo'rnica (Californian). 2 to 3. White. Summer. California. 1880.

CARPHE'PHORUS. (From *karphos*, dried shavings, and *phoreo*, to bear; the bracts surrounding the head. Nat. ord. Compositæ.)

Hardy perennial herbs. Seeds; divisions. Good garden soil.

C. bellidifo'lius (daisy-leaved). 2. Pink. August. N. Amer.
„ *corymbo'sus* (corymbose). 3. Purple. September. Carolina. 1825.

CARPI'NUS. Hornbeam. (From *car*, the Celtic for wood, and *pix*, a head; in reference to the wood being used to make the yokes of oxen. Nat. ord. *Mastworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 5-*Pent-Polyandria*.)

C. Be'tulus is the only one of the Hornbeams that is of much use or ornament; it is one of the best nurse-plants in young plantations, and for making fast-growing hedges. Hardy deciduous trees. Seeds sown when ripe, or kept in dry sand, until the following spring; suckers and layers for the varieties; layers for the common plants; but they are inferior to plants raised from seed. Common soil.

C. america'na (American). See C. CAROLINIANA.
„ *Be'tulus* (*common*). 30. April. Britain.
„ „ *asplenifo'lia* (Asplenium-leaved).
„ „ *au'reo-variega'ta* (golden-variegated-*leaved*). 20. March. 1845.
„ „ *Carpini'zza* (Carpinizza).
„ „ *columna'ris* (columnar). Upright.
„ „ *inci'sa* (cut-*leaved*). 15. March.
„ „ *marmora'ta* (marbled).
„ „ *pe'ndula* (pendulous). Weeping.
„ „ *purpu'rea* (purple-leaved).
„ „ *pyramida'lis* (pyramidal).
„ „ *quercifo'lia* (oak-leaved). 30. May. Europe.
„ „ *ru'bra* (red-leaved).
„ „ *variega'ta* (variegated). 20. March. Britain.
„ *carolinia'na* (Carolinian). 20. N. Amer. 1812. "American Hornbeam."
„ *corda'ta* (heart-shaped). 20 to 40. Fruits in clusters 5 to 6 in. long. Japan. 1904.
„ „ *chine'nsis* (Chinese). Central China.
„ *duine'nsis* (Duinian). See C. ORIENTALIS.
„ *japo'nica* (Japanese). A low tree. Japan. 1889.
„ *laxiflo'ra* (lax-flowered). Japan.
„ „ *macrosta'chya* (large-catkined). Central China.
„ *orienta'lis* (oriental). 12. S. Europe, Orient. 1739.
„ *O'strya* (Ostrya). See OSTRYA CARPINIFOLIA.
„ *Turczanino'vii* (Turczaninow's). China.
„ *yedoe'nsis* (Yedoese). A quick-growing tree. Japan, Central China. 1907.

CARPOCA'PSA POMONE'LLA. The Codlin Moth. Every grower of the apple knows how liable his fruit

is to be "worm-eaten." He finds basketfuls of "windfalls" even in the calmest weather, and that the cause of the loss is a small grub, which has fed upon the pulp of the fruit; but how, when, or where these grubs got there he has not the slightest notion. As it is one of the most injurious of insects to one of our most useful of fruits, we shall give more full particulars than usual, borrowing them chiefly from Mr. Westwood's essay in the *Gardeners' Magazine*, iv. 235, N.S. The grub in question is the larva of the Codlin Moth, *Carpocapsa pomonella* of some entomologists, but *Tinea pomonella*, *Pyralis pomona*, and *Tortrix pomoniana* of others. It is upon the pulpy parts of the apple that the grub chiefly feeds. When, however, it has nearly attained its full size, it feeds on the pips of the apple, which, thus attacked in its most vital part, soon falls to the ground. No sooner is the apple fallen than the grub quits the fruit by the passage which it had previously gnawed. A hundred apples may be opened, and not more than two or three larvæ observed within them; the orifice by which they have escaped being open, and not concealed by a little mass of brown grains, which is the case with those apples from which the larva has not made its escape. These little grains are the excrement of the larvæ, which are also to be seen in the burrows formed by them within the apple. The grub is of a dirty-white colour, with a brown head, varied with darkish-brown marks. The body is slightly hairy; the first segment after the head is whitish, with minute brown spots; the other segments are of a pale colour, with about eight small tubercles on each; each of the three anterior segments is furnished with a pair of legs; and there are a pair of feet at the extremity of the body. In its early state it is of a dirty-reddish or flesh colour. The caterpillar wanders about on the ground till it finds the stem of a tree, up which it climbs, and hides itself in some little crack of the bark. The fall of the apple, the exit of the grub, and its wandering to this place of safety usually take place in the night-time. It gnaws away the bark a little, and, having made a smooth chamber, spins a little milk-white silken case, in which, after a few weeks, it becomes a chrysalis; and in this state it remains through the winter, and until the following June, when the moth comes forth, and is to be seen hovering round the young apples on a midsummer evening. The moth itself, of which we give a cut, of the natural size and magnified, is a very beautiful insect, about three-quarters of an inch in expanse: fore wings ashy-brown, with very numerous, rather obscure, darker, transverse streaks, united into a broadish band towards the base, giving them a damasked appearance. On the hind border of the fore wings is a large reddish-brown patch, spotted, and surrounded with a golden mark. The hind wings reddish-brown, tinged with yellow. The moth lays its eggs in the eyes of the young apples, one only in each, by inserting its long ovipositor (egg-tube) between the divisions of the calyx. As soon as the egg is hatched, the little grub gnaws a hole in the crown of the apple, and soon buries itself in its substance; and it is worthy of remark, that the rind of the apple, as if selected for the purpose, is thinner here than in any other part, and, consequently, more easily pierced. The apple most commonly attacked is the codlin. It will be evident, from the preceding details of the habits of this moth, that there are considerable difficulties in the way of its extermination. It is impossible, for instance, to be aware of the presence of the enemy within the fruit until the mischief is actually completed; and, in like manner, the destruction of the moth, from its small size, and its habit of secreting itself in crevices of the bark, &c., is equally impracticable. The gathering up of the worm-eaten apples immediately after their fall, and before the enclosed caterpillar has had time to escape, cannot but be attended with good effect: care, however, must be taken to destroy the larvæ, which would otherwise very speedily make their escape. The cocoons, also, may be destroyed in the chinks of the bark during the autumn and winter.

CARPODE'TES RECURVA'TA. See STENOMESSON RECURVATUM.

CARPODI'NUS. Sweet Pishamin. (Derived from *carpos*, a fruit, and *dineo*, I turn round; the fruit is curved. Nat. ord. *Dogbanes* [Apocynaceæ]. Allied to Carissa.)

A climbing evergreen for the stove. Cuttings of half-ripened wood in sand in a close case with bottom-heat. Soil, loam, peat, and sand.

C. du'lcis (sweet). 8. Green. June. Trop. Africa. 1822.

CARPODO'NTOS LU'CIDA. See EUCHRYPHIA BILLARDIERI.

CARPOLY'ZA. (From *karpos*, a fruit, and *lussa*, rage; in reference to the three-celled fruit, or seed-pod, opening like the mouth of an enraged animal. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Gethyllis and Lapiedra.)

A very neat little bulb, with spiral leaves, and starry, pinkish flowers, having green tops, requiring the same treatment as Ixia.

C. spira'lis (pink). Cape of Good Hope. 1774.

CARRI'CHTERA. (A commemorative name. Nat. ord. Cruciferæ. Allied to Vella.)

A hardy annual. Seeds. Light, rich soil.

C. Ve'llæ (Vellæ). 1–1½. Yellow-white, with purple veins. S. Europe, N. Africa, &c.

CARRIE'RIA. (Named after *M. Carriere*, an able writer and botanist. Nat. ord. Bixaceæ.)

A hardy tree with the aspect of *Idesia polycarpa*, but having a woody capsular fruit. Ordinary soil. Seeds and cuttings.

C. calyci'na (large-calyxed). 50. China. 1896.

CARROT. *Dau'cus Caro'ta.*

Varieties.—Those with a long tapering root are named Long Carrots; and those having one that is nearly regularly cylindrical, abruptly terminating, are denominated Horn Carrots. The first are employed for the main crops; the second, on account of their superior delicate flavour, are advantageously grown for early use, and for shallow soils.

Horn Carrots.—Early Red. Common Early. Dutch, for forcing. Long. This last is the best for the summer crop.

Long Carrots.—White Belgium, Yellow, Long Yellow, Purple, Long Red, Chertsey, and Surrey. Superb Green-topped, or Altringham. The last two are the best for main crops.

Soil and Situation.—Carrots require a warm, light, rich soil, dug full two spades deep. With the bottom-spit it is a good practice to turn in a little well-decayed manure; but no general application of it to the surface should be allowed in the year they are sown; but a spot should be allotted them which has been made rich for the growth of crops in the previous year, or else purposely prepared by manuring and trenching in the preceding autumn. The fresh application of manure is liable to cause their growing forked, and to expend themselves in fibres, as well as to be worm-eaten. If the soil is at all binding, it should be well pulverised by digging very small spits at a time. Pigeons' dung is a good manure for the carrot.

Time and Mode of Sowing.—The first sowing for the production of plants to draw whilst young should take place in a moderate hotbed (this was the old practice, but modern cultivators grow them under light constructed glass-houses), during January, and in a warm border at the conclusion of February, or early in March. At the close of the last month, or, preferably, in the first half of April, the main crop must be inserted; though, to avoid the maggot, it is even recommended not to do so until its close. In May until July the sowing may be repeated for production in autumn, and lastly in August, to stand through the winter, and produce in early spring. For sowing, a calm day should be selected; and the seeds should be separated by rubbing them between the hands, with the admixture of a little sand or dry coal-ashes, otherwise they cannot be sown regularly. Sow thinly, in drills eight inches apart for the horn, and ten or twelve inches for the long; and the beds not more than four feet wide, for the convenience of after-cultivation. The larger weeds must be continually removed by hand; and when the plants are seven or eight weeks old, or when they have got four leaves two or three inches long, they should be thinned, those intended for drawing young, to four or five inches apart, and those to attain their full growth to ten. At the same time, the ground must be regularly hoed to keep down all weeds, and also to ventilate the soil. It is after

heavy rains, and as soon as the surface is sufficiently dry that hoeing is most beneficial. Never tread on the ground while it is very wet. The crop to stand through the winter should, in frosty weather, be sheltered with a covering of litter, as, if it occurs with much severity, it often destroys them. The hotbed for the first sowing of the year must be moderate, and earthed about sixteen inches deep: two or three linings of hot dung, as the heat decreases, will be sufficient to bring them to a state fit for use. These are the first in production, but are closely followed by those that have withstood the winter. The temperature must never exceed 73°, nor fall lower than 55°. They need not be thinned to more than three inches apart. At the close of October, or early in November, as soon as the leaves change colour, the main crop may be dug up, and laid in alternate layers with sand, in a dry outhouse, previously to doing which the tops and any adhering earth must be removed. A dry day should always be chosen for taking them up.

To obtain Seed.—Leave some where raised; but, if this is impracticable, some of the finest roots should be selected, and their tops not cut so close as those for storing. These, likewise, must be placed in sand until February or March, then to be planted out two feet asunder in a stiff, loamy soil. Those left where grown, or those planted at the close of autumn, must, during frosts, have the protection of litter—to be removed, however, during mild weather. As the seed ripens in August, which is known by its turning brown, each umbel should be cut, otherwise much of the seed is often lost during stormy weather. It must be thoroughly dried, by exposure to the sun and air, before it is rubbed out for storing. For sowing, the seed should always be of the previous year's growth; if it is more than two years old it will rarely vegetate, unless it has been kept in a close box and in a cool position.

Insects.—The carrot is liable to the attacks of the wire-worm (see ELATER), as well as of those next mentioned.

CARROT MAGGOT. (*Psila rosæ.*) The parent fly is dark, with a metallic-green lustre, and rather hairy; head, reddish-yellow; legs, yellow; wings, very transparent. Very much resembles the *Anthomyia*. The grub, or maggot, is cylindrical and yellow; it eats holes in the main root of the carrot. This underground enemy of the carrot is said to be banished by mixing spirits of tar with sand until saturated, and applying it to the soil previously to digging, at the rate of about one gallon to sixty square yards; but we find trenching and manuring, as we have directed, a sufficient protective.

CARROT MOTH. See DEPRESSARIA.

CA'RTHAMUS. (From *quartom*, to paint, in the Arabic; referring to the flowers yielding a fine colour. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy annuals. Seeds sown in April where they are to grow, or in a slight hotbed, in March, and then planted out; common soil.

C. arbore'scens (tree-like). 6. Yellow. August. Spain. 1831.
„ *arbo'reus* (tree). See C. ARBORESCENS.
„ *cæru'leus* (blue). See CARDUNCELLUS CÆRULEUS.
„ *Cardunce'llus* (little Cardoon). See CARDUNCELLUS MONSPELIENSIUM.
„ *cre'ticus* (Cretan). See C. LANATUS.
„ *cynaroi'des* (Cynara-like). See COUSINIA CYNAROIDES.
„ *flave'scens* (yellowish). Asia Minor.
„ *glau'cus* (sea-green). 1½. Purple. July. Caucasus, Asia Minor. 1817.
„ *læ'vis* (smooth). See STOKESIA CYANEA.
„ *lana'tus* (woolly). 2. Yellow. July. Europe. 1596.
„ *leucocau'los* (white-stemmed). 1. White. June. Greece. 1800.
„ *miti'ssimus* (mildest). See CARDUNCELLUS MITISSIMUS.
„ *Oxyaca'ntha* (sharp-spined). 2. Yellow. July. Caucasus. 1818.
„ *tau'ricus* (Taurian). See C. LANATUS.
„ *tinctu'rius* (dyer's), 3. Orange. June. Egypt. 1551. "Safflower."

CARTONE'MA. (From *kartos*, shorn, and *nema*, a filament; referring to the formation of the filaments, or threads, which support the pollen-bags. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Greenhouse herbaceous perennial. Seeds sown in slight hotbed; light loam and sandy peat; requires the protection of a greenhouse, or a warm situation.

C. spica'tum (spiked). 1. Blue. July. N. Holland. 1822.

CA'RUM. Caraway. (From *Caria*, in Asia Minor, where it was first discovered. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to the weed Ammi.)

The seed of *C. Ca'rvi* is our Caraway, esteemed for its aromatic qualities. Hardy biennials. Seeds; open ground, in March or April. Common soil.

C. Ca'rvi (common). 2. White. May. Britain.
„ *Petroseli'num* (rock Selinum). 1 to 2. Yellow. June. Europe. "Parsley."
„ *verticilla'tum* (whorl-*leaved*). 1. White. July. Britain. This species is removed here from *Si'son*, a genus of weeds.

CARU'MBIUM. See HOMALANTHUS.

CA'RYA. Hickory. (The Greek name for the Walnut, so named on account of *Carya*, daughter of Dion, King of Laconia, said to have been changed by Bacchus into a Walnut-tree. Nat. ord. *Juglans* [Juglandaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

This is the Hickory so celebrated in North America for the purposes of the cabinet-maker. Their best chairs they call their *Hickories*. Hardy deciduous trees. Seeds; the nut should be sown where the tree is intended to stand; may also be propagated from layers or by grafting on the ordinary walnut. Good, common soil.

C. a'lba (white). 30. April. 1629. "Shell-bark Hickory."
„ *ama'ra* (bitter-*nut*). 30. May. 1800.
„ *aqua'tica* (aquatic). South United States. "Water Hickory." "Bitter Pecan."
„ *compre'ssa* (compressed-*fruited*). See C. ALBA.
„ *lacinio'sa* (jagged). See C. SULCATA.
„ *microca'rpa* (small-fruited). 30. April.
„ *myristicæfo'rmis* (Nutmeg-formed). Southern United States. "Nutmeg Hickory."
„ *obcorda'ta* (reversed-heart-shaped). See C. PORCINA OBCORDATA.
„ *olivæfo'rmis* (olive-shaped). 30. April. "Pecan."
„ *porci'na* (hog-*nut*). 30. May. 1799.
„ „ *gla'bra* (smooth). May.
„ „ *obcorda'ta* (obcordate). 30. May. 1812.
„ *sulca'ta* (furrowed). 30. April. 1804.
„ *tomento'sa* (woolly). 30. April.
„ „ *ma'xima* (greatest *fruited*). 60. May.

CA'RYOCAR. Butter Nut. (From *karyon*, a nut; in reference to its fruit. Nat. ord. *Rhizobols* [Ternstrœmiaceæ]. Linn. 13-*Polyandria*, 4-*Tetragynia*.)

Two genera of immensely large trees, bearing large flowers and edible nuts, constitute the whole of this small group. The Suwarrow (Sauari) nuts of the shops are the produce of the *C. nuci'ferum*. Oil not inferior to olive-oil is extracted from the kernels. Cuttings in sand, in heat, under glass. Loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°.

C. gla'brum (smooth). 100. Green. Guiana. 1820.
„ *nuci'ferum* (nut-bearing). 100. Red, yellow. Guiana. 1820.
„ *tomento'sum* (woolly). 100. White. Guiana. 1820.

CARYOPHY'LLUS AROMA'TICUS. See EUGENIA CARYOPHYLLATA.

CARYOPTERIS. (Derived from *karyon*, a nut, and *pteron*, a wing; because the fruits are winged. Nat. ord. Verbenaceæ.)

Nearly hardy sub-shrubs, and should be planted in sheltered situations. Seeds, suckers, divisions, layers, or cuttings. Ordinary soil well drained.

C. Mastaca'nthus (Mastacanthus). 1 to 4. Dark blue. Autumn. China, Japan. 1844.
„ „ *ca'ndicans* (grayish). Gray foliage.
„ *mongho'lica* (Mongolian). 2. Violet-blue. N. China. 1872.
„ *wallichia'na* (Wallichian). 4. Red. Himalayas. 1823.

CARYO'TA. (From *karyon*, a nut. The Greeks first applied this name to their cultivated Date. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

A noble member of a noble family of plants, most valuable to the natives of the countries they inhabit, *C. u'rens* furnishing a highly nutritious sago, besides abundance of palm-wine, or toddy. Stove trees. Seeds; rich, sandy loam and peat. Summer temp., 60° to 85°; winter, 50° to 55°.

C. Albe'rti (Albert's). See C. RUMPHIANA.
„ *Blanco'i* (Blancoi). Philippines.
„ *Cumi'ngii* (Cuming's). 25. Philippines. 1841.
„ *e'legans* (elegant).
„ *furfura'cea* (scurfy). See C. MITIS.
„ „ *limba'ta* (large-leaved). Java.
„ *ho'rrida* (horrid). See BACTRIS CARYOTÆFOLIA.
„ *maje'stica* (majestic). Philippines.
„ *ma'xima* (largest). Java. 1849.
„ *mi'tis* (mild). White. Cochin-China. 1820.
„ *obtu'sa* (blunt). Himalayas.
„ *ochla'ndra*. China.
„ *plumo'sa* (feathery).
„ *propi'nqua* (related). See C. MITIS.
„ *purpura'cea* (purplish). See C. FURFURACEA.
„ *rumphia'na* (Rumphian). Malaya and Australia.
„ *soboli'fera* (sucker-bearing). See C. MITIS.
„ *specio'sa* (showy). Philippines. 1881.
„ *u'rens* (stinging). 20. White. E. Ind. 1788.

CASCADE, or **WATERFALL**, is agreeable only when properly associated with the scenery around. That association is a bold, broken ground, and a dense plantation of trees. Nothing is more misplaced or tasteless than a sheet of water falling into another uniform collection of water, in an open, unwooded plain. The roar of a cascade belongs only to larger streams; but it may be introduced by a rivulet to a considerable degree, and attempts to do more have generally been unsuccessful: a vain ambition to imitate nature in her great extravagances betrays the weakness of art. Though a noble river throwing itself headlong down a precipice be an object truly magnificent, it must be confessed that in a single sheet of water there is a formality which its vastness alone can cure; but the height, not the breadth, is the wonder. When it falls no more than a few feet the regularity prevails; and its effect only serves to expose the vanity of affecting the style of a cataract in an artificial cascade. It is less exceptionable if divided into several parts, for then each separate part may be wide enough for its depth; and, in the whole, variety, and not greatness, will be the predominant character. But a structure of rough, large, detached stones cannot easily be contrived of strength sufficient to support a great weight of water. It is sometimes, from necessity, almost smooth and uniform; and then it loses much of its effect. Several little falls in succession are preferable to one greater cascade, which, in figure or in motion, approaches to regularity.

When greatness is thus reduced to number, and length becomes of more importance than breadth, a rivulet vies with a river; and it more frequently runs in a continued declivity, which is very favourable to such a succession of falls. Half the expense and labour which are sometimes bestowed on a river to give it, at the best, a forced precipitancy in any one spot only, would animate a rivulet through the whole of its course; and, after all, the most interesting circumstance in falling waters is their animation. A great cascade fills us with surprise; but all surprise must cease; and the motion, the agitation, the rage, the froth, and the variety of the water are finally the objects which engage the attention. For these a rivulet is sufficient; and they may there be produced without that appearance of effort which raises a suspicion of art. To obviate such a suspicion, it may sometimes be expedient to begin the descent out of sight; for the beginning is the difficulty. If that be concealed, the subsequent falls seem but a consequence of the agitation which characterises the water at its first appearance; and the imagination is, at the same time, let loose to give ideal extent to the cascades.

CASCARILLA BARK. *Croton Eluteria*.

CASEA'RIA. (Named after *J. Casearius*, the coadjutor of Rheede in producing the *Hortus Malabaricus*. Nat. ord. *Samyds* [Samydaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove evergreen trees, chiefly valued for their astringent and medicinal qualities. Cuttings in sand, under a glass, in heat. Light, sandy, fibrous loam. Summer temp., 60° to 80°; winter, 50° to 60°.

C. hirsu'ta (hairy). 8. Yellow, green. Jamaica. 1825.
„ *parvifo'ra* (small-flowered). See C. SYLVESTRIS.
„ *parvifo'lia* (small-leaved). 6. Yellowish-green. Martinique. 1827.
„ *ramiflo'ra* (branch-flowered). 4. Yellowish-green. Guiana. 1824.
„ *serrula'ta* (fine-saw-edged). 6. Whitish-green. Jamaica. 1818.
„ *sylve'stris* (wood). 8. Whitish-green. Jamaica. 1818.

CA'SHEW NUT. *Anacardium occidentale*.

CASIMIRO'A. Mexican Apple. (Named after *Cardinal Casimiro Gomez*. Nat. ord. Rutaceæ.)

An evergreen stove shrub with an edible fruit. Seeds and cuttings of half-ripe wood in sand, plunged in cocoanut fibre in a close case with bottom-heat. Fibrous loam, peat, and sand.

C. edu'lis (edible). Flowers small, green. Fruit like an Apple. Mexico. 1866.

CASPA'REA SPECIO'SA. See BAUHINIA PETIOLATA.

CASSA'NDRA. (A mythological name. Nat. ord. Ericaceæ.)

Hardy shrubs for the American garden, and much benefited by a liberal use of peat in the soil.

C. angustifo'lia (narrow-leaved). See C. CALYCULATA.
„ *calycula'ta* (small-calyxed). 1 to 2. Pure white. April. N. Amer. 1748.

CASSA'VA. *Manihot utilissima* and *M. Aipi*.

CASSEBEE'RA. (Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Allied to Pellæa.)

Divisions; peat and loam; hardy greenhouse and stove treatment, according to their native locality.

C. argentea (silvery). ½. Brown. July Siberia. 1816. Hardy.
„ *auricula'ta* (eared). Brown. July. Stove.
„ *cunea'ta* (wedge-shaped-*leaved*). Brown. July. 1831. Stove.
„ *farino'sa* (mealy). 1½. Brown. May. Isle of Luzon. 1840. Stove.
„ *hasta'ta* (halbert-*leaved*). 2. Brown. August. Cape of Good Hope. 1823. Greenhouse.
„ *intramargina'lis* (bordered-beneath). Brown. September. Mexico. 1828. Greenhouse.
„ *peda'ta* (twice-lobed). ½. Brown. Virginia. 1820. Hardy.
„ *pinna'ta* (leafleted). Brown. June. Stove.
„ *pteroi'des* (fern-like). Brown. July. Cape of Good Hope. 1775. Greenhouse.
„ *triphy'lla* (three-leaved). Brown. July. 1824. Stove.
„ *Vespertilio'nis* (bat-*winged*). 3. Brown. August. N. Holland. 1823. Greenhouse.

CA'SSIA. (From the Greek name of a plant, *kasian* of the Bible. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

C. lanceola'ta produces the true Alexandrian sennaleaves; and *C. angustifolia* yields the Arabian senna. The plant is a native of Tropical Africa, and from it is obtained the senna of Mecca. *C. obova'ta* furnishes the Aleppo senna; and in America they use the leaves of *C. marila'ndica* as a purgative. Allied to Cæsalpinia. Annuals and biennials by seed, sown in March or April, in heat; the biennials by cuttings, in April, of half-ripened shoots, in heat. A few will thrive in the greenhouse; but most of them require stove treatment in winter; that is, a temperature of from 50° to 60°; and where there is much room they deserve it.

ANNUALS.

C. A'bsus (Absus). Yellow. June. Tropics. 1824. Stove.
„ *acutifo'lia* (acute-leaved). 3. Yellow. June. Egypt. Stove. "Nubian Senna."
„ *æschyno'mene* (æschynome). See C. MIMOSOIDES.
„ *angusti'ssima* (narrowest-*leaved*). See C. MIMOSOIDES.
„ *a'spera* (rough). See C. NICTITANS.

C. *Burma'nni* (Burmann's). 1. Yellow. June. Cape of Good Hope. 1810. Half-hardy.
„ *Fi'stula* (Fistula). Yellow. India. " Purging Cassia."
„ *flexuo'sa* (zigzag-*stemmed*). 1. Yellow. July. Brazil. 1810. Stove.
„ *floribu'nda* (bundle-flowered). 4. Yellow. June. New Spain. 1818. Stove.
„ *flo'rida* (large-flowered). See C. SIAMEA.
„ *glandulo'sa* (glanded). 5. Yellow. September. W. Ind. 1822. Stove.
„ *hi'spida* (bristly). See C. HISPIDULA.
„ *hispi'dula*. Yellow. June. Cayenne. 1826. Stove.
„ *hu'milis* (humble). See C. TAGERA.
„ *ita'lica* (Italian *senna*). See C. ACUTIFOLIA.
„ *mimosoi'des* (Mimosa-like). 2. Yellow. July. Ceylon. 1806. Stove.
„ *ni'ctians* (twinkling). 2. Yellow. July. N. Amer. 1800. Hardy.
„ *obova'ta* (reversed-egg). 2. Yellow. July. Egypt. 1640. Stove. " Aleppo Senna."
„ *obtusifo'lia* (twisted-leaved). See C. TORA.
„ *procu'mbens* (lying-down). Yellow. June. N. Amer. 1806. Hardy.
„ *pu'mila* (dwarf). 1. Yellow. June. E. Ind. 1814. Stove trailer.
„ *Se'nna* (Senna). See C. ACUTIFOLIA.
„ *sia'mea* (Siamese). 6. Yellow. June. India. 1820. Stove.
„ *Ta'gera* (Tagera). Yellow. July. Trop. Amer. 1803. Stove biennial.
„ *Thonni'ngii* (Thonning's). See C. ABSUS.
„ *To'ra* (Tora). Yellow. July. Tropics. 1732.
„ *trifio'ra* (three-flowered). 1. Yellow. June. W. Ind. 1816. Stove.
„ *wallichia'na* (Wallich's). See C. MIMOSOIDES.

GREENHOUSE EVERGREENS.

C. *ægypti'aca* (Egpytian). See C. SOPHERA.
„ *artemisioi'des* (wormwood-like). 2. Yellow. June. N. Holland. 1820.
„ *austra'lis* (Australian). Yellow. Australia.
„ *barclaya'na* (Barclay's). See C. SOPHERA.
„ *Berte'ri* (Bertet's). See C. BICAPSULARIS.
„ *bicapsula'ris* (two-capsuled). 4. Yellow. May. W. Ind. 1739.
„ *bifio'ra* (two-flowered). 6. Yellow. August. W. Ind. 1766.
„ *bractea'ta* (bracteated). See C. ALATA.
„ *bracteo'sa* (bracteated). See C. DIDYMOBOTRYA.
„ *brevifo'lia* (short-leaved). Yellow. June. Madagascar. 1824.
„ *callia'ntha* (beautiful-flowered). See C. MULTIJUGA.
„ *cape'nsis* (Cape). 1. Yellow. June. Cape of Good Hope. 1816.
„ *chine'nsis* (Chinese). See C. SOPHERA.
„ *didymobo'trya* (two-lobed-bunch). Orange. Abyssinia. 1866.
„ *Flinde'rsii* (Flinder's). Yellow. June. N.S. Wales. 1818.
„ *frondo'sa* (leafy). See C. BIFLORA.
„ *glutino'sa* (clammy). 3. Yellow. June. N. Holland. 1818.
„ *linea'ris* (narrow-*podded*). See C. OCCIDENTALIS.
„ *marila'ndica* (Maryland). 3. Yellow. September. N. Amer. 1823. Hardy herbaceous perennial.
„ *ni'gricans* (blackish). 1. Yellow. June. Egypt. 1817.
„ *Reinwa'rdtii* (Reinwardt's). Java.
„ *ruscifo'lia* (ruscus-leaved). See C. SOPHERA.

STOVE EVERGREENS.

C. *acapulce'nsis* (Acapulco). See C. BIFLORA.
„ *ala'ta* (winged-*leaved*). 12. Yellow. W. Ind. 1731.
„ *angustifo'lia* (narrow-leaved). Yellow. Trop. Africa. " Arabian Senna."
„ *Apoucoui'ta* (Apoucouita). 8. Yellow. Surinam. 1820.
„ *arbore'scens* (tree-like). See C. EMARGINATA.
„ *atoma'ria* (dotted). 4. Yellow. June. S. Amer. 1810.
„ *auricula'ta* (small-eared). 4. Yellow. E. Ind. 1777.
„ *bacilla'ris* (rod). 3. Yellow. E. Ind. 1782.
„ *Chamæcri'sta* (ground-senna). 1. Yellow. July. America. 1699.
C. *chryso'tricha* (golden-haired). Yellow. June. Guiana. 1828.
„ *cilia'ris* (hair-fringed-*stipuled*). 1. Yellow. June. E. Ind. 1817. Herbaceous perennial.
„ *cilia'ta* (hair-fringed-*leafleted*). See C. OCCIDENTALIS.
„ *coquimbe'nsis* (Coquimban). Yellow. Chili. 1888.
„ *coromandelia'na* (Coromandel). See C. SOPHERA.
„ *corymbo'sa* (corymbose). 3. Yellow. July. Buenos Ayres. 1796.
„ *cuspida'ta* (spine-pointed-*leaved*). See C. PISTACIÆFOLIA.
„ *diphy'lla* (two-leaved). 2. Yellow. June. W. Ind. 1781.
„ *di'spar* (unequal). 3. Yellow. S. Amer. 1824.
„ *elli'ptica* (oval-*leaved*). See C. EMARGINATA.
„ *emargina'ta* (notch-*leaved*). 15. Yellow. May. Jamaica. 1759.
„ *fastigia'ta* (peaked). See C. GLAUCA.
„ *gigante'a* (gigantic). Yellow. June. Jamaica. 1825.
„ *glau'ca* (milky-green). 4. Yellow. June. E. Ind. 1818.
„ *gorate'nsis* (Goratian). Abyssinia.
„ *gra'cilis* (slender). 2. Yellow. June. Orinoco. 1817.
„ *gra'ndis* (grand). Panama.
„ *herbertia'na* (Herbert's). See C. LÆVIGATA.
„ *hirsu'ta* (coarse-haired). 4. Yellow. July. America. 1778.
„ *hi'rta* (hairy). 3. Yellow. August. N. Amer. 1820.
„ *houstonia'na* (Houston's). Yellow. July. Jamaica. 1817.
„ *læviga'ta* (smooth). 3. Yellow. July. Tropics.
„ *lanceola'ta* (spear-*leaved*). See C. ANGUSTIFOLIA.
„ *linea'ta* (lined-*leaved*). 1. Yellow. June. Jamaica. 1818.
„ *longisi'liqua* (long-podded). See C. OCCIDENTALIS.
„ *lotoi'des* (lotus-like). See C. HISPIDULA.
„ *macranthe'ra* (large-anthered). 3. Yellow. June. Brazil. 1824.
„ *margina'ta* (bordered). 3. Yellow. June. Surinam. 1823.
„ *mexica'na* (Mexican). 5. Yellow. June. Mexico. 1824.
„ *melanoca'rpa* (black-podded). See C. VIMINEA.
„ *molli'ssima* (softest-*leaved*). See C. ATOMARIA.
„ *multi'juga* (many-pair-leaved). Yellow. Guiana. 1828.
„ *monta'na* (mountain). Yellow. May. E. Ind. 1822.
„ *nu'tans* (nodding). S. Amer.
„ *occidenta'lis* (western). 3. Yellow. June. W. Ind. 1759. " Negro Coffee."
„ *parkeria'na* (Parker's). See C. RIPARIA.
„ *pa'tula* (spreading). See C. SOPHERA.
„ *pe'ndula* (pendulous). See C. BICAPSULARIS.
„ *pentago'nia* (five-angled). 1. Yellow. June. Peru. 1700. Herbaceous perennial.
„ *pilo'sa* (soft-haired). 1. Yellow. June. Jamaica. 1818. Herbaceous perennial.
„ *pistaciæfo'lia* (Pistacia-leaved). 4. Yellow. July. S. Amer. 1820.
„ *planisi'liqua* (flat-podded). 4. Yellow. June. W. Ind. 1822.
„ *polyphy'lla* (many-leafleted). 4. Yellow. June. W. Ind. 1816.
„ *pube'scens* (downy). 2. Yellow. June. S. Amer. 1812.
„ *pulche'lla* (pretty). 3. Yellow. July. Mauritius. 1825.
„ *purpu'rea* (purple-*stemmed*). See C. SOPHERA.
„ *quinquangula'ta* (five-angled-*branched*). See C. LÆVIGATA.
„ *reticula'ta* (netted). 10. Yellow. August. S. Amer. 1821.
„ *richardia'na* (Richard's). See C. MULTIJUGA.
„ *ripa'ria* (river-bank). 2. Yellow. August. Guiana 1817.
„ *robinioi'des* (Robinia-like). See C. SOPHERA.
„ *sennoi'des* (senna-like). See C. BICAPSULARIS.
„ *seri'cea* (silky). Yellow. May. S. Amer. 1731.
„ *Sophe'ra* (Sophera). 4. Yellow. July. E. Ind. 1658.
„ *specio'sa* (showy). 5. Yellow. June. Brazil. 1816.
„ *specta'bilis* (showy). 4. Yellow. June. Caraccas. 1820.
„ *stipula'cea* (*large*-stipuled). 3. Yellow. Chili. 1781.
„ *sulca'ta* (furrowed-*branched*). 3. Yellow. June. S. Amer. 1820.
„ *sumatra'na* (Sumatra). See C. SIAMEA.
„ *Tara'ntan* (Tarantan). See C. RETICULATA.

C. tene'lla (weak). 2. Yellow. July. Orinoco. 1820.
„ *tomento'sa* (thick-downed). 15. Yellow. July. S. Amer. 1822.
„ *uniflo'ra* (one-flowered). Red. June. Brazil. 1824.
„ *venu'stula* (rather pretty). See C. BIFLORA.
„ *versi'color* (changing colour). Peru.
„ *vimi'nea* (twiggy). 3. Yellow. W. Ind. 1786.
„ *virga'ta* (rod-*branched*). 1. Yellow. June. W. Ind. 1810.

CASSIDA VIRIDIS. Artichoke Tortoise-beetle. The common artichoke's leaves suffer during the summer, sometimes, though rarely, from the attacks of the larva of a very curious small beetle, which may be called the Artichoke Tortoise-beetle, *Cassida viridis*. The beetle, which is found in May and June, is not more than one-sixteenth of an inch long; the antennæ are black; the dotted wing-cases and other outer coverings green; but the body beneath them black; and the legs pale, with black thighs. It is found upon the water-mints, as well as upon thistles and artichokes. The larva has a very flat body, with spines upon its edges; and it has the singular habit of covering itself with its own excrement, which it attaches together in a mass, and carries on a kind of fork attached to its tail. The pupa is also very flat, having thin toothed appendages at the sides of the body, with a broad thorax, prolonged forward into a rounded expansion, which covers the head.

CASSI'NE. (A name given by the North American Indians to a plant now referred to the Holly—*I'lex Cassine*. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

Greenhouse evergreen shrubs; cuttings of half-ripened shoots in sand, under a glass; loam and peat. Summer temp., 60° to 70°; winter, 40° to 45°.

C. æthio'pica (Ethiopian). 5. White. July. Cape of Good Hope.
„ *ba'rbara* (barbarous). 6. White. July. Cape of Good Hope. 1818.
„ *cape'nsis* (Cape *Phillyrea*). 6. White. July. Cape of Good Hope. 1629.
„ *Colpo'on* (Colpoon-tree). See C. CAPENSIS.
„ *exce'lsa* (tall). See ILEX EXCELSA.
„ *læviga'ta* (smooth). See PTEROCELASTRUS ROSTRATUS.
„ *Maurocе'nia* (Maurocenia. *Hottentot cherry*). 5. White. August. Cape of Good Hope. 1690.
„ *oppositifo'lia* (opposite-leaved). 5. White.
„ *sca'ndens* (climbing). 6. White. S. Africa. 1810.
„ *xyloca'rpa* (woody-fruited). See ELÆODENDRON XYLOCARPUM.

CASSI'NIA. Named after *Cassini*, a French botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 5-*Segregata*. Allied to Amobium.)

The annual by seed, in March; the others by dividing at the roots, and cuttings of half-ripened shoots, in sand, in April; loam and peat. Summer temp., 55° to 70°; winter, 45° to 50°.

C. aculea'ta (prickly). 2. May. Australia. 1820. Greenhouse evergreen.
„ *affi'nis* (allied). See C. ACULEATA.
„ *au'rea* (golden). 1. Yellow. July. N. Holland. 1803. Greenhouse herbaceous perennial.
„ *denticula'ta* (small-toothed). Pale yellow. Australia. 1826. Greenhouse evergreen.
„ *fu'lvida* (tawny). White. New Zealand. 1879. Syn. *Diplopappus chrysophyllus* of gardens.
„ *leptophy'lla* (slender-leaved). 2. White. August. New Zealand. 1821. Greenhouse evergreen.
„ *longifo'lia* (long-leaved). 2. May. N. Holland. 1822. Greenhouse evergreen.
„ *specio'sa* (showy). N.S. Wales. Greenhouse herbaceous perennial.
„ *specta'bilis* (showy). 6. Yellow. July. N. Holland. 1818. Hardy annual.

CASSI'OPE. (Named after *Cassiope*, a queen of Ethiopia. Nat. ord. Ericaceæ.)

Dwarf, evergreen, hardy shrubs requiring similar soil as for Hardy Heaths.

C. fastigia'ta (erect). 1. White. Himalayas. 1855.
„ *hypnoi'des* (Moss-like). 1. White. June. Northern Regions. 1798.
„ *tetrago'na* (four-angled). 1. White. April. Northern Regions. 1810.

CASTA'LIA. See NYMPHÆA.

CASTA'LIS FLA'CCIDA. See DIMORPHOTHECA AURANTIACA.

CASTA'NEA. Chestnut. (From a town of that name in Thessaly. Nat. ord. *Mastworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

Hardy deciduous trees, except *C. i'ndica*; seeds gathered in autumn, preserved in dry sand, and sown in March; deep, sandy loam; varieties by grafting.

C. america'na (American). See C. DENTATA.
„ *chine'nsis* (China). See C. CRENATA.
„ *chrysophy'lla* (golden-leaved). See CASTANOPSIS CHRYSOPHYLLA.
„ *crena'ta* (round-toothed). 50. Green. May. Japan. "Japanese Chestnut."
„ *denta'ta* (toothed). 50. Green. May. N. Amer. "American Chestnut."
„ *i'ndica* (Indian). See CASTANOPSIS INDICA.
„ *japo'nica* (Japanese). See C. CRENATA.
„ *pu'mila* (dwarf). 12. Green, yellow. July. N. Amer. 1699. "Chinquapin."
„ *sati'va* (cultivated). 50. Green. June. England. "Sweet Chestnut."
„ „ *a'lbo-margina'ta* (white-edged). Leaves white-edged. 1886.
„ „ *asplenifo'lia* (Asplenium-leaved). 50. Green. May. Europe.
„ „ *au'reo-margina'ta* (golden-edged). Leaves golden-edged. 1886.
„ „ *cochlea'ta* (spiral). Green. May.
„ „ *coralli'na-variega'ta* (coral-variegated). Green. May. 1846.
„ „ *cri'spa* (crisped-leaved).
„ „ *cuculla'ta* (hooded). Green. May. 1846.
„ „ *downtonia'na* (Downtonian).
„ „ *filipe'ndula* (Dropwort-leaved).
„ „ *fo'liis-au'reis* (golden-leaved). 50. Green. June.
„ „ *glabe'rrima* (smoothest).
„ „ *gla'bra* (smooth-*leaved*). Green. May.
„ „ *glau'ca* (milky-green). Green. June.
„ „ *heterophy'lla* (various-leaved).
„ „ *heterophy'lla disse'cta* (cut-various-leaved).
„ „ *lacinia'ta* (jagged-leaved).
„ „ *lu'cida* (shining-*leaved*). Green. May. 1846.
„ „ *macula'ta* (spotted).
„ „ *me'dia* (intermediate). 50. Green. June. Europe.
„ „ *monstro'sa* (monstrous).
„ „ *Moo'rei* (Moore's).
„ „ *Pri'ncei* (Prince's). Green. May. 1846.
„ „ *proli'fera* (proliferous).
„ „ *pu'mila* (dwarf). Green. May. 1846.
„ „ *pyramida'lis* (pyramidal).
„ „ *variega'ta* (variegated-*leaved*). Green. May.
„ *ve'sca* (sweet). See C. SATIVA.
„ *vulga'ris* (common). See C. SATIVA.

CHESTNUT (SPANISH, or SWEET). This, the *Casta'nea sati'va* of the above genus, in the southern parts of England is cultivated for its fruit, as well as for the value of its timber, which is in good esteem. There are several varieties in cultivation in this country, and, of course, many in France and Italy. About twenty foreign varieties may be found in the catalogue of the Horticultural Society; but the Downton, and the Prolific, or Devonshire, are at present most esteemed, probably as being somewhat hardier, and therefore well adapted to our climate, which is not capable of producing the fruit in that high degree of perfection of which it is susceptible in the warm and bright climates of Spain, Portugal, and France. The Châtaigne Exalade has been suggested as particularly eligible for the dwarfing-system in a small garden.

Propagation.—The better sorts are propagated by grafting on the ordinary chestnut of our nurseries, which is raised from seed.

Soil and Culture.—Any free upland soil is adapted to its culture, provided it is dry beneath, and not too adhesive. For the dwarfing-system we recommend the platform mode, allowing only half a yard in depth of soil. Little if any pruning is necessary, the fruit being all produced in clusters on the extremities of the shoots.

No other culture is necessary; but a warm situation is of much importance.

Fruit-seeds, how to Keep.—It is almost needless to observe that chestnuts are generally eaten roasted, mostly with a little salt. They are also stewed in cream, and eaten with salt fish. In keeping them dryness is necessary; but it must be accompanied with as low a temperature as possible. They should be taken out of their exterior or rough coating as soon as ripe; and it is well to subject them to an artificial heat of about sixty to seventy degrees in a warm room for a couple of days afterwards. They may then be packed away in dry sand, or dust, and placed in a very cold but dry room or cellar, where they will keep for months. They are very excitable as to sprouting; a very little moisture, with warmth, will bring on germination.

CASTANO'PSIS. (From *Castanea*, a chestnut, and *opsis*, resemblance. Nat. ord. Cupuliferæ.)

C. chrysophylla is a dwarf evergreen bush, hardy in the south, propagated by seed or cuttings in ordinary soil. *C. indica* may be increased by cuttings in a close case or by imported seeds.

C. chrysophy'lla (golden-leaved). 3. N.W. Amer. 1848.
„ *i'ndica* (Indian). 40. Himalayas. 1827. Stove evergreen.

CASTANOSPE'RMUM. Moreton Bay Chestnut. (From *castanea*, the chestnut, and *sperma*, a seed. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Sophora.)

Greenhouse evergreen; seeds when procurable; layers and cuttings; deep, loamy soil; greenhouse or conservatory wall.

C. austra'le (southern). 40. Saffron. N. Holland. 1828.

CASTE'LA. (After an author named *Castel*. Nat. ord. Simarubaceæ. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Elvasia.)

The Goatbust, *C. Nicholso'ni*, is as bitter as Quassia. Stove evergreen shrubs. Cuttings of rather firm shoots in sand, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. ere'cta (upright). 4. W. Ind. 1821.
„ *Nicholso'ni* (Nicholson's). 4. Copper. Antigua. 1830.

CASTILLE'JA. (Named after a Spanish botanist of that name. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Euphrasia.)

The stove species by cuttings of half-ripe shoots in sand, in bottom-heat, under a glass; loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°. Hardy species, seeds and divisions of the roots; peaty, sandy soil.

C. cocci'nea (scarlet). 1. Scarlet. July. N. Amer. 1826.
„ *indivi'sa* (undivided). 1. Greenish-yellow. Texas. 1878.
„ *inte'gra* (undivided). Bracts orange-scarlet. New Mexico. 1901.
„ *integrifo'lia* (entire-leaved). 1. Trop. Amer. 1825. Stove evergreen.
„ *lithospermoi'des* (gromwell-like). Scarlet. August. Mexico. 1848. Greenhouse.
„ *minia'ta* (vermilion). 1. Yellow, scarlet. N.W. Amer. 1874.
„ *morane'nsis* (Moran). Mexico. 1825. Prostrate stove evergreen.
„ *pa'llida* (pale). 1. Light purple. July. Siberia. 1782. Hardy herbaceous perennial.
„ *septentriona'lis* (northern). 2. White, green. August. Labrador. 1824. Hardy annual.
„ *serra'ta* (saw-edged). 1. Blue. June. 1829. Stove evergreen.
„ *sessilifo'ra* (stalkless-flowered). ½. Pale green. N.W. Amer.

CASUARI'NA. Beefwood. (Supposed to be derived from the resemblance of the long, weeping, leafless branches to the drooping feathers of the *Cassowary*. Nat. ord. *Beefwoods* [Casuarinaceæ]. Linn. 21-*Monœcia*, 1-*Monandria*.)

This is the "Native Oak, or Beefwood" of the Australian colonists, and probably the most singularly picturesque tree of the Australian flora. Large trees, with weeping branches, the individual branches being jointed like a bamboo, and streaked between the joints, having no leaves. The timber is as good as our Oak, and of the colour of raw beef, whence the colonial name. Cattle are extremely fond of the young branches of the *She Oak* (*C. quadriva'lvis*), and the colonists chew them to allay their thirst. From what we know in this country of *C. equisetifo'lia* we would rank the Beefwoods as the most remarkable in a winter conservatory. Greenhouse evergreen trees. Seeds, and cuttings of half-ripened shoots, in April, in sand, under glass; loam and peat, with a portion of sand, and lumps of charcoal. Summer temp., 55° to 70°, winter 40° to 45°. They should be tried in sheltered places out of doors, especially in the south of England.

C. cunninghamia'na (Cunninghamian). Australia.
„ *di'styla* (two-styled). 15. N. Holland. 1812.
„ *equisetifo'lia* (equisetum-leaved). 15. September. South Sea Islands. 1776.
„ *fraseria'na* (Fraserian). Australia.
„ *glau'ca* (milky-green). 15. N. Holland. 1824.
„ *murica'ta* (point-covered). See C. EQUISETIFOLIA.
„ *nodiflo'ra* (knot-flowered). 15. New Caledonia. 1823.
„ *quadriva'lvis* (four-valved). See C. STRICTA.
„ *stri'cta* (upright). 15. May. N.S. Wales. 1775.
„ *subero'sa* (corky). Australia.
„ *sumatra'na* (Sumatra). 4 to 5. Sumatra. 1882.
„ *tenui'ssima* (slenderest). See C. TORULOSA.
„ *torulo'sa* (twisted). 15. N. S. Wales. 1772.

CATAKIDOZA'MIA. See MACROZAMIA.

CATALPA. (The Indian name. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

The North American species by seeds sown in spring, root-cuttings, layers in autumn, and cuttings of the ripened shoots in autumn; deep, rich loam. The West Indian species by cuttings of the ripe shoots in heat, and under a glass; usual stove-treatment.

C. bignonioi'des (Bignonia-like). 25 to 30. White, spotted red. N. Amer. 1798. Varieties of this are *Au'rea* (golden-leaved), *fo'liis argе'nteis variega'tis* (silver variegated), *grandiflo'ra* (large-flowered), *Ka'hnei* (leaves yellow edged), *na'na* (dwarf), and *purpu'rea* (purple-leaved).
„ *Bu'ngei* (Bunge's). Green, yellow, red. China.
„ „ *heterophy'lla* (variable-leaved). See C. HETEROPHYLLA.
„ *cassinoi'des* (Cassine-like). Leaves intermediate between *C. cordifolia* and *C. Bungei*. Brazil. 1890.
„ *cordifo'lia* (heart-shaped-leaved). Western Kentucky and Tennessee. 1881.
„ „ *a'lbo-variega'ta* (white-variegated). Leaves with white blotches. 1910.
„ „ *pulveule'nta* (powdered). Leaves speckled with white. 1910.
„ *cordifo'lia* × *Kæmpfe'ri*. Garden hybrid.
„ *Duclou'xii* (Ducloux's). Rose. 1907.
„ *Farge'si* (Farges's). China.
„ *gallea'na* (Gallean). Hybrid between *C. Kæmpferi* and possibly *C. cordifolia*. 1907.
„ *He'nryi* (Henry's). Flowers numerous, small. China and Japan. 1907.
„ *heterophy'lla* (various-leaved). Flowers 3 to 5. N. China. 1907.
„ *hy'brida* (hybrid). Hybrid between *C. Kæmpferi* and *C. bignonioides*.
„ *japo'nica* (Japanese). Flowers white, fragrant. Japan. 1907.
„ *Kæmpfe'ri* (Kæmpfer's). Flowers and leaves smaller than *C. bignonioides*. Japan.
„ „ *flave'scens* (yellowish).
„ „ *purpu'rea* (purple-leaved).
„ *longi'ssima* (longest-*podded*). 20. White. W. Ind. 1777.
„ *microphy'lla* (small-leaved). 15. White. Hispaniola. 1820.
„ *Po'ttsii* (Potts's). 6. Pink. Mexico. 1851.
„ *pu'mila* (dwarf). Wien Gart. Zeit., 1890, 317.
„ *specio'sa* (showy). See C. CORDIFOLIA.
„ *sutchuene'nsis* (Sutchuen). White. W. China. 1907.
„ *syringæfo'lia* (Syringa-leaved). See C. BIGNONIOIDES.

C. syringæfo'lia teasia'na (Teasian). Hybrid between *C. Kæmpferi* and probably *C. cordifolia*. 1907.
„ *Thunbe'rgii* (Thunberg's). Wien Gart. Zeit., 1890, 318.
„ *umbraculi'fera* (umbrella-headed). 9 to 12. China. 1888.
„ *wallichia'na* (Wallichian). Considered a dwarf form of *C. Kæmpferi*. China. Syn. *C. Kæmpferi nana*.

CATANA'NCHE. (From *katananghe*, a strong incentive; in reference to an ancient custom among the Greek women of using it in love-potions. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)
Division of the roots in March, and seed sown in April; common soil.

C. cæru'lea (sky-blue). 3. Blue. August. S. Europe. 1596. Hardy herbaceous perennial.
„ „ *bi'color* (two-coloured). 3. White, blue. August. Gardens. 1827.
„ *lu'tea* (yellow). 1. Yellow. June. Candia. 1640. Hardy annual.

CATASE'TUM. (From *kata*, downward, and *seta*, a bristle; referring to the position of the two horns of the column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. Divisions; peat, moss, broken pots, and charcoal, elevated above a pot, or in shallow, open baskets; cool and dry in winter; a high temperature and moist atmosphere when making their growth. Summer temp., 60° to 90°; winter, 50° to 55°.

C. abru'ptum (blunt-*lipped*). 1. Greenish-yellow. September. Brazil. 1841.
„ *a'lbo-purpu'reum* (white-purple). Allied to *C. Bungerothii*.
„ *ape'rtum* (open). Apple-green, spotted brown. Allied to *C. macroglossum*. 1895.
„ *atra'tum* (dark-flowered). 1. Dark. July. Brazil.
„ *baraquinia'num* (Baraquinian). Olive, brown, white. Brazil. 1862.
„ *barba'tum* (bearded). ¾. Green, purple. May. Demerara. 1836.
„ „ *immacula'tum* (spotless). ¾. Green, pink. September. Demerara. 1835.
„ „ *labe'llo-a'lbum* (white-lipped). ¾. Greenish-white. September. Demerara. 1835.
„ „ *probosci'deum* (long-snouted). Brownish-green. May. Sertao. 1839.
„ *Bungero'thii* (Bungeroth's). Creamy white. Trop. Amer.
„ „ *a'lbum* (white). White, with rose spot on lip. 1888.
„ „ *au'reum* (golden). Pale yellow. Venezuela. 1887.
„ „ *pottsia'num* (Pottsian). Petals and lip spotted purple. 1887.
„ „ *Ra'ndii* (Rand's). Yellow with apricot spot.
„ *callo'sum* (hardened). 1. Brownish-yellow. June. La Guayra. 1840.
„ „ *grandiflo'rum* (large-flowered). 1. Green, brown, purple. December. Colombia. 1845.
„ *ce'rnuum* (drooping). 1½. Pale green. Rio Janeiro. 1832.
„ *chlora'nthum* (green-flowered). Pale green, rosy blotches. 1894.
„ *christya'num* (Christyan). Reddish-brown, green. 1882.
„ „ *chlo'rops* (green-eyed). Green, with darker green lip. 1882.
„ „ *obscu'rum* (obscure). Blackish-purple. 1884.
„ *citri'num* (citron-*coloured*). Pale yellow. August.
„ *clæsia'num* (Clæsian). Greenish-yellow; lip fringed. Brazil. 1892.
„ *Claveri'ngi* (Clavering's). See C. MACROCARPUM CLAVERINGI.
„ *colla're* (collared). Bright green, white. Venezuela. 1895.
„ *cornu'tum* (horned). Greenish-purple. March. Demerara. 1840.
„ *costa'tum* (ribbed). Yellowish. 1887.
„ *crista'tum* (crested). 2. Green. August. Brazil. 1823.
„ „ *stenose'palum* (narrow-sepaled). Purple, brown, green.
„ *darwinia'num* (Darwinian). British Guiana. 1888.

C. deci'piens (deceiving). Reddish-brown, yellow outside. Venezuela. 1888.
„ *delto'deum* (delta-like). 1½. Green, brown. March. Demerara. 1842.
„ *di'scolor* (two-coloured). 1. Green. Brazil. 1844.
„ „ *ebu'rneum* (ivory). Ivory-white; sac of lip deep yellow. Colombia. 1906.
„ „ *vino'sum* (wine-coloured). Vinous red. Brazil. 1894.
„ *fe'rox* (fierce). Dirty green outside, pea-green inside. 1895.
„ *fimbria'tum* (fringed). Pink. August. Paraguay. 1837.
„ „ *au'reum* (golden). Apple-green, golden-yellow. 1910.
„ „ *Cogniau'xi* (Cogniaux's). White and rose-purple.
„ „ *fi'ssum* (split). Green, purple-brown bars. 1881.
„ „ *Haynde'ri* (Haynder's).
„ „ *Legre'lli* (Legrell's).
„ „ *platy'pterum* (broad-winged). Pale green, spotted purple-brown. 1889.
„ „ *viri'dulum* (greenish). Green, spotted red-purple. 1887.
„ *finetia'num* (Finetian). Whitish, spotted purple. Colombia. 1894.
„ *floribu'ndum* (free-flowering). See C. MACROCARPUM.
„ *fuligino'sum* (sooty). Green, purple. August. Mexico. 1839.
„ *galeri'tum* (hooded). Green, spotted brown, yellow. Colombia. 1886.
„ „ *pachyglo'ssum* (thick-tongued). Lip square, thick. 1889.
„ *garnettia'num* (Garnettian). Green, spotted chocolate, white. Brazil. 1888.
„ *glaucoglo'ssum* (glaucous-tongued). Brown, lip glaucous. Mexico. 1885.
„ *globiflo'rum* (globular-flowered). 1. Olive-brown. June. Mexico. 1840.
„ *Gno'mus* (Gnomus). Brazil. 1877.
„ *Hooke'ri* (Hooker's). 2. Green, brown. October. Brazil. 1818.
„ *hymeno'phorum* (membrane-bearing). Allied to *C. chloranthum*. S. Amer. 1895.
„ *incu'rvum* (incurved). Green, purple. Peru. 1855.
„ *imperia'le* (imperial). See C. SPLENDENS.
„ *imschootia'num* (Imschootian). Yellow, tinged green. Brazil. 1893.
„ *intege'rrimum* (entire-lipped). See C. MACULATUM.
„ *labia'tum* (lipped). Green. Male subglobose. Female, with spreading segments. Brazil. 1908.
„ *lamina'tum* (plaited). Brown, purple. April. Mexico. 1844.
„ „ *ebu'rneum* (ivory-*lipped*). White, green. April. Mexico. 1839.
„ *lanci'ferum* (lance-bearing). Pure green. March. Brazil. 1839.
„ *Landsbe'rgii* (Landsberg's). Green, purple. June. Venezuela. 1851.
„ *Lehma'nni* (Lehman's). Green, orange-yellow. Colombia.
„ *Lemo'sii* (Lemos's). Brownish-yellow, green. Brazil. 1894.
„ *Liechtenstei'nii* (Liechtenstein's). Green and brown. 1892.
„ *longifo'lium* (long-leaved). 2. Orange, violet. August. Demerara. 1837.
„ *lu'ridum* (lurid). Brazil.
„ *macroca'rpum* (large-fruited). Brown and purple. Guiana.
„ „ *atropurpu'reum* (dark purple). Demerara.
„ „ *au'reum* (golden).
„ „ *be'llum* (pretty). Brown, spotted purple. 1886.
„ „ *Claveri'ngi* (Capt. Clavering's). Yellow, brown. Brazil. 1822.
„ „ *floribu'ndum* (free-flowering). Yellow, brown. Trinidad. 1824.
„ „ *lu'teo-ro'seum* (yellow-rose). Pale green, rose, orange.
„ „ *ru'brum* (red). Red. 1905.
„ „ *viridiflo'rum* (green-flowered). Green. May. Demerara.
„ *macroglo'ssum* (large-tongued). Ochre, green, yellow, purple. Ecuador. 1878.
„ *macula'tum* (spotted). Green, spotted purple. Mexico.
„ „ *intege'rrimum* (entire-lipped). Guatemala. 1839.

C. macula'tum interme'dium (intermediate).
„ „ *lu'teo-purpu'reum* (yellow-purple).
„ *me'dium* (intermediate). Greenish-yellow, red. 1885.
„ *mento'sum* (chinned). Brazil.
„ *Mille'ri* (Dr. Miller's). 2. Purple-spotted. September. Brazil. 1837.
„ *mira'bile* (wonderful). Natural hybrid resembling *C. splendens Luciani*.
„ *mo'nodon* (one-toothed). Greenish; lip with long fringes. Brazil. 1904.
„ *Na'so* (nose-like-*lipped*). White, purple. August. Mexico. 1843.
„ *ochra'ceum* (reddish-yellow). Yellow. Brazil. 1844.
„ *Oërste'dii* (Oersted's). Nicaragua.
„ *pa'llidum* (pale). Near *C. finetianum*, with more fleshy lip. Brazil. 1894.
„ *Pha'sma* (Phasma). Dark green, purple-brown spots, white. Brazil. 1877.
„ *pilea'tum* (capped). Red and white. Venezuela. 1882.
„ „ *au'reum* (golden). Creamy-white, shaded greenish-yellow. 1904.
„ *pla'niceps* (flat-headed). 1. Green and yellow. Spanish Main. 1840.
„ *probosci'deum* (long-snouted). Brightish-green. Demerara. 1839.
„ *pu'lchrum* (beautiful). Green, with chocolate bars, yellow. Brazil. 1888.
„ *puncta'tum* (spotted). Yellow-green, with brown spots, yellow. Brazil. 1894.
„ *pu'rum* (spotless). 1. Green. October. Brazil.
„ *qua'dridens* (four-toothed). Light green, blotched brown. 1901.
„ *Quo'rnus*. Misprint for *Gnomus*.
„ *Ra'ndii* (Rand's). Lip with brush-like appendage. Brazil. 1894.
„ *revolu'tum* (revolute). Lip with a smaller pouch than *C. splendens*. 1894.
„ „ *Rhampha'stos* (Rhamphastos). Pale green. Andes of Colombia. 1907.
„ *rodigasia'num* (Rodigasian). Green, spotted brown, yellow. Brazil.
„ „ *tenebro'sum* (dark). Flowers much darker. Brazil.
„ *ro'seo-a'lbum* (rose-and-white-*flowered*). See C. DISCOLOR.
„ *ro'seum* (rosy). ½. White, pink. Brazil.
„ *russellia'num* (Duke of Bedford's). 3. Green. July. Guatemala. 1838.
„ *sacca'tum* (pouched). Yellow, purple. March. Demerara. 1840.
„ *sangui'neum* (blood-red).
„ „ *integra'le* (entire). Lip entire. 1887.
„ *Scu'rra* (Scurra). White, green, orange. Guiana. 1872.
„ *semiape'rtum* (half-open). See C. PU'RUM.
„ *semiro'seum* (half-rose). See C. SPLENDENS.
„ *serra'tum* (saw-edged-*lipped*). See C. VI'RIDI FLA'VUM.
„ *spino'sum* (spiny-*lipped*). 1. Green, brown. Brazil. 1840.
„ *sple'ndens* (splendid). Supposed natural hybrid between *C. Bungerothii* and *C. macrocarpum*. Venezuela. 1894.
„ „ *acutipe'talum* (acute-petalled).
„ „ *a'lbum* (white). Pure white, tinted with green.
„ „ *Ali'ciæ* (Alicia's). Bright rose, lined purple, lip white.
„ „ *a'tro-purpu'reum* (dark-purple). Dark purple and some yellow on lip.
„ „ *auranti'acum* (orange). Deep yellow, spotted purple. 1894.
„ „ *au'reo-macula'tum* (golden-blotched). Yellow, spotted red-brown. 1896.
„ „ *au'reum* (golden). Yellow. 1894.
„ „ *fla've scens* (yellowish). Yellow. 1894.
„ „ *Grigna'ni* (Grignan's). Lip white, tinted orange. 1897.
„ „ *imperia'le* (imperial). White, spotted crimson-purple; lip crimson-purple. 1895.
„ „ *lansbergea'num* (Lansbergean). Lip deep yellow inside. 1897.
„ „ *Linde'ni* (Linden's). Sepals and petals of *C. macrocarpum*. 1894.
„ „ *Lucia'ni* (Lucian's). Lip of *C. Bungerothii*. 1894.
„ „ *macula'tum* (spotted). Sepals and petals densely spotted red-purple. 1894.
C. sple'ndens obrienia'num (Obrienian). Sepals and petals of *C. macrocarpum*; lip white. 1894.
„ „ *rega'le* (regal). Petals purple at base; lip marbled purple. 1894.
„ „ *rubigino'sum* (rusty). Brownish-red; lip yellow. 1897.
„ „ *ru'brum* (red).
„ „ *semiro'seum* (half-rose). Sepals and petals whitish or bright red. 1896.
„ „ *vi'ride* (green). Flushed pale green.
„ „ *worthingtonia'num* (Worthingtonian). White, purple; lip crimson-purple.
„ *stupe'ndum* (stupendous). See C. INCURVUM.
„ *tabula're* (table-formed-*lipped*). Pale green. Guatemala. 1843.
„ „ *brachyglo'ssum* (short-lipped). 1880.
„ „ *læ've* (smooth). 1881.
„ „ *rhino'phorum* (snout-bearing). Greenish-brown, white. Colombia. 1880.
„ „ *serrula'tum* (sawed). Colombia.
„ „ *vi'rens* (green). Greenish, purple-brown. 1880.
„ *tapi'riceps* (tapir-headed). Green, brown, orange. Brazil. 1888.
„ *tenebro'sum* (dark). Purple-brown, nearly black. Peru. 1910.
„ *tigri'num* (tiger-striped). White, with many transverse cinnamon bars. 1881.
„ *tracya'num* (Tracyan). Whitish-green. Peru. 1910.
„ *tridenta'tum* (three-toothed). See C. MACROCARPUM.
„ *tri'fidum* (three-cleft-*lipped*). 2. Green. June. Trinidad.
„ *trimerochi'lum* (three-parted-lip). See MORMODES LINEATUM.
„ *tri'odon* (three-toothed). Flowers large, yellowish-green. Brazil. 1878.
„ *Tru'lla* (trowel-*lipped*). Green, brown. September. S. Amer. 1840.
„ „ *fla'vo-vi'ride* (yellow-green). Yellow-green dotted with brown. 1909.
„ „ *maculati'ssimum* (much-spotted). Petals and lip spotted brown.
„ „ *subimbe'rbe* (beardless). Lip not fringed.
„ *unca'tum* (hooked). Flowers numerous, green. Brazil. 1895.
„ *vi'ridi-fla'vum* (greenish-yellow). 1. Yellow, green. June. S. Amer. 1841.
„ *Waile'sii* (Wailes's). See C. MACULATUM.
„ *Warscewi'czii* (Warscewicz's). Green. Panama. 1851.

CATCHFLY. *Sile'ne.*

CA'TECHU. *Aca'cia Ca'techu.*

CATERPILLAR. *Scorpiu'rus vermicula'ta.*

CATERPILLAR. This is the young of either the butterfly or the moth, in its first state after emerging from the egg. There are many kinds; and the best mode of preventing their invasions is to destroy every *butterfly*, *moth*, *chrysalis*, and *egg* that can be found. Hand-picking, dusting with lime or soot, and other modes of destroying the caterpillar are mentioned when noticing the plants they attack; but we may here observe that the powder of White Hellebore is by far the most effectual for dusting over this marauder. Sparrows and other small birds, in early spring, should not be scared from the garden, for they destroy myriads of caterpillars: at that season they can do no harm if the gardener properly guards his seed-beds. Collecting the eggs or small caterpillars early in the season will save a lot of trouble later on.

CATESBÆ'A. Lily Thorn. (Named after *M. Catesby*, author of a Natural History of Carolina. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Gardenia.)

Stove evergreens. Cuttings in sand, under a glass, in heat, in April. Sandy loam and fibrous peat. Summer temp., 60° to 80°; winter, 55° to 60°.

C. latifo'lia (broad-leaved). 5. Yellow. June. W. Ind. 1823.
„ *lindenia'na* (Linden's). 2. July.
„ *parvifo'ra* (small-flowered). 2. White. June. Jamaica. 1810.
„ *spino'sa* (thorned). 12. Yellow. June. Isle of Providence. 1726.

CA'THA. (Nat. ord. Celastraceæ.)
A greenhouse, evergreen shrub. Cuttings in sand in a close frame with gentle bottom-heat. Fibrous loam, a little peat and sand.

C. edu'lis (edible). Green or yellowish. Trop. Africa. "Arabian Tea."

CATHARA'NTHUS. See VI'NCA.

CATHCA'RTIA. (In honour of *J. F. Cathcart, Esq., B.C.S.*, Judge of Tirhoots. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
A hardy herbaceous plant delighting in a cool, shady position on the rockery, the shade being most beneficial in summer. Seeds and division of the root-stock. Sandy loam and peat.

C. villo'sa (shaggy). 1. Yellow. June. Sikkim-Himalaya. 1850.

CAT-MINT. *Ne'peta.*

CATOBLA'STUS. (From *kata*, near, and *blastos*, a sapling. Nat. ord. Palmaceæ.)
Stove palm, with aerial roots supporting the stem. Seeds. Loam, peat, and sand.

C. præmo'rsus (bitten-*leaved*). 6–8. Venezuela. 1850.

CATO'PSIS. (Derivation not clear. Nat. ord. Bromeliaceæ.)
Moist stove perennial herbs. Seeds; offsets. Fibrous loam, lumpy peat, charcoal, and sand.

C. aloi'des (Aloe-like). Mexico.
„ *ni'tida* (shining). 2. Blue. October. W. Ind. 1823.
„ *nu'tans* (nodding). 2. Blue. August. W. Ind. 1793.
„ *pe'ndula* (drooping). Mexico.
„ *pendulifio'ra* (drooping-flowered). White. Peru. 1910.

CAT-THYME. *Teu'crium Ma'rum.*

CA'TTERIDGE-TREE. *Euo'nymus europæ'us.*

CA'TTLEYA. (Named after *Mr. Cattley*, a distinguished patron of botany. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. Divisions. Moss, peat, and broken pots, either in shallow baskets, or raised above the surface of the pot. Summer temp., 60° to 90°; winter, 60°. The Cattleyas are not given so much heat as formerly. And it is found that a period of rest after new growths are developed is beneficial. It would be difficult to give times of resting, except to say that when growths are fully developed is the proper time to keep them rather dry and cool for a time.

C. abelia'na (Abelian). Creamy-yellow, speckled with purple. Peru. 1910.
„ *Acla'ndiæ* (Lady Acland's). ½. Purple, brown. July. Brazil. 1839.
„ „ *ma'xima* (largest). Larger and darker in colour.
„ „ *nigre'scens* (blackish). Sepals and petals black-brown. 1900.
„ „ *salmo'nea* (salmon). Ground colour salmon-red.
„ *Alexa'ndræ* (Princess Alexandra's). 1892. See C. ELONGATA.
„ „ *e'legans* (elegant).
„ „ *tenebro'sa* (dark).
„ *Ali'ciæ* (Alicia's). White; lip deep rose. Possibly a natural hybrid.
„ *Ame'siæ* (Amesia's). Garden hybrid. 1892.
„ *amethysti'na* (amethyst). See C. INTERMEDIA.
„ *amethystoglo'ssa* (amethyst-lipped). See C. GUTTATA PRINZII.
„ *amœ'na* (lovely). Garden hybrid between *C. Loddigesii* and *Lælia Perinii*. 1891.
„ *Arembe'rgii* (Count Aremberg's). See C. LODDIGESII.
„ *armainvilliere'nsis* (Armainvillier). Garden hybrid between *C. labiata Mendelii* and *C. l. Warscewiczii*. 1895.
„ *arthuria'na* (Arthurian). Garden hybrid between *C. dormaniana* and *C. luteola*. 1894.
„ *ashtonia'na* (Ashtonian). Garden hybrid between *C. Loddigesii Harrisonæ* and *C. labiata Warscewiczii*.
„ *au'rea* (golden). See C. LABIATA AUREA.
„ *aurantia'ca* (orange). Orange. Mexico and Guatemala. 1835.
„ *ballantinia'na* (Ballantinian). Hybrid between *C. labiata Trianæ* and *C. l. Warscewiczii*.
C. Batali'nii (Batalin's). Purplish-rose. Brazil. 1892.
„ *bi'color* (two-coloured). Olive-green; lip pale purple. September. Brazil. 1837.
„ „ *cæru'lea* (sky-blue). Lip blue.
„ „ *Lewi'sii* (Lewis's). Lip white stained purple. 1896.
„ „ *measuresia'na* (Measuresian). Lip with white edge. Brazil.
„ „ *wrigleya'na* (Wrigleyan). Lip dark purple. 1884.
„ *blese'nsis*. Hybrid between *Lælia pumila* and *C. Loddigesii*.
„ *bogote'nsis* (Bogotan). See C. LABIATA TRIANÆ.
„ *Boissie'ri* (Boissier's). Lilac, yellow. Colombia. 1873.
„ *bowringia'na* (Bowringian). Purple, maroon, white. British Honduras. 1886.
„ „ *Ashwo'rthii* (Ashworth's). Light rose-purple.
„ „ *viola'cea* (Violet).
„ „ *triu'mphans* (triumphant). Rich purple. 1902.
„ *Brow'niæ* (Mrs. Brown's). Hybrid between *C. bowringiana* and *C. Loddi'gesii Harrisonæ*.
„ *Brow'nii* (Brown's). Rose purple. 1893.
„ *brymeria'na* (Brymerian). Rose, lilac, orange. Supposed natural hybrid. Brazil. 1883.
„ *bulbo'sa* (bulbed). See C. WALKERIANA.
„ *Bullie'ri* (Bullier's). See C. LABIATA TRIANÆ BULLIERI.
„ *burberrya'na* (Burberryan). Hybrid between *C. intricata* and *C. superba*.
„ *calumna'ta* (tricky). Hybrid between *C. intermedia* and *C. Aclandiæ*. 1883.
„ *ca'ndida* (white-*flowered*). See C. LODDIGESII.
„ *Cassa'ndra* (Cassandra). Garden hybrid. 1888.
„ *chamberlainia'na* (Chamberlainian). Garden hybrid between *C. guttata Leopoldii* and *C. labiata dowiana*.
„ *chocoë'nsis* (Chocoan). See *C. labiata Trianæ chocoënsis*.
„ *chrysoto'xa* (golden). See C. LABIATA CHRYSOTOXA.
„ *citri'na* (citron-*flowered*). Citron. April. Mexico. 1838.
„ „ *aurantia'ca* (orange). Lip larger, deeper yellow. 1894.
„ „ *citri'no-interme'dia*. Garden hybrid. 1888.
„ „ *gigante'a* (giant). Flowers large, intensely coloured. 1904.
„ *cocci'nea* (scarlet). See SOPHRONITIS GRANDIFLORA.
„ *cri'spa* (curled-*flowered*). See LÆLIA CRISPA.
„ „ *viola'cea* (violet-*coloured*). See LÆLIA CRISPA VIOLACEA.
„ *croca'ta* (saffron). White, orange. See C. LABIATA ELDORADO CROCATA.
„ *Dawso'nii* (Dawson's). See C. LABIATA LUEDDEMANNIANA DAWSONI.
„ *dolo'sa* (deceitful). See C. WALKERIANA DOLOSA.
„ *dominge'nsis* (St. Domingo). See BROUGHTONIA LILACINA.
„ *dormania'na* (Dormanian). Brownish-purple. Rio de Janeiro. 1882.
„ *dowia'na* (Dowian). See C. LABIATA DOWIANA.
„ „ *au'rea* (golden). See C. LABIATA AUREA.
„ *dukea'na* (Dukean). Mauve-purple; lip white, and mauve purple. 1887.
„ *ela'tior* (taller). See C. GUTTATA.
„ *Eldora'do* (Eldorado). See C. LABIATA ELDORADO.
„ *e'legans* (elegant). See LÆLIA ELEGANS.
„ *elonga'ta* (elongated). Dull brown; lip rosy purple. Brazil. 1892.
„ „ *e'legans* (elegant). Rose purple.
„ „ *tenebro'sa* (dark). Dusky brown and rose purple.
„ *exonie'nsis* (Exeter). Garden hybrid. 1874.
„ *fe'lix* (happy). Garden hybrid between *Lælia crispa* and *Cattleya schilleriana*. 1876.
„ *flave'ola* (yellowish). Garden hybrid. 1888.
„ *floribu'nda* (free-flowering). See C. MAXIMA FLORIBUNDA.
„ *Forbe'sii* (Forbes's). 1. White. yellow. June. Brazil. 1823.
„ *forgetia'na* (Forgetian). Rose-purple; lip purple-crimson. Brazil. 1906.
„ *Fowle'ri* (Fowler's). Garden hybrid between *C. hardyana* and *C. guttata Leopoldi*.
„ *gaskellia'na* (Gaskellian). See C. LABIATA GASKELLIANA.
„ *Gibe'siæ* (Mrs. Gibezia's). See C. INTERMEDIA GIBEZIÆ.

C. gi'gas (giant). See C. LABIATA WARSCEWICZII.
„ „ *sanderia'na* (Sanderian). See C. LABIATA WARSCEWICZII.
„ *granulo'sa* (granular-lipped). Pale greenish, spotted purple. Brazil. 1841.
„ „ *aspera'ta* (rough). Brown, yellow, spotted purple. 1886.
„ „ *Banne'ri* (Banner's). Suffused bright lurid purple. 1896.
„ „ *buyssonia'na* (Buyssonian). Ivory white. 1890.
„ „ *Pri'nceps* (chief). A dull-coloured variety.
„ „ *russellia'na* (Russellian). Green, white, orange. 1839.
„ „ *schofieldia'na* (Schofieldian). Greenish; lip white and amethyst. 1879.
„ *guatemale'nsis* (Guatemalan). Dull purple and crimson. Guatemala. 1861.
„ „ *wischhusenia'na* (Wischhusenian). Rose purple, brown. Panama. 1888.
„ *Gro'ssii* (Gross'). Origin uncertain. 1897.
„ „ *pa'llida* (pale). Nearly white; lip pale rose.
„ *gutta'ta* (spotted). Green, red. April. Brazil. 1827.
„ „ *ela'tior* (taller). April. Brazil. 1827.
„ „ *immacula'ta* (spotless). Sepals and petals mauve brown, spotless. 1886.
„ „ *Ketelee'rii* (Keteleer's). Blush-white and violet-rose. 1875.
„ „ *leopardi'na* (leopard-spotted). Spotted dark brown; lip white, purple-red.
„ „ *Leopo'ldi* (Leopold's). Yellow, crimson. Brazil. 1852.
„ „ *lilaci'na* (lilac). Pale lilac; lip whitish and purple. 1881.
„ „ *mu'nda* (world). Greenish changing to yellow, spotless. 1888.
„ „ *odorati'ssima* (sweetest scented). Yellow; lip purple. Heliotrope scented. 1888.
„ „ *pernambuce'nsis* (Pernambucan). Greenish-yellow; lip red, edged white. 1893.
„ „ *phænico'ptera* (purple-winged). Rich, dark purple; lip whitish. 1883.
„ „ *Pri'nsii* (Prinz's). White, spotted purple; lip amethyst. Brazil. 1866.
„ „ *punctula'ta* (finely spotted). Sulphur and purple. 1880.
„ „ *russellia'na* (Lord C. Russell's). Green, red. August. Brazil. 1838.
„ „ *williamsia'na* (Williamsian). Purple, white. 1884.
„ *hardya'na* (Hardyan). Rosy mauve; lip crimson, with two yellow eye spots. Colombia. 1885.
„ „ *gardenia'na* (Gardenian). Rose; lip yellow and magenta.
„ „ *laversine'nsis* (Laversin). Marbled purple; lip very dark.
„ „ *Linde'ni* (Linden's). Lilac; lip carmine and golden eye spots. 1895.
„ „ *Lucia'ni* (Lucian's). As large as *C. labiata Warscewiczii*.
„ „ *Regi'næ* (Queen's). Sepals and petals straw-yellow. 1897.
„ „ *Rex* (King's). One of the darkest forms. 1906.
„ *Harri'sii* (Harris's). Garden hybrid. 1887.
„ *Harriso'niæ* (Mrs. Harrison's). See C. LODDIGESII HARRISONÆ.
„ *harrisonia'na* (Harrisonian). See C. LODDIGESII HARRISONÆ.
„ *Holfo'rdi* (Holford's). See C. LUTEOLA.
„ *hy'brida* (hybrid). Garden hybrid.
„ *imperia'lis* (imperial). See C. LABIATA WARSCEWICZII.
„ *interme'dia* (intermediate-*sized*). 1. Rose, white. April. Brazil. 1824.
„ „ *angustifo'lia* (narrow-leaved). 1. Light purple. September. Brazil. 1836.
„ „ *Aqui'nii* (Aquin's). A peloric variety.
„ „ *ca'ndida splе'ndida* (white, splendid). White; lip carmine. Rio Janeiro. 1890.
„ „ *Gibe'ziæ* (Gibezia's). White, orange. 1883.
„ „ *pa'llida* (pale-*red-flowered*). 1. Light red. June. Brazil. 1833.
„ „ *Parthe'nia* (virgin). White. 1888.
„ „ *pictura'ta* (painted). Splashed rose, striped purple.
„ „ *punctati'ssima* (most spotted). Pale rose, dotted purple. S. Brazil. 1891.
„ „ *purpu'rea* (purple-*blotched*).
C. interme'dia variega'ta (variegated-*lipped*). 1. White, red. May. Brazil. 1843.
„ *interme'dio-fla'va*. Garden hybrid. 1896.
„ *interme'dio-Loddige'sii*. Garden hybrid. 1896.
„ *intrica'ta* (intricate). Pale rose and purple. 1884.
„ „ *macula'ta* (spotted). Rose with purple spots. Brazil. 1890.
„ *iri'color* (Iris-coloured). Sulphur, orange, violet. 1874.
„ *irrora'ta* (bedewed). See LÆLIA.
„ *Jenma'nii* (Jenman's). Rosy-mauve, crimson. British Guiana. 1906.
„ *johnstonia'na* (Johnstonian). Of the same origin as *C. ashtoniana*. 1893.
„ *kienastia'na* (Kienastian). Garden hybrid. 1894.
„ *kimballia'na* (Kimballian). Rosy white; lip rich purple. Venezuela. 1887.
„ *krameria'na* (Kramerian). Hybrid between *C. intermedia* and *C. Forbesii*. 1888.
„ *labia'ta* (lipped). Bright rose-purple; lip dark purple. Brazil. 1818.
„ „ *a'lba* (white).
„ „ *atropurpu'rea* (dark purple). Lilac, purple. La Guayra. 1839.
„ „ *a'trosangui'nea* (dark blood-red). S. Amer.
„ „ *cæru'lea* (blue). Flower tinted blue all over.
„ „ *cærule'scens* (bluish). Lip marbled bright purple. 1902.
„ „ *delica'ta* (delicate-coloured). Blush-lilac.
„ „ *Erne'sti* (Ernest's). Pink and apex of petals blotched purple.
„ „ *exi'mia* (choice). Fine dark variety. 1910.
„ „ *foleya'na* (Foleyan). White, with orange and crimson blotches on the lip. 1894.
„ „ *glau'ca* (glaucous). Lavender-blue. 1902.
„ „ *la'cera* (torn). White, purple. Central Amer. 1869.
„ „ *lemonia'na* (Sir Charles Lemon's). Rose, yellow; lip with very narrow tube and small blade. Brazil. 1842.
„ „ *leucophæ'a* (white and dark). Rose; lip lilac, striped yellow. 1888.
„ „ *magni'fica* (magnificent). Rosy purple, dark purple. 1888.
„ „ *massangea'na* (Massangean). Mauve and white; lip with purple lines. 1883.
„ „ *nalderia'na* (Nalderian). Grey rose-purple. 1885.
„ „ *oakwoodie'nsis* (Oakwood). Lip claret-crimson throughout. 1902.
„ „ *orna'ta* (adorned). Purple and darker tips.
„ „ *Peete'rsii* (Peeters's). Dark rose-purple, and lighter variegation. 1894.
„ „ *pi'cta* (painted).
„ „ *Pilche'ri* (Pilcher's). Lip pale, with dark blotch. 1866.
„ „ *reedleye'nsis* (Reedley). White; lip pale rose.
„ „ *rochelle'nsis* (Rochelle). White and faint purple on blade of lip. 1888.
„ „ *Ro'zlii* (Rœzl's). Purple, yellow. Colombia. 1874.
„ „ *Rucke'ri* (Rucker's). Rose; lip dark rose.
„ „ *salmonea'na* (salmon). Salmon-rose.
„ „ *Sande'ræ* (Mrs. Sander's). Lip deep crimson, edged white. 1892.
„ „ *sanderia'na* (Sanderian). Large, richly coloured. 1882.
„ „ *schröderia'na* (Schröderian). White; lip striped mauve and orange. 1886.
„ „ *splе'ndens* (splendid). Deep rose-purple. 1870.
„ „ *supe'rba* (superb). Lip large, deep red purple.
„ „ *virgina'lis* (virginal). White. 1876.
„ „ *virgi'nea* (virginal). White; lip mauve in front. 1910.
„ „ *warocquea'na* (Warocquean). Rosy mauve; lip crimson-purple. 1890.
„ „ *wilsonia'na* (Wilsonian). Amethyst; lip marked and spotted dark purple. 1887.
„ *labia'ta au'rea* (golden). Nankin yellow; lip yellow, and crimson front lobe. Colombia. 1881.
„ „ *au'rea marmora'ta* (marbled). Sepals and petals marbled dark rose. 1888.
„ „ *au'rea statteria'na* (Statterian). Crimson on lip much reduced.
„ „ *au'rea supe'rba* (superb). Richly coloured and of fine shape.

C. labia'ta chrysoto'xa (golden). Sepals and petals bright yellow; lip golden veined crimson. Colombia.
„ *labia'ta dowia'na* (Captain Dow's). Straw; lip crimson-purple. Costa Rica. 1866.
„ „ *dowia'na imschootia'na* (Imschootian). Sepals and petals nearly white. 1898.
„ „ *dowia'na jensenia'na* (Jensenian). Petals with purple marbling at apex. 1900.
„ „ *dowia'na Rosi'ta* (Rosita). Petals rose-purple. 1901.
„ *labia'ta Eldora'do* (Eldorada). White; lip purple, with orange blotch. Brazil. 1869.
„ „ *Eldora'do croca'ta* (saffron). White, with large orange blotch on the lip. 1886.
„ „ *Eldora'do Linde'ni* (Linden's). Rosy-purple and richly coloured lip.
„ „ *Eldora'do orna'ta* (adorned). Petals with dark purple tips. 1883.
„ „ *Eldora'do Owe'ni* (Owen's). White, with band of rose-crimson on the lip.
„ „ *Eldora'do sple'ndens* (splendid). Rose, white, violet, and orange blotch. Rio Negro. 1870.
„ „ *Eldora'do Treyera'næ* (Mrs. Treyeran's). Lilac, with orange-yellow blotch.
„ „ *Eldora'do virgina'lis* (virginal). White, with yellow blotch. Amazons. 1877. Syns. *C. virginalis* and *C. Wallisii*.
„ *labia'ta gaskellia'na* (Gaskellian). Rosy-purple; petals darker at the tip. Venezuela.
„ „ *gaskellia'na a'lba* (white). White, with yellow throat. Venezuela. 1888.
„ „ *gaskellia'na a'lbens* (whitish). White, delicately tinted lilac. 1888.
„ „ *gaskellia'na cæru'lea* (blue). White; lip with bluish spot at base.
„ „ *gaskellia'na delica'ta* (delicate). White, delicately tinted lilac; lip purple. 1895.
„ „ *gaskellia'na formo'sa* (beautiful). Lip cowslip yellow; tinted rose.
„ „ *gaskellia'na pi'cta* (painted). Sepals and petals variegated. 1890.
„ „ *gaskellia'na specio'sa* (showy). White, with rich rose-purple blotch on lip. 1891.
„ *labia'ta lueddemannia'na* (Lueddemannian). Delicate purplish-rose; lip amethyst-purple. Venezuela. 1883.
„ „ *lueddemannia'na a'lba* (white).
„ „ *lueddemannia'na brillianti'ssima* (most brilliant). Petals with amethyst-purple feathered blotch near apex; lip maroon purple. 1885.
„ „ *lueddemannia'na buchanania'na* (Buchananian). Delicate lilac; lip magenta. 1887.
„ „ *lueddemannia'na Dawso'nii* (Dawson's). Yellow, crimson. Brazil. 1863.
„ „ *lueddemannia'na Erne'stii* (Ernest's). Larger and richer in colour than the type. 1896.
„ „ *lueddemannia'na malloua'na* (Malouan). Rose-purple; lip with darker veins.
„ „ *lueddemannia'na Maro'ni* (Maron's). Lip carmine, edged yellow.
„ „ *lueddemannia'na Regi'na* (Queen). Rosy-purple; lip deep purple. 1884.
„ „ *lueddemannia'na sanderia'na* (Sanderian). One of the purest white Cattleyas.
„ „ *lueddemannia'na Stanle'yi* (Stanley's). White; lip lined purple.
„ *labia'ta Mende'lii* (Mendel's). White, tinted rosy mauve; lip crisped, crimson-purple. Colombia. 1870.
„ „ *Mende'lii ballia'na* (Ballian). Large and richly coloured.
„ „ *Mendelii be'lla* (pretty). Lilac and mauve-lilac lip. 1882.
„ „ *Mende'lii Dixo'næ* (Mrs. Dixon's). Blush-pink. 1910.
„ „ *Mende'lii gran'dis* (grand). White, with rose markings on the lip. 1895.
„ „ *Mende'lii jamesia'na* (Jamesian). Sepals and petals with purple tips. 1882.
„ „ *Mende'lii Kegelja'ni* (Kegeljan's). White; lip striped sulphur yellow. 1897.
„ „ *Mende'lii lambeaua'na* (Lambeauan). White; lip lilac in front. 1910.
„ „ *Mende'lii maje'stica* (majestic). White tinted lavender. 1908.

C. labia'ta Mende'lii Morga'niæ (Mrs. Morgan's). White, with purple blotch on front of lip.
„ „ *Mende'lii pulche'rrima* (most beautiful). White tinted peach and lemon. 1881.
„ „ *Mende'lii rosefieldie'nsis* (Rosefield). Petals tipped bright mauve. 1900.
„ „ *Mende'lii Sande'ræ* (Mrs. Sander's). A highly coloured form. 1895.
„ *labia'ta Mo'ssiæ* (Mrs. Moss's). Rosy lilac; lip crisped, mottled and veined lilac. Venezuela. 1836.
„ „ *Mo'ssiæ a'lba* (white). White, with blush tint to lip. 1904.
„ „ *Mo'ssiæ a'lba cæle'stis* (white, blue). White; lip marked lavender. 1902.
„ „ *Mo'ssiæ Alexa'ndræ* (Queen Alexandra's). Pure white; front of lip pale rose. 1903.
„ „ *Mo'ssiæ amæ'na* (pleasing). A delicately coloured variety.
„ „ *Mo'ssiæ ampli'ssima* (most ample). Lip red with darker netting.
„ „ *Mo'ssiæ a'rdens* (glowing). Lip orange, edged white.
„ „ *Mo'ssiæ arnoldia'na* (Arnoldian). Rose, with narrow lip. 1884.
„ „ *Mo'ssiæ a'urea grandiflo'ra* (large-flowered-golden). Lip with much yellow. 1887.
„ „ *Mo'ssiæ Auro'ra* (Aurora). Lip with red patch in front.
„ „ *Mo'ssiæ bousiesia'na* (Bousiesian). Marbled rosy-purple.
„ „ *Mo'ssiæ ca'ndida* (white). White; lip with small purple blotch.
„ „ *Mo'ssiæ cæle'stis* (sky-blue). Lavender tinted. 1902.
„ „ *Mo'ssiæ deco'ra* (adorned). Lip yellow, veined magenta-purple.
„ „ *Mo'ssiæ exi'mia* (choice). Lip with orange blotch and red patch in front.
„ „ *Mo'ssiæ hardya'na* (Hardyan). Sepals and petals irregularly blotched magenta.
„ „ *Mo'ssiæ Impe'rator* (Imperator). Lip red, edged white.
„ „ *Mo'ssiæ Lawre'nciæ* (Lady Lawrence's).
„ „ *Mo'ssiæ mage'nta* (magenta). Lip with large red blotch in front.
„ „ *Mo'ssiæ Mende'lii* (Mendel's). Intermediate between the varieties *Mossiæ* and *Mendelii*.
„ „ *Mo'ssiæ reinecki'na* (Reineckian). White; front of lip striated deep purple.
„ „ *Mo'ssiæ reinecki'na superbi'ssima* (most superb). Lip with violet lines and dots.
„ „ *Mo'ssiæ reticula'ta* (netted). White; lip veined crimson.
„ „ *Mo'ssiæ rouselea'na* (Rousele). Lip richly coloured.
„ „ *Mo'ssiæ Treyera'næ* (Mrs. Treyeran's). Lip very highly coloured.
„ „ *Mo'ssiæ varia'bilis* (variable). Flowers changing from blue to mauve and rose. 1888.
„ „ *Mo'ssiæ Wagene'ri* (Wagener's). White, with small yellow blotch.
„ „ *Mo'ssiæ wambekea'na* (Wambekean). Very large, richly coloured.
„ „ *Mo'ssiæ warocquea'na* (Warocquean). Lip rich orange, streaked magenta in front.
„ *labia'ta percivalia'na* (Percivalian). Rosy lilac; lip crimson-purple, shaded maroon. Venezuela. 1882.
„ „ *percivalia'na magni'fica* (magnificent). Bright and large flowered form. 1895.
„ „ *percivalia'na Reichenba'chi* (Reichenbach's). Rich mauve; lip deep purple, red veined.
„ *labia'ta Schroede'ræ* (Baroness Schroeder's). Mauve, with large tawny orange blotch in the throat. 1887.
„ „ *Schroede'ræ ama'bilis* (lovely). Peach, and deep orange blotch on lip. 1898.
„ „ *Schroede'ræ highburie'nsis* (Highbury). Lip light purple in front. 1903.
„ „ *Schroede'ræ leodine'nsis*. Lip with large crimson blotch in front. 1903.
„ *labia'ta Tria'næ* (Dr. Triana's). Delicate rose to purple; lip purple-crimson, narrower than *Mossiæ*. Colombia. 1860.
„ „ *Tria'næ a'lba* (white). White, with pale rosy-lilac lip.

C. labia'ta Tria'næ ampli'ssima (amplest). Lip white, with red patch in front.
" " *Tria'næ A'nnæ* (Ann's). Rosy-purple; lip dark purple.
" " *Tria'næ a'rdens* (glowing). Lip crimson-purple.
" " *Tria'næ arklea'na* (Arklean). Lip large, purple-crimson. 1895.
" " *Tria'næ Ashto'ni* (Ashton's). Lip very broad and open. 1895.
" " *Tria'næ atra'ta* (dark). Lip rounded, deeply coloured. 1896.
" " *Tria'næ backhousia'na* (Backhousian). Petals with amethyst-purple blotch at apex.
" " *Tria'næ broomea'na* (Broomean). Lip with glowing crimson blotch. 1893.
" " *Tria'næ Bullie'ri* (Bullier's).
" " *Tria'næ chocoe'nsis* (Chocoan). White; lip pale amethyst purple. Fragrant. 1873.
" " *Tria'næ clinkaberrya'na* (Clinkaberryan). Large flowered variety. 1895.
" " *Tria'næ Colema'ni* (Coleman's). Rosy-crimson. 1875.
" " *Tria'næ courtauldia'na* (Courtauldian). Lip violet-crimson. 1895.
" " *Tria'næ delica'ta* (delicate). Flushed with delicate amethyst-purple. 1861.
" " *Tria'næ delicio'sa* (delicious). Lip purple-red. 1897.
" " *Tria'næ Dodgso'ni* (Dodgson's). Pink, crimson lip. 1882.
" " *Tria'næ du'lcis* (sweet). Yellow blotch of lip surrounded by a pink ring.
" " *Tria'næ Emi'liæ* (Emilia's or Mrs. Lee's). Lip crimson-plum. 1884.
" " *Tria'næ e'minens* (eminent). Lip carmine-purple.
" " *Tria'næ Fascina'tor* (Fascinator). Pale violet. 1906.
" " *Tria'næ festi'va* (gay). Lip deep red, the rest pink.
" " *Tria'næ formo'sa* (beautiful). Lip rich magenta, with streaks of yellow. 1880.
" " *Tria'næ fu'lgens* (glowing). Lip rich crimson. 1890.
" " *Tria'næ Grave'siæ* (Mrs. Graves's). Lip with a red blotch. 1893.
" " *Tria'næ hardya'na* (Hardyan). Nearly white; lip warm purple. 1879.
" " *Tria'næ Holme'sii* (Holmes'). Lip rich rose-purple. 1909
" " *Tria'næ hoolea'na* (Hoole Hall). Lip wholly rich magenta.
" " *Tria'næ leea'na* (Leean). Rose, with pure white throat. 1884.
" " *Tria'næ maje'stica* (majestic). Lip red in front and at edge.
" " *Tria'næ margina'ta* (margined). Lip rich crimson, edged white. 1890.
" " *Tria'næ Mari'æ* (Maria's). Silvery-white; lip magenta-crimson. 1902.
" " *Tria'næ massangea'na* (Massangean). Warner's Orchid Album, t. 242
" " *Tria'næ Memo'ria Linde'ni* (in memory of Linden). Tips of sepals and petals purple-red. 1900.
" " *Tria'næ moorea'na* (Moorean). Petals claret-coloured at the tip.
" " *Tria'næ Osma'nii* (Osman's). Mauve; lip purple with pale edges. 1879.
" " *Tria'næ pa'llida* (pale). Wholly pale rose. 1890.
" " *Tria'næ Popa'yan* (Popayan). Lilac. 1884.
" " *Tria'næ purpura'ta* (purple). Lip rich magenta. 1890.
" " *Tria'næ rega'lis* (regal). Lip wholly deep red.
" " *Tria'næ rœblingia'na* (Rœblingian). G. Chr., 1895, xvii., 167.
" " *Tria'næ ro'sea* (rosy). Rose. 1883.
" " *Tria'næ russellia'na* (Provost Russell's). Lip large, deep magenta. 1886.
" " *Tria'næ schroederia'na* (Baron Schroeder's). Large; lip amethyst-purple. 1886.
" " *Tria'næ schroederia'na leyswoodie'nsis*. Nearly pure white and orange blotch. 1892.
" " *Tria'næ sple'ndens* (splendid). White; lip deep red.
" " *Tria'næ splendidi'ssima* (most splendid). White; lip dark purple-magenta. 1884.

C. labia'ta Tria'næ stria'ta (striped). Rosy-purple, with carmine central stripe to sepals and petals. 1890.
" " *Tria'næ vanneria'na* (Vannerian). Lateral sepals with broad orange stripe. 1886.
" " *Tria'næ Ve'sta* (Vesta). Nearly white. 1880.
" " *Tria'næ virgina'lis* (virginal). Pure white, with small pale yellow blotch on lip. 1895.
" " *Tria'næ Wellesle'yæ*. A pretty white form. 1906.
" *labia'ta Warne'ri* (Warner's). Delicate rose; lip richly veined purple. Bahia. 1860.
" " *Warne'ri a'lba* (white). Pure white.
" " *Warne'ri formo'sa* (beautiful). Flowers large, more richly coloured. 1893.
" " *Warne'ri marmora'ta* (marbled). Flowers mottled. 1892.
" *labia'ta Warscewi'czii* (Warscewicz's). Flowers 7 to 9 in. across, rosy mauve; lip rich crimson-purple. Colombia. 1867.
" " *Warscewi'czii a'lba* (white). Pure white. 1910.
" " *Warscewi'czii a'lbo-stria'ta* (white-lined). Pink, with central white bar. 1882.
" " *Warscewi'czii ampli'ssima* (amplest). Large and highly coloured.
" " *Warscewi'czii burfordie'nsis* (Burford Lodge). Front of lip intense amethyst. 1882.
" " *Warscewi'czii franconville'nsis* (Franconville). White; lip with purple-crimson blotch. 1893.
" " *Warscewi'czii grandiflo'ra* (large-flowered). Front of lip white, edged magenta. 1882.
" " *Warscewi'czii purpu'rea* (purple). Deep purple. 1893.
" " *Warscewi'czii Sande'ræ* (Mrs. Sander's). Warm crimson; lip velvety. 1893.
" " *Warscewi'czii variega'ta* (variegated). Variegated with rosy-purple. 1895.
" *lauremo'ssiæ*. Garden hybrid between *C. lawrenciana* and *C. labiata Mossiæ*.
" *lawrencia'na* (Lawrencian). Purple-lilac; lip curved, purple, shaded maroon. British Guiana. 1885.
" " *atroru'bens* (dark red). Wholly brilliant dark purple. 1895.
" " *co'ncolor* (whole-coloured). Of a uniform light purple. 1886.
" " *ocula'ta* (eyed). Centre of lip buff-yellow, without a purple band.
" " *ro'sea-supe'rba* (superb rose). Delicate purple, striated with white.
" " *Vi'nckei* (Vincke's). Lavender; lip slaty-blue. 1895.
" *lemonia'na* (Sir C. Lemon's). See C. LABIATA LEMONIANA.
" *Leopo'ldii* (Leopold's). See C. GUTTATA LEOPOLDII.
" *leucoglo'ssa* (white-lipped). Hybrid between *C. fausta* and *C. Loddigesii*.
" *Linde'ni* (Linden's). Probably a variety of *C. labiata Warscewiczii*.
" *lindleya'na* (Lindleyan). See LÆLIA LINDLEYANA.
" *loba'ta* (lobed). See LÆLIA BOOTHIANA.
" *Loddige'sii* (Loddiges's). Delicate rosy-lilac; lip pale amethyst-purple. Brazil. 1815.
" " *a'lba* (white). Pure white. 1899.
" " *ca'ndida* (white). White, with yellow blotch on the lip.
" " *delica'ta* (delicate). Blush-white. 1902.
" " *Harriso'næ* (Mrs. Harrison's). Lip with orange-yellow blotch, corrugated in front. 1836.
" " *macula'ta* (spotted). Flowers speckled with purple.
" " *viola'cea* (violet). Flowers violet-purple.
" *lowrya'na* (Lowryan). Supposed hybrid between *C. intermedia* and *C. Forbesii*. 1891.
" *lucienia'na* (Lucienian). Brown, washed purple; lip purple. Supposed hybrid. 1885.
" *lueddemannia'na*. See C. LABIATA LUEDDEMANNIANA.
" *lute'ola* (little-yellow). Light yellow. November. Brazil. 1853. The Smallest Cattleya.
" " *Rœ'zlii* (Rœzl's). Brighter than the type. Peru. 1881.
" *Mangle'sii* (Mangles's). Hybrid between *C. labiata speciosissima* and *C. Loddigesii*. 1880.
" *Manti'nii* (Mantin's). Hybrid between *C. bowringiana* and *C. labiata aurea*.
" *Marde'llii* (Mardell's). Garden hybrid. 1879.
" *margina'ta* (margined). See LÆLIA PUMILA PRÆSTANS.
" *mari'tima* (maritime). See C. INTERMEDIA.

C. Marsterso'niæ (Mrs. Marsterson's). A hybrid of *C. labiata.*
„ *massaia'na* (Massaian). Mauve and magenta lip. Colombia.
„ *massangea'na.* See C. LABIATA TRIANÆ MASSANGEANA.
„ *Matho'niæ* (Mrs. Mathon's). Supposed natural hybrid.
„ *ma'xima* (largest). Satiny rose; lip pale rose with citron band. Peru and Ecuador. 1844.
„ „ *a'lba* (white). White, with purple markings on the lip.
„ „ *aphle'bia* (lip-unveined). Lip without coloured veins. 1884.
„ „ *docto'ris* (doctor's). A pale rose variety. 1883.
„ „ *floribu'nda* (free-flowering). Bright rose; lip crimson-purple, edged white.
„ „ *gigante'a* (gigantic). A large, light-coloured variety. 1895.
„ „ *hrubya'na* (Hrubyan). Lip handsomely veined with red.
„ „ *malova'na* (Malouan). Flowers dark. Pseudo-bulbs short. 1889.
„ „ *marchetia'na* (Marchetian). Dark purple, veined magenta-purple. Ecuador and Peru. 1889.
„ „ *peruvia'na* (Peruvian).
„ „ *virgina'lis* (virginal). White; lip striped red purple. 1897.
„ *Measure'sii* (Measures's). Garden hybrid. 1886.
„ *Mende'lii* (Mendel's). See C. LABIATA MENDELII.
„ *Mo'ssiæ* (Mrs. Moss's). See C. LABIATA MOSSIÆ.
„ *Nilso'ni* (Nilson's). Apparently a natural hybrid. Brazil. 1889.
„ *nobi'lior* (nobler). See C. WALKERIANA NOBILIOR.
„ *obrienia'na* (Obrienian). Rosy-tinted. Brazil. 1890.
„ *odorati'ssima* (sweetest). Purple. Demerara. 1836.
„ *owenia'na* (Owenian). Creamy-white; lip crimson and gold. Seems a variety of *C. hardyana.* 1892.
„ *pa'llida* (pale). White, pink, yellow. Brazil. 1850. A variety of *C. labiata.*
„ *papeiansia'na* (Papeiansian). See C. LODDIGESII.
„ *Parthe'nia* (Parthenia). Garden hybrid.
„ *Patroci'nii* (Patrocin's). Supposed natural hybrid, *C. Loddigesii* and *C. guttata leopardina.* Brazil.
„ *percivalia'na* (Percivalian). See C. LABIATA PERCIVALIANA.
„ *Perri'nii* (Perin's). See LÆLIA PERINII.
„ *pictura'ta* (painted). Garden hybrid. 1878.
„ *pinellia'na* and *C. Pinellii.* See LÆLIA PUMILA PRÆSTANS.
„ *porphyroglo'ssum* (purple-lipped). Lip purple. Brazil.
„ „ *punctula'ta* (finely spotted). Sepals and petals with crimson spots. 1887.
„ *porphyrophle'bia* (purple-veined). Hybrid between *C. intermedia* and *C. superba.* 1885.
„ *Pri'nceps* (chief). A dull-coloured variety of *C. granulosa schofieldiana.* 1892.
„ *pu'mila* (dwarf). See LÆLIA PUMILA.
„ *quadri'color* (four-coloured). See C. LABIATA TRIANÆ.
„ *Regne'lii* (Regnell's). See C. SCHILLERIANA.
„ *reineckia'na* (Reineckian). See C. LABIATA MOSSIÆ REINECKIANA.
„ *resple'ndens* (resplendent). Supposed natural hybrid, *C. schilleriana* and *C. granulosa.* 1885.
„ *R'ex* (King). Creamy-white; lip purple, veined gold. 1890.
„ *Rœ'zlii* (Rœzl's). See C. LABIATA RŒZLII.
„ *Rucke'ri* (Rucker's). White, yellow. Colombia. 1865.
„ *sanderia'na* (Sanderian). See C. LABIATA WARSCEWICZII.
„ *schilleria'na* (Schillerian). Red-brown, purple, white. Bahia. 1857.
„ „ *amalia'na* (Amalian). Lip densely veined bright purple. Brazil. 1887.
„ „ *aulcote'nsis* (Aulcote). Rose; lip crimson-purple. 1895.
„ „ *Lo'wii* (Low's). Lavender-blue; lip with darker lavender veins. 1892.
„ „ *supe'rba* (superb). Lip red-purple, edged white. 1899.
„ *schofieldia'na* (Schofieldian). See C. GRANULOSA SCHOFIELDIANA.
„ *Schroeda'ræ* (Baroness Schroeder's). See C. LABIATA SCHROEDERÆ.
„ *schroederia'na* (Schroederian). Purple mauve; lip with small side lobes and a long claw. 1883.
C. Sci'ta (Scita). Pale ochre, purple blotches; lip purple. Perhaps a natural hybrid. 1885.
„ *Skinne'ri* (Skinner's). Rosy-purple. September. Guatemala, Mexico. 1836.
„ „ *a'lba* (white). White. Costa Rica. 1877.
„ „ *a'tro-ro'sea* (dark rose). Dark rose. Guatemala. 1836.
„ „ *ocula'ta* (eyed). Lip with maroon-purple disc.
„ „ *soro'ria* (sisterhood). Green, yellow, purple, white. Brazil. 1887.
„ *speciosi'ssima* (showiest). See C. LABIATA LUEDDEMANNIANA.
„ *spheno'phora* (freckle-bearing). See C. GUTTATA.
„ *statteria'na* (Statterian). See C. LABIATA AUREA STATTERIANA.
„ *sua'vior* (sweeter). Rose; lip lilac and purple. Garden hybrid.
„ *supe'rba* (superb). Purple. May. Brazil and Guiana. 1838.
„ „ *a'lba* (white). Brazil. 1890.
„ „ *sple'ndens* (splendid). Rose, violet, white. Ric Negro. 1870.
„ *supe'r-Forbe'sii.* Garden hybrid, *C. superba* and *C. Forbesii.* 1896.
„ *Tria'næ* (Dr. Triana's). See C. LABIATA TRIANÆ.
„ *triophtha'lma* (three-eyed). Garden hybrid between *C. exoniensis* and *C. superba.* 1883.
„ *Veda'sti* (Vedast's). Garden hybrid between *C. Loddigesii* and *Lælia pumila præstans.*
„ *veluti'na* (velvety). Green, purple, rose. Brazil. 1870.
„ „ *Lie'tzei* (Lietz's). Dusky orange, spotted purple. Brazil. 1888.
„ „ *puncta'ta* (spotted). Larger, thickly dotted purple. Brazil. 1888.
„ *veno'sa* (veiny). Supposed natural hybrid, *C. Loddigesii Harrisonæ* and *C. Forbesii.*
„ *Victo'ria-regi'na* (Queen Victoria). Reddish; lip white, lined and blotched crimson. Brazil. 1892.
„ *virgina'lis* (virginal). See C. LABIATA ELDORADO VIRGINALIS.
„ *Wagene'ri* (Wagener's). See C. LABIATA MOSSIÆ WAGENERI.
„ *walkeria'na* (walkerian). Lilac, crimson. May. Brazil. 1844.
„ „ *dolo'sa* (deceitful). Side lobes of lip overlap half their length.
„ „ *nobi'lior* (nobler). Side lobes of lip overlap their whole length.
„ „ *schroederia'na* (Schroederian). Rose-purple, with darker markings.
„ *Walli'sii* (Wallis's). See C. LABIATA ELDORADO VIRGINALIS.
„ *Warne'ri* (Warner's). See C. LABIATA WARNERI.
„ *warocquea'na* (Warocquean). See C. LABIATA WAROCQUEANA.
„ *Warscewi'czii* (Warscewicz's). See C. LABIATA WARSCEWICZII.
„ *wellsia'na* (wellsian). Hybrid between *C. superba* and *Lælia elegans* (?). 1893.
„ *Wendla'ndii* (Wendland's). Hybrid, *C. bowringiana* and *C. labiata Warscewiczii.* 1894.
„ *Whi'tei* (White's). Dull purple; lip fringed, magenta-purple. Brazil. 1882.
„ *wilsonia'na* (Wilsonian). Deep purple; lip violet, white base. S. Amer. 1877.
„ *Zeno'bia* (Zenobia). Garden hybrid. 1887.

CATTLEYO'PSIS. (From *Cattleya,* and *opsis,* resemblance; it resembles a Cattleya. Nat. ord. Orchidaceæ.) Stove Orchid. For culture, see CATTLEYA.

C delica'tula (very pale). Pale rose. June. Cuba.

CAULIFLOWER. *Bra'ssica olera'cea cauliflo'ra.*

Varieties.—There are many to be found in local catalogues; but they are only different names for the following:—*Early London, Veitch's Autumn Giant, Large Asiatic,* and *Walcheren.* The last named is included also among the Broccolis; for it unites these to the Cauliflowers, partaking of the character of each.

Sowing.—There are three seasons for sowing this vegetable.

First Sowing.—For the first main crop, a sowing

should be made in the third week, or about the 24th of August, to raise plants for winter protection, to form the first principal and main crops of the following year. Should the weather be very dry at the time of sowing, the soil should be thoroughly well watered before the seed is sown, and so continued to encourage the growth of the seedlings. As soon as these are up and large enough to handle, beds should be formed in an open situation, well broken up, made rich, lined out neatly, and, if the weather is dry, well watered before planting, as well as afterwards. The best time for pricking out young plants of any kind, in dry weather, is late in the afternoon or in the evening. By this attention, strong, healthy plants will be ready for either finally planting out under hand-glasses, about the middle of October, or for protection in frames, or at the foot of walls. These protected plants are to form a second crop to those which were planted out under the hand-glasses, and may be finally planted out towards the end of February, if the weather is favourable, two feet and a half asunder each way; and should severe weather set in again, flower-pots just large enough to cover the plant may be turned over each, but taken off in all favourable weather. Care should always be taken to lift up the plants out of the nursery-beds, so as to insure uninjured roots.

Should the weather be very severe in the winter, the hand-glass crop must have a little protection more than that of the hand-light itself. But particular attention should be paid to airing at all times when the weather will permit, by either taking the lights entirely off, or tilting them.

If, through some mismanagement or misfortune, the winter stock should become short, a sowing towards the end of January becomes of importance. A very little seed must then be sown in a pan or box, placed in some moderate-heated structure, or in a gentle hotbed made up for the purpose; and when the seedlings are up, and large enough to handle, they should be pricked out on other very gentle hotbeds, care being taken to keep the plants up close to the glass, and inured to the open air. Plants raised in this way will be nearly as forward as those sown in August, and protected in cold frames through the winter.

The second Sowing should be at the end of February or beginning of March, and then either in a cold frame, or warm, open border; or, if the weather be very unfavourable, a sowing may be made on a very gentle hotbed even at this time, attention to pricking-out, &c., given as before directed. From this sowing a third planting is made.

The third Sowing should be made about the last week in April, or first week in May, and the seedlings attended to as before, as to pricking-out, &c. From this sowing a fourth planting is made.

Fitness for Use.—When a cauliflower has arrived at its full size, which is shown by the border opening as if it was about to run, pull up the plant, as it never produces any useful sprouts; and if hung up thus entire, in a cool place, it may be preserved for several days. The best time to cut a cauliflower is early of a morning, before the dew is evaporated: if it is done during the meridian or afternoon of a hot day, it loses much of its firmness, and boils tough.

To Preserve from Frost.—As frost destroys the cauliflower, it is a practice in November, before it sets in, to pull up the late-standing plants, and the leaves being tied over the head, to hang each up in a coal-shed or cellar, by which means they remain good for some time. But a better mode is to bury them in sand, laying them in alternate layers with the earth, in a dry situation. By this means they may be preserved to the close of January; or they may be put in a trench dug near a wall, eighteen inches wide and deep, the plants being laid with their roots uppermost, in an inclining position, so that the roots of the second covered the top of the one preceding. The earth to be laid over them thick, a considerable slope given to it, and beaten smooth with the spade, to throw off rain.

Saving Seed.—Some should be from the first planted out of the hand-glass crop. The best with well-formed heads should be selected for this purpose, and marked for seed by placing a strong stake to each for the purpose of tying up the flower-stems as they grow. Gather each branch of seed as it ripens.

Diseases and Insects.—See CABBAGE and BROCCOLI.

CAULOPHY'LLUM. (From *kaulos*, a stem, and *phullon*, a leaf; in reference to the stems ending as if it were in a leaf-stalk. Nat. ord. *Berberids* [Berberidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy tuberous perennial; division of the roots; light, sandy peat.

C. thalictroi'des (Thalictrum-like). 1. Yellow, green. N. Amer. 1755.

CAUTLE'A. (Named after *Mr. Cautley*, an Indian botanist. Nat. ord. Scitaminaceæ. Sometimes spelt Cautleya, but amended by Royle to Cautlea.)

Herbaceous perennials requiring the moist atmosphere of a stove, and otherwise to be treated like Alpinia or Hedychium.

C. lu'tea (yellow). Yellow. July. Himalaya. 1820.
„ *spica'ta* (spiked). Yellow. Himalaya. 1820.

CAVENDI'SHIA. (Named in compliment to *Henry Cavendish*, a noted chemist. Nat. ord. Vacciniaceæ.)

Evergreen shrubs of climbing habit, requiring stove treatment. Cuttings of nearly ripe wood in sand, in close case, with mild bottom-heat. Peat and sand.

C. acumina'ta (pointed). Scarlet, tipped yellow-green. Andes of Ecuador.
„ *cordifo'lia* (heart-shaped-leaved). Red, white. Colombia. 1866.
„ *specta'bilis* (showy). White, pinkish. Colombia. 1889.

CEANO'THUS. (From *keanothus*, a name applied by Theophrastus to a plant now not known. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cuttings in sand, under a glass, of firm side-shoots answer best, either in April or August. The greenhouse varieties do well against a south wall, but may require a little protection in severe weather. Those from tropical regions require the usual treatment of the stove, or a warm conservatory. They are not particular as to soil; a little peat mixed with loam will be an advantage.

Many pretty varieties have been added to this genus, and they are very desirable for gardens in sheltered positions.

HARDY.

C. america'nus (American). 2. White. July. N. Amer. 1713.
„ „ *herba'ceus* (herbaceous). White. August. Carolina. 1822.
„ „ *interme'dius* (intermediate). See C. AMERICANUS.
„ „ *na'nus* (dwarf).
„ „ *opa'cus* (opaque).
„ „ *tardiflo'rus* (late-flowering). 3. White. September. 1820.
„ „ *variega'tus* (variegated). Leaves edged yellow. 1889.
„ *Arnol'di* (Arnold's). Garden hybrid. 1882.
„ *axilla'ris* (axillary). Pale lilac-rose. 1875.
„ *azu'reus* (azure). Deep blue. Mexico.
„ „ *flo're a'lbo* (white-flowered). 10. White. April.
„ *colli'nus* (hill). 1. Light. July. N. Amer. 1827. Evergreen.
„ *cunea'tus* (wedge-shaped). 4. California. 1848.
„ *delilia'nus* (Delilian). Origin uncertain.
„ *denta'tus* (toothed). 3. Blue. California. 1848.
„ *divarica'tus* (straggling). 4. Blue. June. California. 1848.
„ *e'legans* (elegant). See C. THYRSIFLORA.
„ *Fendle'ri* (Fendler's). 1 to 2. Snow-white. N.W. America. 1893.
„ *floribu'ndus* (copious-flowering). Blue. June. California.
„ *hirsu'tus* (hairy). Coast Range of Central California.
„ *intege'rrimus* (quite entire). California. B. M., t. 7640.
„ *interme'dius* (intermediate). See C. AMERICANUS.
„ *lobbia'nus* (Mr. Lobb's). See C. DENTATUS.
„ *macroca'rpus* (large-fruited). California. 1824.
„ *microphy'llus* (small-leaved). 2. White. June. N. Amer. 1806.
„ *nepale'nsis* (Nepaul). See RHAMNUS NEPALENSIS.
„ *orega'nus* (Oregon). See C. SANGUINEUS.
„ *ova'lis* (oval). See C. OVATUS.
„ *ova'tus* (egg-shaped-*leaved*). 3. White. July. N. Amer. 1818.

C. pa'llidus (pale). 10. Pale blue. July. N. Amer.
„ *papillo'sus* (pimpled). 8. Blue. California. 1848.
„ *parvifo'lius* (small-leaved). California to Oregon.
„ *pere'nnis* (perennial). See C. AMERICANUS HERBACEUS
„ *prostra'tus* (prostrate). Flowers blue, axillary Oregon and California. 1889.
„ *ri'gidus* (stiff). 4. Blue. California. 1848.
„ *sangui'neus* (crimson-*stalked*). 2. White. June. Missouri. 1812.
„ *soredia'tus* (powdered). Coast Range of Southern California.
„ *spino'sus* (spiny). Middle Coast Range, California.
„ *tardiflo'rus* (late-flowering). See C. AMERICANUS TARDIFLORUS.
„ *thyrsiflo'rus* (thyrse-flowered). Pale lilac. California. "California Lilac."
„ *veitchia'nus* (Veitchian). Blue. California. Evergreen.
„ *veluti'nus* (felted). 10. White. November. British America to California.
„ *verruco'sus* (warted). See C. CUNEATUS.

GREENHOUSE EVERGREENS.

C. africa'nus (African). See NOLTEA AFRICANA.
„ *buxifo'lius* (box-leaved). White. April. Mexico. 1824.
„ *cape'nsis* (Cape). See SCUTIA COMMERSONII.

STOVE EVERGREENS.

C. cube'nsis (Cuban). 5. Crimson. W. Ind. 1820.
„ *infe'stus* (troublesome). See ADOLPHIA INFESTA.
„ *læviga'tus* (smooth-*leaved*). 4. Green, yellow. W. Ind. 1818.
„ *latifo'lius* (broad-leaved). N. Amer. 1881.
„ *mocinia'nus* (Mocino's). 5. Mexico. 1824.
„ *Mystaci'nus* (bearded). See HELINUS MYSTACINUS.
„ *reclina'tus* (bent-down). 5. Green. August. W. Ind. 1758.
„ *sphæroca'rpus* (round-fruited). See RHAMNUS SPHÆROSPERMUS.
„ *zeyla'nicus* (Cingalese). See SCUTIA COMMERSONII.

CECIDOMY'IA PYRI'VORA. Pear Gnat Midge. See DIPLO'SIS PYRI'VORA.

CECRO'PIA. Snake-wood. (A classical name, after *Cecrops*, first king of Athens, who built that city, and called it Cecropia. Nat. ord. *Artocarpads* [Urticaceæ]. Linn. 22-*Diœcia*, 2-*Diandria*.)

All the Artocarpads abound in milky juice, by which they are easily distinguished from the Nettleworts, with which they are allied. From many of the genera, and from *C. pelta'ta*, caoutchouc, or india-rubber, is obtained. Stove evergreen trees; cuttings of ripened shoots, placed in sandy peat, under glass, and in a moist bottom-heat, in April; peat and loam in a rough state, with a little sand. Summer temp., 60° to 85°; winter, 48° to 55°.

C. co'ncolor (one-coloured). 20. Brazil. 1822.
„ *dealba'ta* (whitened). Colombia.
„ *mexica'na* (Mexican). Mexico.
„ *palma'ta* (hand-*leaved*). 20. Brazil. 1820.
„ *pelta'ta* (shield-*leaved*). 30. Jamaica. 1778.

CEDRE'LA. (Derived from *Kedros*, the Cedar-tree; in allusion to the odoriferous wood recalling that of the Cedar. Nat. ord. Meliaceæ.)

Most of them are small, stove or greenhouse trees, but *C. sinensis* is hardy in the latitude of London at least. "Toon" of India (*C. Toona*) has a durable and beautifully marked wood, used in the manufacture of all kinds of furniture and ornamental work. *C. sinensis* may be grown in well-drained garden soil. Cuttings of ripened shoots of the tender species in sand, in a close case, with bottom-heat. Loam, leaf-mould, and sand.

C. Duge'sii (Duges's). Mexico.
„ *fi'ssilis* (cleft). Brazil.
„ *odora'ta* (scented). 50. Whitish. S. Amer. 1739.
„ *serrula'ta* (finely sawed). Java.
„ *sine'nsis* (Chinese). China and Japan. 1875. Hardy.
„ *Too'na* (Toon). 60. White to pink. India. 1823.
„ *veluti'na* (felted). See CHICKRASSIA TABULARIS.

CEDRONE'LLA. (A diminutive of *kedros*, the cedar; referring to the fragrant, resinous scent. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Dracocephalum.)

It is worthy of remark that the Lipworts are all destitute of any deleterious qualities, and that most of them are fragrant and aromatic—as the lavender, salvia, rosemary, mint, balm, and hyssop, &c. Hardy plants. Divisions of the roots of the herbaceous species; cuttings of the evergreen, under a hand-light in summer; sandy loam and a little peat.

C. ca'na (hoary-leaved). 3. Crimson. July. New Mexico. 1851.
„ *canarie'nsis* (Canary). Canaries. Greenhouse.
„ *corda'ta* (heart-shaped-*leaved*). 1. Purple. July. N. Amer. 1824.
„ *mexica'na* (Mexican). 2. Purple. Mexico.
„ *pa'llida* (pale-*flowered*). 1½. Rose. September. N.W. Amer. 1844.
„ *tryphy'lla* (three-leaved). Pale purple. July. Canaries. 1697. "Balm of Gilead."

CE'DRUS. The Cedar. (From the Arabic *kedron*, or *kedree*, power; in reference to its majestic appearance; but some have supposed from *Kedron*, a brook in Judea. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

Hardy evergreen trees. Seeds, saved in the cones, extracted by steeping the cones in water, and boring a hole down their centre so as to split them, and sowing in sandy soil, in March; also by cuttings, under a hand-light; and the *Deoda'ra* by inarching and grafting on the common Cedar, and by seeds, which are best; deep, sandy soil.

C. afric'ana (African). See C. ATLANTICA.
„ *alla'ntica* (Atlantic). May. Mount Atlas. 1843. "Mount Atlas Cedar."
„ „ *au'rea* (golden).
„ „ *fastigia'ta* (upright).
„ „ *glau'ca* (glaucous).
„ „ *pe'ndula* (pendulous). "Weeping Atlas Cedar."
„ *Deoda'ra* (Deodar). 120. Himalaya. 1822. "The Deodar Cedar."
„ „ *a'lbo-spi'ca* (white-spiked). Tips of young shoots white.
„ „ *crassifo'lia* (thick-leaved).
„ „ *ere'cta* (erect).
„ „ *pe'ndula* (pendulous). "Weeping Deodar."
„ „ *robu'sta* (robust).
„ „ *variega'ta* (variegated).
„ „ *verticilla'ta* (whorled).
„ „ *vi'ridis* (green).
„ „ *You'ngi* (Young's).
„ *Li'bani* (Lebanon). Asia Minor. Syria. 1683. "Cedar of Lebanon."
„ „ *brevifo'lia* (short-leaved). Cyprus.
„ „ *fo'liis arge'nteis* (silvery-leaved).
„ „ *na'na* (dwarf).
„ „ *pe'ndula* (pendulous). "Weeping Cedar of Lebanon."
„ „ *pyramida'lis* (pyramidal).
„ „ „ *arge'nteis* (silvery pyramidal).

CELANDINE. (*Chelido'nium ma'jus.*) Shrubby Celandine *Bocco'nia frute'scens*.

CELA'STRUS. Staff-tree. (From *kelas*, the latter season; referring to the fruit hanging on the trees all winter. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cuttings of the half-ripened shoots in sand, under a glass; peat, and very sandy, fibrous loam. The stove and greenhouse species require the treatment common to each department. The hardy species may be propagated by layers in autumn, and *sca'ndens* by seeds; *bulla'tus* seldom ripens its seeds. Deep, loamy soil for those hardy climbers.

HARDY DECIDUOUS CLIMBERS.

C. angula'tus (angled). 23. Flowers small. China. 1909. Shrub.
„ *articula'tus* (jointed). China and Japan. 1890.
„ *bulla'tus* (blistered). See C. SCANDENS.
„ *flagella'ris* (whip-like). Amur region; Corea. 1909.
„ *hypoglau'cus* (glaucous beneath). Central China.

C. latifo'lius (broad-leaved). Greenish-white. Central China. 1910. Shrub.
„ *Ori'xa* (Orixa). Japan.
„ *sca'ndens* (climbing). 15. Yellow. May. N. Amer. 1736.

STOVE EVERGREEN SHRUBS.

C. cri'spulus (finely-crisped). China.
„ *lute'olus* (small yellow). Tropical Africa.
„ *mexica'nus* (Mexican). 7. Mexico. 1824.
„ *multiflo'rus* (many-flowered). 4. White. May. South Europe. 1816.
„ *myrtifo'lius* (myrtle-leaved). 20. White. May. Jamaica. 1810.
„ *nu'tans* (nodding). See C. PANICULATUS.
„ *panicula'tus* (panicled). 3. Greenish. May. E. Ind. 1810.
„ *quadrangula'tus* (square-stalked). 10. White. Brazil. 1820.
„ *tri'gynus* (three-styled). See GYMNOSPORIA TRIGYNA.

GREENHOUSE EVERGREEN SHRUBS.

C. angula'ris (angular). S. Africa.
„ *austra'lis* (Southern). Australia.
„ *buxifo'lius* (box-leaved). 4. White. May. Cape of Good Hope. 1752.
„ *cassinoi'des* (cassine-like). See GYMNOSPORIA CASSINOIDES.
„ *ce'rnuus* (drooping). 5. White. May. Cape of Good Hope. 1817.
„ *cymo'sus* (cymose). See C. BUXIFOLIUS.
„ *dispe'rmus* (two-seeded). Australia.
„ *emargina'tus* (notch-*leaved*). See GYMNOSPORIA EMARGINATA.
„ *flexuo'sus* (zigzag). 6 White. May. Cape of Good Hope. 1826.
„ *glomera'tus* (clustered). See C. HETEROPHYLLUS.
„ *heterophy'llus* (various-leaved). S. Africa.
„ *ilici'nus* (holly-*leaved*). 3 White. Cape of Good Hope. 1817.
„ *lauri'nus* (laurel-like). 3. White. June. Cape of Good Hope. 1818.
„ *linea'ris* (narrow-leaved). 4. White. May. Cape of Good Hope. 1818.
„ *lu'cidus* (shining). 2. White. May. Cape of Good Hope. 1722.
„ *lycioi'des* (box-thorn-like). White. August. Canaries. 1821.
„ *macroca'rpus* (large-fruited). White. Peru. 1826.
„ *oleoi'des* (olive-like). 3. White. May. Cape of Good Hope. 1824.
„ *pteroca'rpus* (wing-fruited). See PTEROCELASTRUS TRICUSPIDATUS.
„ *puncta'tus* (dotted-*branched*). See C. ARTICULATUS.
„ *pyraca'nthus* (fire-spined). 3. White. May. Cape of Good Hope. 1742.
„ *retu'sus* (blunt). 6. Yellow. Peru. 1824.
„ *ri'gidus* (stiff). 3. Yellow. May. Cape of Good Hope. 1818.
„ *rostra'tus* (beaked). See PTEROCELASTRUS ROSTRATUS.
„ *serra'tus* (serrated). Abyssinia.
„ *tetrago'nus* (four-angled). See CASSINE SCANDENS.
„ *tricuspida'tus* (three-pointed). See PTEROCELASTRUS TRICUSPIDATUS.
„ *unda'tus* (waved). 4. White. May. Cape of Good Hope. 1826.
„ *zeyla'nicus* (Cingalese). See SCUTIA COMMERSONII.

CELE'RIAC, or **TURNIP-ROOTED CELERY.** (*A'pium grave'olens rapa'ceum.*) Of this variety of celery there is said to be a hardier kind cultivated by the Germans, called by them *Knott-celery*.

Sowing.—It may be sown in March, April, and May, to afford successional plantations in June, July, and August. Sow in drills six inches apart, and keep regularly watered every evening in dry weather. The bed must be kept free from weeds, and when about three inches high, the plants may be pricked out into another border in rows three inches apart each way, giving water abundantly and frequently. By adopting the precautions mentioned in the cultivation of celery, the same seed-bed will afford two or three distinct prickings. In the neighbourhood of Dresden, where this vegetable is grown in great perfection, they sow in February or March, in a hotbed, under glass; and the plants are removed in April, when two or three inches high, to another hotbed, and set an inch and a half apart. Success depends much upon regular supplies of water and manure.

When five or six inches high, they are fit for final planting in rows two feet asunder, and the plants eight inches apart on the level ground, or in drills drawn with the hoe three inches deep, as they only require earthing up a few inches with the hoe. In dry weather they should be watered plentifully, at least every other evening. Keep them free from weeds. They require a light, fertile soil.

Sowing Seed.—The directions given for saving the seed of celery are in every respect applicable to this vegetable.

CELERY. *A'pium grave'olens.*

Varieties.—A better idea of the best sorts can be gained from any seedsman's catalogue than we can give here. There are types such as Red, White, and the Striped, but names are numerous.

Sowing.—The first sowing may be made about the middle or toward the end of February, sowing a very little seed in a pan or box placed in any heated structure, and having a gentle hotbed made up ready to receive the young plants as soon as they are fit to prick out. The soil cannot be too rich for them; and, if pricked out in gentle hotbeds under glass, which is best, the young crop should be kept up within two or three inches of the glass, and attention paid to frequent watering, earth-stirring, and airing, in favourable weather.

The sowing for a main crop should be made about the first week in March; and although it may be sown in a rich, warm border, yet it is better to make a gentle hotbed for this sowing, even if it is only of four boards nailed together, to keep up the earth round the sides of the bed, and no glass to cover it; but, if an old light can be spared until the plants are up, all the better. Several prickings-out may be made from this sowing in any rich earth, in open situations, having the beds made up neatly ready for pricking out, either in warm, showery weather, or during evenings in dry weather. The plants should be inserted six inches apart in the nursery-beds, well supplied with water, until the plants are established, and the earth among them frequently stirred.

A third sowing may be made about the second week, or middle of April, in the open, warm border, to be attended to as before mentioned, as to pricking-out, watering, &c., only that cool situations will be found best, such as north borders for summer pricking-out, for a supply to plant out for winter and spring use.

Final Planting; the Single-trench System.—The trenches, where the soil will allow of it, may be eight or ten inches deep, to receive the plants for the first summer plantings; but, as the season advances, not so deep by two inches at each successive planting; and, lastly, on the level surface, for late winter and spring use. When planted in deep trenches for the first crop, the rows may be much nearer together. Another method of planting out the principal and late crops is, to dig out a trench, four and a half feet wide, and one foot deep, placing the earth half on one side, and half on the other side; this done, give a thorough good manuring, as the soil cannot be made too good for this vegetable; let it be neatly dug in, and the surface made smooth as the work goes on; then lift the plants with a trowel from the nursery-beds, to insure their having good roots; let them be planted precisely one foot from row to row, and six or seven inches from plant to plant, the row crossways of the trench. Thoroughly well water; and, in the course of a week after planting, the earth should be carefully stirred over the whole bed.

The leaves may be shortened, which gives more strength to the base of the plants, and a better heart is formed.

Earthing up.—The first earthing up should be done with a small trowel, holding the leaves of the plant together in one hand, and stirring and drawing up a little earth to the plant with the other. The next earthing is done by the help of two light boards, six to eight inches broad, of the same length as the trench is wide; these to be placed between two of the rows of plants by two persons; then place between these boards well-broken earth, as much as required; draw up the boards steadily; do the same in the next space, and so on until the work is completed. By the last-mentioned method of final planting, more than double the quantity can be grown on a given

space of ground, and the heads are quite as fine as in the single-trench system. It is also handy for protection in winter, either with hoops and mats or litter.

The trench being dug out four and a half feet wide, allows room for six plants across it, at six inches apart from plant to plant, leaving three inches' space from the outside of the trench.

Frost.—At the appearance of very severe weather setting in at any time during the winter months, three or four dozen heads of the celery may be taken up without cutting away any part of them, and laid in dry earth, sand, or sifted coal-ashes, so as to be handy for immediate use.

Manuring.—In the seed-bed, when pricked out, and in the bed for final growth, too much of the richest manure cannot be applied. Upon this, and upon the roots being uninjured at each removal, depend the fineness and excellence of the celery; any check to its growth is never recovered, but renders it dwarf and stringy. Liquid-manure should be given to it frequently.

To save Seed.—Some plants must be left where grown; or, in February or March, some may be carefully taken up, and, after the outside leaves are cut off, and all laterals removed, planted in a moist soil a foot apart. Those which are most solid, and of a middling size, are to be selected. When they branch for seed, they must be tied early to a stake, to preserve them from the violence of winds. The flower appears in June, and the seed is swelling in July. If dry weather occurs, they should be watered every other night. In August the seed will be ripe, and, when perfectly dry, may be rubbed out and stored.

Diseases.—In heavy, wet soil it is liable to have its stalks split and canker. The soil for earthing up cannot be too light and dry. We have seen coal-ashes employed for the purpose most successfully.

CELERY FLY. (*Tephritis onopordinis.*) In the autumn it is very common to observe part of the leaves of Celery-plants blistered and turned yellow; and this occurs occasionally to such an extent, that their growth is checked and their size diminished. If the withered parts are examined, and the skin of the blisters is raised, there will be found beneath it some small green grubs, that have eaten away all the green pulp (*parenchyma*) of the parts so withered. These grubs are the larvæ of the Celery Fly. The grubs may be found in the leaves of the Celery in June, July, September, October, and November; for there are two or more broods of them in the course of the year. The grubs, though less frequently, are found doing similar damage to the leaves of Alexanders and Parsnips. When full grown, the grubs descend into the earth, and remain in the chrysalis state until the spring following, when they give birth to the fly. The Celery Fly may usually be found upon the leaves of the laurel, hovering over flowers and resting upon palings in the sunshine, from the middle of May to the end of July. It is one of the most beautiful of the English two-winged flies, and has been thus described by Mr. Westwood:—The general colour of the body, which is five-jointed, varies from rusty-brown to shining black; head buff, with black hairs; legs yellow; thorax sprinkled with long black hairs; wings black, with various pale spots; eyes green. The whole length of the insect is not more than one-sixth of an inch, and its wings, when outspread, barely half an inch across. A mark, like the letter W, on each fore-wing, may serve to identify it. The motions of this fly are very peculiar: seated upon a leaf in the sunshine, the wings are partially extended, yet partially elevated, and it has a sideling kind of motion. The withered leaves of the celery should be picked off, and the grubs within them crushed as soon as seen. Mr. Westwood suggests that a string, smeared with bird-lime, and stretched over the celery-plants, might catch many of the parents.—*The Cottage Gardener*, i. p. 73.

CELMI'SIA. (Named after *Celmisius*, the mythical son of a nymph. Nat. ord. Compositæ.)

Evergreen perennials of showy appearance, safest in a greenhouse, but hardy in the more favoured parts of the south and west of Britain and in Ireland. The rockery is the best place for them. Seeds when obtainable. Soil light and well drained.

C. angusti'ssima (narrowest-leaved). Ray white; disc yellow. New Zealand. 1909.

C. coria'cea (leathery). ½. Ray white; disc yellow. New Zealand. 1902.

„ *holoseri'cea* (wholly silky). Ray white; disc yellow. New Zealand. 1909.

„ *Lindsa'yi* (Lindsay's). ½. Ray white; disc yellow. New Zealand. 1890.

„ *Mackau'i* (Mackau's). Ray white; disc yellow. New Zealand. 1909.

„ *Munro'i* (Munro's). ½. Ray white; disc golden yellow. New Zealand. 1896.

„ *specta'bilis* (showy). 1. Ray white; disc yellow. New Zealand. 1882.

CELO'SIA. Cockscomb. (From *kelos*, burnt; in reference to the burnt-like appearance of the flowers of some of the species. Nat. ord. *Amarants* [Amarantaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The flowers of the Cockscomb, *Celo'sia crista'ta*, are astringent, and much used by Asiatic physicians. Seeds in a hotbed in March; potted off repeatedly, and transferred to the hothouse or greenhouse; light, rich soil, well drained.

SHRUBS.

C. echina'ta (hedgehog). See ALTERNANTHERA ACHYRANTHA.

„ *glau'ca* (milky-green). 1. White. July. Cape of Good Hope. 1818. Greenhouse evergreen.

GREENHOUSE ANNUALS.

C. crista'ta (crested). 2. Dark red. July. Asia. 1570.

„ „ *au'rea* (golden). Bright yellow.

„ „ *cocci'nea* (scarlet). Magenta. India. 1597.

„ „ *compa'cta* (compact). 2. Dark red. July. Asia. 1570.

„ „ *ela'ta* (tall). 2. Dark red. July. Asia. 1570.

„ „ *flave'scens* (pale yellow). 2. Yellow. July. Asia. 1570.

„ „ *pyramida'lis* (pyramidal). Colours various. July. India. 1820.

STOVE ANNUALS.

C. arge'ntea (silvery-*spiked*). 1. Light flesh. July. China. 1740.

„ „ *linea'ris* (narrow-*leaved*). 1. Flesh. June. E. Ind. 1714.

„ „ *margarita'cea* (pearly). 2. Yellow. W. Ind. 1817.

„ *castre'nsis* (camp). See C. CRISTATA.

„ *ce'rnua* (drooping). 3. Purple. July. E. Ind. 1809.

„ *cocci'nea* (scarlet). See C. CRISTATA COCCINEA.

„ *como'sa* (tufted). See C. CRISTATA.

„ *dicho'toma* (fork-branched). See ALLMANIA NODIFLORA.

„ *Hutto'ni* (Hutton's). Leaves crimson. Java. 1872.

„ *lana'ta* (woolly). See AERVA TOMENTOSA.

„ *margarita'cea* (pearly). See C. ARGENTEA MARGARITACEA.

„ *Monso'nia* (Monson's). See AERVA MONSONIA.

„ *ni'tida* (shining). See C. PANICULATA.

„ *nodiflo'ra* (knotted-flowered). See ALLMANIA NODIFLORA.

„ *panicula'ta* (panicled). 1. Purple. August. Malabar. 1706.

„ *pyramida'lis* (pyramidal). See C. CRISTATA PYRAMIDALIS.

„ *tri'gyna* (three-styled). Trop. Africa.

„ *virga'ta* (twiggy). Greenish. Colombia.

CELO'SIA CRISTA'TA. *The Cockscomb of florists.*—All the varieties of this are well worth cultivating. The deep crimson-coloured varieties are generally the most esteemed; and of these there are tall and dwarf kinds, the latter being generally preferred, the comb at its extremities altogether, or nearly, touching the sides of the pot. *Seeds* should be sown in a sweet hotbed in spring; and, unlike the balsam, where splendid specimens are required, they should never be turned out of the hotbed until the combs are nearly full-grown, when they may be set in the greenhouse. Two systems of *culture* may be adopted. *First*, as soon as the plants are one inch in height, prick out, and shift successively into larger pots, never allowing the plants to be pot-bound. By this method the plants are strong before the combs appear, and you have a chance of having many very fine, but with the risk that many others, from their shape, will be fit only for the rubbish-heap. By the

second method, the best for those with limited space, the young plants are pricked out a few inches apart into shallow pans, in light, rich earth, encouraged to grow freely, and then checked suddenly by keeping them cooler and withholding water, which will cause them to show their combs in a few days. Though small, you can easily observe those which are close and well shaped from those which will be upright and straggling. Select the best, pot them, and continue repotting, and encourage with heat and manure-water; and the strength of your culture going chiefly into the combs, these will be large, while your plants will be small. Where extremely dwarf plants are wanted, cut off young plants a little below the comb; insert the part with the comb into a small pot, in sandy soil, in strong heat, and a hand-glass over. Soil, sandy loam and very rotten dung, but sweet. Temperature when growing, 60° to 85° by day; 60° at night.

CELO'SIA PYRAMIDA'LIS. There are many improved varieties of pyramidalis. It is the clear yellow and the crimson that are most appreciated, the orange-red is also very pretty. By careful selection for seeding from they may be kept true, and though usually treated as warm greenhouse plants, they are found to be very effective for the flower gardens; for this purpose the seeds must be sown early in the year in heat and the plants well advanced, then hardened off before putting them into the beds. They succeed best in a rich, light, sandy loam, to which may be added leaf-mould. For the greenhouse they are very effective, and last for a considerable time. It should be noted that those which seed freely usually deteriorate; the best forms produce comparatively little seed.

CE'LSIA. (Named after *Professor Celsius*, of Upsal. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Chiefly from seeds, or raised in a slight hotbed, in March or April, and flowered in the greenhouse during the summer, or in favourable positions out of doors. The biennials require the protection of the cold pit during winter; light, sandy, open soil.

C. acau'lis (stemless). ½. Yellow. Peloponnesus. 1899.
„ *Arctu'rus* (Arcturus). 4. Yellow. August. Candia. 1780. Half-hardy perennial.
„ „ *linnæa'na* (Linnean). 2. Yellow. 1818.
„ *betonicæfo'lia* (betony-leaved). 2. Yellow. July. N. Africa. Half-hardy biennial.
„ *bugulifo'lia* (bugle-leaved). Yellow-brown. Asia Minor. 1877.
„ *coromandelia'na* (Coromandel). 4. Yellow. July. E. Ind. 1783. Stove annual.
„ *cre'tica* (Cretan). 6. Yellow. July. Crete. 1752. Half-hardy biennial.
„ *Dænze'ri* (Dænzer's). Greece.
„ *glandulo'sa* (glandular). Asia Minor.
„ *heterophy'lla* (various-leaved). Yellow. July. 1829. Half-hardy biennial.
„ *lana'ta* (woolly). See C. ARCTURUS LINNÆANA.
„ *lanceola'ta* (spear-*leaved*). 3. Yellow. July. Levant. 1816. Half-hardy biennial.
„ *linea'ris* (linear). See ALONSOA LINEARIS.
„ *orienta'lis* (eastern). 2. Brown, yellow. July. Levant. 1713. Hardy annual.
„ *sublana'ta* (rather-woolly). See C. ARCTURUS LINNÆANA.
„ *urticifo'lia* (nettle-leaved). See ALONSOA INCISIFOLIA.
„ *visco'sa* (clammy). See VERBASCUM VIRGATUM.

CE'LTIS. Nettle-tree. (The name of a tree mentioned by Pliny. Nat. ord. *Nettleworts* [Urticaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)

Seeds, sown as soon as ripe; layers, also, and cuttings of ripe shoots, in autumn; common, good soil. The East and West India species require protection; but there seems little to recommend in them over the European and North American species, which are hardy. The wood of *austra'lis* is extremely pliant.

HARDY DECIDUOUS.

C. austra'lis (southern). 10. Green. Mediterranean Region. 1796.
„ *cane'scens* (hoary). See TREMA MICRANTHA.
„ *cauca'sica* (Caucasian). Caucasus.
„ *crassifo'lia* (thick-leaved). See C. OCCIDENTALIS.
C. davidia'na (Davidian). 20. Green. China. 1868.
„ *glabra'ta* (glabrous). 20. Green. Orient.
„ *læviga'ta* (polished). See C. MISSISSIPPIENSIS.
„ *mississippie'nsis* (Mississippi). 20. Green. S. United States.
„ *occidenta'lis* (western). 20. Green. April. N. Amer. 1656.
„ „ *corda'ta* (heart-*leaved*). 20. Green. April. N. Amer.
„ „ *grandidenta'ta* (large-toothed).
„ „ *pu'mila* (dwarf). 6. Green. May. N. Amer. 1812.
„ „ *reticula'ta* (netted). Leaves netted beneath. Texas. 1890.
„ „ *scabriu'scula* (roughish). 20. Green. April. N. Amer.
„ *sine'nsis* (Chinese). 12. Green. Asia. 1820.
„ *Tournefo'rti* (Tournefort's). 8. Green. Levant. 1739.

STOVE EVERGREENS.

C. aculea'ta (prickly). 10. Green. Jamaica. 1791.
„ *Li'ma* (file-*leaved*). See TREMA LIMA.
„ *micra'ntha* (small-flowered). See TREMA MICRANTHA.
„ *orienta'lis* (eastern). See TREMA ORIENTALIS.

CENARRHE'NES. (Derived from *kenos*, empty, and *arren*, a male; in reference to the glands, which look like barren stamens. Nat. ord. Proteaceæ.)

Greenhouse tree, requiring treatment given to Banksia. Cuttings in sand in close case. Loam, peat, and sand.

C. ni'tida (shining). 15. Greenish. Australia.

CE'NIA. (Derived from *kenos*, empty; in allusion to the fruits of the disc often being empty. Nat. ord. Compositæ.)

Hardy annual of neat habit but no great beauty. Ordinary garden soil.

C. pruino'sa (frosty). See C. TURBINATA.
„ *turbina'ta* (top-shaped). ½. Yellow. July. S. Africa. 1713.

CENTAU'REA. Centaury. (The classical name of a plant, fabled by Ovid to have cured a wound in the foot of Chiron—Chiron being one of the centaurs, or warhorse breakers of Thessaly. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*.)

The Centaurys are so numerous that more than seventy generic names have been applied to the species. *C. Cyanus* and *depre'ssa*, or corn-flowers, are much used in bouquets. Seeds of most of them in the open border, in the end of March. The tenderer ones may be raised on a hotbed, transplanted to another; a few might be preserved in a cold pit, if it was deemed desirable. Common soil. The improved white varieties, pure white, and soft mauve are later additions and are very beautiful.

HARDY ANNUALS AND BIENNIALS.

C. Ada'mi (Adams's). See C. SOLSTITIALIS.
„ *america'na* (American). 2. Red. July. N. Amer. 1824.
„ *A'pula* (Apulian). See C. MELITENSIS.
„ *arachnoi'dea* (cobweb-like). 3. Yellow. July. Italy. 1820. Biennial.
„ *Be'hen* (Behen). 2. Yellow. August. Asia Minor. 1797.
„ *benedi'cta* (blessed-*thistle*). See CARBENIA BENEDICTA.
„ *Calci'trapa* (Calcitrapa). 1. Yellow. July. England.
„ *cancella'ta* (latticed). 1. Yellow. July. N. Amer. 1824.
„ *chile'nsis* (Chilian). 1½. Lilac. June. Chili. 1836.
„ *coarcta'ta* (compressed). See C. GLOMERATA.
„ *Crocody'lium* (Crocodylium). 3. Purple. July. Levant. 1777.
„ *Crupi'na* (Crupina). See CRUPINA VULGARIS.
„ *crupinoi'des* (Crupina-like). See VOLUTARELLA BICOLOR.
„ *Cya'nus* (blue-bottle). 3. Blue. July. Britain.
„ *erio'phora* (wool-bearing). 1. Sulphur-yellow. Portugal. 1900.
„ *fusca'ta* (brownish). See C. NICÆE'NSIS.
„ *glau'ca* (milky-green). See C. MOSCHATA.
„ *glomera'ta* (clustered). 1. Yellow. July. Egypt 1801.
„ *ibe'rica* (Iberian). 2. Purple. July. Iberia. 1818 Biennial.

C. imperia'lis (imperial). Hybrid, *C. moschata* and *C. Margaritæ*. 1899.
„ *Li'ppii* (Lippi's). See VOLUTARELLA LIPPII.
„ *Marga'ritæ*. See C. MOSCHATA ALBA.
„ *Mari'æ* (Maria's). A hybrid between *C. moschata purpurea* and *C. moschata*.
„ *melite'nsis* (Maltese). 1. Yellow. July. Malta. 1710.
„ *moscha'ta* (musky. *Sweet Sultan*). 2. Purple. August. Persia. 1629.
„ „ *a'lba* (white).
„ „ *fla'va* (yellow).
„ „ *purpu'rea* (purple).
„ *napifo'lia* (turnip-leaved). 3. Purple. July. Candia. 1691.
„ *odora'ta* (sweet-scented). Caucasus. 1893.
„ „ *a'lba* (white). White, sweet scented, dwarf. 1893.
„ *palle'scens* (pale). 2. Yellow. July. Egypt. 1816.
„ *pulche'lla* (neat). 2. Purple. June. Persia. 1836.
„ *pu'lchra* (beautiful). 1. Bright crimson. June. Cashmere. 1838.
„ *salma'ntica* (Salamanca). 3. Purple. July. S. Europe. 1596. Biennial.
„ *si'cula* (Sicilian). 2. Yellow. July. Sicily. 1710.
„ *solstitia'lis* (solstitial). 1. Yellow. July. England. "Barnaby's Thistle."
„ *Steve'nii* (Steven's). 2. Yellow. July. Caucasus. 1820. Biennial.
„ *strami'nea* (straw-coloured). See C. GLOMERATA.
„ *suave'olens* (sweet-scented). See C. MOSCHATA.
„ *sulphu'rea* (sulphur-*coloured*). 1. Yellow. July. Sicily. 1815.
„ *torrea'na* (Torre's). See C. CALCITRAPA.
„ *Veru'tum* (dwarf). 2. Yellow. July. Levant. 1780.

HALF-HARDY.

C. ægypti'aca (Egyptian). 1. White. July. Egypt. 1790. Herbaceous perennial.
„ *argе'ntea* (silver-*leaved*). 2. Pale yellow. July. Candia. 1739. Evergreen shrub.
„ *argu'ta* (sharp-*notched*). August. Canaries. 1839. Evergreen shrub.
„ *Cinera'ria* (grey-*leaved*). 3. Purple. July. Italy. 1710. Herbaceous perennial.
„ *crassifo'lia* (thick-leaved). Malta.
„ *gymnoca'rpa* (naked-fruited). 2. Pale purple. Island of Capraja. 1858.
„ *hyssopifo'lia* (hyssop-leaved). 1. Purple. July. Spain. 1812. Half-hardy evergreen.
„ *ragusi'na* (Ragusan). 2. Yellow. July. Candia. 1710. Evergreen shrub.
„ *sempervi'rens* (evergreen). 2. Red, yellow. July. Portugal. 1683. Herbaceous perennial.
„ *spino'sa* (prickly-*branched*). 2. Purple. July. Candia. 1640. Herbaceous perennial.

HARDY HERBACEOUS.

C. acantho'des (Acanthus-like). 2. Purple. July. 1827.
„ *acau'lis* (stemless). N. Africa. 1799.
„ *ala'ta* (winged-*stalked*). See C. BEHEN.
„ *a'lba* (white-*flowered*). 2. White. July. Spain. 1597.
„ „ *deu'sta* (burnt). 5. Dark red. August. Naples. 1818.
„ *alpi'na* (alpine). 3. Yellow. July. Italy. 1640.
„ *ama'ra* (bitter). 2. Purple. July. Italy.
„ „ *grandiflo'ra* (large-flowered). 2. Purple. July. Switzerland. 1819.
„ „ *pinnati'fida* (leafleted). 2. Purple. July. Switzerland. 1819.
„ *arena'ria* (sand). 2. Purple. August. S. Europe. 1778.
„ *a'spera* (rough). 2. Purple. August. S. Europe. 1772.
„ *astraca'nica* (Astracan). See C. STEREOPHYLLA.
„ *atropurpu'rea* (dark-purple). 3. Purple. July. Hungary. 1802.
„ *au'rea* (*great*-golden). 2. Yellow. August. S. Europe. 1758.
„ *austra'lis* (southern). 1. August. Australia. 1821.
„ *austri'aca* (Austrian). 2. Purple. August. Austria. 1815.
„ *axilla'ris* (axillary). 1. Purple. July. Austria. 1823.
C. babylo'nica (Babylonian). 7. Yellow. July. Levant. 1710.
„ *Balsa'mita* (Balsamita). 2. Yellow. July. Syria 1820.
„ *Barrelie'ri* (Barrelier's). 2. Purple. July. Hungary. 1820.
„ *bractea'ta* (bracteated). 2. Purple. July. S. Europe. 1817.
„ *calcitrapoi'des* (Calcitrapa-like). 1. Purple. June. Levant. 1683.
„ *caloce'phala* (beautiful-headed). 3. Yellow. July. Levant. 1816.
„ *calophy'lla* (beautiful-leaved). 5. Yellow. July. S. Europe. 1816.
„ *capilla'ta* (hairy). 1. Purple. July. Siberia. 1810.
„ *carthamoi'des* (Carthamus-like). 2. August. Siberia. 1816.
„ *centauroi'des* (Centaurea-like). 3. Yellow. June. S. Europe. 1739.
„ *Centau'rium* (*great* centaury). 4. Yellow. July. Italy. 1596.
„ *cheiranthifo'lia* (wallflower-leaved). 2. Pale yellow. July. Caucasus. 1820.
„ *cichora'cea* (endive-like). See SERRATULA CICHORACEA.
„ *cicutæfo'lia* (Cicuta-leaved). See C. COLLINA.
„ *cine'rea* (grey). 2. Purple. June. Italy. 1710.
„ *Clеme'ntei* (Clement's). 2. Yellow. Spain. 1871.
„ *colli'na* (hill). 3. Yellow. June. S. Europe. 1596.
„ *conci'nna* (neat). 4. Yellow. August. Caucasus. 1818.
„ *coria'cea* (leathery-*leaved*). See C. SCABIOSA.
„ *coronopifo'lia* (buckhorn-leaved). 3. Yellow. June. Levant. 1739.
„ *corymbo'sa* (corymbose). 1. Purple. July. Switzerland. 1819.
„ *crue'nta* (crimson-*leaved*). 1. Purple. July. 1816.
„ *cynaroi'des* (Cynara-like). Purple. Canary Islands.
„ *dealba'ta* (whitened). 2. Purple. July. Caucasus. 1804. "Mealy Centaury."
„ *deci'piens* (deceiving). See C. NIGRA DECIPIENS.
„ *declina'ta* (curved-down). 2. Purple. July. Caucasus. 1821.
„ *decu'mbens* (lying-down). 2. Purple. August. France. 1815.
„ *depre'ssa* (depressed). 1. Blue. July. Caucasus. 1818.
„ *deu'sta* (burned). See C. ALBA DEUSTA.
„ *dilu'ta* (washed). 2. Pale purple. July. S. Europe. 1781.
„ *disse'cta* (deeply-cut-*leaved*). 2. Purple. July. Naples. 1823.
„ *ela'ta* (tall). 4. Yellow. August. Mauritania. 1820.
„ *elonga'ta* (lengthened). 2. Purple. August. Barbary. 1823.
„ *eriophy'lla* (woolly-leaved). 3. Yellow. July. 1827.
„ *Fe'nzlii* (Fenzl's). 4. Yellow. Temperate Asia. 1868.
„ *fe'rox* (fierce). 2. Yellow. August. Barbary. 1790.
„ *Fische'rii* (Fischer's). 2. Blue. July. Russia. 1820.
„ *flosculo'sa* (many-floreted). 1. Purple. August. Italy. 1818.
„ *Fontane'sii* (Fontanes's). Algeria.
„ *glastifo'lia* (woad-leaved). 4. Yellow. July. Siberia. 1731.
„ *hy'brida* (hybrid). See C. CORYMBOSA.
„ *inca'na* (hoary). 2. Purple. August. Naples. 1822.
„ *intyba'cea* (succory-*leaved*). 2. Purple. August. S. Europe. 1778.
„ *Isna'rdi* (Isnard's). See C. ASPERA.
„ *Ja'cea* (Jacea). 2. Purple. July to September. Europe. "Brown Knapweed."
„ *jacobææfo'lia* (Jacobæa-leaved). 3. Yellow. July. 1818.
„ *kartschia'na* (Kartschi's). 2. Purple. June Carniola. 1836.
„ *leuca'ntha* (white-flowered). 2. White. August. S. France. 1816.
„ *leucophy'lla* (white-leaved). 2. Purple. July. Caucasus. 1823.
„ *limba'ta* (fringed). 3. Purple. July. Portugal. 1818.
„ *lingula'ta* (tongue-*leaved*). 2. Blue. July. Spain. 1824.
„ *linifo'lia* (flax-leaved). 1. Purple. July. Spain. 1827.
„ *macroce'phala* (large-headed). 3. Yellow. July. Caucasus. 1805. "Great Knapweed."

C. macrolo'pha (large-crested). Orient.
,, *macula'ta* (spotted-*leaved*). See C. MACULOSA.
,, *maculo'sa* (spotted-*calyxed*). 1. Purple. July. S. Europe. 1816.
,, *marshallia'na* (Marshall's). 2. Purple. July. Caucasus. 1820.
,, *mo'llis* (soft). See C. MONTANA.
,, *mona'ntha* (one-flowered). July. Siberia. 1796.
,, *monia'na* (mountain. *Perennial blue-bottle*). 2. Blue. July. Austria. 1596.
,, ,, *a'lba* (white). White-flowered variety.
,, ,, *lugdune'nsis* (Lugdunum).
,, ,, *ru'bra* (red). Red-flowered variety.
,, *murica'ta* (point-covered). See VOLUTARELLA MURICATA.
,, *myaca'ntha* (mouse-thorn). 1. Purple. August. France. 1820.
,, *negle'cta* (neglected). See C. CENTAUROIDES.
,, *nervo'sa* (nerved). 2. Purple. July. S. Europe. 1815.
,, *nicae'nsis* (Nice). 2. Yellow. July. Nice. 1819.
,, *ni'gra* (black). 2. Purple. July to September. Britain. "Black Knapweed."
,, *nigre'scens* (blackish). Purple. Europe.
,, ,, *vochine'nsis* (Vochin). 2. Purple. July. Austria. 1817.
,, *ni'tens* (sparkling). Purple. Caucasus. 1823.
,, *ochroleu'ca* (yellowish-white). 2. Pale yellow. July. Caucasus. 1801.
,, *orienta'lis* (eastern). 2. Yellow. Siberia. 1759.
,, *orna'ta* (ornamental). 2. Yellow. July. Spain. 1818.
,, *ovi'na* (sheep's). 1. Purple. August. Caucasus. 1802.
,, *paniculo'ta* (panicled). 2. Purple. July. Europe. 1640.
,, *parvifio'ra* (small-flowered). 2. Violet. June. Barbary. 1823.
,, *pectina'ta* (comb-*edged*). 1. Purple. August. France. 1727.
,, *peregri'na* (diffuse). 2. Yellow. July. S. Europe. 1749.
,, *phry'gia* (Swiss). 2. Purple. August. Switzerland. 1633.
,, ,, *ambi'gua* (ambiguous). 2. Purple. August. Switzerland. 1819.
,, *polyaca'ntha* (many-spined). 1. Purple. July. Portugal. 1804.
,, *polymo'rpha* (many-formed). 2. Purple. July. Spain. 1819.
,, *Pouzi'ni* (Pouzin's). 2. Purple. July. S. France. 1824.
,, *præ'lta* (tall). 2–3. Purple. Cilicia.
,, *prate'nsis* (meadow). 2. Purple. July. Hungary. 1817.
,, *procu'mbens* (procumbent). 1. Purple. June. S. Europe. 1821. Trailer.
,, *pube'scens* (downy). 1. Yellow. July. 1804.
,, *pulche'rrima* (very beautiful). 5. Yellow. July. Armenia. 1816.
,, *pulla'ta* (sad-looking). 2. Purple. July. S. Europe. 1789.
,, *radia'ta* (rayed). See SERRATULA XERANTHEMOIDES.
,, *refle'xa* (bent-back-*spined*). 3. Yellow. July. Iberia. 1801.
,, *re'pens* (creeping). 1. Yellow. July. Levant. 1739.
,, *Rhapo'nticum* (Rhaponticum). Purple. Europe. 1640. "Swiss Knapweed."
,, *ri'gida* (stiff). 1. Purple. July. 1823.
,, *rivula'ris* (rivulet). 2. Brown. July. Portugal. 1812.
,, *roma'na* (Roman). 3. Red. July. Rome. 1739.
,, *rupe'stris* (rock). 2. Yellow. July. Italy. 1806.
,, *ruthe'nica* (Russian). 3. Pale yellow. August. Russia. 1806.
,, *rutifo'lia* (Rue-leaved). Byzantium.
,, ,, *lavra'na* (Lavran).
,, *sabulo'sa* (sand). 1. White. July. Siberia. 1820
,, *salicifo'lia* (willow-leaved). 2. Purple. July. Caucasus. 1823.
,, *sali'na* (salt). 1. June. Siberia. 1817.
,, *salonita'na* (Salonitan). Eastern Europe.
,, *sangui'nea* (bloody). 2. Purple. July. 1827.
,, *Scabio'sa* (Scabiosa). 2. Purple. June to September. Britain.
C. Scabio'sa oliveria'na (Oliverian).
,, *Se'ridis* (endive-*leaved*). 1. Purple. July. Spain. 1686.
,, *sessa'na* (Sessane). 1. Blue. July. S. Europe. 1816.
,, *sibi'rica* (Siberian). 1. Purple. July. Siberia. 1780.
,, *sonchifo'lia* (sow-thistle-leaved). 1. Purple. August. Mediterranean. 1780.
,, *so'rdida* (sordid). 1. Purple. July. Austria. 1818.
,, *spathula'ta* (spathulate-*leaved*). 2. Blue. July. Naples. 1825.
,, *sphæroce'phala* (globe-headed). 2. Purple. July. Middle Europe. 1683.
,, *spinulo'sa* (small-spined). 2. Purple. July. Hungary. 1826.
,, *sple'ndens* (shining). 3. Purple. July. Spain. 1597.
,, *squarro'sa* (wide-spreading). 1½. Purple. July. Persia. 1836.
,, *stereophy'lla* (stiff-leaved). 2. Purple. July. Podolia. 1820.
,, *Stæ'be* (Stœbe). 1. Red, yellow. June. Austria. 1759.
,, *stri'cta* (erect). 1. Blue. July. Hungary. 1816.
,, *tata'rica* (Tartarian). See C. ORIENTALIS.
,, *tenuifo'lia* (fine-leaved). 2. Purple. July. Spain. 1820.
,, *transalpi'na* (transalpine). See C. NIGRESCENS.
,, *trichoce'phala* (hairy-headed). 1. Purple. July. Siberia. 1805.
,, *trine'rvia* (three-nerved). 2. Purple. July. Podolia. 1816.
,, *uligino'sa* (marshy). 3. Yellow. July. Portugal. 1816.
,, *unifio'ra* (one-flowered). 1. Purple. July. S. Europe. 1819.
,, *vallesi'aca* (Vallesian). Switzerland.
,, *vochine'nsis* (Vochin). See C. NIGRESCENS VOCHINENSIS.
,, *weidmannia'na* (Weidmann's). 2. Rose. July. Anatolia. 1836.
,, *xanthi'na* (yellow). 2. Yellow.

CENTAURI'DIUM DRUMMO'NDII. See XANTHISMA TEXANUM.

CENTE'MA. (From *kentema* a sharp point; the leaves and bracts are pointed. Nat. ord. Amarantaceæ.) Greenhouse annual or perennial herb. Seeds; cuttings in sand under a bell-glass. Loam, leaf-mould, and sand.

C. bifio'ra (two-flowered). 2–3. Dull magenta. Trop. Africa. 1909.

CENTRADE'NIA. (From *kentron*, a spur, and *aden*, a gland; referring to a spur-like gland on the anthers. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Lavoisiera.) Stove evergreen. Cuttings of side-shoots, in March or April; sandy loam one part, and rough peat two parts; a cool stove, or a warm greenhouse. Summer temp., 55° to 75°; winter, 45° to 55°.

C. divarica'ta (spreading). White. Central Amer. 1851.
,, *floribu'nda* (free-flowering). Lilac. Mexico.
,, *grandifo'lia* (large-leaved). 2. Pink. November. Mexico.
,, *inæquilatera'lis* (unequal-sided). 1½. Rosy-white. April. Mexico. 1843.
,, *ova'ta* (ovate). Pink. Central Amer. 1861.
,, *ro'sea* (rose-coloured). See C. INÆQUILATERALIS.

CENTRANTHE'RUM. (From *kentron*, a spur, and *antheros*, *anthera*, an anther. Nat. ord. Compositæ.) Hardy annuals. Seeds. Garden soil.

C. interme'dium (intermediate). 1½. Purple. August Brazil. 1821.
,, *mu'ticum* (snipped). 1. Purple. July. S. Amer. 1803.
,, *puncta'tum* (dotted). 1. Purple. July. Venezuela. 1824.

CENTRA'NTHUS. (From *kentron*, a spur, and *anthos*, a flower; referring to a spur-like process at the base of the flower. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.) Hardy herbaceous perennials, except *C. Calci'trapa* and *C. macrosi'phon*. Seeds and divisions; common soil.

C. angustifo'lius (narrow-leaved). 2. Crimson. June. S. Europe. 1759.

C. Calci'trapa (caltrop-*leaved*). 1. Purple. June. Portugal. 1683. Hardy annual.
„ *ju'nceus* (rush-like). Greece.
„ *longiflo'rus* (long-flowered). Armenia.
„ *macrosi'phon* (long-spurred). 1½. Red. July. Spain.
„ „ *a'lbus* (white). White variety.
„ *ru'ber* (red). 2. Crimson. June. Britain.
„ „ *flo're-a'lbo* (white-flowering). 2. White. June. Britain.
„ *Sibtho'rpii* (Sibthorp's). Red. Greece.

CENTROCA'RPHA. See RUDBE'CKIA.

CENTROCLI'NIUM. (From *kentron*, a spur, and *kline*, a bed. Nat. ord. Compositæ.)

C. appre'ssum (close-pressed). See ONOSERIS ADPRESSA.
„ *refle'xum* (reflexed). See ONOSERIS REFLEXA.

CENTRO'NIA. (From *kentron*, a spur; in allusion to the horns on the anthers. Nat. ord. Melastomaceæ.)
An ornamental stove evergreen. Cuttings of half-ripe shoots in sand in a close case with bottom-heat. Loam, peat, and sand.

C. hæma'ntha (blood-coloured). 4. Crimson. Colombia. 1856.

CENTROPE'TALUM. (Derived from *kentron*, a spur, and *petalon*, a petal; in reference to the spur of the lip. Nat. ord. Orchidaceæ.)
Intermediate orchid house.

C. puncta'tum (spotted). Vermilion, yellow. April. Peru. 1867. Syn. *Nasonia punctata.*

CENTROPO'GON. (From *kentron*, a spur, and *pogon*, a beard; in reference to the fringe which envelopes the stigma. Nat. ord. *Lobeliads* [Lobeliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Notwithstanding the acid poisonous qualities assigned to Lobeliads, it is asserted that the soft fruit of the *Centropo'gon surinamе'nsis* is eatable. Herbaceous perennials. Divisions of roots; sandy peat, and rich, fibrous loam; moisture and heat when growing, and comparative dryness and a low temperature when at rest. The Surinam species will require a few degrees higher temperature in winter than the others.

C. cocci'neus (scarlet). 3. Scarlet. July. Brazil.
„ *cordifo'lius* (heart-leaved). Rose. June. Mexico. 1839. Stove.
„ *fastuo'sus* (proud). 2. Rose. November. Mexico. Greenhouse.
„ „ *leuco'stomus* (white-mouthed). 2. White. 1850.
„ *lo'ngipes* (long-stalked). 2. Rose. Central Amer. 1854.
„ *lucya'nus* (Lucienian). Rosy-carmine, white. Winter. Garden hybrid. 1856.
„ *surinamе'nsis* (Surinam). 2. Rose. November. Surinam. 1786. Stove.
„ *tovare'nsis* (Tovarese). 3. Rose. Autumn. Venezuela.

CENTROSE'MA. (Derived from *kentron*, a spur, and *sema*, standard; in allusion to the short spur of the standard. Nat. ord. Leguminosæ.)
Evergreen stove plants of twining habit. Seeds and layers. Loam, peat, and sand.

C. brasilia'num (Brazilian). 5. Pink. July. Brazil. 1759.
„ *du'bium* (doubtful). See C. HASTATUM.
„ *grandiflo'rum* (large-flowered). Brazil.
„ *hasta'tum* (halbert-shaped). 6. Scarlet. Brazil. 1815.
„ *Plumie'ri* (Plumier's). 6. White, red. October. S. Amer.
„ *virginia'num* (Virginian). 8. Trop. Amer. 1732.

CENTROSOLE'NIA. (From *kentron*, a spur, and *solen*, a tube. Nat. ord. Gesneraceæ.) All now referred to Episcia.

C. bulla'ta (blistered). See EPISCIA TESSELLATA.

CENTROSPE'RMUM CHRYSA'NTHEMUM. See CHRYSANTHEMUM VISCOSUM.

CENTROSTE'MMA. See HOYA.

C. refle'xum. See HOYA CORIACEA.

CEPHAE'LIS. (From *kephale*, a head; in reference to the arrangement of the flowers in heads, or corymbs. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Psychotria.)
The Ipecacuanha of the shops is the root of *C. Ipecacua'nha*, a half-herbaceous plant, with creeping roots growing in the damp, shady forests of Brazil. Stove plants. Cuttings of firm young shoots in sand, under a glass, and in moist bottom-heat. Sandy, fibrous peat, and lumpy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

C. a'lba (white). Pale pink. April. Guiana. 1824.
„ *axilla'ris* (axillary). 4. White. April. W. Ind. 1816.
„ *Bea'rii* (Bear's). Small umbels of flowers. Mexico. 1888.
„ *ela'ta* (tall). 15. Purple. Jamaica. 1793.
„ *gla'bra* (smooth). Blue. April. Trinidad. 1820.
„ *involucra'ta* (involucrated). 5. White. July. Guiana. 1826.
„ *Ipecacua'nha* (Ipecacuanha). ½. White. January. Brazil. 1839.
„ *Ma'nnii* (Mann's). 1. White. Fernando Po.
„ *musco'sa* (mossy). White. May. W. Ind. 1824.
„ *peduncula'ris* (*long*-flower-stalked). 2. White. February. Sierra Leone.
„ *puni'cea* (scarlet-*involucred*). See C. ELATA.
„ *purpu'rea* (purple-*fruited*). 1. White, purple. May. Trinidad. 1821.
„ *Swa'rtzii* (Swartz's). 4. Bluish. W. Ind. 1824.
„ *tomento'sa* (downy). 4. Brownish. August. Guiana. 1825.
„ *viola'cea* (violet-*berried*). 1. White. June. W. Ind. 1818.

CEPHALANDRA. (From *kephale*, a head, and *aner*, an anther; in reference to the anthers being united in a round head. Nat. ord. Cucurbitaceæ.)
Slender climbers with a tuberous rootstock and requiring to be grown in a moist stove. Seeds or division of the tubers. Loam, leaf-mould, and sand.

C. cordifo'lia (heart-shaped leaved). Fruits cylindrical. Tropics.
„ *i'ndica* (Indian). Fruits cylindrical or oblong. Tropics.

CEPHALANTHE'RA. (From *kephale*, a head, and *anthera*, an anther. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Limodorum.)
Hardy terrestrial orchids. Divisions; peat and loam.

C. ensifo'lia (sword-leaved). 2. White. June. Britain.
„ *grandiflo'ra* (large-flowered). See C. PALLENS.
„ *pa'llens* (pale). 1. White. June. Britain.
„ *ru'bra* (red). 2. Purple. June. Britain.

CEPHALA'NTHUS. Button-wood. (From *kephale*, a head, and *anthos*, a flower; flowers disposed in heads being a general characteristic of this order. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Spermacoce.)
The Button-wood grows in marshy places, from Canada to Florida, and prefers a damp, peat bed in this country. Hardy deciduous shrub. Cuttings in sandy soil, under a hand-glass, in the beginning of autumn; layers also. Sandy loam, with vegetable mould or peat.

C. natale'nsis (Natal). Pink and green. S. Africa.
„ *occidenta'lis* (western). 7. White. August. N. Amer. 1735.
„ „ *angustifo'lius* (narrow-leaved). Leaves narrower and longer. 1889.
„ „ *brachypo'dus* (short-stalked). White. August. N. Amer.

CEPHALA'RIA. (From *kephale*, a head, in allusion to the dense head of flowers. Nat. ord. Dipsaceæ. Allied to Scabiosa.)
Hardy herbaceous plants. Seeds and divisions. Ordinary garden soil.

C. alpi'na (alpine). Yellow. Europe.
„ *leuca'ntha* (white-flowered). Creamy-white. Europe.
„ *radia'ta* (rayed). Yellow. Transylvania.
„ *syri'aca* (Syrian). Mediterranean region.
„ *tata'rica* (Tartarian). 6. Yellow. Siberia. 1759. Perennial.
„ *transylva'nica* (Transylvanian). Yellow. S. Europe.

CEPHALOCE'REUS DE LÆTII. See ECHINOCEREUS DE LÆTII.

CEPHALOSTA'CHYUM. (From *kephale*, a head, and *stachus*, a spike; the flowers are in spike-like heads. Nat. ord. Gramineæ.)

A greenhouse bamboo, with leaves 14 in. long. Seeds; suckers. Loam, a little leaf-mould and sand.

C. pergra'cile (very elegant). 40. Stems, 2–3 in. thick. Burma. 1908.

CEPHALOTA'XUS. (From *kephale*, a head, and *taxus*, the yew; referring to the general appearance of these trees. Nat. ord. *Taxads* [Coniferæ]. Linn. 22-*Diœcia*, 13-*Polyandria*. Allied to Phyllocladus.)

These are the Japanese Yews lately set apart from the old yews by Dr. Siebold, the Japan traveller, and Zuccarini, in their work called *Flora Japonica*. Hardy evergreens.

C. drupa'cea (berry-bearing). 12 to 20 feet. Japan. 1844.
„ *Fortu'ni* (Fortune's). 40 to 60 feet. Northern China. 1848.
„ „ *brevifo'lia* (short-leaved).
„ „ *longifo'lia* (long-leaved).
„ „ *robu'sta* (robust).
„ *Olive'ri* (Oliver's). China. 1903.
„ *pedunculata* (stalked-fruited. *Lord Harrington's Yew*). Japan. 1837.
„ „ *fastigia'ta* (erect). Leaves darker green. Stems erect. 1863.
„ „ *sphæra'lis* (spherical). Fruit spherical. 1884.
„ *umbraculi'fera* (umbrella-bearing). See TAXUS BREVIFOLIA.

CEPHALO'TUS. (From *kephalotes*, headed; in reference to the glandular head of stamens. Nat. ord. Saxifragaceæ.)

This is the Australian Pitcher-plant, found growing in the marshes of King George's Sound. Greenhouse herbaceous perennial. Offsets. Chopped sphagnum, peat, earth, and broken pots, well drained, and carefully watered; a bell-glass kept over it, and frequently cleaned. Summer temp., 60° to 75°; winter, 48° to 55°.

C. follicula'ris (follicled). 1. White. Australia. 1822.

CERA'DIA FURCA'TA. See OTHONNA FURCATA.

CERANTHE'RA. See ALSODEIA.

CERAPTERYX GRA'MINIS. The Antler Moth. See CHARÆAS GRAMINIS.

CERA'STIUM. Mouse-ear Chickweed. (From *keras*, a horn; from the form of the seed-vessel. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)

There are many annuals of this genus, all unworthy of cultivation; but the following hardy trailing perennials are ornamental. They are easily propagated by divisions in the spring; will grow in any light, moderately rich soil, and are all white-flowered.

C. alpi'num (alpine). ½. July, August. Europe.
„ „ *lana'tum* (woolly). Leaves woolly and hoary.
„ *arve'nse* (field). ½. June, July. Britain.
„ „ *suffruticosum* (sub-shrubby).
„ *Bieberstei'nii* (Bieberstein's). ½. June. Caucasus. 1820.
„ *Boissie'ri* (Boissier's). 1. White. July, August. Spain.
„ *carinthi'acum* (Carinthian). See C. OVATUM.
„ *deca'lvans* (becoming bald). White. Servia. 1892.
„ *grandiflo'rum* (large-flowered). White. E. Europe. Caucasus.
„ *latifo'lium* (broad-leaved). ½. White. July. Europe.
„ *Ledebou'rii* (Ledebour's). See C. PILOSUM.
„ *macra'nthum* (large-flowered). White. Asia Minor.
„ *ova'tum* (ovate). ½. White. Summer. Eastern Europe.
„ *pilo'sum* (thinly-hairy). White. June. Siberia.
„ *purpura'scens* (purplish). ½. July. Asia Minor. 1831.
„ *Scara'ni* (Scarani's). See C. ARVE'NSE.
„ *tomento'sum* (felted). ½. White. June. Europe, Asia Minor. 1648. "Snow in Summer."

CE'RASUS. Cherry. (From *Cerasus*, a town in Pontus, in Asia, whence the cherry was brought to Rome by Lucullus. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. See also PRUNUS.)

Besides the cultivated cherry, the genus Cerasus includes species which contain virulent poisons, chiefly in their leaves and fruit-kernels. Hardy deciduous trees and shrubs, except where otherwise specified. Seeds sown when the fruit is ripe, or mixed up with three or four parts their bulk of dry sand, and frequently turned, to prevent sprouting, and sown in the March following; also by layers and cuttings from the roots, and from suckers; particular varieties by budding and grafting; deep soil, rather sandy. The double varieties are very showy, and for early forcing are much appreciated; those of the Pseudocerasus type being the most showy, and force well.

C. a'cida (acid). 20. White. April. Europe.
„ „ *dumo'sa* (bushy). 4 to 6. White. April. A low, bushy tree.
„ „ *flo're-ple'no fo'liis variega'tis* (double, leaves variegated).
„ „ *hu'milis* (dwarf).
„ „ *Mara'sca* (Marasca). White. April. Europe. 1827.
„ „ *montmorencia'na* (Montmorency an). 20. White. April.
„ „ *pyramida'lis* (pyramidal). Branches erect. 1886.
„ „ *salicifo'lia* (willow-leaved).
„ „ *semperflo'rens* (ever-flowering). "All Saints Cherry." 1822.
„ „ *umbraculi'fera* (umbrella-bearing).
„ *affi'nis* (related). White. May. Europe. 1837.
„ *A'vium* (birds'). 50. White. April. Britain. Gean or Wild Cherry.
„ „ *cordi'gera* (heart-bearing). 20. White. April.
„ „ *dura'cina* (hard). 20. White. April. S. Europe.
„ „ *flo're ple'no* (double-flowered). 20. White. April.
„ „ *Gobbe'tta* (Gobbetta). 20. White. April. White flesh.
„ „ *Grio'tta* (Griotte). 20. White. April.
„ „ *heaumea'na* (helmeted). 15. White. April.
„ „ *julia'na* (St. Julian's). 20. White. April. S. Europe.
„ „ *macroca'rpa* (large-fruited). 50. White. April. Switzerland.
„ „ *mammilla'ris* (nippled). 20. White. April.
„ „ *mu'ltiplex* (double). See C. AVIUM FLORE PLENO.
„ „ *obtusa'ta* (blunted). 20. White. April.
„ „ *palle'scens* (pale). 20. White. April. "Ceramble."
„ „ *pa'llida* (pale). 20. White. April. Red fruited.
„ „ *pe'ndula* (pendulous). 10. White. April. S. Europe. 1821.
„ „ *poly'gyna* (many-pistilled). 20. White. April.
„ „ *sylve'stris* (wood). See C. AVIUM.
„ *Besse'yi* (Bessey's). White. N. W. United States. "Sand Cherry."
„ *borea'lis* (northern). See C. PENNSYLVANICA.
„ *canade'nsis* (Canadian). See C. CHAMÆCERASUS.
„ *capronia'na* (hautbois). See C. ACIDA.
„ „ *mu'ltiplex* (double). See C. VULGARIS RHEXII FLORE PLENO.
„ *carolinia'na* (Carolinian). 38. White. May. Carolina. 1759. "Evergreen Bird Cherry."
„ *Chamæce'rasus* (Ground Cherry). 8. White. May. Austria. 1597.
„ „ *pe'ndula* (pendulous). "Weeping Ground Cherry."
„ *Chica'sa* (Chicasaw Plum). 8. White. April. N. Amer. 1806. Chicasaw Plum.
„ *cornu'ta* (horned). 10. White. Himalaya. 1842.
„ *depre'ssa* (depressed). See C. PUMILA.
„ *dura'cina* (hard). See C. AVIUM DURACINA.
„ *fenzlia'na* (Fenzlian). Caucasus.
„ *hu'milis* (dwarf). China.
„ *hyema'lis* (winter). See PRUNUS AMERICANA.
„ *ilicifo'lia* (Holly-leaved). White. March to May. California.
„ *japo'nica* (Japan). 2. Pink. April. Japan. 1810.
„ „ *flo're-a'lbo-ple'no* (white-double-flowered). 2. White. March. North of China. 1846.
„ „ *flo're-ro'seo-ple'no* (double-rose-flowered). Japan. 1810.
„ „ *mu'ltiplex* (double). See C. JAPONICA FLORE-ROSEO-PLENO.

C. julia'na (St. Julian's) and varieties. See C. AVIUM and varieties.
„ *Laurocе'rasus* (*common*-laurel-cherry). 12. White. April. Levant. 1629. Evergreen.
„ „ *angustifo'lia* (narrow-leaved). 8. White. April. Evergreen.
„ „ *variega'ta* (variegated-*leaved*). 12. White. April. Evergreen.
„ *lusita'nica* (Portugal-*Laurel*). 20. White. May. Portugal. 1648. Evergreen.
„ *Maha'leb* (Mahaleb). 20. White. April. Austria. 1714.
„ „ *fru'ctu-fla'vo* (yellow-fruited). 20. White. May South of Europe.
„ „ *latifo'lia* (broad-leaved). 20. White. June. South of Europe.
„ „ *pe'ndula* (pendulous). "Weeping Mahaleb Cherry."
„ „ *variega'ta* (variegated).
„ *Mara'sca* (Marasca). White. See C. ACIDA MARASCA.
„ *Maximowi'czii* (Maximowicz's). Japan. 1893.
„ *microca'rpa* (small-fruited). Persia.
„ *miquelia'na* (Miquelian). Japan. 1888.
„ *nepale'nsis* (Nepaul). 20. White. May. Nepaul. 1820. Half-hardy.
„ *occidenta'lis* (West-*Indian*). 20. White. Jamaica. 1629. Stove evergreen.
„ *Pa'dus* (bird-cherry). 50. White. April. Britain. "Bird Cherry."
„ „ *argе'ntea* (silver-*blotched*). 20. White. April. 1846.
„ „ *aucubæfo'lia* (aucuba-leaved). 20. White. April. 1845.
„ „ *bracteo'sa* (*long*-bracted). 30. White. April. Europe.
„ „ *heterophy'lla* (various-leaved). 20. White. April. 1845.
„ „ *leucoca'rpa* (white-fruited).
„ „ *parvifo'ra* (small-flowered). 30. White. April. North of Europe.
„ „ *pe'ndula* (pendulous). "Weeping Bird Cherry."
„ „ *ru'bra* (red. *Cornish bird*). 30. White. April. Britain.
„ *pe'ndula* (pendulous). Japan. "Rose-bud Cherry."
„ *pennsylva'nica* (Pennsylvanian). 30. White. May. N. Amer. 1773.
„ *persicifo'lia* (peach-leaved). See C. PENNSYLVANICA.
„ *prostra'ta* (prostrate). 1. Pink. April. Crete. 1802.
„ *Pseu'do-ce'rasus* (bastard-cherry). 6. White. April. China. 1821.
„ *pube'scens* (downy). See PRUNUS MARITIMA.
„ *Pu'ddum* (Puddum). Himalaya.
„ *pu'mila* (dwarf). 2. White. May. N. Amer. 1756. "Sand Cherry."
„ *pygmæ'a* (pigmy). See PRUNUS MARITIMA.
„ *sali'cina* (willow-*leaved*). 4. White. April. China. 1822.
„ *semperflo'rens* (ever-flowering). See C. ACIDA SEMPERFLORENS.
„ „ *sessiliflo'ra* (stalkless-flowered). 20. White. April.
„ *sero'tina* (late. *American bird*). 30. White. June. N. Amer. 1629.
„ „ *cartilagi'nea* (cartilaginous). Leaves long and leathery. 1889.
„ „ *pe'ndula* (pendulous). "Weeping Wild Black Cherry."
„ „ *retu'sa* (blunt-*leaved*). 30. May. S. Amer.
„ „ *salicifo'lia* (willow-leaved). "Capollin."
„ *serrula'ta* (saw-edge-*leaved*). 4. White. April. China. 1822.
„ „ *flo're-lu'teo-ple'no* (double yellow flowered).
„ *spharoca'rpa* (round-fruited). 10. White. June. Jamaica. 1820. Stove evergreen.
„ *subhirte'lla* (slightly hairy). Japan.
„ *Susqueha'nna* (Susquehanna). See C. PUMILA.
„ *tortuo'sa* (tortuous). Asia Minor.
„ *virginia'na* (Virginian). 30. White. May. United States. 1724. "Choke Cherry."
„ *vulga'ris* (common). 10 to 20. White. April. Europe. "Wild or Dwarf Cherry, Morello Cherry." (The correct name is *Prunus Cerasus*.)
„ „ *persicifloʼra* (Peach-flowered).
„ „ *Rhe'xii flo're-ple'no* (double).

CHERRY CULTURE.—All our cultivated cherries appear to be derived, by the aid of various crosses, from *Ce'rasus dura'cina*, *julia'na*, and *capronia'na*.

The best dessert cherries are: Belle d'Orleans, Bigarreau de Schreken, Bigarreau Napoleon, Black Eagle, Black Tartarian, Early Red Bigarreau, Early Rivers, Elton, Frogmore Early Bigarreau, Governor Wood, May Duke, Noble.

For cooking or preserving Morello takes first place. Kentish and May Duke are also good.

Propagation.—Both budding and grafting are resorted to; the former is the safest plan to avoid gum. The stocks used are those of the wild cherry for ordinary standards, or wall-trees; but, for a dwarfing-system, it has become customary, of late, to use the *Ce'rasus Maha'leb*, or Perfumed Cherry—so called on account of the agreeable perfume emitted by the wood whilst burning. In France this is called Bois de St. Lucia, and this has long been used as stocks. In addition to its promoting a dwarf habit, it is said to be adapted to very ordinary soils, totally unfit for the common cherry-stock. It is the usual practice to obtain the Mahaleb from layers; but no doubt cuttings will answer equally well. The ordinary cherry-stocks are raised from seed, generally obtained from trees of the same kind. They are preserved in sand through the winter, and sown in February. Care must be taken to preserve them from the mice. They may be transplanted, in the following October, in rows two feet apart in the row. For dwarfs they may be budded the following season; but, if standards are required, they must stand until they acquire the desired height.

Soil.—A deep and mellow loam, rather sandy, is best adapted to the cherry. It will, however, succeed in any ordinary garden-soil, if somewhat fertile in character, and one which parts freely with superfluous moisture.

Wall Culture in Growing Period.—The first operation commences in the disbudding, stopping, and laying in of the young shoots: this will be in the early part of June. Gross fore-right shoots may at once be displaced, unless required to fill gaps; but if any doubt exists as to their becoming permanent stock, it will suffice to pinch off their points when four or five inches long.

The kinds differ so much in size of foliage that a difference becomes necessary in the distance at which the young wood is trained. This must be ruled by the size of the leaves. Such as the Bigarreau must be kept at least five inches apart; the Morello section may be placed from two to four inches apart. One of the main points is to destroy the aphides in time; they are almost sure to infest the trees before midsummer.

Culture in Rest Period.—The cherry, in general, requires less culture than most of our hardy fruits; and this because it produces so little breast-wood. If the summer management has been duly attended to, there will be little to perform during the rest period.

The remaining portion of the snags, or bases of the young shoots, which were pinched back in June, must now be pruned back to within two inches of the branch, unless required to furnish a blank space. Any late-made, immature-looking wood may be shortened to where solid; but no other shortening is required with bearing trees. All the shortening requisite, in order to multiply shoots to furnish the wall, should be done within three years after their transplanting. There will, however, be mostly a few shoots to be entirely removed in the winter's pruning; and, in doing this, regard must be paid to the distance previously given.

Uses, how to keep, &c.—We need scarcely point to the dessert section. The Morellos are famous as "brandy-cherries." The Kentish has the peculiar property of slipping from the stone, and, when dried, making a delightful confection; and, indeed, most of them are of great use for confectionery purposes. The pulp of some makes a very good wine; and in Germany a liqueur is made from the kernel and pulp, bruised and fermented, known by the name of *Kirschwasser*.

Disease.—We are not aware of any positive disease in the cherry, excepting *the gum*. This is an exudation of gummy matter, which generally follows a wound or bruise, and not unfrequently breaks out spontaneously. The best way to avoid this is to plant in soil of moderate quality. In general, a light, maiden loam is good enough, without adding a particle of manure or vegetable matter. See EXTRAVASATED SAP.

Insects.—The *Black Aphis* (see APHIS) is the greatest enemy, and next the *Red Spider*. (See ACARUS.) The wall and wood of the trees should be washed annually,

in the *rest* season, with soft-soap water, six ounces to a gallon, adding plenty of lime, soot, and sulphur. When the aphides attack the young shoots in summer, there is no better plan than to dip each in a bowl of tobacco-water just before they are trained.

Winter Pruning of Standards.—Very little is requisite with standards. Like all other fruit-trees, they are apt to produce an inconvenient amount of young spray, in the interior of the tree especially. All shoots of this character should be dressed away during the rest season, and all that are obviously not placed in a position to receive the influence of light and air. Most of these must be spurred back, leaving a couple of inches of the base, which generally becomes a nucleus of spurs; and, although not well placed to produce fruit of the highest amount of flavour, yet they are sometimes of importance in inclement seasons; for we not unfrequently find a sprinkling of fruit in such situations, when all round the outside is barren. Orchard cherry-trees, which have to receive nets occasionally, will, as strength increases, require the removal of some of the coarsest and most unyielding shoots; for, were they permitted to extend themselves without control, the amount of netting required to cover them would become a rather serious item, and a drawback on their culture. Such unruly shoots, therefore, should be timely removed; for amputations of the large limbs should always be avoided in the cherry, and, indeed, in all trees liable to extravasation of sap. By a timely removal of such shoots, and by the occasional use of rope-yarn, or other fastenings, the tree may be kept in a somewhat compact form.

CERATI'OLA. (From a diminutive of *keras*, a horn; in reference to the stigma radiating into four divisions like little horns, as in the Carnation. Nat. ord. *Crowberries* [Empetraceæ]. Linn. 21-*Monœcia*, 1-*Monandria*.)

The Crowberries are a small group of little bushes, with heath-like leaves, which are evergreen. The most of them inhabit the bleak and inhospitable regions both in Europe and in North America. Half-hardy under-shrub. Cuttings in sandy soil, under a glass, in a mild bottom-heat. Sandy peat, and a little very fibrous loam. Winter temp., 40° to 48°.

C. ericoi'des (heath-like). 2. Brown. June. N. Amer. 1826.

CERATOCHI'LUS OF LINDLEY. See STANHOPEA.

CERATODA'CTYLIS OSMUNDIOI'DES. See LLAVEA CORDIFOLIA.

CERATO'LOBUS. (From *keras*, a horn, and *lobos*, a pod; in allusion to the spathe which is horned and resembles a pod. Nat. ord. Palmaceæ. For culture, see PALMS.)

C. co'ncolor (one-coloured). Leaves green beneath. Sumatra. 1905.
„ *findlaya'nus* (Findlayan).
„ *glauce'scens* (sea-green). Leaves 1 to 2. ft. long. Java. Good table plant.
„ *micholitzia'nus* (Micholitzian). Stem and leaves spiny. 1898.

CERATO'NIA. Carob-tree. (From *keras*, a horn; in reference to the shape of the seed-pods. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 2-*Diœcia*. Allied to Gleditschia.)

This is believed to be the *Locust-tree* of Scripture. "The dry pulp in which the seeds are buried is very nutritious, and is supposed to have been the food of St. John in the wilderness; wherefore it is called the Locust-tree, and St. John's Bread."—*Lindley*. The North American Locust-tree, and the Locust-tree of the West Indies, are different from each other, and from the Locust-tree of Scripture. Greenhouse tree hardly worth culture. Cuttings of ripe shoots in sand, under a hand-glass. Sandy loam.

C. Si'liqua (podded). 15. Red, yellow. September. Levant. 1570.

CERATOPE'TALUM. Red Gum-tree. (From *keras*, a horn, and *petalon*, a petal; the petals being jagged, or like a stag's horn. Nat. ord. Saxifragaceæ. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse trees. Cuttings under a bell-glass, in sand; rich, sandy loam. Summer temp., 55° to 75°; winter, 35° to 45°.

C. ape'talum (without petals). 50 to 60. Greenish-yellow. Australia.
„ *gummi'ferum* (gum-bearing). 50. Yellow. N. Holland. 1820.

CERATO'PTERIS. (Derived from *keras*, a horn, and *pteris*, a fern. Nat. ord. Ferns or Filices.)

This is a stove aquatic, and sometimes called the Water Fern or Floating Stag's-horn Fern. It is biennial and requires to be grown in a pot plunged in the warm water of a Water Lily tank. Spores are freely produced and young plants readily spring up, if the pots are plunged in warm water, nearly to the rim, in February.

C. thalictroi'des (Thalictrum-like). 2. Tropics.
„ „ *pteroi'des* (fern-like). Capsule without a ring.

CERATOSTE'MA. (From *keras*, a horn, and *stema*, a stamen. Nat. ord. *Cranberries* [Vacciniaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Thibaudia and Cavendishia.)

Stove plants. Divisions; layers. Peaty soil.

C. corona'rium (garland). See THEMISTOCLESIA CORONILLA.
„ *longiflo'rum* (long-flowered). Crimson. Peru. 1846.
„ *specio'sum* (showy). Orange-red. Ecuador. 1870.

CERATOSTI'GMA. (From *keras*, a horn, and *stigma*; in allusion to the horn-like branches of the style, that is the stigmas. Nat. ord. Plumbaginaceæ.)

Hardy, herbaceous plants of dwarf habit, most suitable for the rockery. Divisions, and cuttings under a hand-light or in a cold frame during July and August. Well-drained garden soil.

C. plumbaginoi'des (Plumbago-like). Indigo-blue. September. China. 1845.
„ *Polhi'lli* (Polhill's). Pale sky-blue. Western China. 1901.

CERATOTHE'CA. (Derived from *keras*, a horn, and *theke*, seed vessel. Nat. ord. Pedalinaceæ.)

A half-hardy annual. Seeds. Well-drained, light garden soil.

C. tri'loba (three-lobed). Mauve and purple. S. Africa. 1887.

CERATOZA'MIA. (Derived from *keras*, a horn, and Zamia. Nat. ord. Cycadaceæ.)

Stove plants requiring treatment similar to Zamia. They are distinguished from the latter by two horns on the scales of the cones. Seeds and sometimes by suckers. Loam and peat or leaf-mould and sand.

C. fu'sco-vi'ridis (brown-green). See C. MEXICANA.
„ *kuesteria'na* (Kuesterian). Mexico.
„ *mexica'na* (Mexican). Mexico.
„ *miquelia'na* (Miquelian). Pinnæ 6 in. to 12 in. long. Mexico.

CE'RBERA. (Named after the fabled dog, *Cerberus*. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Plumiera.)

Stove evergreens. Cuttings of young, rather ripe shoots, in April, in sand, under a glass, and in bottom-heat. Rich, fibrous loam. Summer temp., 60° to 80°; winter, 48° to 55°.

C. Ahou'ai (Ahouai). See THEVETIA AHOUAI.
„ *borbo'nica* (Bourbon). See OCHROSIA BORBONICA.
„ *dicho'toma* (forked). See TABERNÆMONTANA DICHOTOMA.
„ *frutico'sa* (shrubby). See KOPSIA FRUTICOSA.
„ *lacta'ria* (milky). See C. ODOLLAM.
„ *laurifo'lia* (laurel-leaved). See C. ODOLLAM.
„ *macula'ta* (spotted). See OCHROSIA BORBONICA.
„ *Ma'nghas* (Manghas). See C. ODOLLAM.
„ *Odo'llam* (Odollam). 20. White. August. India. 1756.
„ *ova'ta* (egg-*leaved*). See THEVETIA OVATA.
„ *Ta'nghin* (Tanghin). 30. Pink. May. Madagascar. 1826. "Tanghin Poison."
„ *Theve'tia* (Thevetia). See THEVETIA NEREIFOLIA.
„ *thevetioi'des* (Thevetia-like). See THEVETIA YCCOTLI.
„ *venenife'ra* (poison-bearing). See C. TANGHIN.

CERCE'STIS. (From *keras*, a horn, and *kestos*, stitched. Nat. ord. Araceæ.)

Evergreen stove climber, rooting at the joints. Cut-

tings in sand in a close frame, with bottom-heat. Loam, lumpy peat and sand.

C. conge'nsis (Congo). Fruits red. Congo. 1909.

CERCIDOPHY'LLUM. (From *Cercis*, the Judas-tree, and *phullon*, a leaf; the leaves having a general similarity. Nat. ord. Trochodendraceæ.)

A small tree or shrub, hardy in the more favoured parts of Britain and Ireland, or on a wall in the latitude of London. Seeds, layers. Ordinary, well-drained soil.

C. japo'nicum (Japanese). 8. Apetalous. Japan. 1889.

CE'RCIS. Judas-tree. (From *kerkis*, a shuttlecock; the name given by Theophrastus. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*. 1-*Monogynia*.)

The wood of *C. Siliqua'strum* is beautifully veined, and takes a good polish. Hardy deciduous trees. Seeds, sown in a gentle hotbed, in spring; hardened off, and pricked out into a sheltered situation; the varieties by grafting. In the south of the island they do well in sheltered places, on a lawn; in the north, they require a wall.

C. canade'nsis (Canadian). 18. Pale red. May. N. Amer. 1730.
„ *„ a'lba* (white). 1907.
„ *„ flo're-ple'no* (double).
„ *„ pube'scens* (downy). 18. Pale red. May.
„ *chine'nsis* (Chinese). 10. Rose. China.
„ *japo'nica* (Japanese). See C. CHINE'NSIS.
„ *occidenta'lis* (western). 15. Texas.
„ *renifo'rmis* (reniform). Texas.
„ *Siliqua'strum* (Siliquastrum). 20. Red. May. S. Europe. 1596. Common Judas-tree.
„ *„ a'lba* (white). White. S. Europe. Syn. *C. Siliquastrum flo're a'lbo*.
„ *„ ca'rnea* (flesh-coloured).
„ *„ parviflo'ra* (small-flowered). 20. Purple. May. Bucharia. 1827.

CERCOCA'RPUS. (From *kerkos*, a shuttlecock, and *carpos*, a fruit. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Geum and Purshia.)

There is no unwholesome plant in this order; and the strawberry, raspberry, and the blackberry or the bramble, are the nearest plants in affinity to the rose itself. Then come the Potentilla, Geum, and Agrimonia, among which stands Cercocarpus, followed by the Spiræas and Quillaiads. Greenhouse evergreen shrubs. Cuttings of green shoots in sand, under a glass, in a little heat. Peat and loam. Winter temp., 40° to 45°.

C. betulæfo'lius (Birch-leaved). See C. PARVIFOLIUS.
„ *fothergillo'ides* (Fothergilla-like). 12. Purple. May. Mexico. 1828.
„ *parviflo'rus* (small-flowered). See C. PARVIFOLIUS.
„ *parvifo'lius* (small-leaved). 3 to 10. California. 1881.
„ *Tra'skiæ* (Traskia's). 10. White. Santa Catalina Island. 1901.

CE'REUS. Torch Thistle. (From *cereus*, waxy; referring to the fact that some of the spines are as pliant as soft wax, while others are as brittle as wax tapers. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Cuttings, at any time, of either old or young shoots; the latter are the best, if the base of the cutting is well dried. Instead of inserting them firmly in sand, they do best when laid among rough material, such as peat charcoal, leaf-mould, and brick and lime-rubbish. They are generally described as stove plants; but, unless when they are just making their wood, they will endure a very low temperature, if kept dry. Unless for the winter-flowering varieties, and those desired to bloom at that season, no water will be requisite from October to March, if kept cool. Sandy loam, turfy peat, half-parts of lime-rubbish and dried cow-dung. Water freely when growing, and when in bloom. Summer temp., 55° to 85°; winter, 35° to 50°.

C. a'cifer (needle-bearing). Mexico.
„ *Ackerma'nni* (Ackermann's). See PHYLLOCACTUS ACKERMANNI.
„ *acuta'ngulus* (acute-angled). Mexico.
„ *Æ'thiops* (black-*spined*). Brazil. 1829.
C. affi'nis (related). White.
„ *aggrega'tus* (aggregated). S. United States.
„ *alacriporta'nus* (cheerful-looking). Brazil.
„ *albiseto'sus* (white-bristled. *Trailing*). 2. St Domingo. 1816.
„ *albispi'nus* (white-spined). 2. S. Amer. 1816.
„ *ambi'guus* (doubtful). 2. Purple, white. July. 1827.
„ *amblygo'nus* (blunt-angled). Buenos Ayres. 1836.
„ *amecae'nsis* (Amecan). White, 5 in. across. Mexico. 1904.
„ *amœ'nus* (pleasing). Mexico.
„ *angui'nus* (snake). Orange-yellow, 3 in. long. Paraguay. 1907.
„ *Anisi'tsii* (Anisits's). Purplish and white. Paraguay. 1908.
„ *apicula'tus* (small-pointed). Gardens.
„ *arcua'tus* (arched). White. 1835.
„ *areola'tus* (pitted). S. Amer.
„ *au'reus* (golden-*spined*). S. Amer. 1825.
„ *aurivi'llus* (yellow-haired). Stem clothed with golden-yellow spines. Andes? 1903.
„ *azu'reus* (azure-blue). Brazil.
„ *Bauma'nnii* (Baumann's). Peru.
„ *baxanie'nsis* (Baxanian). July. Mexico. 1838.
„ *baxæ'rius* (clog-shaped). June. Mexico. 1838.
„ *Berlandie'ri* (Berlandier's). Texas.
„ *Berti'ni* (Bertin's). Chili.
„ *bifo'rmis* (two-formed). See PHYLLOCACTUS BIFORMIS.
„ *Bla'nckii* (Blanck's). Mexico.
„ *Bonplan'dii* (Bonpland's). Brazil.
„ *Brandege'ei* (Brandegee's). California.
„ *Bridge'sii* (Bridge's). Bolivia.
„ *Bruenno'wii* (Bruennow's). Bolivia. 1888.
„ *cærule'scens* (bluish). 3. Blue. July. Brazil. 1829.
„ *cæ'sius* (gray).
„ *cæspito'sus* (tufted). Rose-purple. New Mexico, Texas. 1880.
„ *ca'ndicans* (whitish). Chili.
„ *caripe'nsis* (Caripan). White. Mexico. 1809. Trailer.
„ (*Piloce'reus*) *celsia'nus* (Celsian). Andes.
„ *chalibæ'us* (Chalibæan).
„ *chile'nsis* (Chilian). Chili.
„ *„ brevispi'nulus* (short-spined).
„ *chiloe'nsis* (Chiloe).
„ *chlora'nthus* (green-flowered). Texas and Mexico.
„ *chrysoma'llus* (yellow-haired). 2. Mexico.
„ *cinera'scens* (grayish). Mexico.
„ *„ Smi'thii* (Smith's). Gardens.
„ *cinnabari'nus* (cinnabar). Yellow-vermilion; anthers scarlet. Guatemala. 1910.
„ *cirrhi'ferus* (tendril-bearing). Mexico.
„ *cocci'neus* (scarlet) of Engelmann. See C. AGGREGATUS.
„ *cocci'neus* (scarlet) of Salm-Dyck. Scarlet. September. Brazil.
„ *Co'chal* (Cochal). California.
„ *colubri'nus* (serpent-like).
„ *Colu'mna-Traja'ni* (Trajan's-Column). Mexico. 1890.
„ (*Piloce'reus*) *Come'tes* (Cometes). Mexico. 1840.
„ *coniflo'rus* (cone-flowered). Red. Hayti. 1904. Blooms at night.
„ (*Piloce'reus*) *Conso'lei* (Console's).
„ *crena'tus* (round-toothed). See PHYLLOCACTUS CRENATUS.
„ *crenula'tus* (round-toothed). S. Amer.
„ *Crimso'nii* (Crimson's). See C. CINERASCENS SMITHII.
„ *crispa'tus* (curly). See RHIPSALIS CRISPATA.
„ (*Piloce'reus*) *Curti'sii* (Curtis's). Red, white. June. Colombia. 1830.
„ *cyli'ndricus* (cylindric). See OPUNTIA CYLINDRICA.
„ (*Piloce'reus*) *Dantwi'tzii* (Dantwitz's). Peru. 1873.
„ *dasyaca'nthus* (close-set-spined). S. United States.
„ *decaisnea'nus* (Decaisnean). Gardens.
„ *defi'ciens* (deficient). Venezuela.
„ *De'ppei* (Deppe's). 1. Peru. 1799.
„ *Donkelaa'rii* (Donkelaar's). Brazil.
„ *Duva'li* (Duval's). Gardens.
„ *Dybow'skii* (Dybowski's). White, 10 in. long. Fruit red. Brazil. 1908.
„ *Dy'ckii* (Dyck's). Mexico.
„ *ebu'rneus* (ivory). 3. Gray. S. Amer. 1809.
„ *Ehrenbe'rgii* (Ehrenberg's). Mexico.
„ *Emo'ryi* (Emory's). California.
„ *Engelma'nni* (Engelmann's). Rose-carmine. California.
„ *„ variega'tus* (variegated).

C. enneaca'nthus (nine-spined). Texas.
„ *Enrique'sii* (Enriques'). Mexico.
„ *ensa'tus* (sworded). Gardens.
„ *erio'phorus* (woolly). Red. 1835.
„ *Eru'ca* (Eruca). California.
„ *euchlo'rus* (bright-green). S. Amer.
„ *euphorbioi'des* (Euphorbia-like). 3. S. Amer.
„ *exie'nsus* (long-*stemmed*). 6. Pale rose. August. Trinidad.
„ (*Echino'psis*) *Eyre'sii* (Eyres's). White, green. 1829. *cristatus*, *roseus*, and *ruber* are varieties of this species.
„ *Fendle'ri* (Fendler's). Rose. June. New Mexico. 1880.
„ *fe'rox* (fierce). 1. Brazil. 1827.
„ *fimbria'tus* (fringed). 20. Pink. St. Domingo. 1836.
„ *flagellifo'rmis* (rod-shaped. *Creeping Cereus*). Pink. Peru. 1690.
„ *flavispi'nus* (yellow-spined). 3. W. Ind.
„ *flumine'nsis* (river). Brazil. 1862.
„ *Forbe'sii* (Forbes's).
„ *formo'sus* (handsome). White. Buenos Ayres. 1834.
„ *foveola'tus* (pitted). See C. CELSIANUS.
„ *fu'lgidus* (glittering). B. M., t. 5856.
„ *fulvispino'sus* (tawny-spined). See C. ROYENI.
„ *Fu'nkii* (Funk's). Garden hybrid.
„ *gemma'tus* (bud-bearing). July. Mexico. 1834.
„ *geome'trizans* (land-measuring). Mexico.
„ *gigante'us* (giant). 10. California. 1862.
„ (*Piloce'reus*) *glauce'scens* (becoming-sea-green). Argentina.
„ *glau'cus* (sea-green). Brazil.
„ *gonaca'nthus* (jointed-spined). Mexico.
„ *gra'cilis* (slender *long-spined*). S. Amer.
„ *grandiflo'rus* (great-flowering. *Night-blooming Cereus*). White, yellow. Jamaica. 1700.
„ *gra'ndis* (great-*spined*). 3. Brazil.
„ *Gre'ggii* (Gregg's). Texas and Mexico.
„ *gri'seus* (grey). See C. EBURNEUS.
„ *Gueli'chii* (Guelich's). Green, white. Fruit red-violet. Paraguay; Argentina. 1909.
„ *Gui'sei* (Guise's). Gardens.
„ *hankea'nus* (Hankean). S. Amer.
„ (*Piloce'reus*) *Hawo'rthii* (Haworth's). 3. Caribbees. 1811.
„ *heptago'nus* (seven-angled). 3. White. July. S. Amer. 1728.
„ (*Pilocereus*) *hermentia'nus* (Hermentean).
„ *hexago'nus* (six-angled). 36. White. August. Surinam. 1690.
„ *hondure'nsis* (Honduran). Yellow, white, 8 in. long. Honduras. 1904. Night blooming.
„ (*Piloce'reus*) *Hoppenste'dtii* (Hoppenstedt's). Mexico. 1888.
„ *hu'milis* (humble). S. Amer. 1827.
„ (*Echino'psis*) *Huo'ttii* (Huott's). Chili.
„ *hypoge'us* (underground). Purple, edged with yellow. Chili. 1882.
„ *Hy'strix* (porcupine). W. Ind. 1808.
„ *ine'rmis* (unarmed). Venezuela.
„ *insula'ris* (insular). Fernando Noronha.
„ *Jamaca'ru* (Jamacaru). White. Brazil. 1835.
„ *Jusbe'rtii* (Jusbert's). Green, white. Argentina or Paraguay. 1901.
„ *labouretia'nus* (Labouretian). See C. FORBESII.
„ (*Echino'psis*) *Lagerma'nni* (Lagermann's).
„ *lamprochlo'rus* (shining green).
„ *lancea'nus* (Lance's). Scarlet. May. Guiana. 1834.
„ *lanugino'sus* (woolly). 1. White. August. W. Ind. 1690.
„ *la'tifrons* (broad-stemmed). See PHYLLOCACTUS LATIFRONS.
„ *leea'nus* (Mr. Lee's). 1. Bright red. Mexico.
„ *Lemai'rii* (Lemaire's). Yellow and white. June. 1854.
„ *lepida'nthus* (slender-flowered). Yellow-green, fire-red. Guatemala. 1909.
„ *le'ptophis* (slender). White, purple. Mexico. 1835.
„ *leuca'nthus* (white-flowered). 1. White, pink. Mendoza. 1830.
„ *Li'nkii* (Link's). See C. AURIVILLUS.
„ *li'vidus* (livid). 9. White. June. Brazil. 1868.
„ *lute'scens* (yellowish).
„ *MacDona'ldiæ* (Mrs. MacDonald's *great night-flowering Cereus*). Yellow and white. July. Honduras. 1851.
C. macrogo'nus (large-angled).
„ *ma'gnus* (great). 3. White. June. St. Domingo. 1829.
„ *Malliso'ni* (Mallison's). Garden hybrid.
„ *margina'tus* (margined). Mexico.
„ *martia'nus* (Martius's). 2. Pink. April. Mexico. 1838.
„ *mexica'nus* (Mexican). Mexico.
„ *Mirbe'lii* (Mirbel's). See C. MARGINATUS.
„ *Mœnnigho'ffi* (Mœnnighoff's). Garden hybrid. 1905.
„ *mojave'nsis* (Mojavan). Reddish-scarlet. California, 1900.
„ *monoclo'nos* (single-branched). See C. PERUVIANUS.
„ *monstro'sus* (monstrous). See C. PERUVIANUS MONSTROSUS.
„ *moritzia'nus* (Moritzian). Brazil.
„ *Muelle'ri* (Mueller's). Gardens.
„ *multangula'ris* (many-angled). S. Amer.
„ *mu'ltiplex* (multiplied). Scarlet. Brazil. 1829.
„ *myosu'rus* (mouse-tail). See RHIPSALIS MYOSURUS.
„ *myriophy'llus* (thousand-leaved). See C. STRIGOSUS.
„ *Napoleo'nis* (Napoleon's). 6. Green, white. W. Ind. 1834.
„ *Nicke'lsii* (Nickels's). Gardens.
„ *ni'ger* (black). 3. S. Amer. 1820.
„ *nigripi'lis* (black-haired). Chili.
„ *no'bilis* (noble). See C. HAWORTHII.
„ *nycti'calus* (night-blooming). Mexico.
„ *obtu'sus* (blunt). See C. VARIABILIS.
„ *Ocampo'nis* (Ocampon's). Mexico and Colombia.
„ *ochroleu'cus* (cream-coloured). Striped. S. Amer. 1835.
„ *octogo'nus* (eight-jointed). See C. ALBISPINUS.
„ *ophi'tes* (snake-like). See C. GRANDIFLORUS.
„ *ova'tus* (egg-shaped). Chili. 1827.
„ *oxygo'nus* (sharp-angled). Pink. Brazil. 1829.
„ *oxype'talus* (sharp-petaled). See PHYLLOCACTUS LATIFRONS.
„ *paci'ficus* (pacific). California.
„ *panicula'tus* (panicled). White, red. St. Domingo. 1827.
„ *panoplæa'tus* (fully-armed). See C. PYCNACANTHUS.
„ *paucispi'nus* (few-spined). Dark red. Texas.
„ *paxtonia'nus* (Paxtonian). Brazil? B. M., t. 7648.
„ *Pe'cten-abori'ginum* (Aborigines'-comb). 20 to 30. Purple and white. Sonora, Mexico. 1894.
„ *pectina'tus* (comb-like). Purple-red. Mexico. 1875.
„ „ *robu'stus* (robust). Rose, white. Mexico. 1890.
„ *pentago'nus* (five-angled). 3. White. July. S. Amer. 1769.
„ *pentalo'phus* (five-crested). Rose, white. Mexico.
„ (*Echino'psis*) *Pentla'ndii* (Pentland's). Peru.
„ „ *ochroeu'cus* (Yellow-white.) Yellowish-white. 1897.
„ *pepinia'nus* (Pepinian). Bolivia.
„ *perlu'cens* (pellucid). Stems oil-green in colour. Amazons. 1900.
„ *peruvia'nus* (Peruvian). 3. Red. August. Peru. 1728.
„ „ *monstro'sus* (monstrous). Red, white. S. Amer. 1816.
„ *phœaca'nthus* (dusky-spined). Mexico.
„ *Phili'ppii* (Philipp's). Yellow, red. Chili.
„ *phœni'ceus* (purple). See C. AGGREGATUS.
„ *Pitajay'a* (Pitajaya). See C. VARIABILIS.
„ (*Piloce'reus*) *planchetia'nus* (Planchetian). Gardens.
„ *pleiogo'nus* (many-angled). See ECHINOCEREUS LEEANUS.
„ *polyaca'nthus* (many-spined). Texas.
„ *polygo'nus* (many-angled). 10. White. Island of St. Domingo. 1827.
„ *polylo'phus* (many-crested). Mexico.
„ *Poselge'ri* (Poselger's). Texas.
„ *Po'ttsii* (Potts's). See C. GREGGII.
„ *Pri'nglei* (Pringle's). 26. White, tinted purple. California and Mexico. 1889.
„ *procu'mbens* (procumbent). Mexico.
„ *propi'nquus* (related). See C. PENTALOPHUS.
„ *pruino'sus* (frosted). See ECHINOCACTUS PRUINOSUS.
„ *pseudosonore'nsis* (false-Sonoran). 8–12. Scarlet. Mexico. (?) 1910.
„ *pterogo'nus* (winged-angled). Colombia. 1863.
„ (*Echino'psis*) *Puda'ntii* (Pudant's).
„ *pulche'llus* (pretty). White. Mexico. 1831.
„ *Purpu'sii* (Purpus'). Purplish, white. Mexico. 1909.

C. pycnaca'nthus (dense-spined). Bolivia.
„ *quadrangula'ris* (four-angled). See C. CARIPENSIS.
„ *Qui'sco* (Quisco). Chili.
„ *ramo'sus* (branched). See C. BAXANIENSIS.
„ *redu'ctus* (reduced). See ECHINOCACTUS GIBBOSUS.
„ *rega'lis* (royal). 10. White. S. Amer.
„ *Rege'lii* (Regel's). Whitish, crimson-tipped, white. Country unknown. 1910.
„ *repa'ndus* (waved-*leaved*). 20. August. W. Ind. 1728.
„ *resupina'tus* (lying on its back).
„ *rigidi'ssimus* (very rigid). Gardens.
„ *ri'gidus* (rigid). See C. HUMILIS.
„ *Rœme'ri* (Rœmer's). S. United States.
„ *Rœtte'ri* (Rœtter's). Texas and Arizona.
„ *rosa'ceus* (rosy). See C. NYCTICALUS.
„ *rostra'tus* (beaked). Antigua.
„ *Roye'ni* (Royen's). 2. White. S. Amer. 1728.
„ *ru'ber* (red). Flowers orange-yellow, then scarlet. Brazil. 1905.
„ *russelia'nus* (Russelian). Venezuela.
„ *sargentia'nus* (Sargentian). Small, pink. Lower California. 1891.
„ *saxi'colus* (rock-loving). Greenish, white. Argentina. 1909.
„ *Schee'rii* (Scheer's). Mexico.
„ *Schelha'sii* (Schelhas's).
„ *Scho'ttii* (Schott's). S. United States.
„ (*Piloce'reus*) *seni'lis* (old-man). 20. Red. Mexico. 1823.
„ *se'pium* (of the hedges). Ecuador.
„ *serpenti'nus* (serpentine). 4. White, purple. Mexico.
„ *seto'sus* (stiff-haired). 3. Pink. August. Rio de Janeiro. 1829.
„ *Side'llii* (Sidell's).
„ *sonore'nsis* (Sonoran). Flowers short, narrow, cinnabar red. Sonora, Mexico. 1901.
„ *spachia'nus* (Spachian). Mexico.
„ *speciosi'ssimus* (showiest). Crimson. July. Mexico. 1836.
„ *specio'sus* (showy). Rose. June. S. Amer. 1801.
„ *sple'ndens* (splendid).
„ *sple'ndidus* (splendid). Scarlet. September. Mexico. 1831.
„ *stri'ctus* (erect). 3. S. Amer. 1823.
„ *strigo'sus* (stiff-haired). Brown. Chili. 1815.
„ *subrepa'ndus* (sub-waved-*leaved*). 3. W. Ind. 1817.
„ *Swa'rtzii* (Swartz's). W. Ind.
„ *te'nuis* (slender). Pink. Brazil. Creeper
„ *tephraca'nthus* (grey-spined). S. Amer.
„ *tetraca'ntha* (four-spined). Rose. July. Bolivia.
„ *tetrago'nus* (four-angled). 3. White. July. S. Amer. 1810.
„ *thlassi'nus* (flattened). Venezuela.
„ *Thurbe'ri* (Thurber's). New Mexico.
„ (*Piloce'reus*) *tilo'phorus* (wool-bearing). Mexico.
„ *Ti'nei* (Tine's). Brazil.
„ *tortuo'sus* (tortuous). Argentina.
„ *triangula'ris* (triangular-*stemmed*). 1. White. August. W. Ind. 1590.
„ (*Echino'psis*) *tri'color* (three-coloured). Mexico.
„ *tricosta'tus* (three-ribbed). White. Fruit red, with scarlet flesh. Mexico. 1907.
„ *trigo'nus* (three-angled). 1. White. W. Ind. 1809.
„ „ *costarice'nsis* (Costarican). White, 12 in. long. Costa Rica. 1902. "Pitahaya."
„ *trique'ter* (three-sided). 3. S. Amer. 1794.
„ *triu'mphans* (triumphant). Gardens.
„ *trunca'tus* (snipped). See EPIPHYLLUM ALTENSTEINII.
„ *tubero'sus* (tuberous). See C. POSELGERI.
„ (*Echin'opsis*) *tubiflo'rus* (tube-flowered). White. 1830.
„ *tunica'tus* (tunicated). See OPUNTIA TUNICATA.
„ *Tuni'lla* (Tunilla). Rose, 2½ in. long. Costa Rica. 1902.
„ (*Echino'psis*) *turbina'tus* (turbinate).
„ *Twee'diei* (Tweedie's). 4 to 6. Orange-scarlet. September. Argentina. 1849.
„ *unda'tus* (waved). China. 1829.
„ *urbania'nus* (urbanian). Red-brown, tipped red, Vanilla scented. Hayti. 1905.
„ *va'lidus* (strong). S. Amer.
„ *varia'bilis* (variable). Green, red. August. S. Amer.
„ (*Piloce'reus*) *vi'rens* (green). Mexico.
„ *viridiflo'rus* (green-flowered). Texas.
„ *weingartia'nus* (Weingartian). Stems bright green, then grey. Hayti. 1904.
C. (*Echino'psis*) *Wilke'nsii* (Wilkens's). Garden hybrid.
„ *Wi'ttii* (Witt's). Branches flattened, leaf-like. 1900.
„ *xanthoca'rpus* (yellow-fruited). White-green, white. Paraguay. 1907.
„ (*Echino'psis*) *Zuccari'nii* (Zuccarini's). B. M., t. 3627.

CERI'NTHE. Honeywort. (From *keros*, wax, and *anthos*, a flower; referring to its being a favourite flower with bees. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Anchusa.)

Hardy annuals, except *C. macula'ta*. All by seeds, in common soil. *Macula'ta* requires a dry soil, or its fleshy roots decay.

C. alpi'na (alpine). Pale yellow. June. Carpathian Mountains. 1827.
„ *a'spera* (rough). 2. Yellow, purple. July. S. France. 1633.
„ *gla'bra* (smooth). Yellow, violet. European Alps. 1827.
„ *gymna'ndra* (naked anthered). See C. MAJOR.
„ *macula'ta* (spotted). 2. Yellow, red. July. S. France. 1804. Perennial.
„ *ma'jor* (greater). 3. Yellow. July. S. France. 1596.
„ *mi'nor* (smaller). 2. Yellow, purple. July. Austria. 1570.
„ *reto'rta* (twisted). 2. Yellow, green. July. Levant. 1825.

CEROPE'GIA. (From *keros*, wax, and *pege*, a fountain; referring to the form and waxy appearance of the flower. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Hoya.)

Cuttings of small side-shoots in April, in sand, under a glass, and a little heat; sandy loam, fibrous peat, and a little leaf-mould and charcoal. Summer temp., 55° to 80°; winter, 45° to 55°; giving the East Indian species the most heat. More curious than beautiful.

GREENHOUSE.

C. africa'na (African). 6. Yellow. July. S. Africa. 1823.
„ *aphy'lla* (leafless). See C. DICHOTOMA.
„ *austra'lis* (southern). 3. N. Holland. 1820. Evergreen twiner.
„ *Ba'rklyi* (Barkly's). Green, purple-brown. May. S. Africa. 1877.
„ *Bowke'ri* (Bowker's). Yellow, green. S. Africa. 1863.
„ *dicho'toma* (forked). 2. White. July. Canaries. 1804.
„ *fu'sca* (brown). Reddish-brown. Grand Canary. 1906.
„ *Meye'ri* (Meyer's). Pale purple, green. S. Africa. 1867.
„ *multiflo'ra* (many-flowered). Purple-green. S. Africa. 1868.
„ „ *latifo'lia* (broad-leaved).
„ *radi'cans* (rooting). S. Africa.
„ *Renda'llii* (Rendall's). Transvaal.
„ *sagitta'ta* (arrow-shaped). See MICROLOMA SAGITTATUM.
„ *Sanderso'ni* (Sanderson's). Light and dark green blotched. S. Africa. 1868.
„ *sinua'ta* (wavy-*edged*). See MICROLOMA LINEARE.
„ *Soro'ria* (Sororia). Green, purple. S. Africa. 1866.
„ *staphelia'fo'rmis* (Staphelia-formed). 4. Purple. July. Cape of Good Hope. 1826. Evergreen trailer.
„ *torulo'sa* (uneven). Yellow. July. Cape of Good Hope. 1820. Evergreen twiner.
„ *Woo'dii* (Wood's). Leaves netted with silvery veins. Natal. 1897.

STOVE.

C. acumina'ta (taper-pointed). 2. Purple. July. Coromandel. 1820. Tuber.
„ *barbertone'nsis* (Barberton). Green. Transvaal. 1909.
„ *Brow'nii* (Brown's). Green, white, purple. Uganda. 1909.
„ *bulbo'sa* (bulbous). 2. Red, green. May. E. Ind. 1821. Trailer.
„ *cumingia'na* (Cumingian). Brown. August. Java. 1847.
„ *de'bilis* (weak). Pale purple. Nyasaland. 1895.
„ *decaisnea'na* (Decaisnean). India.
„ *discre'ta* (divided). Whitish, purple. Madras. 1909.

C. elegans (elegant). 20. Purple. August. E. Ind. 1828. Deciduous twiner.
„ *Gardne'ri* (Gardner's). White, chocolate. Ceylon. 1862.
„ *gemmi'fera* (bud-bearing). Green, brown, black, yellow. W. Trop. Africa. 1903.
„ *hirsu'ta* (hairy). 20. Purple. September. Bombay. 1837.
„ *hy'brida* (hybrid). Natural hybrid between *C. similis* and *C. Sandersonii*.
„ *ju'ncea* (rushy). 1. Yellow. E. Ind. 1822. Evergreen.
„ *Lu'shii* (Dr. Lush's). See C. BULBOSA.
„ *Monteiro'æ* (Mrs. Monteiro's). White and green, spotted purple-brown. Delagoa Bay.
„ *ocula'ta* (round-spotted). 6. Green. Red-spotted. September. Bombay. 1842. Deciduous twiner.
„ *perfora'ta* (perforated). New Guinea.
„ *Renda'llii* (Rendall's). Green, brown. Transvaal. 1909.
„ *si'milis* (similar). White or pale green. 1906.
„ *Thwai'tesii* (Mr. Thwaites's). 2½. Red, yellow, green. September. Ceylon. 1851.
„ *tubero'sa* (tuberous). 8. Red, green. May. E. Ind. 1821. Tuberous perennial.
„ *vincæfo'lia* (vinca-leaved). See C. HIRSUTA.
„ *Wi'ghtii* (Dr. Wight's). 20. Green, purple. August. E. Ind. 1832. Deciduous climber.

CERO'XYLON. (Derived from *keros*, wax, and *xulon*, wood; wax exudes from the stem. Nat. ord. Palmaceæ.)

Stove Palms.—Seeds are occasionally imported. Should be started in heat, and given loam and sand. When well advanced a little manure may be added to the soil. Seeds must be sown as soon as received, and plants grown on in a moderate stove temperature.

C. andi'cola (Andean-native). 50. Colombia. 1845. "Wax Palm."
„ *ferrugi'neum* (rusty). Colombia. 1879.
„ *ni'veum* (snowy). See DIPLOTHEMIUM CAUDESCENS.

CESPEDE'SIA. (In honour of *Juan Maria Cespedes*, of Santa Fé de Bogota. Nat. ord. Ochnaceæ.)

Stove trees, requiring similar treatment to Gomphia and Ochna.

C. Bonpla'ndii (Bonpland's). Orange-yellow. Colombia. 1878.
„ *di'scolor* (two-coloured). Yellow. Leaves highly coloured when young. S. Amer. 1903.

CE'STRUM. (An ancient Greek name for another plant. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Includes Habrothamnus.)

Cuttings in sand, in heat, in April; peat and loam. Of easy culture. With the exception of *tincto'rium*, which is used for dyeing, and the few others we have selected, none are worth cultivating, being chiefly poisonous plants of no beauty. There are several other species. Those we have described are stove evergreen shrubs, except where otherwise indicated. The most useful species of this genus are *C. aurantiacum*, which makes a good pot plant when strong cuttings are rooted early in the spring and grown under cool greenhouse treatment, and *C. elegans*, which may be treated as a wall plant, and keeps up a succession of bloom almost all the year through, and in the south of England it will live through the winter in the open. It is better known in gardens as *Habrothamnus elegans*, and there is a variety with deeper coloured flowers known as "Newelli," which is a greater favourite than *elegans*, and is supposed to be a hybrid, but is simply an improved variety raised from seed.

C. alaternoi'des (alaternus-like). 6. Yellowish. March. Trinidad. 1824.
„ *angustifo'lium* (narrow-leaved). Yellow. W. Ind. 1800.
„ *auranti'acum* (orange-coloured-*flowered*). 3. Orange Guatemala. 1842. Greenhouse.
„ *Bentha'mi* (Bentham's). Purple. August. Mexico. 1844.
„ *bractea'tum* (bracteated). Green. Brazil. 1852.
„ *calyci'num* (large calyxed) of Willdenow. See C. VIRIDIFLORUM.
„ *cauliflo'rum* (stem-flowering). See ACNISTUS ARBORESCENS.
C. corymbo'sum (corymbose) of Endlicher. See C. ENDLICHERI.
„ *cya'neum* (blue). See IOCHROMA TUBULOSA.
„ *diu'rnum* (day-flowering). White. W. Ind.
„ *e'legans* (elegant). 8 to 10. Rose. Summer. Mexico. 1844. Greenhouse.
„ *Endliche'ri* (Endlicher's). 6. Rose. March. Peru. 1844. Greenhouse.
„ *fascicula'tum* (fascicled). 8 to 12. Red. March. Mexico. 1843. Greenhouse.
„ *fastigia'tum* (erect). White. November. W. Ind.
„ *fœtidi'ssimum* (very fœtid). See C. NOCTURNUM.
„ *Hartwe'gi* (Hartweg's). 8. Crimson. Mexico. Greenhouse.
„ „ *pube'scens* (downy). Crimson. Very downy. 1883. Greenhouse.
„ *Huge'lii* (Hugel's). See C. ELEGANS.
„ *latifo'lium* (broad-leaved). 6. White. June. Trinidad. 1818.
„ *laurifo'lium* (Laurel-leaved). Yellow. Autumn and Winter. S. Amer.
„ *nervo'sum* (nerved). See TABERNÆMONTANA AMYGDALÆFOLIA.
„ *Newe'llii* (Newell's). 8 to 10. Bright crimson. Greenhouse.
„ *noctu'rnum* (night-flowering). S. Amer.
„ *odontospe'rmum* (toothed-seeded). White. September. S. Amer.
„ *Pa'rqui* (Parque's). Yellowish. June. Trop. Amer. 1787.
„ *penduli'num* (pendulous). White. December. Colombia.
„ *ro'seum* (rose-coloured). 3. Rose. July. Mexico. 1839.
„ *salicifo'lium* (willow-leaved). Pale yellow. Venezuela.
„ *Scho'ttii* (Schott's). Brazil.
„ *Smi'thii* (Smith's). Silvery pink. Garden hybrid. 1901.
„ *subero'sum* (cork-*barked*). 5. Sulphur. June. 1815.
„ *tincto'rium* (dyeing). 4. White. May. Caraccas. 1823.
„ *vesperti'num* (evening-flowering). White. Winter. W. Ind.
„ *viridiflo'rum* (green-flowered). Yellow-green. Brazil. 1836.
„ *Warscewi'czii* (Warscewicz's). Orange and yellow. November. S. Amer. 1852.

CE'TERACH OFFICINA'RUM. See ASPLENIUM CETERACH.

CETO'NIA AURA'TA. Golden Rose-Beetle. This insect is the *Scarabæus auratus* of some naturalists. The grub is of a dirty-white colour, and the tail-end thicker and more highly glazed than the remainder of its body. It is usually found in decayed wood; but, being occasionally discovered in the nest of the ant, underground, where it seems to feed upon the bits of wood of which the nest is composed, it thence has the popular name of "King of the Ants." After remaining about three years in the larva state, it makes a sort of cocoon of chips of wood, glued together by an excretion of its own. In this it passes the winter, and in June following emerges in the perfect form. The Rose Beetle flies well, with a considerable humming noise, during the hottest part of the day, passing from flower to flower, preferring, but not exclusively, our roses. It robs them of their honey; but not content with this, devours, occasionally, their nectaries, and the lowermost, juicy portion of the petals. The perfect insect is, therefore, the harmful stage of this enemy. The beetle is of a shining green-colour above, and the wing-sheaths dotted with white. Beneath, the body and head are coppery-red.—*The Cottage Gardener*, iii. 341.

This beetle is most severely felt by the gardener when it attacks the blossoms of his strawberries, which it does in May or June; but it also attacks the whitethorn, candytuft, elder, mountain-ash, and pæony, the flowers of which it feeds upon. The female rose-chafers often lay their eggs in the ground; and the larvæ they produce are no doubt often confounded with those of the cockchafer (*Melolontha vulgaris*), being as large, and very similar.

The beetle is of large size and easily caught in the early morning while resting upon various bushes. Later on, especially on bright days, it is more active and less

easily caught, as it flies very swiftly. The larva, being of large size and conspicuous, may be gathered by hand while digging, or fowls may be turned on the ground while being dug.

CHABRÆ'A RUNCINA'TA. See LEUCERIA RUNCINATA.

CHACO or **CHOCO.** See SECHIUM EDULE.

CHÆNA'CTIS. (Derived from *chaino*, to gape, and *aktin*, a ray. Nat. ord. Compositæ.)

A small genus of herbs of varying durability, the annuals being of easy cultivation in the open air in ordinary garden soil. Seeds for the annuals.

C. tenuifo'lia (slender-leaved). 1. Yellow. California.

CHÆNA'NTHE BARKE'RI. See DIADENIUM BARKERI.

CHÆNE'STHES LANCEOLA'TA. See IOCHROMA LANCEOLATA.

CHÆNOME'LES. See CYDONIA JAPONICA.

CHÆNO'STOMA. (From *chaino*, to gape, and *stoma*, a mouth; in reference to the wide opening of the tube, or bottom part of the flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

All natives of the Cape of Good Hope. Seeds sown in March, in a hot-bed, and transplanted to the flower-garden in May; and cuttings taken off in August and September, and potted in a greenhouse or cold pit, to be transplanted the following season.

GREENHOUSE ANNUALS.

C. fœ'tidum (fœtid). 1½. White. June. 1794.
„ *villo'sum* (long-haired). See POLYCARENA CAPENSIS.

GREENHOUSE HERBACEOUS PERENNIALS.

C. corda'tum (heart-shaped-*leaved*). 1½. White. June. 1816.
„ *fastigia'tum* (erect). White. July.
„ *hi'spidum* (bristly). 1. White. July. 1816.
„ *linifo'lium* (flax-leaved). 1. White, yellow. November.
„ *polya'nthum* (many-flowered). ½. Lilac, yellow. June. 1844.

CHÆTANTHE'RA. (From *chaite*, a bristle, and *anthera*, an anther, or pollen-bag; the anthers being furnished with tufts of bristly hairs. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Mutisia.)

All natives of Chili, and half-hardy herbaceous perennials, except two species. Division of the roots, in March or April. C. *linea'ris* by seed. Peat and loam. Protection of greenhouse or cold pit in winter.

C. chile'nsis (Chilian). 1. Yellow. July. 1827. Annual.
„ *cilia'ta* (hair-fringed). 2. July. 1822.
„ *linea'ris* (narrow-*leaved*). Yellow. July. 1837. Annual.
„ *serra'ta* (saw-*leaved*). See C. CHILENSIS.
„ *tenuifo'lia* (fine-leaved). Yellow. July. 1827.

CHÆTO'CALYX. (From *chaite*, a bristle, and *kalux*, a flower-envelope; in reference to the calyx being furnished with bristles. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Hedysarum.)

Stove evergreen twiner. Cuttings of ripe shoots in heat. Peat and loam. Summer temp., 60° to 85°; winter, 45° to 55°.

C. vincenti'na (St. Vincent's). 6. Yellow. June. St. Vincent. 1823.

CHÆTOGA'STRA. (From *chaite*, a bristle, and *gastron*, a cavity; referring to the cavities between the apex of the ovary and the bottom of the calyx being furnished with hairy scales. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Tibouchina.)

C. gra'cilis (slender). See TIBOUCHINA GRACILIS.
„ *lanceola'ta* (spear-head-*leaved*). See TIBOUCHINA LONGIFOLIA.
„ *lindenia'na* (Lindenian). See TIBOUCHINA GROSSA.
„ *strigo'sa* (short-bristled). See TIBOUCHINA ORNATA.

CHAFF-FLOWER. *Alternanthe'ra achyra'ntha.*

CHALK. *Carbonate of lime* contains, when pure, carbonic acid, 45; lime, 55; but, as it usually occurs, it contains about 24 per cent. of water, and 5 per cent. of silica (flint), alumina (clay), and oxide (rust) of iron. After these deductions, it will be apparent, that if fifty tons of lime be applied to land, it will be equal to more than one hundred of chalk—a subject worthy of consideration, when it has to be conveyed from afar. Chalk is usually employed in large quantities, to improve the staple of a soil. It makes heavy soils less retentive of moisture, and light, sandy soils more retentive. On wet, sour lands it neutralises the acids which render them unproductive. Some chalks contain phosphate of lime; and this being a constituent of all plants, such chalk is to be preferred. Some contain a large proportion of carbonate of magnesia, which is less beneficial. Chalk has also been shown, by Mr. Beaton, to be of great value in forming the best of walks. See CONCRETE WALKS.

CHAMÆBA'TIA. (Derived from *chamai*, dwarf, and *batos*, a bramble; in allusion to its dwarf habit, and the white bramble-like flowers. Nat. ord. Rosaceæ.)

A half-hardy, evergreen shrub, that may be grown in a cold pit, frame, or greenhouse. Cuttings in sand under a bell-glass in a greenhouse. Sandy loam and peat.

C. foliolo'sa (leafleted). 2 to 3. White. California. 1859.

CHAMÆCI'STUS. See RHODODENDRON CHAMÆCISTUS.

CHAMÆCLA'DON. (Derived from *chamai*, dwarf, and *klados*, a branch. Nat. ord. Araceæ.)

Stove evergreens requiring similar treatment to Anthurium.

C. meta'llicum (metallic). Leaves bronzy green, but red beneath. Borneo. 1884.
„ *ru'bens* (red). Leaves olive green above, purple beneath. Borneo. 1881.

CHAMÆCY'PARIS. White Cedars. See CUPRESSUS.

CHAMÆDO'REA. (From *chamai*, dwarf, and *dorea*, a gift; referring to the nuts of this palm being easily reached. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Diœcia*, 6-*Hexandria*. Allied to Areca.)

Stove Palms. Seeds, when obtainable; freely, by suckers from the roots. Rich, sandy loam. Summer temp., 60° to 80°; winter, 50° to 60°.

C. amazo'nica (Amazon). Brazil.
„ *arenbergia'na* (Arenbergian). 5. Straw-colour. Guatemala. 1879.
„ *bambusoi'des* (Bambusa-like). Honduras. 1908.
„ *co'ncolor* (one-coloured). Mexico.
„ *coralli'na* (coral). Venezuela.
„ *desmoncoi'des* (Desmonca-like). Mexico.
„ *ebu'rnea* (ivory-white). Leaves green with ivory-white midribs. Colombia. 1877.
„ *ela'tior* (taller). 12. Mexico. 1843.
„ *e'legans* (elegant). 3½. Scarlet. February. Mexico.
„ *eleganti'ssima* (most elegant). Mexico.
„ *Erne'sti-Augu'sti* (Ernest Augustus's). Orange. New Grenada.
„ *formo'sa* (beautiful). Leaves pinnate. Colombia. 1876.
„ *fra'grans* (sweet-scented). 8. White. Trinidad. 1820.
„ *geonomæfo'rmis* (Geonoma-formed). Guatemala.
„ *glaucifo'lia* (glaucus-leaved). 12. Colombia. 1881.
„ *gra'cilis* (slender). 10. White, green. Caraccas. 1803.
„ *graminifo'lia* (grass-leaved). Costa Rica.
„ *grati'ssima* (most pleasing). Leaves like *C. Verschaffelti*. 1896.
„ *Hartwe'gii* (Hartweg's). See C. SARTORII.
„ *karwinskia'na* (Karwinskian). See C. ELATIOR.
„ *la'tifrons* (broad-leaved). See C. ARENBERGIANA.
„ *lindenia'na* (Lindenian). 10. Colombia. 1846.
„ *martia'na* (Martian). Mexico.
„ *mexica'na* (Mexican). See C. SARTORII.
„ *microphy'lla* (small-leaved). Panama.
„ *oblonga'ta* (oblong). Brazil.
„ *poli'ta* (polished). Leaves of five leaflets. Mexico. 1884.
„ *Pri'nglei* (Pringle's). Mexico.
„ *pulche'lla* (pretty). Leaflets numerous, linear. 1885.
„ *pygmæ'a* (dwarf). Colombia.

C. Ruí'zii (Ruiz's). Peru.
„ *Sarto'rii* (Sartor's). Mexico.
„ *sca'ndens* (climbing). Mexico. 1846.
„ *schiedea'na* (Schiedean). Mexico. 1834.
„ *stoloni'fera* (stolon-bearing). 3. Yellow. S. Mexico.
„ *tene'lla* (slender). Mexico.
„ *Tepejilo'te* (Tepejilote). 10. Yellow. Mexico. 1873.
„ *Wendla'ndii* (Wendland's). Mexico.
„ *wobstia'na* (Wobstian). 4. Yellow. 1885.

CHAMÆFI'STULA. Same as CA'SSIA.

CHAMÆLAU'CIUM. (From *chamaileuke*, a dwarf, white poplar; because its heathy stems are miniatures of that tree. Nat. ord. *Fringe-myrtles* [Myrtaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

This is the head of a small order of beautiful little greenhouse bushes, natives of New Holland, generally with the aspect of Heaths, having their flowers gathered into heads, and the flower-envelopes ending in awns, fringes, or bristles, which give them the appearance of Composites. A greenhouse evergreen shrub. Cuttings of the points of shoots, or side-shoots, when getting firm, in sand, under glass; one part fibrous peat, and two of sandy, lumpy loam. Summer temp., 55° to 75°; winter, 35° to 45°.

C. ciliа'tum (hair-fringed). 2. White. May. N. Holland. 1825.
„ *plumo'sum* (feathery). See VERTICORDIA FONTANESII.

CHAMÆLE'DON PROCU'MBENS. See LOISELEURIA PROCUMBENS.

CHAMÆLI'RIUM. (From *chamai*, dwarf, and *lirion*, a lily. Nat. ord. Liliaceæ.)

A small, and very pretty herb, suitable for peaty soil in the rock-garden. Seeds and divisions.

C. carolinia'num (Carolinian). ½ to 1. White. N. Amer.

CHAMÆ'LUM. See CHAME'LUM.

CHAMÆNE'RIUM. See EPILOBIUM.

CHAMÆPEU'CE. See CNICUS.

CHAMÆRA'NTHEMUM. (From *chamai*, dwarf, and *anthemon*, a flower. Nat. ord. Acanthaceæ.)

Dwarf, evergreen stove plants with fine foliage. Cuttings in sand in a close case with bottom-heat. Fibrous loam, leaf-mould, and sand.

C. argе'nteum (silvery). Leaves with silvery veins. New Britain.
„ *Beyri'chii* (Beyrich's). White. Leaves striped with white. Brazil. 1866.
„ *Gaudichau'dii* (Gaudichaud's). Brazil. 1869.
„ *i'gneum* (fiery). Yellow. Leaves red-veined. Peru. 1868.
„ *ni'tidum* (shining). See EBERMAIERA NITIDA.
„ *pi'ctum* (painted). Leaves edged orange, with silvery blotch in the centre. Brazil. 1878.

CHAMÆRHO'DOS. (From *chamai*, dwarf, and *rodon*, a rose; in reference to the appearance of the plants. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*. Allied to Rubus.)

Hardy herbaceous perennials; chiefly by seeds; sandy loam, and a dry, elevated position.

C. erе'cta (erect). 1. Pink. July. Siberia. 1806.
„ *grandiflo'ra* (large-flowered). Yellow. June. Dahuria. 1828.
„ *poly'gyna* (many-pistiled). Yellow. June. Siberia. 1824.

CHAMÆ'ROPS. (From *chamai*, dwarf, and *rhops*, a twig. A comparative name, making the Fan-palm of the south of Europe a low twig in comparison to the huge, gigantic Palms of the tropics. Nat. ord. *Palms* [Palmaceæ]. Linn. 23-*Polygamia*, 2-*Dioecia*.)

Seeds, imported; suckers, which are freely produced, with the exception of *C. gra'cilis* and *guiane'nsis*. The others will flourish in a greenhouse; and their leaves render them striking objects. In Edinburgh the *hu'milis* stood out several winters, with but a slight protection; rich, loamy soil. Summer temp., 50° to 80°; winter, 35° to 45°.

C. acau'lis (stemless). See SABAL ADANSONII.
„ *bilamina'ta* (two-bladed). See C. HUMILIS BILAMINATA.
„ *Biroo'* (Biroo). See LIVISTONA ROTUNDIFOLIA.
C. excе'lsa (tall). See TRACHYCARPUS EXCELSUS.
„ *Fortu'nei* (Fortune's). See TRACHYCARPUS EXCELSUS.
„ *gra'cilis* (slender). 10. Green, white. S. Amer. 1822. Stove.
„ *Griffi'thii* (Griffith's). See TRACHYCARPUS KHASYANUS.
„ *guiane'nsis* (Guiana). 20. Green, white. Guiana. 1824. Stove.
„ *hu'milis* (low). 10. Green, white. March. South of Europe. 1731.
„ „ *bilamina'ta* (two-bladed).
„ „ *dactyloca'rpa* (finger-fruited). Fronds longer. 1889.
„ „ *macroca'rpa* (large-fruited).
„ „ *tomento'sa* (felted).
„ *Hy'strix* (porcupine). See RHAPIDOPHYLLUM HYSTRIX.
„ *khasya'na* (Khasyan). See TRACHYCARPUS KHASYANUS.
„ *martia'na* (Martian). See TRACHYCARPUS MARTIANUS.
„ *Palme'tto* (Palmetto). See SABAL PALMETTO.
„ *ritchiea'na* (Ritchiean). See NANNORHOPS RITCHIEANA.
„ *serrula'ta* (saw-*leaved*). See BRAHEA SERRULATA.
„ *stauraca'ntha* (cross-spined). See ACANTHORHIZA ACULEATA.

CHAMÆSCI'LLA. (From *chamai*, dwarf, and *Scilla*, a Squill; in reference to the appearance of the plant. Nat. ord. Liliaceæ.)

A hardy, herbaceous plant suitable for the rockery. Ordinary garden soil. Divisions and seeds.

C. corymbo'sa (corymbose). Blue. Australia.

CHAME'LUM. (Derived from *chamai*, dwarf, and *melon*, an apple. Nat. ord. Iridaceæ.)

Half-hardy, perennial herb. Divisions and seed. Loam, leaf-mould, and sand.

C. lu'teum (yellow). Yellow. Andes of Chili. 1883.

CHAMISSO'A. (Named after *M. Camisso*, a botanist. Nat. ord. *Amarants* [Amarantaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrubs; cuttings of ripe shoots in heat, under a bell-glass; fibrous, sandy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. alti'ssima (tallest). 5. Yellow. July. S. Amer. 1816.
„ *dicho'toma* (forked). See ALLMANIA NODIFLORA.
„ *nodiflo'ra* (knotted flowered). See ALLMANIA NODIFLORA.
„ *pyramida'lis* (pyramidal). See ALLMANIA ALBIDA.

CHAMO'RCHIS ALPI'NA. See HERMINIUM ALPINUM.

CHAPTA'LIA. (Named after *M. Chaptal*, a French chemist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria*. Allied to Cussonia.)

Hardy herbaceous perennial; division of the roots; light, sandy soil.

C. tomento'sa (woolly). ½. White. May. N. Amer. 1806.

CHARÆ'AS GRA'MINIS. The Antler Moth. We have seen enough to render us quite ready to assent to Mr. Kirby's observation, that it is "the greatest enemy of our pastures." Fortunately, it is of rare occurrence in this country. It is the *Charæas* and *Bombyx graminis* of some entomologists. This moth, measuring about 1¼ in. across the fore-wings, is generally altogether of a grey-brown colour, with a slender, whitish line running from the base of the fore-wing along its centre vein, and following along its branches. Another whitish line runs along near each edge of the fore-wing; near the point of the wing is a row of triangular, dark spots. There are also two dark, kidney-shaped spots near the front edge. The hind-wings are yellowish-brown, with a dark circular spot in the centre of each, and various dusky bars. The caterpillar is green, with brown spots, and smooth. In the few instances it has been found in this country it appeared in June. Mr. Kirby says: "It is said not to touch the foxtail grass. In the years 1740–41–42–48–49, they multiplied so prodigiously, and committed such ravages, in many provinces of Sweden, that the meadows became white and dry, as if a fire had passed over them. In 1759, and again in 1802, the high sheep-farms in Tweeddale were dreadfully infested with a caterpillar, which was probably the larva of this moth. Spots a mile square were totally covered with them, and the grass devoured to the root."—*The Cottage Gardener*, v. 1.

In 1894, several of the southern counties of Scotland got ravaged by the caterpillars of this moth. Cold and heavy showers of rain are the most effective means of destroying the caterpillars, and when they come into the garden or pleasure-ground destroying the grass, repeated soakings of cold water would serve to destroy them, as the wetting of their food causes violent purging. Rooks and starlings should be encouraged, and fowls might be allowed to forage for a time on the grass, as they would devour large numbers of the caterpillars and thereby reduce the pest.

CHARCOAL. Soot, a chief constituent of which is charcoal, has long been known as a very effective fertiliser; and burning has still longer been known as a mode of reducing stubborn soils to prompt productiveness. But both these sources of fertility might owe their efficiency to other causes than their affording carbon to plants; and, comparatively, it is only lately that anything like a general knowledge has been diffused that mere charcoal is a good manure. Charcoal is a most efficient manure to all cultivated plants, especially to those under glass. Heaths, rhododendrons, cucumbers, onions, roses, orchidaceous plants, hydrangeas, camellias, melons, and pineapples, have been the subjects of extensive and most successful experiments. We think no cultivated plant would be unbenefited by having charcoal applied to the soil in which it is rooted. It should be broken into small pieces, about the size of a nut, and, for potted plants, may be mixed in the proportions of one part charcoal to twenty parts earth. If applied to the open ground, one-fourth of a bushel may be sown over a square rod or perch, and dug in just before inserting the crop. The reason of charcoal being so useful as a manure is very apparent. MM. Sennebier, Ruckert, Saussure, and others, have demonstrated that plants are rendered much more luxuriant and productive by having carbonic acid applied to their roots, than other plants to whose roots no such application was made. Now, charcoal kept moist, as when buried in the soil, slowly combines with oyxgen, and emits carbonic acid; in fact, it slowly dissolves. We do not agree with Liebig, who broadly asserts that "carbon never combines, at common temperatures, with oxygen, so as to form carbonic acid." This was long since shown to be otherwise by Count Rumford, and may easily be demonstrated to be incorrect, by confining a few ounces of fresh and moistened charcoal-powder, mixed with earth, in a glass receiver full of oxygen, over lime-water: carbonate of lime will form, showing the gradual evolution of carbonic acid. *For draining*, pieces of charcoal, about the size of filberts and walnuts, are among the best that can be employed.

CHARD. See ARTICHOKE.

CHARDI'NIA. (Named after *Jean Chardin*, a traveller in Persia. Nat. ord. Compositæ.)

A hardy annual that may be sown in the open garden in April.

C. xeranthemoi'des (Xeranthemum-like). 1. White. July. Asia Minor.

CHARDOON. See CARDOON.

CHA'RIEIS. (From *charieis*, elegant. Nat. ord. Compositæ.)

Hardy annual. Seeds may be sown in the open garden in April or in a gentle heat in March and planted out after being hardened off.

C. heterophy'lla (various-leaved). 1. Blue. June. S. Africa. 1819.
" " *atrocæru'lea* (dark blue). Rich dark blue.

CHARLES'S SCEPTRE. *Pedicula'ris Sce'ptrum-Caroli'num.*

CHARLOCK. *Bra'ssica Sinapi'strum.* A troublesome weed.

CHARLWOO'DIA. New Holland Dragon-tree. Now referred to Cordyline.

CHA'SCANUM CUNEIFO'LIUM. See BOUCHEA CUNEIFOLIA.

CHEESE-RENNET. *Ga'lium ve'rum.*

CHEILA'NTHES. (From *cheilos*, a lip, and *anthos*, a flower; in reference to the form of the seed-organs. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Allied to Adiantum.)

Division of the roots, just when commencing to grow, or from spores (see FERNS). Peat and loam. Summer temp., 55° to 80°; winter, 45° to 55°.

HARDY.

C. fra'grans (fragrant). Brown. June. S. Europe. 1819.
" *gra'cilis* (slender). See C. LANUGINOSA.
" *lanugino'sa* (woolly). Brown. August. N. Amer. 1812.
" *odo'ra* (sweet-smelling). See C. FRAGRANS.
" *vesti'ta* (clothed). See C. LANUGINOSA.

GREENHOUSE.

C. arge'ntea (silvery). Siberia.
" *califo'rnica* (Californian). Fronds four times divided. California. 1882.
" *cauda'ta* (tailed). ½. Brown. June. N. Holland. 1824.
" *hi'rta* (hairy). ½. Brown. June. Cape of Good Hope. 1806.
" *macrophy'lla* (large-leaved). 1. Brown. August. W. Ind.
" *mysure'nsis* (Mysore). Japan. 1862.
" *pteroi'des* (pteris-like). ½. Brown. July. Cape of Good Hope. 1775.
" *suave'olens* (sweet-scented). See C. FRAGRANS.
" *tomento'sa* (felted). 1½. N. Carolina to Mexico. 1841.

STOVE.

C. alabame'nsis (Alabaman). ½. United States.
" *angustifo'lia* (narrow-leaved). 1. Brown. Mexico. 1831.
" *brachy'pus* (short-stalked). ½. Mexico.
" *chlorophy'lla* (green-leaved). Fronds thrice divided. Brazil. 1884.
" *crenula'ta* (scolloped). 1. Brown. 1824.
" *cunea'ta* (wedge-*leaved*). See C. ANGUSTIFOLIA.
" *dicksonioi'des* (Dicksonia-like). 4. Brown. August.
" *farino'sa* (mealy). Brown, yellow. Isle of Luzon.
" *ferrugi'nea* (rusty). ½. Brown. June. 1816.
" *fra'gilis* (fragile). Moulmein.
" *fri'gida* (frigid). 1½. Trop. Amer.
" *glau'ca* (sea-green). Chili.
" *hirsu'ta* (hairy). Fronds scaly beneath. Chili. 1871.
" *lendi'gera* (maggot-bearing). ½. Brown. June. New Spain.
" *micro'mera* (parted-small). See C. MICROPHYLLA MICROMERA.
" *microphy'lla* (small-leaved). Trop. Amer. and W. Ind.
" " *micro'mera* (parted-small). Mexico.
" *micro'pteris* (small-winged). ½. Brown. September. 1838.
" *multi'fida* (multifid). S. Africa.
" *myriophy'lla* (myriad-leaved). 1. Trop. Amer. 1841.
" " *e'legans* (elegant). 1½. Trop. Amer.
" *preissia'na* (Preissian). See C. SIEBERI.
" *profu'sa* (dangling). ½. Brown. September.
" *pulvera'cea* (dusty). See NOTHOCHLÆNA SULPHUREA.
" *re'pens* (creeping). 1. Brown. July. W. Ind. 1824.
" *ru'fa* (reddish-brown). ½. Reddish-brown. Mexico.
" *rufe'scens* (brownish-red). ½. Brown. September. 1838.
" *Siebe'ri* (Sieber's). 1. Australia.
" *sinuo'sa* (wavy-edged). 1. Brown. August. W. Ind.
" *specta'bilis* (showy). 1½. Brown. September. Brazil. 1829.
" *tenuifo'lia* (slender-leaved). Brown. September. Ceylon.
" *visco'sa* (clammy). Brown. Mexico. 1841.

CHEIMATO'BIA BRUMA'TA. Winter Moth. This is the cause of more destruction to our fruit and other trees than almost any other insect; for no weather is sufficiently severe to injure either them or their eggs; and the caterpillars, in the early spring, will feed upon the opening buds and leaves of almost every kind of tree. The females, being without wings, may be prevented ascending our standard fruit-trees by grease-banding; but this must be renewed, as it dries, every two or three days. The male moths begin to fly about just after sunset

during November, and until the end of January. Their upper wings, when opened, measure across about one inch and a quarter; but, during the day, they look much smaller, for they fold them so as to form a triangle, and have their feelers or horns (antennæ) turned back over them. Those wings are pale grey, marked with various darker-waved lines. The under-wings are greyish-white, often having a notched line crossing their centre. The body, delicate and tapering, is yellowish-grey. The female crawls to the top of a tree, and deposits her very small, oval eggs upon the blossom and leaf-buds, as well as upon the shoots. She will lay from 200 to 300 eggs. The caterpillars and the buds come to life together. At first they are grey, and scarcely thicker than a horsehair; but they cast their skins, and finally become the green-looper, of a yellowish-green colour, shining, and with a blue line down the back. On their sides are two yellowish-white lines. The apple-buds are their favourite food; but they destroy, without difficulty, the leaves of the hawthorn, lime, hazel, rose, elm, willow, and hornbean.—(*The Cottage Gardener*, i. 53.) The caterpillar descends into the earth, and becomes a chrysalis about the end of May.

CHEIRANTHE'RA. (From *cheir*, the hand, and *antheros*, flowery. Nat. ord. Pittosporaceæ.)

Greenhouse shrubs requiring similar treatment to Pittosporum.

C. linea'ris (linear). Blue. November. Australia. 1822.
„ *parvifło'ra* (small-flowered). Purple. W. Australia. Twiner.

CHEIRA'NTHUS. Wallflower. (From *cheir*, the hand, and *anthos*, a flower; in reference to the custom of carrying the wallflower in the hand for a nosegay. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Half-hardy evergreen under-shrubs, except where otherwise specified. Seeds and cuttings under a hand-light, in May or June, of particular varieties, and double-flowering especially. Most of the finer kinds will like the protection of a pit in winter, and may be employed for early blooming in the greenhouse. When left out of doors, a protection of a few evergreen boughs should be given them; herbaceous kinds by division. A light, rich, sandy soil suits them best; but even the tenderer species survive the winter on rock-work.

C. Allio'nii (Allioni's). 1. Orange. Gardens.
„ *alpi'nus* (alpine). ½. Yellow. May. Scandinavia. 1810.
„ *arbo'reus* (tree). 3. Yellow. May. Egypt. 1827.
„ *a'sper* (rough). Yellow. June. N.W. Amer. 1826. Hardy herbaceous perennial.
„ *capita'tus* (*round*-headed). See C. ASPER.
„ *Chei'ri* (Cheiri. *Common Wallflower*). 2. Pale yellow. May. S. Europe. 1573.
„ „ *ferrugi'neus* (rusty-*flowered*). 2. Brown. May. S. Europe. 1573.
„ „ *flave'scens* (yellowish). 2. Yellow. May. S. Europe. 1573.
„ „ *flo're-ple'no* (double-flowered). 2. Yellow. May.
„ „ *grandiflo'rus* (large-flowered). 2. Yellow. May. S. Europe. 1573.
„ „ *hæma'nthus* (*double*-bloody-flowered). 2. Crimson. May. S. Europe. 1573.
„ „ *hæma'nthus-variega'tus* (variegated-bloody). 2. Crimson. June. S. Europe.
„ „ *ma'ximus* (largest). 2. Yellow. May. S. Europe. 1573.
„ „ *pa'tulus* (*double*-spreading). 2. Yellow. May. S. Europe. 1573.
„ „ *purpu'reus* (purple-*flowered*). 2. Purple. June. S. Europe.
„ „ *purpu'reus-variega'tus* (variegated-purple). 2. Purple. June. S. Europe.
„ „ *sangui'neus* (bloody). 2. Dark brown. May.
„ „ *serra'tus* (saw-edged-*flowered*). 2. Yellow. May. S. Europe. 1573.
„ „ *thyrsoi'des* (thyrse-*flowered*). 2. Blood. May. S. Europe. 1573.
„ „ *va'rius* (various-*coloured*). 2. Variegated. May. S. Europe. 1573.
„ *fi'rmus* (firm). See ERYSIMUM VIRGATUM.
„ *fruticulo'sus* (small-shrubby). See C. CHEIRI.
„ *kewe'nsis* (Kew). Yellow, buff, purple. Secondary hybrid between *C. Cheiri* and *C. mutabilis*. 1904.
C. linifo'lius (flax-leaved). See ERYSIMUM LINIFOLIUM.
„ *Marsha'llii* (Marshall's). 1½. Orange. June. Supposed garden hybrid. 1850.
„ *Menzie'sii* (Menzie's). N.W. Amer.
„ *muta'bilis* (changeable). 3. Yellow, purple. April. Madeira. 1777.
„ „ *longifo'lius* (long-leaved). 3. White, purple. September. Madeira. 1815.
„ *ochroleu'cus* (pale yellow). ¾. Pale yellow. April. Switzerland. 1822. Hardy herbaceous perennial.
„ *scopa'rius* (broom). 3. White, purple. June. Teneriffe. 1812.
„ „ *ærugino'sus* (rusty). 3. Rusty. June. Teneriffe. 1812.
„ „ *Chamæ'leo* (Chamæleon). 3. Yellow, purple. June. Teneriffe. 1812.
„ *semperflo'rens* (ever-blooming). 2. White. Barbary. 1815.
„ „ *fruti'scens* (shrubby). 2. White. May. Teneriffe. 1815.
„ *tenuifo'lius* (slender-leaved). 2. Yellow. June. Madeira. 1777.

CHEIROSTE'MON. Hand-plant. (From *cheir*, the hand, and *stemon*, a stamen; in reference to the formation of the stamens and style. They issue in a central column, bearing five curved anthers and a curved style in the middle, having much resemblance to a hand with long claws. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

Stove tree. Cuttings of rather firm shoots in sandy peat, under a glass, and in bottom-heat. Sandy loam and fibrous peat. Summer temp., 60° to 80°; winter, 48° to 55°.

C. platanoi'des (plane-tree-like). 30. Mexico. 1820.

CHEIRO'STYLIS. (Derived from *cheir*, the hand, and *stu'los*, a style. Nat. ord. Orchidaceæ.)

Warm stove Orchids for pot culture.

C. grandiflo'ra (large-flowered). Pink, white. New Guinea. 1861.
„ *marmora'ta* (marbled). See DOSSINIA MARMORATA.
„ *monta'na* (mountain). Java. 1861.
„ *parvifo'lia* (small-leaved). White. September. Ceylon. 1839.

CHELIDO'NIUM. Celandine. (From *chelidon*, a swallow; alluding to the flowers opening on the arrival of that bird, and to the plant drying up on its departure. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

The yellow juice of the common Celandine (*C. ma'jus*) is said to be a violent acrid poison, and a popular remedy for warts. Hardy herbaceous perennials. Division. Common garden-soil.

C. franchetia'num (Franchetian). 1. Yellow. China.
„ *grandiflo'rum* (large-flowered). See C. MAJUS GRANDIFLORUM.
„ *lacinia'tum* (jagged-*leaved*). See C. MAJUS LACINIATUM.
„ *lepto'podum* (slender-stalked). Yellow. China. 1898.
„ *ma'jus* (greater). 2. Yellow. May. Europe.
„ „ *flo're-ple'no* (large-double-flowered). 2. Yellow. September. Gardens.
„ „ *grandiflo'rum* (large-flowered).
„ „ *lacinia'tum* (jagged-leaved). Leaves much divided.

CHELO'NE. (From *chelone*, a tortoise; the back of the helmet of the flower being fancifully compared to a tortoise. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 11-*Didynamia*, 2-*Angiospermia*. Allied to Pentstemon.)

Hardy herbaceous perennials, except where otherwise specified. Division of the roots, and cuttings of the young shoots under a hand-glass, in April or May; also by seeds. Sandy loam, and if a little leaf-mould is added, all the better.

C. atropurpu'rea (dark purple). See PENTSTEMON CAMPANULATUS.
„ *barba'ta* (bearded). See PENTSTEMON BARBATUS.
„ *campanuloi'des* (Campanula-like). See PENTSTEMON CAMPANULATUS.
„ *centranthifo'lia* (centranthus-leaved). See PENTSTEMON CENTRANTHIFOLIUS.
„ *cheilanthifo'lia* (Cheilanthus-leaved). See PENTSTEMON CENTRANTHIFOLIUS.
„ *Digita'lis* (Digitalis). See PENTSTEMON LÆVIGATUS.

C. gentianoï'des (Gentian-like). See PENTSTEMON GENTIANOIDES.
„ *gla'bra* (smooth). 4. White. August. N. Amer. 1730.
„ *hirsu'ta* (hairy). See PENTSTEMON PUBESCENS.
„ *Lyo'ni* (Lyon's). 4. Purple. August. N. Amer. 1812.
„ *mexica'na* (Mexican). Scarlet. Mexico. 1842.
„ *nemoro'sa* (grove). 2. Purple. July and August. N. Amer. 1827.
„ *obli'qua* (oblique). 2. Purple. August. N. Amer. 1752.
„ *Pentste'mon* (Pentstemon). See PENTSTEMON LÆVIGATUS.
„ *purpu'rea* (purple). See C. OBLIQUA.
„ *ro'sea* (rosy). See PENTSTEMON CAMPANULATUS.
„ *ruellioï'des* (Ruellia-like). See PENTSTEMON BARBATUS.
„ *specio'sa* (showy). 3. Red. August. N. Amer.

CHELONOPSIS. (From *Chelone*, and *opsis*, resemblance; the plant resembles a Chelone. Nat. ord. Labiatæ.)
A hardy perennial herb. Seeds and divisions. Ordinary soil.
C. moscha'ta (musky). Pale yellow and rose purple. China and Japan. 1901.

CHENOLE'A. (From *chen*, a goose, and *leia*, prey; in reference to the plant being eaten by those birds. Nat. ord. *Chenopods* [Chenopodiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Greenhouse evergreen. Cuttings of half-ripe shoots under a glass, in sandy loam. Summer temp., 55° to 80°; winter, 35° to 45°.
C. diffu'sa (spreading). 1. Green. August. Cape of Good Hope. 1758.

CHENOPO'DIUM. (Derived from *chen*, a goose, and *pous*, a foot; in reference to the shape of the leaves. Nat. ord. Chenopodiaceæ.)
Hardy annuals or perennials that will grow in any ordinary soil. Seeds, and the perennial by division. *C. Bo'nus-Henri'cus*, or Good King Henry, is more or less eaten in the same way as Spinach.

C. amara'nticolor (Amarantus-coloured). 8. Young leaves with amaranth-red powder. S. France (?) 1908.
„ *Bo'nus-Henri'cus* (Good-Henry). 1½. Green. Britain. Perennial.
„ *nitraria'ceum* (Nitraria-like). 2 to 4. Green. N. and W. Australia. 1904. Shrubby.
„ *purpura'scens* (purplish). 3. Purple-red. Stem and bracts purple. China.

CHERIMOYER. See ANONA CHERIMOLIA.

CHE'RMES. See INSECT PESTS.

CHERRY. See CE'RASUS.

CHERRY PEPPER. *Ca'psicum cerasifo'rme.*

CHERRY LAUREL. The common Laurel, *Ce'rasus Lau'ro-ce'rasus.*

CHERRY PLUM. See PRUNUS CERASIFERA.

CHERVIL. Parsley-leaved. *Anthri'scus Cerefo'lium.* Fern-leaved Chervil, or Sweet Cicely, *Chærophy'llum aroma'ticum*, for soups, salads, &c. They are not often found in the kitchen-garden. Bulbous-rooted Chervil is *Chærophy'llum bulbo'sum*, a native of S. Europe and Asia Minor. It is a biennial with a root about the size of an Early Horn Carrot, and the flavour of the Parsley-leaved Chervil.
Soil and Situation.—The soil for these plants must be unshaded, light, with a large portion of calcareous matter, and well drained.
Sowing.—A principal sowing should be made in August; and from this sowing, seed should be saved the following season. To continue the supply during the summer months a spring sowing should be made at the end of February, and at the end of every three or four weeks to the middle of July. Sow in drills, eight inches apart, covering the seeds lightly with fine soil, and thin the seedlings out to six inches apart in the rows.

CHESTNUT, HORSE. See ÆSCULUS HIPPOCASTANUM.

CHESTNUT, MORETON BAY. See CASTANOSPERMUM AUSTRALE.

CHESTNUT, SWEET or SPANISH. See CASTANEA SATIVA.

CHEVALIE'RIA. See ÆCHMEA.

CHICASAW PLUM. See CERASUS CHICASA.

CHICKEN GRAPE. See VITIS CORDIFOLIA.

CHICKLING VETCH. See LATHYRUS SATIVUS.

CHICK PEA. *Ci'cer ærieti'num.*

CHICKWEED. *Stella'ria me'dia.*

CHICKRA'SSIA. (A native name or its imitation, also spelled Chukrasia. Nat. ord. Meliaceæ.)
A stove tree. Cuttings in sand in a close case, with bottom-heat. Loam, leaf-mould, and sand.
C. tabula'ris (table-like). 50. White. India. 1793.

CHICORY. Succory, or wild Endive (*Cicho'rium I'ntybus*). Cultivated for use in salads, and for its roots, to roast for use like coffee.
Soil and Situation.—Like Endive, for the main crops it requires a rich, light soil, and for the earlier sowings a moister one, in every instance having an open situation allotted to it.
Sowing must be annually; for, although it is a perennial, yet, after being cut from two or three times, the leaves become bitter and worthless. Sow from the beginning of March, and at intervals, to the end of June, or early in July. Sow moderately thick, in the same manner as Endive, the directions for cultivating which are equally applicable in every other particular.
Cultivation.—When the plants begin to cover the ground, thin to nine inches apart; and those removed plant out at similar distances. If the leaves grow very luxuriant, and shade the roots much, they must be cut off within an inch of the ground. Those grown from sowings antecedent to June, when of nearly full growth (which they arrive at in about four months from the insertion of the seed), must have all their leaves trimmed away, so as not to injure their hearts, and then covered over thick with sand, ashes, or long litter. By this treatment, those fresh leaves which are produced are blanched and crisp, losing their bitterness. Those from the sowings of June and July must, at the end of September, or early in October, be raised, and planted very close, by the dibble, in pots or boxes, having their leaves trimmed as before directed, and their roots shortened, previous to planting. Water must be given moderately in dry weather, until they are established; and shelter, if frosts occur, by a light covering of litter. When well rooted, they may be removed into the cellar, or other place, where the light can be completely excluded from them, to blanch for use as wanted, which change will be effected in six or seven days. Succory will bear a temperature of 60°, but thrives better in a rather lower one.
If the roots are vigorous, they will bear cutting two or three times, after which they are unproductive.
To obtain Seed, a few plants must be left in the open ground of the June sowing. They bear the severity of winter without protection, and shoot up in the spring, running to seed about May.

CHI'LDSIA WE'RCKLEI. See HIDALGOA WERCKLEI.

CHILI PEPPER. *Ca'psicum.*

CHILIAN NUT. *Guevi'na Avella'na.*

CHILIA'NTHUS. (Derived from *chilioi*, a thousand, and *anthos*, a flower; in reference to the large number of flowers. Nat. ord. Loganiaceæ.)
Greenhouse evergreen. Cuttings of half-ripe wood in sand with gentle bottom-heat. Loam, peat, and sand.
C. arbo'reus (tree). See C. OLEACEUS.
„ *olea'ceus* (olive-like). 6. White. August. S. Africa. 1816.

CHILO'DIA. (From *cheilos*, a lip, and *odous*, a tooth; the lip of the flower being toothed. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Now referred to Prostanthera.)

Greenhouse evergreen shrubs; cuttings of young shoots set firm in sand, under glass; peat and loam. Summer temp., 53° to 75°; winter, 40° to 45°.

C. austra'lis (southern). 3. Violet. July. N. Holland.
„ *scutellarioi'des* (Scutellaria-like). See PROSTANTHERA EMPETRIFOLIA.

CHILO'PSIS. (From *cheilos*, a lip, and *opsis*, like; referring to the irregular lobes of the corolla. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Catalpa.)

Greenhouse evergreen shrub; cuttings of half-ripened shoots in sand, under a bell-glass, in bottom-heat; peat and fibrous loam. Summer temp., 60° to 90°; winter, 48° to 55°.

C. linea'ris (narrow-*leaved*). See C. SALIGNA.
„ *sali'gna* (willow-like). Rose. May. Mexico. 1825.

CHIMA'PHILA. (From *cheima*, winter, and *phileo*, to love; these little plants being green all winter. Nat. ord. *Wintergreens* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Hardy herbaceous perennials; divisions and suckers; sandy soil.

C. corymbo'sa (corymbose-*flowered*). See C. UMBELLATA.
„ *macula'ta* (spotted-*leaved*). ½. Pink. June. N. Amer. 1752.
„ *umbella'ta* (umbelled). ½. White. June. N. Amer. 1752.

CHIMONA'NTHUS. (From *cheima*, winter, and *anthos*, a flower; referring to the time of flowering. Nat. ord. *Calycanths* [Calycanthaceæ]. Linn. 12-*Icosandria*, 3-*Trigynia*.)

Half-hardy deciduous shrub; layers made in the beginning of autumn; seeds sown in March, in a gentle hotbed; deep, rich, sandy loam; requires a wall in most places, but, from its scent, should be admitted, during winter, to the greenhouse.

C. fra'grans (fragrant). 6. Yellow, red. December. Japan. 1766.
„ „ *grandiflo'rus* (large-flowered). 8. Yellow. December. China.
„ „ *parviflo'rus* (small-flowered). 8. Pale yellow. December. Japan. 1818.

CHINA-ASTER. See CALLI'STEPHUS HORTE'NSIS.

CHINESE ROSE. *Hibi'scus Ro'sa-sine'nsis.*

CHIOCO'CCA. Snowberry. (From *chion*, snow, and *kokkos*, a berry. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Psychotria.)

The roots of *C. angui'fuga* and *densiflo'lia* are said to be a certain cure for serpent-bites in Brazil. Stove evergreen shrubs. Cuttings in sand, under a glass, in hotbed. Peat and loam. Summer temp., 60° to 80°; winter, 48° to 55°.

C. angui'fuga (snake-defeating). See C. BRACHIATA.
„ *brachia'ta* (opposite). 3. White. July. Trop. Amer. 1824.
„ „ *acutifo'lia* (acute-leaved). Brazil. 1903.
„ *densiflo'ra* (thickly-flowered). 3. White. Brazil.
„ *racemo'sa* (racemed). 6. White. February. Jamaica. 1729.

CHIO'GENES. (From *chion*, snow, and *gigno*, to produce. Nat. ord. Vacciniaceæ.)

A small evergreen for a peaty bed on the rockery.

C. serpyllifo'lia (Thyme-leaved). ½. White. N. Amer. 1815.

CHIONA'NTHUS. Fringe-tree. (From *chion*, snow, and *anthos*, a flower. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Fine hardy shrubs for peat-bogs, in a sheltered situation. Seeds imported, sown in spring; layers made in summer; and grafting on the common ash. Deep, moist, sandy loam. The East Indian species requires the heat of a stove.

C. axilla'ris (axil-*flowering*). 7. White. June. Queensland. 1810.
„ *mari'tima* (sea-side). See C. VIRGINICA PUBESCENS.
„ *retu'sa* (blunt). 5. White. May. China and Japan. 1852.

C. virgi'nica (Virginian). 30. White. June. N. Amer. 1736.
„ „ *angustifo'lia* (narrow-leaved). 30. White. June. N. Amer.
„ „ *latifo'lia* (broad-leaved). 30. White. June. Carolina.
„ „ *pube'scens* (downy). 10. White. June. N. Amer. 1736.

CHIONODO'XA. (From *chion*, snow, and *doxa*, glory; the plants flower at the melting of the snow in Asia Minor. Nat. ord. Liliaceæ. Allied to Scilla.)

Hardy bulbs flowering in February and March. They increase rapidly by offsets. Seeds may also be sown. Light, rich soil.

C. ama'bilis Leichtli'nii (Leichtlin's lovely). Creamy white, shaded rose-purple. Early. 1904.
„ *cre'tica* (Cretan). ½. Pale blue and white, small. Spring. Crete.
„ *Forbe'sii* (Forbes's). See C. LUCILIÆ.
„ *Luci'liæ* (Mrs. Lucilla's). ½. Blue with large white eye.
„ „ *a'lba* (white). White variety. 1882.
„ „ *Alle'ni* (Allen's). See C. LUCILIÆ GIGANTEA. March. Asia Minor. 1877.
„ „ *gigante'a* (giant). Flowers fewer, but much larger.
„ „ *sarde'nsis* (Sardis). Bright blue, with small white eye. February. 1885.
„ „ *Tmo'li* (Mount Tmolus). Seg. narrow. Late flowering. (Syn. *C. L. Tmolusi*.)
„ *na'na* (dwarf). ½. White, flushed pale blue. Crete. 1880.

CHIONOGRA'PHIS. (Derived from *chion*, snow, and *graphis*, a painter's pencil; in allusion to the snow-white spike of flowers. Nat. ord. Liliaceæ.)

A hardy, herbaceous perennial allied to the Bog Asphodel, but requires the protection of a frame in winter. Seeds and divisions. Fibrous loam, peat, and sand.

C. japo'nica (Japanese). ½ to 1. White. Spring. Japan. 1880.

CHIONO'PHILA. (Derived from *chion*, snow, and *phileo*, to love; the plant in its native habitats frequents lofty and snowy habitats. Nat. ord. Scrophulariaceæ.)

A dwarf and hardy perennial for the rock-garden.

C. Jame'sii (James's). ½. Creamy-white. Colorado. 1888.

CHIONOSCI'LLA. (Nat. ord. Liliaceæ.)

C. Alle'ni (Allen's). Hybrid between *Scilla bifolia* and *Chionodoxa Luciliæ*. 1897.

CHIRI'TA. (From *cheryta*, the Hindostanee for the Gentian-plant. Nat. ord. *Gesnerworts* [Gesneraceæ] Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreens, except *C. sine'nsis*. Seeds sown in a hotbed, in spring, and cuttings in March and April, in sandy peat, under glass. Peat and loam. Summer temp., 55° to 80°; winter, 40° to 45°.

C. barba'ta (bearded). 2. Bluish-lilac, yellow. India. 1896.
„ *Blu'mei* (Blume's). 1½. White-purple. September. Java. 1845.
„ *depre'ssa* (depressed). ½. Purple and Gloxinia-like. China.
„ *hamo'sa* (hooked). Recorded by mistake. See C. BARBATA.
„ *Horsfie'ldii* (Horsfield's). 1½. White, purple. September. Java. 1845.
„ *lilaci'na* (lilac). 1. Pale blue, white, yellow. India. 1870.
„ *Moo'nii* (Mr. Moon's). 2. Pale purple. July. Ceylon. 1847.
„ *primula'cea* (Primula-like). Sikkim.
„ *pu'mila* (dwarf). Himalaya.
„ *rupe'stris* (rock). 1–2. Bright blue, yellow. Malay Peninsula. 1910. Annual.
„ *sine'nsis* (Chinese). ½. Lilac. July. China. 1843. Greenhouse evergreen.
„ *Walke'ri* (General Walker's). 1½. Pale yellow. Ceylon. 1845.
„ *zeyla'nica* (Ceylon). 1½. Purple. June. Ceylon. 1845.

CHIRO'NIA. (A classical name, after *Chiron*, one of the centaurs, fabled to be the father of medicine. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreens, from the Cape of Good Hope. Cuttings in sandy peat, under glass. Peat, three parts; loam, one part; all fibrous, with a little sand and charcoal, and good drainage. Winter temp., 40° to 45°.

C. angustifo'lia (narrow-leaved). See C. FRUTESCENS.
„ *bacci'fera* (berry-bearing). 2. Yellow. June. 1759.
„ *decussa'ta* (cross-leaved). See C. FRUTESCENS.
„ *floribu'nda* (abundant-flowering). 1. Rose. May. 1842.
„ *frute'scens* (shrubby). 1½. Red. July. 1756.
„ „ *albiflo'ra* (white-flowered). 1½. White. July. 1756.
„ *glutino'sa* (clammy). 3. Red, lilac. 1844.
„ *gra'cilis* (graceful). See SABBATIA GRACILIS.
„ *ixi'fera* (Ixia-bearing). See C. LINOIDES.
„ *jasmino'des* (jasmine-like). 2. Purple. May. 1812.
„ *linoi'des* (flax-like). 2. Red. August. 1787.
„ *lychnoi'des* (Lychnis-like). 2. Purple. May. 1816.
„ *nudicau'lis* (naked-stemmed). 1. Purple. July. 1816.
„ *palu'stris* (marsh). S. Africa.
„ *pedunculа'ris* (long-flower-stalked). 3½. Purple. July. 1830.
„ *serpyllifo'lia* (wild-thyme-leaved). 1. Yellow. August. 1829.
„ *tetrago'na* (four-angled). 1. Yellow. July. 1824.
„ *trine'rvia* (three-nerved). See EXACUM ZEYLANICUM.
„ *trine'rvis* (three-nerved). See C. PEDUNCULARIS.

CHITO'NIA. (From *chiton*, a coat of mail; the seeds, when dry, bearing a rough or scabrous exterior. Nat. ord. *Melastomads* [Melastomaceæ].)

Stove evergreens. Cuttings in sand, in heat, in April. Peat and loam. Summer temp., 60° to 80°; winter, 45° to 55°.

C. a'lbicans (white-*leaved*). See TETRAZYGIA ALBICANS.
„ *Fothergi'lla* (Fothergill's), See MICONIA FOTHERGILLA.
„ *macrophy'lla* (large-leaved). See MICONIA MACROPHYLLA.
„ *pyramida'lis* (pyramidal). See MICONIA LÆVIGATA.
„ *Tamo'nia* (Tamonia.) See MICONIA FOTHERGILLA.

CHIVE or **CIVE** (*A'llium Schœnopra'sum*) is used as a very superior substitute for young onions in spring salading. A single row, a few yards long, will supply a family.

A light, rich *soil* is most suitable.

Plant together eight or ten of the offsets of the bulbs, in March or April, in rows ten inches apart, and as many from patch to patch. By autumn they multiply into large-sized bunches, and, if required, may be taken up as soon as the leaves decay, and be stored as a substitute for the onion. The leaves, which are fit for use as long as they remain green, must, when required, be cut down close to the ground, when they will speedily be succeeded by others.

CHLIDA'NTHUS. (From *chlideios*, delicate, and *anthos*, a flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Clinanthus.)

A half-hardy bulb, with sweet-scented flowers. It requires fertile loam in a warm border, and to be taken up on the approach of frost, and kept dry, in a pot of sand, till April, when its numerous offsets should be removed, to enable the bulb to flower well. Offsets; sandy peat and fibrous loam.

C. Ehrenbe'rgii (Ehrenberg's). Bright yellow, nearly horizontal. Mexico. 1901.
„ *fra'grans* (fragrant). 1. Yellow. June. Buenos Ayres. 1820.

CHLOA'NTHES. (From *chloa*, greenish-yellow, and *anthos*, a flower; in reference to its greenish flowers. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 3-*Angiospermia*. Allied to Lantana.)

Greenhouse evergreens, from New Holland. Cuttings of young shoots in sandy soil, under a glass; fibrous loam, and turfy, sandy peat. Winter temp., 40° to 45°.

C. glandulo'sa (glandulous). 2. Green, yellow. July. 1824.
C. rosmarinifo'lia (rosemary-leaved). 2. Green, yellow. July. 1823.
„ *Stœ'chadis* (Stœchas-like). 2. Green, yellow. July. 1822.

CHLO'RA. Yellowwort. (From *chloros*, greenish-yellow. The flowers of *C. perfolia'ta*, a British plant, are yellow, and turn green when dried. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

The leaves of these plants are a good substitute for Gentian. Hardy annuals. Seed sown in April, in the open border.

C. grandiflo'ra (large-flowered). See C. PERFOLIATA.
„ *imperfolia'ta* (leaf-unstem-pierced). Yellow. June. Italy. 1823.
„ „ *sessilifo'lia* (stalkless-leaved). 1. Yellow. November. S. Europe. 1832.
„ *perfolia'ta* (leaf-stem-pierced). Yellow. June. Britain.
„ *quadrifo'lia* (four-leaved). Yellow. S. Europe.
„ *sero'tina* (late-*flowering*). 1. Yellow. November. South of Europe. 1832.

CHLORÆ'A. (From *chloros*, greenish-yellow. Nat. ord. Orchidaceæ.)

Terrestrial Orchids to be grown in pots in the cool house. See ORCHIDS.

C. cri'spa (crisped). Pure white, dotted green. Chili. 1903.
„ *inci'sa* (incised). 2 to 3. White, marked green. Chili. 1904.
„ *longebractea'ta* (long-bracted). 1 to 1½. White, green, orange. Chili. 1903.
„ *multiflo'ra* (many-flowered). 1. Creamy-white, dotted green. Chili. 1903.
„ *vire'scens* (greenish). 1 to 1½. Yellow veined green. Chili. 1827.

CHLORIDE OF LIME, or **BLEACHING POWDER,** is composed of chlorine, 36.23, lime, 36.77. Exposed to the air, it is converted into chalk and muriate of lime, a salt which absorbs moisture from the air very powerfully. By this conversion it becomes a useful addition to soils; and, as it also gives out some chlorine gas, so offensive and destructive to insects, it has been suggested as a useful application to the land at the time of turnip-sowing. It is also useful as a disinfectant, and for sprinkling about stable-floors, to fix the ammoniacal fumes.

CHLO'RIS. "Green Grass." (From *chloros*, greenish-yellow. Nat. ord. Gramineæ.)

Greenhouse or hardy annual grasses, grown for ornament.

C. acicula'ris (needle-like). Australia.
„ *barba'ta* (bearded). 1. Summer. India. 1777.
„ *e'legans* (elegant). 1. Mexico.
„ *radia'ta* (rayed). 1. Trop. Amer. 1739.
„ *verticilla'ta* (whorled). N. Amer.

CHLOROCO'DON. (From *chloros*, green, and *kodon*, a bell; in reference to the colour and shape of the flowers. Nat. ord. Asclepiadaceæ.)

A stove climber. Amongst the Caffres of South Africa it is known as Mundi or Mindi Root, and is used by them as a tonic. Division of the root-stock or cuttings taken from the crown of the root-stock, with a small portion of the root in sand, in a close case with bottom-heat. Summer temp., 60° to 80°; winter, 55° to 65°.

C. Whi'tei (White's). Green, purple. S. Africa. 1869.

CHLORO'GALUM. (From *chloros*, green, and *gala*, milk; in allusion to the colour of the juice. Nat. ord. Liliaceæ.)

A hardy border bulb, allied to the Quamash (Camassia). Seeds and offsets in light, rich soil.

C. divarica'tum (spreading-branched). See C. POMERIDIANUM.
„ *Leichtli'nii* (Leichtlin's). See CAMASSIA LEICHTLINII.
„ *pomeridia'num* (afternoon). 3. White. June. California. 1819. "Californian Soap Plant."

CHLORO'PHORA. (From *chloros*, green, and *phoreo*, to bear; in allusion to the colour of the juice. Nat. ord. Urticaceæ.)

Evergreen stove plants. Cuttings of ripe wood in a close case with bottom-heat. Loam, a little peat and sand.

C. tincto'ria (Dyer's). 20. Mexico. 1739.
„ „ *Plumie'ri* (Plumier's). 20. Mexico. 1804.

CHLOROPHY'TUM. (From *chloros*, green, and *phuton*, a plant. Nat. ord. Liliaceæ.)

Leafy evergreen herbs of easy culture in a stove, greenhouse, or window; *C. elatum* and its varieties being popular window plants. Seeds, suckers, offsets from the flower stem and divisions of the plant in spring.

C. amanie'nse (Amanian). 1. Greenish-white. German E. Africa. 1904.
„ *arundina'ceum* (reed-like). White. Himalayas. 1876.
„ *Bowke'ri* (Bowker's). 1. White. S. Africa.
„ *brachysta'chyum* (short-spiked). White. Nyasaland. 1893.
„ *como'sum* (long-haired). 3. White. Central Africa; S. Africa. 1910.
„ *ela'tum* (tall). 1. White. S. Africa.
„ „ *arge'nteo-linea're* (silvery-lined).
„ „ *me'dio-pi'ctum* (middle-painted). Broad, creamy-white band down the middle.
„ „ *variega'tum* (variegated). Creamy-white band on the edges of the leaves.
„ *falca'tum* (sickle-shaped). See C. LAXUM.
„ *glau'cum* (sea-green). India.
„ *Huy'ghei* (Huyghe's). Greenish-white. Congo. 1909.
„ *inorna'tum* (unadorned). Trop. Africa.
„ *Ki'rkii* (Kirk's). 2. White, and green outside. Trop. Africa. 1882.
„ *la'xum* (loose). ½. Whitish. Trop. Africa. 1873.
„ *longifo'lium* (long-leaved). Abyssinia.
„ *macrophy'llum* (large-leaved). Trop. Africa.
„ *nepale'nse* (Nepaulese). India.
„ *orchida'strum* (false Orchid). Trop. Africa.
„ *polyrhi'zon* (many-rooted). White. Trop. Africa. 1878.
„ *rhizomato'sum* (long-rhizomed). 1. White, with green lines outside. Zanzibar. 1884

CHLOROSPA'THA. (From *chloros*, green, and *spathe*, a spathe; the spathe is green. Nat. ord. Araceæ.)

Tuberous stove perennial. Seeds, offsets, and division of the tuber. Equal parts loam and peat, with sand. Give abundant water while growing, keeping the atmosphere moist. Keep it drier in winter. Summer temp., 60° to 80°; winter, 55° to 60°.

C. Ko'lbii (Kolb's). Green. Colombia. 1878.

CHLOROSPLE'NIUM ÆRUGINO'SUM. A fungus attacking the wood of Magnolias, turning it of a verdigris green hue.

CHLORO'XYLON. (From *chloros*, greenish-yellow, and *xylon*, wood. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. The Satin-wood is from the trunk, and the wood-oil of India is from the leaves of *C. Swiete'nia*.)

Stove evergreen tree. Cuttings of ripe shoots in sand, under a glass, and in heat; loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°.

C. Swiete'nia (Van Swieten's). 50. White. E. Ind. 1820.

CHOCHO. See SECHIUM EDULE.

CHOCOLATE NUT. *Theobro'ma.*

CHŒNE'STES LANCEOLA'TA. See IOCHROMA LANCEOLATA.

CHOI'SYA. (Named after *M. Choisy*, a botanist of Geneva. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse evergreen, but hardy in the south of England, Ireland, and the west coasts of Britain, either as a bush or on a wall.

C. grandiflo'ra (large-flowered). See C. TERNATA.
„ *terna'ta* (three-leafleted). 6. White. July. Mexico. "Mock Orange." One of our most useful flowering plants, only requiring very slight protection in the coldest districts.

CHOME'LIA. (Named after *Dr. Chomel*, physician to Louis XV. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Ixora.)

Stove evergreen shrubs, cultivated like Chloroxylon.

C. fascicula'ta (bundle-flowered). 5. White. W. Ind. 1825.
„ *spino'sa* (spiny). 12. White. W. Ind. 1793.

CHONDRORHY'NCHA. (Derived from *chondros*, cartilage, and *rhynchos*, a snout; referring to the snout-like rostellum. Nat. ord. Orchidaceæ.)

Cool stove epiphytes, requiring treatment similar to that for *Lycaste Skinneri*.

C. a'lbicans (whitish). White, tinged green. Costa Rica. 1898.
„ *Chesterto'ni* (Chesterton's). Yellow. Colombia. 1879.
„ *fimbria'ta* (fringed). See STENIA FIMBRIATA.
„ *lendya'na* (Lendyan). Pale yellow, the lip darker. 1886.
„ *ro'sea* (rosy). Rose. Venezuela.

CHONEMO'RPHA. (From *chone*, a funnel, and *morpha*, form; the flowers being funnel-form. Nat. ord. *Dog-banes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Rhyncospermum.)

Stove evergreen shrubs. Cuttings of rather firm young shoots in sand, under a glass, and in heat; peat and loam. Summer temp., 60° to 85°; winter, 55° to 60°.

C. Griffi'thi (Griffith's). White. Himalayas.
„ *macrophy'lla* (large-leaved). White. India and Malaya.
„ *pube'scens* (downy). See HOLARRHENA ANTIDYSENTERICA.

CHORE'TIS. See HYMENOCALLIS.

CHORI'SIA. (From *choris*, separate. Nat. ord. Malvaceæ.)

Stove tree. Cuttings of half-ripe shoots in a close case. Fibrous loam and peat, with sand.

C. specio'sa (showy). Yellowish, with dark brown rays at the base. Brazil. 1888.

CHORI'SPORA. (From *choris*, separate, and *spora*, a seed; the seeds being divided from each other in the pods. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Cakile.)

Hardy annuals. Seeds, sown at the end of March; common soil.

„ *Grei'gi* (Greig's). 1½. Purple. Turkestan. 1879.
„ *tene'lla* (slender). ½. Purple. June. Siberia. 1780.
„ „ *arcua'ta* (bowed). ½. Purple. June. Siberia.

CHORIZE'MA. (From *choros*, a dance, and *zema*, a drink. The party who discovered the first of these beautiful flowers, in New Holland, danced for joy at finding fresh water in its neighbourhood. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse evergreens, from Australia. Seeds sown in a slight hotbed, in March, give the best plants; cuttings of firm, short side-shoots may be taken off any time before midsummer, and inserted in sand, under glass; peat, three parts; fibrous loam, one part; sand and charcoal, one-half part each. Summer temp., 55° to 70°; winter, 45° to 50°.

C. angustifo'lium (narrow-leaved). Yellow, red. March. 1830.
„ *Chandle'ri* (Chandler's). See C. VARIUM.
„ *corda'tum* (heart-shaped-*leaved*). 2. Red. April.
„ *Dickso'ni* (Mr. Dickson's). 3. Scarlet, yellow. July. 1836.
„ *diversifo'lium* (diverse-leaved). 3. Orange, red. March. 1840.
„ *fla'vum* (yellow). See C. CORDATUM.
„ *Henchma'nni* (Henchmann's). 2. Scarlet. May. 1824.
„ *Huge'lii* (Hugel's). 2. Blue. May.
„ *ilicifo'lium* (holly-leaved). 2. Yellow, red. August. 1803.
„ *lawre'nciæ* (Mrs. Lawrence's). See C. VARIUM.
„ *Lo'wii* (Low's). See C. CORDATUM.
„ *macrophy'llum* (large-leaved). Red. April.
„ *mucrona'tum* (sharp-pointed). 3. Deep orange. Spring. 1845.

C. na'num (dwarf). See C. ILICIFOLIUM.
„ *nervo'sum* (nerved). Australia. 1852.
„ *ova'tum* (egg-shaped). See C. RHOMBEUM.
„ *platylobioi'des* (Platylobium-like). See MIRBELIA GRANDIFLORA.
„ *rho'mbeum* (diamond-shaped). 2. Yellow. May. 1803.
„ *rotundifo'lium* (round-leaved). 1881.
„ *sca'ndens* (climbing). See OXYLOBIUM SCANDENS.
„ *spartioi'des* (Spartium-like). See ISOTROPIS STRIATA.
„ *specta'bile* (showy). See C. DIVERSIFOLIUM.
„ *triangula're* (three-angled). See C. ILICIFOLIUM.
„ *va'rium* (variable). 4. Orange, red. March. 1830.
„ „ *grandiflo'rum* (large-flowered). 3. Orange. Spring. 1844.

CHRISTMAS ROSE. *Helle'borus ni'ger.*

CHRIST'S THORN. *Paliu'rus.*

CHRYSALIDOCA'RPUS. (From *chrusallis, chrusallidos*, golden, and *karpos*, a fruit; fruits yellow. Nat. ord. Palmaceæ.)
Stove palm. Seeds. Loam, peat, and sand.
C. lute'scens (yellow). 20. White. Madagascar. 1824.

CHRYSA'NTHEMUM. (From *chrusos*, gold, and *anthos*, a flower. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy plants. Annuals by seed sown in the border, in April, or in a slight hotbed, at the end of March, and transplanted; perennial herbaceous species by seed and division of roots, in autumn or spring; the garden-varieties of *sine'nse* by divisions and cuttings, in March and April, giving them light, rich soil; and to do these full justice, planting them against a wall, or blooming them under glass, giving plenty of manure-water after the bloom-buds appear. The shrubby kinds are increased by cuttings and divisions, and require a little aid in winter, in a frame, cold pit, or cool greenhouse.
C. absinthiifo'lium (wormwood-leaved). See C. SINUATUM.
„ *Achi'lleæ* (milfoil-*leaved*). 1. White. July. Italy. 1775.
„ *achilleæfo'lium* (Achillea-leaved). 2. Yellow. August. Caucasus; Siberia. 1739.
„ *alpi'num* (alpine). ½. White. July. Europe. 1759.
„ „ *pube'scens* (downy). ½. July. 1819.
„ *anethifo'lium* (dill-leaved). 2. White. Shrubby. Canaries.
„ *ano'malum* (anomalous). 1. White. June. Spain. 1811.
„ *anserinæfo'lium* (silver-leaf-leaved). Orient.
„ *a'rcticum* (arctic). ½. White. July. Kamtschatka. 1801.
„ *arge'nteum* (silver-*leaved*). 1. White. July. Levant. 1731.
„ *atra'tum* (blackened-*leaved*). 1. White. July. Austria. 1731.
„ „ *loba'tum* (lobed). ¾. White. July. Switzerland. 1819.
„ *Balsami'ta* (Balsamita). 2. Yellow. August. Western Asia. 1568. "Costmary."
„ *bipinna'tum* (twice-cut). ¾. Yellow. June. Arctic regions. 1796.
„ *Bocco'ni* (Bocconi's). 1. Yellow. July. Spain. 1823.
„ *Bornmülle'ri* (Bornmüller's). Armenia.
„ *Broussone'tii* (Broussonet's). 3. Yellow. May. Canary Islands. 1817.
„ *carina'tum* (keeled). 2. White, purple. August. Barbary. 1796. Annual.
„ *ca'rneum* (flesh-coloured). Flesh-colour. Caucasus.
„ *Catana'nche* (Catananche). Pale yellow, deep red. April. Morocco. 1874.
„ *cauca'sicum* (Caucasian). ½. White. July. Caucasus. 1804.
„ *ceratophylloi'des* (Buck's-horn-leaved). Europe. "Buck's-horn."
„ *Ce'res* (Ceres). Flesh-coloured. Garden hybrid. 1884.
„ *cinerariæfo'lium* (Cineraria-leaved). 1. White. Dalmatia. 1826. "Dalmatia Insect Powder."
„ *cocci'neum* (scarlet). 2. Red. Caucasus.
„ *corona'rium* (garland). 4. Yellow. August. Sicily. 1629. Annual.
„ *coronopifo'lium* (Buck's-horn-leaved). 1. White. June. S. Europe. 1819.
C. corymbo'sum (flat-topped). 1. White. July. Caucasus. 1596.
„ *daucifo'lium* (carrot-leaved). 1. White. July. 1820.
„ *decaisnea'num* (Decaisnean). 1 to 1½. Pale yellow. Japan. 1888.
„ *denticula'tum* (toothleted). See C. FLOSCULOSUM.
„ *discoi'deum* (disc-like). 3. Yellow, green. July. Italy. 1791.
„ *flosculo'sum* (small-flowered). 4. Yellow. August. Mediterranean Regions. 1605.
„ *fœnicula'ceum* (Fennel-like). See C. ANETHIFOLIUM.
„ *frute'scens* (shrubby). 3 to 4. White. Canaries. 1699.
„ „ *chrysa'nter* (false-yellow). 2 to 3. Pale yellow. Gardens. Syn. *Etoile d'Or.*
„ *graminifo'lium* (grass-leaved). 1. White. June. Montpelier. 1739.
„ *gra'nde* (large). 2 to 3. Golden yellow. N. Africa. 1903. Syn. *Plagius grandiflorus.*
„ *grandiflo'rum* (large-flowered). 2 to 3. White. Canaries. 1815.
„ *hæma'tomma* (blood-red). Rays white or rosy; disc dark purple. Madeira. 1888.
„ *He'be* (Hebe). Rosy-lilac. July. 1884.
„ *heterophy'llum* (various-leaved). 1. White. July. Switzerland. 1806.
„ *i'ndicum* (Indian). 2. Yellow. September. China. 1810.
„ *inodo'rum* (scentless). See MATRICARIA INODORA.
„ *ita'licum* (Italian). 2. Pale yellow. June. Italy. 1796.
„ *lacu'stre* (lake). 3. White. S.W. Europe. "Marsh Ox-eye Daisy."
„ *lanceola'tum* (spear-head-*leaved*). ½. White. June. Hungary. 1817.
„ *Leuca'nthemum* (white-flowered). 2. White. June. Britain.
„ *leucopiloi'des* (white-haired). ½ to 1. Yellow. Asia Minor. 1901.
„ *macrophy'llum* (large-leaved). 3. White. July. E. Europe. Caucasus. 1803.
„ *margina'tum* (margined). Dark yellow. Japan. 1888.
„ *Maw'ii* (Maw's). White. Morocco. 1872.
„ *ma'ximum* (largest). 2. White. Pyrenees. 1818.
„ „ *Robinso'ni* (Robinson's). Ray florets laciniated. 1904.
„ *mexica'num* (Mexican). 1. White. August. Mexico. 1825.
„ *millefolia'tum* (milfoil-leaved). 2. Yellow. July. Caucasus. 1731.
„ *monspelie'nse* (Montpelier). 1. White. July. Montpelier. 1739.
„ *monta'num* (mountain). 2. White. June. France. 1759.
„ *multicau'le* (many-stemmed). 1. Bright yellow. Algeria. Annual.
„ *Myco'nis* (Mycon's). 1. Yellow. July. Italy. 1775.
„ *nippo'nicum* (Nipponic). 1. White. Japan. 1895. "Shrubby Ox-eye Daisy."
„ *orna'tum* (adorned). 3 to 4. White. Japan. 1904.
„ *pa'llens* (pale). Europe.
„ *paludo'sum* (marsh). 1½. White. June. Barbary. 1810.
„ *palu'stre* (marsh). 2. White. June. Armenia. 1820.
„ *partheniifo'lium* (Parthenium-leaved). See C. PRÆALTUM.
„ *Parthe'nium* (Parthenium). 1. White. Europe. "Feverfew."
„ „ *au'reum* (golden). Leaves golden-yellow.
„ „ *flo're-ple'no* (double-flowered).
„ *perpusi'llum* (very small). See NANANTHEA PERPUSILLA.
„ *pinnati'fidum* (leafleted). 3. White. July. Madeira. 1777.
„ *præa'ltum* (rather tall). 1½. White. July. Caucasus. 1804.
„ *ptarmicæfo'rum* (Ptarmica-flowered). White. Canaries.
„ *pu'milum* (dwarf). ¼. White. August. 1806.
„ *radi'cans* (rooting-*branched*). 1. White. July. Spain. 1818.
„ *ro'seum* (rosy). See C. COCCINEUM.
„ *rotundifo'lium* (round-leaved). 1½. White. June. Hungary. 1817.
„ *rutheni'acum* (Russian). ½. Pink. June. Russia. 1827.
„ *se'getum* (corn). 1½. Yellow. July. Britain.

C. se'getum grandiflo'rum (large-flowered). Garden variety. 1888.
„ *setabe'nse* (Setaban). Spain and Portugal.
„ *Sibtho'rpii* (Sibthorp's). See C. VISCOSUM.
„ *sine'nse* (Chinese). 3. Variegated. October. China. 1764.
„ *sinua'tum* (indented). 1. White. Siberia. 1824.
„ *specio'sum* (showy). See C. CORONARIUM.
„ *starckia'num* (Starckian). 1. White. June. Caucasus. 1897.
„ *sylve'stre* (wood). See C. LEUCANTHEMUM.
„ *tanacetifo'lium* (tansy-leaved). 1. White. Asia Minor. 1818.
„ *Tanace'tum* (Tanacetum). See TANACETUM VULGARE.
„ *Tchihatchew'ii* (Tchihatcheff's). See MATRICARIA TCHIHATCHEWII.
„ *tomento'sum* (felted). ½. White. Corsica. 1910.
„ *transilie'nse* (beyond Troy). Turkestan.
„ *tri'color* (three-coloured). See C. CARINATUM.
„ *triparti'tum* (three-lobed-*leaved*). See C. INDICUM.
„ *uligino'sum* (marsh). 4 to 5. White. September. E. Europe. 1816.
„ *visco'sum* (clammy). 1½. Yellow. S. Europe.
„ *Zawa'dskii* (Zawadsky's). 1. White. Eastern Europe.

CHRYSANTHEMUM *as a Florist's Flower.*—This is the *C. sine'nse* and its varieties.

Propagation by Cuttings.—The best time is the first week in February. Take off the young shoots three inches long, and, with a sharp knife, cut off the lower leaves; insert the cuttings round the edge of a five-inch pot, numbering each kind as they are put in, to prevent mistakes. Use a light, sandy loam, with a thin layer of pure sand on the surface. Give a gentle watering, to settle the earth closely to the cuttings. Place them upon a heated surface of either coal-ashes or river-sand. Cover them with a hand-glass, and they will soon emit roots. When rooted, pot them immediately into small pots, and replace them under the hand-glasses. As soon as the roots reach the sides of the pots, re-pot them immediately. Cramping the roots in small pots is very injurious. Then place them either on a shelf near the glass of a good greenhouse, or, which is better, place them in a cold frame, well protected from frost and damp. For dwarf pot plants cuttings may be taken about the time the buds begin to form, and with a little bottom-heat, with shade, they will root in a few days, and should be removed to an exposed position as soon as they are started. Most of the early sorts may be grown as dwarf plants by stopping them, and some of the later sorts may be treated in the same manner.

By Seeds.—The seed must be saved as soon as it is ripe, and only from such as are of a fine shape, and bright, clear colour. Sow the seeds early in the year, very slightly covered with soil, finely sifted, in shallow, wide pots. Place them in a gentle heat, giving very gentle waterings, when dry, with a fine-rosed watering-pot. As soon as the seedlings have two or three leaves each, transplant them singly into small pots, keeping them in a temperature of 55° to 60°; re-pot when required. Some of them may flower, if well grown, the same season. Treat them exactly like the old varieties, and they will all flower the second year.

Soil.—As these plants are gross feeders, they require a very rich compost. Half light loam, half decayed dung, with a fourth of peat added, will grow them strong, and flower them well.

Summer Culture commences in April. Such as are intended to bloom in pots should now have large shifts out of their small pots into three sizes larger. For cuttings struck the same season, the blooming-pots should be at least nine inches' diameter, but for plants a year older, they should be twelve inches. At every potting stop all the shoots, to cause them to branch early, and form dwarf, compact bushes. Give up stopping at the last shift, which should not be done later than the middle of June. Tie the branches out, so as to give as much room and air to each as possible, consistent with forming a handsome plant. Thin the buds of such as are intended for exhibition, to cause large flowers. During the whole season of growth give abundance of water. Every week give them one watering with liquid-manure. *Never allow them to flag from the first re-potting up to the finishing bloom.* Water them over head, in hot weather, at least twice a day. The proper situation to place them at this season (from May till they bloom) is on a bed of ashes or gravel, in an open situation. As soon as the buds begin to open, remove them into the greenhouse, giving them as much space as possible, or the lower leaves will drop off. Continue an abundant supply of water till the blooming season is over.

Winter Culture.—When the flowers are all decayed, cut down the blooming shoots, and place the pots in a cool pit, giving only just water enough to keep the plants alive during the winter; and, as they are nearly hardy, they do not require much protection: a mat or two thrown over the glass in very severe frost will be quite sufficient.

These old plants are the best to plant out in the open border. In the southern counties Chrysanthemums bloom very finely, either in the open borders or against a wall or low paling, and, during the months of October and November, make a fine display.

Insects.—The *green fly* is the most troublesome, and, where it is allowed to prevail greatly, will quite destroy the bloom. It is easily destroyed, in the open air, by dipping the ends of the shoots in tobacco-water, and, in the greenhouse, by filling it completely with the smoke of tobacco, or the more modern fumigants.

Diseases.—These are such robust, hardy plants that they are seldom troubled with any diseases. The only one that is dangerous is *mildew* on the leaves, produced by a damp, cold atmosphere before they are brought into the greenhouse. The only remedy is dusting the parts where it appears with flowers of sulphur. The leaf *miner* has proved troublesome in recent years. The best remedy for this is a mild solution of paraffin; the leaves being of a woolly nature it must be used with care. A slight syringing periodically will keep the small black flies, which deposit their eggs in large quantities, off the plants and kill any that may be about.

Much more might be written about the Chrysanthemums, but as all catalogues and other books on the subject are published, it is not necessary.

CHRYSE'IS. See ESCHSCHOLTZIA.

CHRYSI'PHIALA. See STENOMESSON.

CHRYSIPHIALA LATIFO'LIA. See URCEOLINA LATIFOLIA.

CHRYSOBA'CTRON. See BULBINELLA.

CHRYSOBA'LANUS. Cocoa Plum. (From *chrusos*, gold, and *balanos*, an acorn; in reference to the colour of the drupes, or berries. Nat. ord. *Chrysobalans* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Layers; also cuttings of half-ripened shoots in sand, under glass. Loam and peat. Common greenhouse and cool stove treatment.

C. Ica'co (Icaco). 15. White. W. Ind. 1752. Stove evergreen.
„ *oblongifo'lius* (oblong-leaved). 3. White. May. Georgia. 1812. Greenhouse evergreen.

CHRYSO'COMA. Goldy-locks. (From *chrusos*, gold, and *kome*, hair; in reference to the yellow florets. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Solidago.)

Hardy herbaceous species by divisions, in March. Common soil. Greenhouse species by cuttings of half-ripe shoots in April, under a glass, in sand. Loam and a little peat. Winter temp., 35° to 45°.

HARDY HERBACEOUS.

C. bifio'ra (two-flowered). See ASTER ACRIS.
„ *dracunculoi'des* (tarragon-like). See ASTER ACRIS.
„ *Lino'syris* (flax-*leaved*). See ASTER LINOSYRIS.
„ *nuda'ta* (naked). See BIGELOVIA NUDATA.
„ *villo'sa* (long-haired-*leaved*). See ASTER VILLOSUS.
„ *virga'ta* (twiggy). See BIGELOVIA NUDATA.

GREENHOUSE EVERGREENS.

C. ce'rnua (drooping). See C. COMA-AUREA CERNUA.
„ *cilia'ta* (hair-fringed-*leaved*). 4. White. August. Cape of Good Hope. 1759.
„ *Co'ma-au'rea* (golden-hair). 1½. Yellow. July Cape of Good Hope. 1731.

C. Co'ma-au'rea ce'rnua (nodding). 1½. White. July. S. Africa. 1712.
„ *denticula'ta* (tooth-*leaved*). See CHRYSANTHEMUM FLOSCULOSUM.
„ *ni'vea* (snow-*white*). 3. Yellow. July. Cape of Good Hope. 1816.
„ *pa'tula* (spreading). See C. COMA-AUREA.
„ *sca'bra* (rugged). See FELICIA REFLEXA.
„ *squama'ta* (scaly-*stalked*). See LEPTORHYNCHUS SQUAMATUS.

CHRYSO'GONUM. (From *chrusos*, gold, and *gonu*, a joint; the golden flowers being borne on the joints. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Milleria.)
Hardy herbaceous perennial. Dividing the roots in spring; loam, with a little leaf-mould and manure.
C. virginia'num (Virginian). 1. Yellow. May. N. Amer. "Golden Knee."

CHRYSO'PA PE'RLA. The Lace-wing Fly or Golden-eye is so named, in the first case, on account of its large, lace-like wings, and in the second case, on account of its bright golden eyes. The larvæ feed voraciously on aphides and other harmful insects, so that it is a valuable assistant and friend of the gardener, and should not be injured nor molested in any way. The perfect insect is about an inch long, the wings being about twice the length of the bright green body. The female lays her eggs in small groups or lines, but singly, each at the end of a long stalk, formed of gummy matter, exuded by the insect while in the act of laying, and which soon hardens. Any observant gardener may see these eggs, attached to the stems and leaves of various plants during summer. As soon as the larvæ are hatched out they commence feeding on the aphides with which they come in contact. In this respect they resemble the larvæ of the lady-birds, equally good friends of the gardener, and, like them, are very ugly creatures in this stage of existence, being furnished with stalked tufts of hairs on their prolegs or protuberances from most of the segments of their long bodies. After feeding upon the aphides for about fourteen days they spin a silken cocoon, in which they pupate, and emerge in the perfect state about three weeks later on.

CHRYSOPHY'LLUM. Star Apple. (From *chrusos*, gold, and *phullon*, a leaf; referring to the colour of the under side of the leaves. Nat. ord. *Sapotads* [Sapotaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
The fruit of *C. Caini'to* is the Star Apple, an esteemed Indian dessert-fruit. Stove evergreen trees; cuttings in sand, under a glass, and in heat; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.
C. africa'num (African). White. Trop. Africa. 1824.
„ *a'lbidum* (whitish). S. Africa.
„ *angustifo'lium* (narrow-leaved). 20. White. W. Ind. 1819.
„ *argе'nteum* (silvery-*leaved*). 20. White. Martinique. 1758.
„ *Cainі'to* (Cainito). 50. White. May. W. Ind. 1737.
„ „ *cæru'leum* (blue-*fruited*). 40. White. May. S. Amer. 1737.
„ „ *jamaice'nse* (Jamaica). 40. White. May. Jamaica. 1737.
„ „ *microphy'llum* (small-leaved). 30. White. May. S. Amer. 1800.
„ *gla'brum* (smooth). 15. White. Martinique. 1823.
„ *imperia'le* (imperial). White. Brazil. 1875. Syn. *Theophrasta imperialis*.
„ *macrophy'llum* (large-leaved) of G. Don. 100. White. Sierra Leone.
„ *macrophy'llum* (large-leaved) of Sabine. See C. AFRICANUM.
„ *maga'lis-monta'na* (mountain-huts). S. Africa.
„ *monopyre'num* (one-stoned). 30. Brown. W. Ind. 1812.
„ *natale'nse* (Natal). S. Africa.
„ *olivifo'rme* (olive-shaped). See C. CAINITO.
„ *Roxbu'rghii* (Roxburgh's). Trop. Asia.

CHRYSO'PSIS. (From *chrusos*, gold, and *opsis*, a face. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)
Strong, coarse, hardy herbaceous perennials for a shrubbery, and will grow in any common soil; divisions in March.
C. Maria'na (Mary's). 1. July. N. Amer. 1742.
„ *trichophy'lla* (hairy-leaved). Yellow. June. N. Amer. 1827.
„ *villo'sus* (hairy). 1½. Yellow. August. N. Amer. 1811. "Golden Aster."
„ „ *Rutte'ri* (Rutter's).

CHRYSORRHO'E. See VERTICORDIA.

CHRYSOSPLE'NIUM. Golden Saxifrage. (From *chrusos*, gold, and *splen*, spleen; in reference to the colour of the flowers, and the supposed medicinal qualities of the plant as a slight tonic. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*.)
Hardy herbaceous perennials. Dividing the roots; moist situation; common soil.
C. alternifo'lium (alternate-leaved). 1. Yellow. April. Britain.
„ *glacia'le* (glacial). See C. OPPOSITIFOLIUM ALPINUM.
„ *nepale'nse* (Nepaul). 1. Yellow. April. Nepaul. 1820.
„ *oppositifo'lium* (opposite-leaved). Yellow. April. Britain.
„ „ *alpi'num* (alpine).

CHRYSOSTE'MMA. See COREOPSIS.

CHUQUIRA'GA. (A native name. Nat. ord. Compositæ.)
A greenhouse evergreen shrub. Cuttings under a bell-glass. Loam, peat, sand.
C. spino'sa (spiny). 4. Yellow. Peru. 1825.

CHUSQUE'A. (The native name. Nat. ord. Gramineæ.)
A graceful, climbing Bamboo, with wiry stems and small, linear-lanceolate leaves. Seeds and suckers. Stove treatment.
C. abietifo'lia (Abies-leaved). Green, purple. Jamaica.

CHYMOCA'RPUS PENTAPHY'LLUS. See TROPÆOLUM PENTAPHYLLUM.

CHY'SIS. (From *chusis*, melting; in reference to the fused appearance of the pollen masses. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. Offsets; baskets filled with fibrous peat and potsherds, and kept in a cool, moist stove.
C. au'rea (golden-*flowered*). 1. Yellow and crimson. May. Colombia. 1834.
„ „ *macula'ta* (spotted). Yellow, with darker tips, spotted purple. 1850.
„ *bracte'scens* (bracteated). 1. White, yellow. May. Guatemala. 1840.
„ *bruennowia'na* (Bruennowian). Pinkish. Peru. 1857.
„ *chelso'ni* (Chelsea). Garden hybrid. 1878.
„ *læ'vis* (smooth). Cream, yellow. Guatemala.
„ *Limmi'nghei* (Limminghe's). Mexico. 1860.
„ *owenia'na* (Owenian). See C. BRUENNOWIANA.
„ *Sede'ni* (Seden's). Garden hybrid. 1880.

CHYTROGLO'SSA. (Derived from *chutros*, a well, and *glossa*, a tongue; referring to the hollow at the base of the lip. Nat. ord. Orchidaceæ.)
Stove epiphytes to be grown in baskets or on rafts.
C. aura'ta (golden). Green, yellow, purple. Brazil. 1865.
„ *Marileo'niæ* (Mrs. Marileon's). Yellow, blood-red. Brazil. 1865.

CIBO'TIUM. (From *kibotion*, a small box; referring to the form of the seed-vessels. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.) All are species of Dicksonia, most of them belonging to the section Cibotium.
Division of the roots, or from spores (see FERNS); peat and loam; a warm greenhouse, or cool stove.
C. assa'micum (Assamese). See C. BAROMETZ.
„ *Ba'rometz* (Barometz). 6. Brown, yellow. May. China. 1824. Stove.
„ *Billardie'ri* (Billardier's). See DICKSONIA ANTARCTICA.
„ *Chamisso'i* (Chamisso's). Sandwich Islands. 1879.
„ *glau'cum* (sea-green). Sandwich Islands. 1879.

C. Menzie'sii (Menzies'). Sandwich Islands. 1878.
„ *pri'nceps* (chief). See CYATHEA INSIGNIS.
„ *pruina'tum* (frosted). Sandwich Islands. 1878.
„ *rega'le* (regal). Mexico. 1864.
„ *Schie'dei* (Schiede's). 6. Brown. Mexico. 1846. Stove.
„ *specta'bile* (showy). Mexico. 1868.

CIBOUL, or WELSH ONION. (*A'llium fistulo'sum.*) A perennial, never forming any bulb, but sown annually, to be drawn young for salads, &c. Its strong taste renders it greatly inferior to the common onion for this purpose; but, from its extreme hardiness, it is good as a winter-standing crop for spring use.

Varieties.—Two varieties are in cultivation, the white and the red.

Cultivation.—It may be sown at all times with the onion, and is similarly cultivated, except that it may be sown thicker, and only thinned as wanted. (See ONION.) The blade usually dies away completely in winter; but fresh ones are thrown out again in February or March.

To obtain Seed.—Plant some of the roots in March, six or eight inches asunder. The first autumn they will produce but little seed; in the second and third, however, it will be produced abundantly. If care is taken to part and transplant the roots every two or three years, they may be multiplied, and will remain productive for many years, and afford much better seed than that from one-year-old roots.

Scallions.—There is good reason for concluding that by a confusion of names, arising from similarity of appearance, this vegetable is the true scallion, whilst the hollow leek of Wales is the true Welsh onion. At present, all onions that have refused to bulb, but form lengthened necks and strong blades, in spring and summer, are called scallions.

CI'CCA DI'STICHA. See PHYLLANTHUS DISTICHUS.

CICELY. See CHÆROPHY'LLUM AROMA'TICUM.

CICE'NDIA PULCHE'LLA. See ERYTHRÆ'A RAMOSISSIMA.

CI'CER. (From Latin *Cicer*, the Chick Pea. Nat. ord. Leguminosæ.)

The Chick Pea is cultivated in the South of Europe, India, &c., and has been so grown from very early times. Under the name of *gram*, the Indians use it in cakes and curries. Seeds in ordinary garden soil in April.

C. arieti'num (ram's-head). 1. Violet. July. Europe, Orient, India.
„ *Le'ns* (Lens). See LENS ESCULENTA.

CICHO'RIUM. Chicory, or Succory. (An ancient Egyptian name. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis.*)

Hardy salad-plants, of easy culture; seed at different times. See CHICORY and ENDIVE.

C. Endi'via (endive). 2. Blue. July. Europe. Orient. 1548. Annual.
„ *I'ntybus* (Intybus. *Chicory*). 2. Blue. July. Britain. Perennial.
„ *pu'milum* (dwarf). Mediterranean Region.

CIENKOW'SKIA. (In commemoration of *Professor Cienkowsky*, a Russian botanist. Nat. ord. Scitaminaceæ. Now referred to Kæmpferia.)

A stove perennial herb of considerable beauty. Division of the roots. Fibrous loam, peat, leaf-mould, and sand. Moist atmosphere.

C. Ki'rkii (Kirk's). ½. Mauve. Trop. Africa. 1872.

CIMICI'FUGA. Bugwort. (From *cimex*, a bug, and *fugo*, to drive away; from its supposed quality. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia*. Allied to Actæa.)

Good old hardy herbaceous plants for borders; seeds, and division of the roots in spring or autumn; common soil.

C. america'na (American). 2. White, yellow. July. Carolina. 1824.
„ *cordifo'lia* (heart-leaved). 3. White, yellow. June. N. Amer. 1812.
„ *davu'rica* (Dahourian). 3. White, pale yellow. China.
„ *ela'ta* (tall). 5. Cream. N. Amer.
C. fœ'tida (fœtid). 4. Light yellow. June. Siberia. 1777.
„ „ *interme'dia* (intermediate).
„ *japo'nica* (Japanese). 2. White. September. Japan.
„ *palma'ta* (palmate). See TRAUTVETTERIA PALMATA.
„ *racemo'sa* (racemose). 3 to 4. Creamy-white. July. N. Amer.
„ *si'mplex* (simple). 2½. Creamy-white. October. Japan. The best species.

CINCHO'NA. Peruvian Bark. (Named after the *Countess of Cinchon*, who was cured by this Peruvian Bark. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

The Peruvian bark stands foremost as a febrifuge tonic. Stove evergreens; cuttings of ripe wood in sand, under a glass, in heat; loam and fibrous peat, with a little sand and charcoal. Summer temp., 60° to 85°; winter, 55° to 60°. This is a very important family of plants, and some are extensively cultivated for their medicinal properties.

C. Calisa'ya (Calisaya). 20. Pink. September. Bolivia. 1848. "Yellow Bark."
„ *Condami'nea* (Condaminea). See C. OFFICINALIS.
„ *cordifo'lia* (heart-leaved). Pink. Colombia.
„ *josephia'na* (Josephian). White. Bolivia, 1873.
„ *lanceola'ta* (lance-shaped). See C. OFFICINALIS.
„ *ledgeria'na* (Ledgerian). Pink. Bolivia.
„ *microphy'lla* (small-leaved). Pink. Peru.
„ *ni'tida* (shining). Peru.
„ *officina'lis* (shop). 18. Red. July. Peru. 1810. "Crown Bark."
„ *pahudia'na* (Pahudian). Trop. Amer.
„ *peruvia'na* (Peruvian). Peru. "Grey Bark."
„ *pombia'na* (Pombian). Gardens.
„ *sca'bra* (rugged). 6. Red. 1820.
„ *succiru'bra* (red-juiced). 20 to 40. Pink. July. Peru. "Red Bark."

CINCINA'LIS FLA'VENS, C. NI'VEA, and **C. TE'NERA.** See NOTHOCHLÆNA.

CINERA'RIA. (From *cineres*, ashes; in reference to the grey down covering the surfaces of the leaves. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua.*)

Hardy herbaceous species by seed, but chiefly by division of the roots; good, loamy soil, manure, and leaf-mould. The shrubs and under-shrubs, which mostly require a greenhouse or cold pit in winter, by cuttings in sandy soil, under a hand-light. The *garden florist varieties* see further on.

STOVE EVERGREENS.

C. aitonia'na (Aiton's). See C. CANESCENS.
„ *america'na* (American). See SENECIO DENTICULATUS.
„ *di'scolor* (two-coloured-*leaved*). See SENECIO DISCOLOR.
„ *glabra'ta* (smooth). See SENECIO SWARTZII.
„ *lu'cida* (shining). See SENECIO LUCIDUS.

GREENHOUSE EVERGREENS.

C. a'lba (white). 1. White. February. Cape of Good Hope. 1825.
„ *a'lbicans* (whitish). Clear yellow. Natal. 1895.
„ *angustifo'lia* (narrow-leaved). See SENECIO SALIGNUS.
„ *auri'ta* (eared). See SENECIO MADERENSIS.
„ *bi'color* (two-coloured). See SENECIO BICOLOR.
„ *cacalioi'des* (cacalia-like). See OTHONNA CARNOSA.
„ *cane'scens* (hoary). 2. Yellow. June. Cape of Good Hope. 1790.
„ *cauca'sica* (Caucasian). See SENECIO CAUCASICUS.
„ *crue'nta* (blood-coloured). See SENECIO CRUENTUS.
„ *ela'tior* (taller). See SENECIO MULTIFLORUS.
„ *geifo'lia* (geum-leaved). 2. Yellow. July. Cape of Good Hope. 1710.
„ *gibbo'sa* (swollen). See SENECIO GIBBOSUS.
„ *humifu'sa* (trailing). 1. Yellow. July. Cape of Good Hope. 1754. Herbaceous.
„ *hy'brida* (hybrid). See SENECIO CRUENTUS.
„ *inca'na* (hoary). See GYNOXYS INCANA.
„ *la'ctea* (milk-coloured). See SENECIO APPENDICULATUS.
„ *lana'ta* (woolly). See SENECIO HERITIERI.

C. lobā'ta (lobed). 3. Yellow. July. Cape of Good Hope. 1774.
„ *malvæfo'lia* (mallow-leaved). See SENECIO MALVÆFOLIUS.
„ *multiflo'ra* (many-flowered). See SENECIO MULTIFLORUS.
„ *othonnoi'des* (Othonna-like). 1. Yellow. July. S. Africa. 1823.
„ *penta'ctina* (five-rayed). Golden yellow. S. Africa ? 1901.
„ *Petasi'tis* (butterbur-*leaved*). See SENECIO PETASITIS.
„ *populifo'lia* (poplar-*leaved*). See SENECIO POPULIFOLIUS.
„ *præ'cox* (early). See SENECIO PRÆCOX.
„ *pulche'lla* (neat). 2. Purple. February. Canaries. 1818.
„ *purpura'ta* (purple). Purple. June. S. Africa. 1816.
„ *salicifo'lia* (willow-leaved). See SENECIO SALIGNUS.
„ *scapiflo'ra* (scape-flowered). See SENECIO POLYMORPHUS.
„ *tussilaginoi'des* (coltsfoot-like). See SENECIO TUSSILAGINIS.
„ *vesti'ta* (clothed). See OTHONNA VESTITA.
„ *visco'sa* (clammy). 2. Yellow. July. Cape of Good Hope. 1774. Biennial.

HARDY HERBACEOUS PERENNIALS.

C. alpe'stris (alpine). See SENECIO ALPESTRIS.
„ *alpi'na* (alpine). See SENECIO ALPINUS.
„ *auranti'aca* (orange). See SENECIO PALUSTRIS AURANTIACUS.
„ *au'rea* (golden). See SENECIO AURATUS.
„ *auricula'ta* (small-eared). See SENECIO RACEMOSUS.
„ *campe'stris* (wild). See SENECIO CAMPESTRIS.
„ *canade'nsis* (Canadian). See SENECIO CINERARIA.
„ *crassifo'lia* (thick-leaved). 1. Yellow. July. Carinthia. 1827.
„ *cri'spa* (curled). See SENECIO CRISPATUS.
„ *fla'mmea* (flame-coloured). See SENECIO FLAMMEUS.
„ *gigante'a* (gigantic). See SENECIO SMITHII.
„ *integrifo'lia* (entire-leaved). See SENECIO CAMPESTRIS.
„ *læviga'ta* (smooth-*leaved*). 1. Yellow. July. Siberia. 1819.
„ *longifo'lia* (long-leaved). See SENECIO BRACHYCHÆTUS.
„ *macrophy'lla* (large-leaved). See SENECIO LEDEBOURII.
„ *mari'tima* (sea. *Ragwort*). See SENECIO CINERARIA.
„ *palu'stris* (marsh). See SENECIO PALUSTRIS.
„ *pappo'sa* (downy-crowned). See SENECIO PAPPOSUS.
„ *parviflo'ra* (small-flowered). See C. CANESCENS.
„ *racemo'sa* (racemed). See SENECIO RACEMOSUS.
„ *renifo'lia* (kidney-leaved). See SENECIO RENIFOLIUS.
„ *rivula'ris* (rivulet). See SENECIO CRISPATUS.
„ *Saxi'fraga*. S. Africa.
„ *sibi'rica* (Siberian). See SENECIO LIGULARIA.
„ *spathulæfo'lia* (spathulate-leaved). See SENECIO SPATHULÆFOLIUS.
„ *specio'sa* (showy). See SENECIO LIGULARIA.
„ *sude'tica* (Swiss). See SENECIO CRISPATUS.
„ *thyrsoi'dea* (thyrse-formed). See SENECIO SIBIRICUS.

CINERA'RIA *as a Florist's Flower.*—The immense varieties of this flower seem to be the offspring, by various crosses, of *Sene'cio crue'ntus*, *malvæfo'lius*, *lana'tus*, *populifo'lius*, and probably some others.

Propagation by Offsets.—When a Cineraria has done blooming, remove it from the greenhouse, cut down the old flower-stems (excepting such as are intended to save seed from), place the pots out of doors, upon a bed of coal-ashes, in an open situation. Give water moderately in dry weather; and, as soon as the offsets appear, and have attained a leaf or two, take them off with a sharp knife, with the roots uninjured; plant them in small pots, and place them in a cold frame, shading them from the light for a fortnight, and from bright sunshine for another week. They will then be well rooted, and will require a pot a size larger. Very few are now grown from offsets, except it may be a few special varieties selected for seeding from.

By Seed.—Sow the seed as soon as it is ripe in shallow, wide pots, in light, fine soil, and slightly covered. As soon as the seedlings have formed two or three leaves, prick them out into the same kind of pots, in a somewhat richer soil. They may remain in these pots till they have made some more leaves and fresh roots; then pot them off singly into small pots, shading for a few days. Afterwards, and at the proper time, re-pot them in the same manner as the offsets.

Soil.—The offsets and seedlings having attained the proper size for potting into larger pots, prepare for that operation by mixing and bringing, in a moderately dry state, to the potting-bench, the following compost:—Turfy loam, from an upland pasture, two parts; decayed leaves, two years old, one part; very rotten cowdung, half a part; and a small addition of river-sand. Prepare, also, a sufficient quantity of broken potsherds, of two sizes; one as large as walnuts, and the other about the size of peas. Have, also, a sufficient number of either new or clean-washed pots, two sizes larger than the plants are in. You are then ready for the operation of potting.

Winter Culture.—By the time the plants, whether offsets or seedlings, are ready for re-potting out of their first-size pots, cold nights will have begun to take place, which brings the time of culture under this head. Bring the plants on to the potting-bench; prepare a pot by placing a large piece of potsherd over the hole at the bottom of the pot, then a layer of the larger size, and a second layer of the smallest size; place a thin layer of the rougher parts of the compost upon them, and as much soil as will be required to keep the plant just level with the rim of the pot; set the plant in the pot, and fill round it with the compost, pressing it gently down. Be careful not to break the leaves, as they are very brittle and tender. When the pot is quite full, give it a gentle knock upon the bench, to finally settle the soil. When all are finished, give a gentle watering, and place them in a cold frame; shade them if they flag from the sun, and water when necessary. The Cineraria is a very fast-rooting plant, and they will soon require another shift. To know when they require it, turn a plant carefully out of its pot, and if the roots have reached the sides of the pots, and through the drainage, re-pot again immediately; for, if the roots once become closely matted, the plants will be crippled in their growth. The grand object is to keep them growing freely till they make large, broad-leaved plants, in eight-inch pots, before they begin to show their flower-stems. For market good plants are grown in five-inch pots. Keep them in the cool greenhouse where sufficient heat can be given to keep out frost. They may be kept in pits through the winter, but it entails much trouble, as they are easily killed by a few degrees of frost. Pick off all decaying leaves, should any appear; and only water when absolutely necessary. They grow, and keep healthy, much better in such a situation than in a greenhouse.

Summer Culture.—As soon as the warm, mild days of spring arrive, give the plants their last shift, and, if desirable, remove them into the greenhouse at once, placing them as near the glass as possible. The flower-stems will now be advancing rapidly.

Insects.—The great pest of the Cineraria is the *green fly;* but it may be easily got rid of by smoking with tobacco. Yet it must be carefully applied, as there is no plant so susceptible of injury from a too strong dose of this smoke. Sometimes the *red spider* makes its appearance; and when it does, it will be necessary to dust the leaves with sulphur, which, though it will not kill him, prevents his feeding, and thus starves him to death.

Diseases.—These plants, like all other highly cultivated ones with soft wood, are subject to go off just on the surface of the soil. The only preventive is plenty of fresh, sweet air, and a judicious application of water, especially during the early part of the year.

CINNAMODE'NDRON. (Derived from *Cinnamomum*, and *dendron*, a tree; as it resembles a cinnamon-tree. Nat. ord. Canellaceæ.)

Stove tree, requiring similar treatment to *Canella alba*. Its bark is used as an aromatic stimulant. Fibrous loam, a little peat and sand.

C. cortico'sum (corky). 50. Red. W. Ind. 1860.

CINNAMO'MUM. Cinnamon. (From the Arabic name, *kinamon*. Nat. ord. *Laurels* [Lauraceæ]. Linn. 9-*Enneandria*, 1-*Monogynia*.)

Cassia Bark is obtained from nearly all the species of

Cinnamon-trees. Other countries have their Cinnamon-trees, but differing from the true Asiatic Cinnamon, Stove trees. Cuttings of fine shoots in April, in sand, under a glass, and a moist bottom-heat. Peat and loam. Summer temp., 60° to 80°; winter, 55° to 60°.

C. Bejolgho'ta (Bejolgota). See C. OBTUSIFOLIUM.
„ *brevifo'lium* (short-leaved). Japan.
„ *Burma'nni* (Burmann's). 40. White, yellow. Java. 1820.
„ *Ca'mphora* (Camphora). 30. Greenish-white. June. China and Japan. 1727. "Camphor." Although camphor is secreted by many plants in this order, and more particularly by some species of cinnamon, the true camphor of commerce is obtained from *C. Camphora*, and is a product of the oil procured from the wood, branches, and leaves, by means of dry distillation. Camphor is chiefly manufactured in the Island of Formosa, and from thence sent to Canton for exportation. The hard camphor of Sumatra and the camphor-oil of Borneo are the natural secretions of *Dryoba'lanops aroma'tica*.
„ *Ca'ssia* (Cassia). 50. Yellow, green. June. Java. 1763. "Cassia lignea."
„ *Culila'wan* (Culilawan). 20. Yellow, green. E. Ind. 1823.
„ *du'lce* (sweet.) See C. BURMANNI.
„ *glau'cum* (milky-green). See LITSEA GLAUCA.
„ *gra'cile* (slender). See C. CAMPHORA.
„ *i'ners* (inert). 20. Yellow, green. Burma. Malaya. 1805.
„ *Lourei'rii* (Loureir's). Yellow, green. Cochin-China.
„ *Malaba'thrum* (Malabar-*leaf*). See C. I'NERS.
„ *monta'num* (mountain). See PHŒBE MONTANA.
„ *ni'tidum* (shining). 20. White. E. Ind. 1823.
„ *obtusifo'lium* (blunt-leaved). 40. Yellow, green. Burma. 1818.
„ *officina'rum* (officinal). See C. CASSIA.
„ *ovalifo'lium* (oval-leaved). Ceylon.
„ *Reinwa'rdtii* (Reinwardt's). See C. TAMALA.
„ *seri'ceum* (silky). Japan. 1875.
„ *Tama'la* (Tamala). Pale green. Himalayas.
„ *ve'rum* (true). See C. ZEYLANICUM.
„ *zeyla'nicum* (Cingalese). Greenish. May. India and Malaya. "Cinnamon."

CINQUEFOIL. See POTENTILLA.

CION is the same as SCION.

CIPU'RA. (Nat. ord. Iridaceæ. Allied to Marica.)
A greenhouse plant with a cormous root-stock. Seeds and offsets. Fibrous loam, leaf-mould, and sand.

C. martinice'nsis (Martinique). See TRIMEZIA LURIDA.
„ *paludo'sa* (marshy). 1. White. July. Trop. Amer. 1792.

CIRCÆ'A. Enchanters' Nightshade. (A classical name, after *Circe*, a celebrated enchantress, skilled in poisonous herbs. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Lopezia.)
Hardy perennials. Offsets and divisions. Common garden-soil.

C. alpi'na (alpine). 1. Red. July. Britain.
„ *corda'ta* (heart-shaped). White. Himalayas.
„ *interme'dia* (intermediate). 1. Red. July. Europe. 1821.
„ *lutetia'na* (Parisian. *Common*). 1. Red. July. Britain.
„ *mo'llis* (soft). White. Japan.

CIRCUMPOSITION differs from layering, only that in this the shoot to be rooted is bent down to the soil, whilst, in circumposition, the soil is placed in a vessel, and raised to the shoot. There are pots called *layering-pots*, made for this practice, and differing from the common garden-pot only by having a section, about an inch broad, cut through one side, and to the centre of the bottom, for the admission of the shoot or branch. Moisture necessary for favouring the emission of roots is supplied by means of a bottle, from which the bottom is struck off, and the neck furnished with a cork, perforated so as to admit a small pigeon's feather, or bit of wool, to form a syphon, by means of which the moss is kept in a proper state of moisture. Hard-wooded plants are propagated in this way from the middle of May till the end of June; and the branches are sufficiently rooted to be taken off by the end of September. It is, however, necessary in all cases to ascertain whether the branches are sufficiently rooted previously to their being separated. After being separated, the rooted branch is treated like one layered. See LAYERING.

Another method is to split a pot in two, and after putting it round the stem and binding it together, to fill it with suitable soil for the plant to root into. Some propagators, after splitting a stem through a joint, bind sphagnum, peat, and sand round; and this is one of the best methods for Crotons, Dracænas, and similar plants.

CIRRHÆ'A. (From *cirrhus*, a tendril; the rostellum being extended like a small tendril. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. Divisions and offsets. Sphagnum, peat, broken pots, and charcoal, in shallow, open baskets; a high, moist temperature when growing; cooler and dry when at rest. Summer temp., 60° to 90°; winter, 55° to 60°.

C. a'lbo-vi'ridis (white-and-green-*flowered*). White, green. May. Brazil. 1838.
„ *a'tro-purpu'rea* (dark-purple-*flowered*). Dark purple. April. Mexico. 1838.
„ *bracte'scens* (bracted). White, yellow. July. Brazil.
„ *fuscolu'tea* (dusky-yellow). Of B. M., t. 3726. See C. SACCATA. *C. fuscolutea of Lindley* is not in cultivation.
„ *læ'vis* (smooth). Yellow, brown. July. Brazil.
„ *Loddige'sii* (Loddiges's). Yellow, red. May. Brazil. 1827.
„ *obtusa'ta* (blunt-*petaled*). ½. Yellow, red. September. Rio Janeiro. 1835.
„ *pa'llida* (pale-*flowered*). Yellowish. August. Brazil. 1837.
„ *pi'cta* (painted). Purple. May. Brazil. 1830.
„ *ru'bra purpu'rea* (red-and-purple-*flowered*). Red, purple. May. Brazil. 1838.
„ *russellia'na* (Duke of Bedford's). Green, red. May. Brazil. 1837.
„ *sacca'ta* (pouched). Dusky yellow-green. June. Brazil. 1839.
„ *squa'lens* (squalid). May. Brazil. 1836.
„ *tri'stis* (dull-*coloured-flowered*). ½. Dull purple, red. June. Mexico. 1834.
„ *vi'ridi-purpu'rea* (green and purple). ½. Purple, green. June. Brazil.
„ „ *frya'na* (Fryan). ½. Green, purple-spotted. July.
„ *warrea'na* (Warrean). See C. VIRIDI-PURPUREA.

CIRRHOPE'TALUM. (From *cirrhus*, a tendril, and *petalon*, a flower-leaf; in reference to the strap-shaped petals. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. On blocks of wood. Growing temp., 75° to 85°, and very moist air; rest temp., 60°.

C. abbrevia'tum (shortened). White, purple. 1881.
„ *amesia'num* (Amesian). Yellow-white, shaded rosy purple. E. Ind.
„ *Anderso'nii* (Anderson's). Whitish, with fine rose dots. Sikkim. 1908.
„ *antenni'ferum* (antennæ-bearing). Brown. Philippines. 1843.
„ *appendicula'tum* (small-appendaged). Speckled reddish-purple. Sikkim. 1901.
„ „ *Fascina'tor* (fascinator). Sepals and petals with deeper purple fringe. 1907.
„ *aura'tum* (gold-*edged*). ½. Yellow, crimson. March. Manilla. 1840.
„ *biflo'rum* (two-flowered). Greenish, with three purple stripes. Java. 1907.
„ *Blephari'stes* (Blepharistes). Yellow. Burma. 1872.
„ *Blu'mei* (Blume's). August. Java. 1843.
„ *bre'vipes* (short-stalked). Himalaya.
„ *brevisca'pum* (short-scaped). Purple, yellow; lip rosy purple. Malaya. 1905.
„ *brienia'num* (O'Brienian). Yellow and maroon. Borneo. 1893.
„ *cæspito'sum* (tufted). Pale yellow. April. Khasia. 1837.
„ *candela'brum* (chandelier). Straw, pink, purple. July. Manilla. 1840.
„ *capita'tum* (head-*flowering*). Java. 1843.
„ *chine'nse* (Chinese). ½. Purple, yellow. China. 1840

C. chry'seum (golden). Golden, purple-lined. Philippines. 1910.
„ *Colle'ttii* (Collett's). Dark purple and yellow. Upper Burma. 1891.
„ *compa'ctum* (compact). Pale yellow. Tenasserim. 1895.
„ *compre'ssum* (flattened-*stemmed*). Java. 1843.
„ *conci'nnum* (neat). Singapore.
„ *cornu'tum* (horned-*sepals*). ½. Purple. August. Khasia. 1837.
„ *Cumi'ngii* (Cuming's). Ruby. May. Philippines. 1839.
„ *Curti'sii* (Curtis's). White, pink, and yellow. Malacca. 1897.
„ *delite'scens* (lying-hid). Marbled lurid purple. Hong-Kong. 1882.
„ *elega'ntulum* (small, elegant). Striped maroon-purple. Madras. 1891.
„ *elonga'tum* (elongated). May. Himalayas. 1843.
„ *Fascina'tor* (fascinator). See BULBOPHYLLUM FASCINATOR.
„ *fimbria'tum* (fringed). ½. Green, purple. April. Bombay. 1838.
„ *Ga'mblei* (Gamble's). India.
„ *gamose'palum* (united-sepaled). India.
„ *graci'llimum* (most graceful). Reddish-purple, small. Burma. 1895.
„ *grandiflo'rum* (large-flowered). Ceylon.
„ *grave'olens* (strong-smelling). See C. ROBUSTUM.
„ *guttula'tum* (finely spotted). ½. Yellow. Himalaya. 1837.
„ „ *Bergma'nni* (Bergmann's).
„ *Hooke'ri* (Hooker's). Yellow and red-purple streaks. Western Himalaya. 1902.
„ *lendya'num* (Lendyan). Whitish, greenish-yellow. 1887.
„ *longi'ssimum* (very long). Cream, white, purple. Siam. 1909
„ *Macræ'i* (M'Rae's). Brown, yellow. April. Ceylon. 1839.
„ *macula'tum* (spotted). Pale green. May. India. 1841.
„ *maculo'sum* (spotted-*flowered*). Green, purple. E. Ind. 1841.
„ *makoya'num* (Makoyan). Light yellow, brown spots and lines. Brazil. 1879.
„ *mastersia'num* (Mastersian). Deep yellow and brownish-purple. E. Ind.
„ *maxilla're* (Maxillaria-like). Philippines. 1843.
„ *Medu'sæ* (Medusa's *head*). See BULBOPHYLLUM MEDUSÆ.
„ *mu'ndulum* (neat). Upper Burma.
„ *mysore'nse* (Mysore). White; lip purple. Mysore. 1895.
„ *nodo'sum* (knotted). Reddish, speckled brown. Nilghiri Hills. 1895.
„ *nu'tans* (nodding-*flowered*). ½. Pale straw. May. Manilla. 1838.
„ *ornati'ssimum* (most ornate). Straw-coloured, purple lines. E. Ind. 1882.
„ *Pahu'dii* (Pahud's). Reddish-brown. Java. 1866.
„ *papillo'sum* (papillose). Lined dark purple on pale ground. Siam. 1908.
„ *pictura'tum* (pictured). Purple, red. March. E. Ind. 1838.
„ *proli'ferum* (proliferous).
„ *pu'lchrum* (beautiful). Purple, yellow, dotted purple. Moluccas. 1886.
„ „ *Clifto'nii* (Clifton's). Cream-white, spotted deep rose. 1909.
„ *refra'ctum* (broken-back). See C. WALLICHII.
„ *retusiu'sculum* (bluntish). Purple, yellow. Burma. 1869.
„ *robu'stum* (robust). Greenish-yellow; lip red purple. New Guinea. 1895.
„ *rothschildia'num* (Rothschildian). Crimson-purple, blotched yellow. India. 1895.
„ *Roxbu'rghii* (Roxburgh's). Yellow. May. E. Ind. 1843.
„ *seti'ferum* (bristle-bearing). Sepals and petals setiferous. Himalaya. 1895.
„ *strangula'rium* (strangled). Purple, yellow, brown. 1887.
„ *Thoua'rsii* (Thouar's). 1. Yellow. July. Society Islands.
C. Thwaite'sii (Thwaites's). Ceylon.
„ *trigo'nopus* (three-angle-stalked). Lilac and mauve lip. 1881.
„ *tripu'dians* (dancing). Brown, white, spotted purple. Burma. 1876.
„ *umbella'tum* (umbel-*flowered*). See C. GUTTULATUM.
„ *vagina'tum* (sheathed). Pale yellow. Singapore. 1843.
„ *Walli'chii* (Wallich's). Brown. March. Nepaul. 1837.
„ *wendlandia'num* (Wendlandian). Wine-purple. Burma. 1891.
„ *whitea'num* (Whitean). Flowers small, yellow. Moluccas (?). 1895.
„ *Wi'ghtii* (Wight's). Ceylon.

CI'RSIUM. See CNI'CUS.

C. cichora'ceum. See SERRATULA CICHORACEA.
„ *heteroma'llum.* See SAUSSUREA CANDICANS.
„ *orienta'le.* See GALACTITES TOMENTOSA.
„ *pinnati'fidum.* See SERRATULA PINNATIFIDA.

CISSA'MPELOS. Pareira Brava Root. (From *kissos*, ivy, and *ampelos*, a vine; creeps like ivy, and flowers like the vine, on long, hairy racemes. Nat. ord. *Menispermads* [Menispermaceæ]. Linn. *22-Diœcia*, *13-Polyandria.*)

Stove twiners. The species from South Africa will do in a warm greenhouse; cuttings of small side-shoots, rather firm, in sand, under glass, and in bottom-heat; loam and peat. Summer temp., 60° to 80°; winter, 45° to 55°.

C. Caape'ba (Caapeba). See C. PAREIRA.
„ *cape'nsis* (Cape). 6. Green. Cape of Good Hope. 1775.
„ *hirsu'ta* (hairy). See C. PAREIRA.
„ *mauritia'na* (Mauritian). See C. PAREIRA.
„ *microca'rpa* (small-fruited). See C. PAREIRA.
„ *Parei'ra* (Pareira). 6. Green. July. S. Amer. 1733. " Pareira Brava."

CI'SSUS. (From *kissos*, ivy; in reference to their scrambling habit. Nat. ord. *Vineworts* [Ampelidaceæ]. Linn. *4-Tetrandria*, *1-Monogynia.*)

A genus of stove and greenhouse climbers, with the exception of the handsome foliage of *C. discolor*, having no particular pretensions to beauty. We introduce it in order to remark, that with the exception of the grape-vine and Ampelopsis, the plants of this order are singularly deficient in use or beauty. The species require the same treatment as Cissampelos.

C. a'cida (acid). Yellow-green. W. Ind.
„ *adeno'podus* (gland-stalked). Green, yellow. Young leaves and shoots covered with red hairs. Uganda. 1905.
„ *baudinia'na* (Baudinian). Green. Australia. 1790. Syn. *Vitis antarctica.*
„ *davidia'na* (Davidian). See VITIS HETEROPHYLLA.
„ *di'scolor* (two-coloured). Greenish-white. September. Java.
„ *hauptia'na* (Hauptian). Green. Leaves heart-shaped elongate. Cameroons. 1899.
„ *inci'sa* (incised). Texas.
„ *Linde'ni* (Linden's). Leaves blotched with white. Colombia. 1869.
„ *mexica'na* (Mexican). Leaves similar to those of the Grape-vine. Mexico. 1888.
„ *orienta'lis* (oriental). Orient. Should be placed with Ampelopsis.
„ *Pau'li-Guilie'lmi* (Paul-William's). Trop. Africa.
„ *porphyrophy'llus* (purple-leaved). See PIPER PORPHYROPHYLLUM.
„ *quinquefo'lia* (five-leaved). See AMPELOPSIS HEDERACEA, and PARTHENOCISSUS QUINQUEFOLIA.
„ *rochea'na* (Rochean). Trop. Africa. 1884.
„ *ro'sea* (rosy). Rose. Himalayas.
„ *rotundifo'lia* (round-leaved). Arabia. 1884.
„ *tubercula'ta* (tubercled). Scarlet. S. Amer.
„ *Vei'tchi* (Veitch's). See AMPELOPSIS VEITCHII, PARTHENOCISSUS TRICUSPIDATA, and VITIS INCONSTANS.
„ *veluti'na* (velvety). Red. Malaya (?).
„ *viticifo'lia pinnati'fida* (pinnatifid-vine-leaved). See VITIS SERIANÆFOLIA.

CISTERNS for the accumulation of rain-water should be formed in connection with the gutters of the various buildings in the gardens, for no water is equal to it for the artificial supply of moisture to plants.

CI'STUS. Rock Rose. (From *kiste*, a box; in reference to the form of the seed-vessel. Nat. ord. *Rock Roses* [Cistaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

C. ladani'ferus and *C. Le'don* produce gum ladanum. Seeds sown in April; if under glass, so much the better; layers after the plants have flowered; and cuttings in May, under a hand-glass; dry soil; all smaller kinds suitable for rock-work; and although hardy in sheltered, dry places, it is safest to propagate a few every season, and give the protection of a cold pit in winter.

C. acutifo'lius (pointed-leaved). 1. White. August. South of Europe.
„ *a'lbidus* (white-*leaved*). 2. Pale purple. June. Spain. 1640.
„ *asperifo'lius* (rough-leaved). See C. LONGIFOLIUS.
„ *candidi'ssimus* (whitest). See C. VAGINA'TUS.
„ *cane'scens* (hoary-*leaved*). See C. VILLOSUS.
„ *Clu'sii* (Clusius's). 3. White. June. Spain. 1810.
„ *complica'tus* (complicated). See C. PARVIFLORUS.
„ *corbarie'nsis* (Corbor). 2. White. June. Spain. 1656.
„ *cordifo'lius* (heart-leaved). 4. White. June. 1800.
„ *cre'ticus* (Cretan). See C. VILLOSUS CRETICUS.
„ „ *tau'ricus* (Taurian). See C. TAURICUS.
„ *cri'spus* (curled-*leaved*). 2. Purple. June. Portugal. 1656.
„ *cupania'nus* (Cupani's). See C. CORBARIENSIS.
„ *cymo'sus* (cyme-*flowered*). See C. PARVIFLORUS.
„ *cy'prius* (Cyprus). 4. June. White. Greece. 1800.
„ *Deli'lei* (Delile's). S.W. Europe.
„ *dunalia'nus* (Dunal's). See C. VILLOSUS.
„ *florenti'nus* (Florentine). 3. White. June. Italy. 1825.
„ *glau'cus* (sea-green). 1. White. June. France. 1730.
„ *heterophy'llus* (various-leaved). 2. Purple. June. Algiers.
„ *hirsu'tus* (hairy). 2. White. June. Portugal. 1656.
„ *inca'nus* (hoary). See C. VILLOSUS.
„ *ladani'fero-monspelie'nsis*. S.W. Europe.
„ *ladani'ferus* (ladanum-bearing). *Bog-cistus*). 4. White. June. Spain. 1629.
„ „ *albifo'rus* (white-flowered. *Gum-cistus*). 4. White. June. Spain.
„ „ *macula'tus* (spotted). 4. White. June. Spain. 1700.
„ *latifo'lius* (broad-leaved). See C. POPULIFOLIUS.
„ *laurifo'lius* (laurel-leaved). 4. White. June. Spain. 1731.
„ *la'xus* (loose-*flowered*). See C. HIRSUTUS.
„ *Le'don* (Ledon). See C. GLAUCUS.
„ *longifo'lius* (long-leaved). 4. White. June. South of Europe. 1800.
„ *lusita'nicus* (Portuguese). 3. Yellow. July. Portugal. 1830.
„ *monspelie'nsis* (Montpelier). 2. White. June. South of Europe. 1656.
„ *oblongifo'lius* (oblong-leaved). See C. LONGIFOLIUS.
„ *obtusifo'lius* (blunt-leaved). See C. LONGIFOLIUS.
„ *parvifo'rus* (small-flowered). 3. Pale red. June. Crete. 1800.
„ *platyse'palus* (broad-sepaled). 4. Red. June. Crete.
„ *populifo'lius* (poplar-leaved). 3. White. May. Spain. 1656.
„ *psilose'palus* (smooth-sepaled). See C. HIRSUTUS.
„ *purpu'reus* (purple). 2. Purple. June. Levant.
„ *reco'gnitus* (recognised). S. Europe.
„ *rotundifo'lius* (round-leaved). See C. VILLOSUS ROTUNDIFOLIUS.
„ *salvifo'lius* (sage-leaved). 2. White. June. South of Europe. 1548.
„ „ *erectiu'sculus* (rather erect). 2. White. June.
„ „ *ochroleu'cus* (yellowish-white). 2. Yellowish. June.
„ *seri'ceus* (silky). 2. Red. June. Spain. 1826.
„ *tau'ricus* (Taurian). 2. Purple. June. Crimea. 1817.
„ *undula'tus* (waved). See C. VILLOSUS UNDULATUS.
„ *vagina'tus* (sheathed). 2. Pale purple. April. Teneriffe. 1779.
„ *va'rius* (variable). See C. ALBIDUS.
C. villo'sus (long-haired). 3. Purple. June. S. of Europe. 1640.
„ „ *co'rsicus* (Corsican).
„ „ *cre'ticus* (Cretan). 2. Purple. July. Levant. 1731. "Gum Cistus."
„ „ *rotundifo'lius* (round-leaved). 2. Purple. June. S. Europe. 1640.
„ „ *undula'tus* (waved). 4. White. June. S. Europe. 1803.
„ *vulga'ris* (common). See C. VILLOSUS.

CITHARE'XYLUM. Fiddle-wood. (From *kithara*, a lyre, and *xulon*, wood; in reference to the wood being fit for musical instruments. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove trees; cuttings of ripe shoots in sand, under a glass, and in bottom-heat; loam and peat. Summer temp., 60° to 80°; winter, 50° to 60°.

C. cauda'tum (tailed). 20. White. Jamaica. 1763.
„ *cyanoca'rpum* (blue-fruited). See RHAPHITHAMNUS CYANOCARPUS.
„ *denta'tum* (toothed). 15. E. Ind. 1824.
„ *ilicifo'lium* (holly-leaved). Ecuador.
„ *mo'lle* (soft). Soft yellow. S. Amer.
„ *penta'ndrum* (five-anthered). Porto Rico.
„ *quadrangula're* (square-stemmed). 20. White. W. Ind. "Fiddle Wood."
„ *seri'ceum* (silky). 15. E. Ind. 1824.
„ *subserra'tum* (slightly-toothed). 15. White. W. Ind. 1820.
„ *villo'sum* (long-haired). 10. St. Domingo. 1784.

CITRIO'BATUS. (From *citros*, a citron, and *batos*, a thorn; called the *Orange Thorn* by the colonists in Australia, the plant bearing small, orange-coloured fruit. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreens, from Australia; cuttings in sand, under glass; sandy, turfy peat, and a little loam and charcoal. Summer temp., 55° to 75°; winter, 45° to 50°.

C. multiflo'rus (many-flowered). 3. November. 1818.
„ *pauciflo'rus* (few-flowered). 1822.

CITRON. *Ci'trus Me'dica.*

CITRU'LLUS. (From *kitron*, the citron, the fruits resembling an orange or other species of Citrus. Nat. ord. Cucurbitaceæ.)

Stove climbers of a herbaceous character, requiring treatment similar to that given the Cucumber.

C. Colocy'nthis (Colocynthis). Yellow. Fruit green, blotched cream. Trop. Africa. "Colocynth."
„ *vulga'ris* (common). Yellow. Fruits green, blotched cream. Trop. Africa. "Water Melon."

CI'TRUS. Orange-tree. (From the Greek word *kitron*. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Greenhouse evergreen trees.

C. a'cida (acid). See C. MEDICA ACIDA.
„ *angula'ta* (angular-*fruited*). White. E. Ind.
„ *Aura'ntium* (*sweet*-orange). 15. White. Asia. 1595.
„ „ *japo'nica* (Japanese). 6. White. June. Japan.
„ „ *myrtifo'lia* (Myrtle-leaved). White. Asia.
„ „ *variega'ta* (variegated). Leaves variegated.
„ *australa'sica* (Australasian). Australia.
„ *austra'lis* (southern). Australia.
„ *buxifo'lia* (box-leaved). 3. White. June. China.
„ *decuma'na* (huge). 15. White. June. India. 1724. "Shaddock."
„ *delicio'sa* (delicious). See C. AURANTIUM.
„ *Hy'strix* (porcupine). 15. White. June. E. Ind.
„ *japo'nica* (Japan-*small-fruited*). See C. AURANTIUM JAPONICA.
„ *Lime'tta* (lime-*bergamot*). See C. MEDICA LIMETTA.
„ *Limo'num* (lemon). See C. MEDICA LIMONUM.
„ *madure'nsis* (Madura). See C. AURANTIUM JAPONICA.
„ *Margari'ta* (pearl). See C. AURANTIUM JAPONICA.
„ *Me'dica* (Median). 8. White. June. Asia. "Citron."
„ „ *a'cida* (acid).
„ „ *Lime'tta* (Limetta). "Sweet Lime."
„ „ *Limo'num* (Limonum). "Lemon."
„ „ *odorati'ssima* (sweetest scented).

C. Me'dica Rive'rsii (Rivers's). White. St. Michael's, Azores. "Rivers's Bijou Lemon."
„ *no'bilis* (noble. *Mandarin*). 15. White. June. China. 1805.
„ „ *Dai'dai* (Daidai). Japan. 1889.
„ „ *ma'jor* (larger). "Mandarin Orange."
„ „ *mi'nor* (smaller). 15. White. June. China. 1805.
„ „ *Tangeri'na* (Tangerine). "Tangerine Orange."
„ *spinosi'ssima* (spiniest). 15. White. June. Cayenne. See C. MEDICA.
„ *trifolia'ta* (three-leafleted). The proper name is *Æ'gle sepia'ria.*
„ *vulga'ris* (common. *Seville*). See C. AURANTIUM.
„ „ *myrtifo'lia* (myrtle-leaved). See C. AURANTIUM MYRTIFOLIA.

Common Orange (C. Aura'ntium).—The following are esteemed varieties: the China, Blood-red, Sweet-skinned, the Ribbed, Pear-shaped, Tiny-fruited, Fingered, St. Michael's, and Mandarin. The Mandarin and St. Michael's are far superior to the rest for cultivation. The Mandarin is cultivated extensively at Malta, although originally from China: it has a thin rind, and is of very superior flavour. The St. Michael's is also a small orange; but the skin is of a pale yellow; the rind, also, very thin, and the pulp remarkably sweet. The fruit is generally without seed, and the tree is a great bearer.

The Lime (C. Lime'tta) approaches the Lemon; but the juice is flat, and somewhat bitter.

The Shaddock (C. decuma'na) has a large and round fruit; skin yellow, with a white, spongy rind; the pulp sweet and juicy. This has been successfully cultivated, in Devonshire, on the open walls, with protection in winter, but no artificial heat.

The Lemon (C. Limo'num).—The Continental growers are content to raise these from seed; hence the great difference in quality of the imported fruit.

The Citron (C. Me'dica) has a rind thick, spongy, and very fragrant; pulp, sub-acid.

Propagation.—All the kinds will propagate freely by *cuttings*, either of the young shoots, or of those riper in character. They are prepared in the usual way, and inserted in pots of sand. A close frame, with a bottom-heat of 75°, is necessary; and they must be plunged. They may be made at any period, excepting whilst the plants are growing. Some cultivators put out long, straight pieces of the Citron (which is easiest to propagate), of two or three years' growth; and, as soon as they are rooted, they graft them.

Layers root with facility, but do not make such fine plants.

Grafting.—There are various ways of performing this operation, dependent much on the size and character of the stock. Some graft the young seedlings which were sown in early spring: these, by bottom-heat and high culture, are rendered fit for this operation in about four or five months. No clay is used in this delicate operation, but a little fine moss. Some cut off the head of the stock and crown-graft; others attach the graft to the growing shoot, as in ordinary whip-grafting. *Budding* is also practised by some cultivators.

Inarching has sometimes been practised by inarching several plants on one large stock, in order to form a head speedily.

Stocks.—The Citron has been mostly preferred; the Shaddock, however, makes a robust stock. M'Intosh seems to recommend sowing any ordinary seeds—from such fruit, indeed, as have rotted in the warehouses, from which he has had complete success.

Seeds.—The mode of rearing them thus is simple enough. A light, rich soil and a lively bottom-heat, with a somewhat close atmosphere, will produce plants eighteen inches high in a few months.

Soil and Culture.—All the family love a generous soil. One half a free, yet rich loam, and the other half composed of leaf-mould, old cow-manure, and sandy heath-soil, will grow them in high perfection, adding a little sand and some charred materials. Care must be taken to use the turfy loam in lumps, and to drain well; indeed, all the materials should be somewhat coarse. They require liberal watering; and it must, when given, penetrate the whole mass of soil. They enjoy liquid-manure occasionally. They are not only grown in pots or tubs, but planted out as trees, and against walls and trellises; and they are equally adapted for all these modes of culture. Span-roofed houses would be highly eligible for them as standards; and the sides and ends, being portable, might be removed in summer. The Citron family are impatient of intense sunshine, being, for the most part, natives of woods. A slight amount of shading, therefore, becomes occasionally necessary. The temperature during winter—especially in houses with opaque roofs—must be very moderate: 48° to 50°, by means of fire heat, is quite sufficient. As light increases with a returning spring, the thermometer may be permitted to advance a little. In light houses, a thermometer of 50° to 55° will do no injury. Here, however, shading will, at times, be requisite.

Fruit, uses, &c.—Besides forming, in its natural state, one of the adjuncts of the modern dessert, these fruits are used in a variety of forms, both in confectionery, sweetmeats, and liqueurs. Thus, the *Seville*, Bizarade, or Bitter Orange, having a very bitter rind, is used for marmalade, bitter tinctures, candied peel, and for flavouring curaçoa. The Bizarades are the kinds used principally for the production of cut blossoms by the French gardeners. The *Bergamot* has a pear-like fragrance: from this the perfumer obtains his bergamot essences. The *Lime* is used in flavouring punch and confectionery. The *Shaddock* has a cooling and refreshing juice; and the fruit is a splendid addition, in appearance, to the dessert. The *Lemon* is too well known to need comment. The *Citron* is used for sweetmeats, lemonade, and to flavour negus and punch.

Diseases.—We are not aware of anything which may be strictly termed a disease of this genus. A *black fungus* is frequently found on the leaf, having the appearance of soot, and perhaps arguing a corrupt atmosphere, through a too close confinement. This must be cleaned away, by a sponge, with warm water.

Insects.—The *aphis* and the *scale* (coccus) are amongst its principal enemies. The former may at all times be readily destroyed by fumigation; the latter may be rubbed off by means of sponge bound on a stick, frequently dipping the sponge in a liquor consisting of two ounces of soft soap beat up in a gallon of water.

CLADA'NTHUS. (From *klados*, a branch, and *anthos*, a flower; flowering at the end of the branches. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Anthemis.)

The annual from seeds, in April; the evergreen from cuttings, under a glass; common soil.

C. ara'bicus (Arabian). 2. Yellow. July. Bombay. 1759. Hardy annual.
„ *cane'scens* (whitish). 1. Yellow. June. Canaries. 1829. Greenhouse evergreen.
„ *proli'ferus* (proliferous). 2. Yellow. July. N. Africa. 1759. Hardy Annual.

CLADRA'STIS. (Derivation not clear. Nat. ord. Leguminosæ.)

Hardy, ornamental, deciduous trees, with racemes of white flowers. Imported seeds, cuttings of the roots, budding, grafting, or layering. Ordinary soil.

„ *amure'nsis* (Amurland). 6. White. Amur. 1880.
„ *tincto'ria* (dyer's). 15. White. July. N. Amer. 1812. "Yellow Wood."
„ „ *au'reo-variega'ta* (golden variegated). Leaves variegated with yellow. 1907.

CLANDESTI'NA PENDULIFLO'RA. See LATHRÆA CLANDESTINA.
„ *rectiflo'ra.* See LATHRÆA SQUAMARIA.

CLA'RKIA. (Named after *Captain Clarke*. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Hardy annuals. Seeds in common border, in March; or, in September, in reserve-garden, protected with a few branches in frosty weather, and transplanted, in spring, in patches, when they will bloom early, or sow early in spring, where they are to be grown.

C. e'legans (elegant). 2. Rose, purple. July. California. 1832.
„ „ *flo're-ple'no* (double-flowered). 1½. Pale rose. September. Gardens. 1827.
„ „ *rhomboi'dea* (diamond-*petaled*). See C. RHOMBOIDEA.
„ *gauroi'des* (gaura-like). See C. RHOMBOIDEA.
„ *pulche'lla* (pretty). 2. June. N. Amer. 1826.

C. pulche'lla bi'color (two-coloured).
„ „ *flo're-a'lbo* (white-flowered). 2. White. June. N. Amer. 1826.
„ „ *flo're-ple'no* (double rose). 1864.
„ „ *margina'ta* (edged). Rose, edged white. 1858.
„ *rhomboi'dea* (diamond-shaped). Pink. June to September. N.W. Amer. 1823.

CLARY. (*Sa'lvia Scla'rea.*) Its leaves are sometimes used in soups and medicated wines. A very small number of plants is sufficient for a family. Sow early in April, or a month earlier, in any light-soiled border. Thin the plants to two feet apart. The sowing must be annual. Seed may be saved by allowing some plants to run up the next spring. They ripen their seed in September.

CLAUSE'NA. (Derivation not explained. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
Stove evergreens. Cuttings of ripe shoots in sand, under a glass, in heat. Loam and peat. Summer temp., 60° to 80°; winter, 50° to 60°.
C. anisa'ta (smelling of anise). Trop. Africa.
„ *corymbiflo'ra* (corymb-flowered). White. Loyalty Islands. 1878. Fruit edible.
„ *pentaphy'lla* (five-leaved). 20. White. July. Himalayas. 1800.
„ *Wa'mpi* (Wampi). 15. White. China. 1795. "Wampee."

CLA'VICEPS PURPU'REA. The Ergot of rye, a fungus attacking Rye.

CLAVI'JA. (Named after *Clavija*, a Spanish naturalist. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Theophrasta.)
Stove evergreen trees. Cuttings of half-ripe shoots in sandy loam, with sand above, under glass, and in bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.
C. cauliflo'ra (stem-flowering). Antioquia.
„ *E'rnstii* (Ernst's). Apricot-yellow. Caraccas.
„ *fu'lgens* (shining). Orange-red. Peru. 1867.
„ *Hooke'ri* (Hooker's). Peru.
„ *latifo'lia* (broad-leaved). W. Ind.
„ *macroca'rpa* (large-fruited). 20. White. Peru. 1816.
„ *macrophy'lla* (large-leaved). Brazil.
„ *orna'ta* (adorned). 12. Orange. Caraccas. 1828.
„ *riedelia'na* (Riedelian). Orange. Brazil.
„ *rodekia'na* (Rodekian). Orange. Colombia. 1874.
„ *spathula'ta* (spathulate). See C. HOOKERI.
„ *umbro'sa* (shady). Brazil. 1868.
„ *undula'ta* (waved). Trop. Amer. 1831.

CLAY is a constituent of all fertile soils, though in these it rarely exceeds one-sixteenth part, and generally bears a much smaller relative proportion to the other constituents. In its pure state it is known as alumina. It is the best of all additions to light, unretentive soils; for it retains moisture much more powerfully than any other earth. M. Schubler found, that when silicious sand lost eighty-eight parts of moisture, and chalky sand seventy-six, stiff clay, in the same time, lost only thirty-five parts.
Clay soils are the worst that can be for gardens; for there is scarcely one of the crops there cultivated that is not injured by stagnant water, which can scarcely be prevented in clay soils at some seasons; and, in wet weather, clayey soils cannot be worked, whereas the gardener must be inserting or attending to his crops every day.
For the improvement of clay lands, by rendering their staple less retentive, burning some of their own soil is an efficient application. One hundred tons per acre, for this purpose, are not too many; for a dressing as a manure, thirty tons are a good quantity. See PARING.

CLAYING is adding clay to a soil, to render it more retentive.

CLAYTO'NIA. (Named after *John Clayton*, who collected plants in America. Nat. ord. *Purslanes* [Portulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
C. perfolia'ta, a gay little annual, is used as a substitute for purslane in North America. Annuals, in border of sandy loam, or sandy peat, in March and April; tuberous species, by offsets in spring or autumn, and seeds in spring; herbaceous species, by division of the roots; vegetable mould and peaty soil.

HARDY ANNUALS.

C. alsinoi'des (Alsine-like). See C. SIBIRICA ALBA.
„ *a'rctica* (arctic). 1. White. June. Siberia. 1818.
„ *cube'nsis* (Cuba). See C. PERFOLIATA.
„ *gypsophiloi'des* (gypsophila-like). See C. PERFOLIATA.
„ *joannea'na* (Joannes's). See C. ARCTICA.
„ *parviflo'ra* (small-flowered). See C. PERFOLIATA PARVIFLORA.
„ *perfolia'ta* (leaf-stem-pierced). 1. White. June. N. Amer. 1794.
„ „ *parviflo'ra* (small-flowered).
„ *sibi'rica* (Siberian). 1. Red. June. Siberia. 1768.
„ „ *a'lba* (white). White, with red anthers. Nootka Sound.
„ *unalaschke'nsis* (Unalaschka). See C. SIBIRICA.

HARDY TUBEROUS-ROOTED.

C. acutiflo'ra (pointed-petaled). See C. VIRGINICA.
„ *acutifo'lia* (pointed-leaved). 2. August. Siberia. 1827.
„ *califo'rnica* (Californian). California. Herbaceous perennial.
„ *carolinia'na* (Carolina). 1. Pink. April. N. Amer. 1789.
„ *grandiflo'ra* (large-flowered). See C. VIRGINICA.
„ *lanceola'ta* (spear-head-*leaved*). See C. CAROLINIANA.
„ *longifo'lia* (long-leaved). 1. White. April. N. Amer. 1827.
„ *polyphy'lla* (many-leaved). 1. Pink. April. N. Amer. 1827.
„ *sarmento'sa* (trailing). 1. Rose. Asia and Arctic Amer. 1827.
„ *spathulæfo'lia*(spathulate-leaved). See C. CAROLINIANA.
„ *umbella'ta* (umbelled). N.W. Amer.
„ *vestia'na* (Vest's). 1. Rose. Altai. 1827.
„ *virgi'nica* (Virginian. *Notch-petaled*). 1. White. N. Amer. 1740.

CLEISO'STOMA. (From *kleio*, to close, and *stoma*, a mouth. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Sarcochilus.)
Stove orchids, except *C. tridenta'ta*; divisions; blocks of wood, with a little sphagnum moss. Summer temp., 60° to 80°; winter, 55° to 60°.
C. bi'color (two-coloured). Pink, purple. July. Manilla. 1848.
„ *bre'vipes* (short-stalked). E. Himalayas.
„ *crassifo'lium* (thick-leaved). Green, purple. E. Ind. 1852.
„ *dawsonia'num* (Dawsonian). See TRICHOGLOTTIS DAWSONIANA.
„ *dealba'tum* (whitened). Yellow. September. Manilla. 1843.
„ *deci'piens* (deceiving). Ochre. May. Ceylon. 1843.
„ *di'scolor* (two-coloured). Yellow. March. India. 1844.
„ *fu'ceum* (brown). See C. LATIFOLIUM.
„ *Guibe'rti* (Guibert's). Yellow, with cinnamon rings. 1862.
„ *iono'smum* (violet-scented). 2. Yellow. March. Manilla. 1843.
„ *lana'tum* (woolly). See SACCOLABIUM LANATUM.
„ *latifo'lium* (broad-leaved). Yellow, red. March. Singapore. 1840.
„ *maculo'sum* (spotted-*flowered*). Yellow, pink. March. Ceylon. 1839.
„ *ri'ngens* (gaping). Yellow; lip purple, orange. Philippines. 1888.
„ *ro'seum* (rose-coloured-*flowered*). Straw-coloured. September. Manilla. 1837.
„ *secu'ndum* (one-sided). Rose-pink, rose-purple. Burma. 1907.
„ *spica'tum* (spiked). Red, yellow. May. Borneo. 1846.
„ „ *pa'llidum* (pale). Malaya. 1837.
„ *stria'tum* (striated). Yellow, red. Darjeeling. 1879.
„ *tridenta'tum* (three-toothed). Reddish-white. Australia. 1838. Greenhouse.

C. wendlando'rum (Wendlandian). Himalayas and Burma.
„ *zollingeria'num* (Zollingerian). White and red-brown spots.

CLEISTA'NTHUS. (From *kleistos*, locked up or closed, and *anthos*, a flower; the flowers are closed. Nat. ord. Euphorbiaceæ.)
Evergreen stove shrubs. Cuttings in sand, in bottom heat. Loam, leaf-mould, and sand.
C. colli'nus (hill). 2. White. E. Ind. 1807.
„ *pa'tulus* (spreading). 3. White. E. Ind. 1812.

CLE'MATIS. Virgin's Bower. (From *klema*, a vine-branch; in reference to their climbing like a vine. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)
Cuttings of firm side-shoots under a hand-light, in summer; layers in September; division of herbaceous kinds as they commence to grow, in spring; light loam, or loam and a little peat. A dry situation suits most of them.
The numerous hybrid Clematis are divided into several sections.
Those of the *Jackmani* type all flower from the terminal growths of long shoots, and in the ordinary way do not flower until July. Yet when grown in pots under glass they come in much earlier.
The Patens section are the earliest, and these flower from the short side-shoots of the previous year's growth. Mrs. Quilter and Albert Victor are good examples of this type, but there are many others, and they are extensively grown for early flowering in pots.
The Florida section are chiefly double varieties, of which Belle of Woking and Lucy Lemoine are good types.
The Lanuginosa section include all the large-flowered sorts, and do not flower so early as those of the *patens* type. The original *C. lanuginosa* was one of the finest. *Alba magna*, Beauty of Worcester, Fairy Queen, and *purpurea elegans* are good examples.
Montana section.—There are a few pretty varieties of this species, including one which is of a decided red shade.
Coccinea section.—The original species is very distinct, with red, almost campanulate, flowers; but many hybrids have been raised, the flowers of which expand more, and are very pretty as pot plants. *Viorna* is the name applied by some growers. *Flammula* is another species from which we have some good varieties.
Viticella is another type; in this we have some of a decided red shade. All of the above may be propagated by grafting them on the young seedlings of *C. Vitalba* (our common Travellers' Joy). Started in moderate warmth early in the spring the stock plants will soon make growth, and one shoot will give several scions; they should be cut off quite close above a pair of leaves, and only sufficient length left below to cut a wedge-shaped portion to insert into the stock, which should be cut off just below the seed leaves and split deep enough to insert the scion. After being bound with cotton or raffia, they should be potted singly in small pots, and placed in a close frame where there is a moderate bottom-heat. And they should be removed to where they are more exposed as soon as they are well started. Some growers propagate from cuttings of riper wood during the summer; and in days gone by layering was the usual practice, but now it is only a few distinct species that are increased in that manner. Some are raised from seeds, but the seeds having a very hard covering they should be kept in moist sand for some time before sowing. With *C. Vitalba* it was our practice to put the seed in moist sand soon after collected, and sow it as early as weather permitted in March. The seedlings then made useful stocks for the following spring.

Stove Evergreen Climbers.

C. america'na (American). See C. DIOICA.
„ *brasilia'na* (Brazilian). 12. White. Brazil. 1823.
„ *caripe'nsis* (Caripe). 12. White. Mexico. 1820.
„ *dioi'ca* (dioecious). 14. Green. Yellow, May. W. Ind. 1733.
„ *grandiflo'ra* (large-flowered). 12. Yellow, green. Sierra Leone. 1823.
„ *hedysarifo'lia* (Hedysarum-leaved). White. E. Ind. 1819.
„ *smilacifo'lia* (Smilax-leaved). 20. Purple. E. Ind. 1824.

Greenhouse Climbers.

C. afolia'ta (leafless). New Zealand.
„ *arista'ta* (awned-*anthered*). 12. Green, yellow. June. N. Holland. 1812. Deciduous.
„ „ *coria'cea* (leathery). 12. White. Australia. 1821.
„ *balea'rica* (Balearic) of Rich. See C. CALYCINA.
„ *balea'rica* (Balearic) of Pers. See C. CIRRHOSA.
„ *barbella'ta* (finely bearded). Chocolate and cream-coloured. May. Himalayas.
„ *benthamia'na* (Benthamian). China.
„ *brachia'ta* (armed). 2. Yellow, green. October. Cape of Good Hope. Evergreen.
„ *buchania'na* (Buchanian). Greenish-yellow. Himalaya and China. 1900.
„ *chine'nsis* (Chinese). 12. White. China. 1820. Half-hardy evergreen.
„ *cocci'nea* (scarlet). Scarlet. Texas. 1868.
„ „ *lute'ola* (yellow). Yellow inside. 1888.
„ „ *parviflo'ra* (small-flowered). Smaller, reddish inside. 1888.
„ *Cole'nsoi* (Colenso's). Yellow. New Zealand. 1889.
„ *coria'cea* (leather-*leaved*). See C. ARISTATA CORIACEA.
„ *Drummo'ndii* (Drummond's). N. Amer.
„ *glycinoi'des* (glycine-like). 10. White. Australia. 1826. Evergreen.
„ *grave'olens* (strong-smelling). See C. ORIENTALIS.
„ *grave'olens of Lindley*. Pale yellow. Himalayas. 1846.
„ *grewiæflo'ra* (Grewia-flowered). Tawny-yellow. Himalayas. 1868.
„ *hexase'pala* (six-sepaled). 3. Pale green. April. New Zealand. 1844.
„ *Hila'rii* (Hilarii). Bluish-white, fragrant. Brazil, Argentina. 1904.
„ *indivi'sa* (undivided-*leaved*). 20. White, cream. April. New Zealand.
„ „ *loba'ta* (lobed-*leaved*). 20. White, cream. April. New Zealand. 1847.
„ *linearilo'ba* (narrow-lobed). See C. CRISPA.
„ *meyenia'na* (Meyenian). China.
„ „ *heterophy'lla* (various-leaved). Leaflets 1 to 5. Flowers larger. China. 1904.
„ *nepale'nsis* (Nepalese). White. Nepal. 1874.
„ *odora'ta* (fragrant). June. E. Ind. 1831.
„ *Owe'niæ* (Miss Owen's). Flowers small. Port Natal.
„ *Sande'ri* (Sander's). White, fragrant. Australia. 1907. Evergreen.
„ *Stanle'yi* (Stanley's). Purple. S. Africa. Sub-erect shrub.
„ *zanzibare'nsis* (Zanzibar). 10. Zanzibar. 1820.

Hardy Climbers and Herbaceous.

C. Addiso'nii (Addison's). Violet-purple. Alleghany Mountains. 1896.
„ *æthusæfo'lia* (Æthusa-leaved). White. Amurland and N. China.
„ „ *latise'cta* (broad-cut-leaved). White. Segments of leaves broader. Amurland. 1869.
„ *alpi'na* (alpine). Varying from blue to white. May. Mountains of Europe. 1753.
„ *angustifo'lia* (narrow-*entire*-leaved). 2. White. June. Austria. 1787.
„ *apiifo'lia* (Celery-leaved). China and Japan.
„ *Arma'ndi* (Armand's). White, 2½ in. across. West and Central China. 1904.
„ *aroma'tica* (aromatic). Light blue, fragrant. Garden hybrid.
„ *Bergero'ni* (Bergeron's). Origin unknown.
„ *brevicauda'ta* (short-tailed). White. Mongolia and Manchuria. 1888.
„ *cæru'lea* (sky-blue-*flowered*). See C. PATENS.
„ „ *grandiflo'ra* (large-flowered). See C. PATENS GRANDIFLORA.
„ *califo'rnica* (Californian). California. 1840.
„ *calyci'na* (large-calyxed). Balearic Islands. 1878.
„ *campaniflo'ra* (bell-flowered). 6. Purple. July. Portugal. 1810.
„ *cirrho'sa* (tendrilled). 12. White, green. April. Mediterranean region. 1596.
„ *conna'ta* (connate). White. Himalaya. 1891.
„ *cri'spa* (crisped). 4. White. July. N. Amer. 1823. Herbaceous Perennial.
„ *cyli'ndrica* (cylindrical). See C. CRISPA.
„ „ *Henderso'ni* (Henderson's). See C. HENDERSONI.

C. dau'rica (Daurian). 12. Yellow, green. September. Temperate Asia. 1820.
„ *daveya'na* (Daveyan). See C. HERACLEÆFOLIA DAVIDIANA.
„ *davidia'na* (Davidian). See C. HERACLEÆFOLIA DAVIDIANA.
„ *diversifo'lia* (diverse-leaved). 4. White. April. Herbaceous perennial.
„ *Dougla'sii* (Douglas's). Blue, bell-shaped. N. Amer. 1889.
„ *ere'cta* (erect). See C. RECTA.
„ „ *grandiflo'ra* (large-flowered). See C. RECTA GRANDIFLORA.
„ „ *hispa'nica* (Spanish). See C. RECTA.
„ *Fla'mmula* (Flammula). 20. White. August. Europe. 1596.
„ „ *cæspito'sa* (tufted). 20. White. September.
„ „ *mari'tima* (maritime). 20. White. May. S. Europe.
„ „ *robu'sta* (robust). 20. White. Japan. 1875.
„ „ *rotundifo'lia* (round-leaved). 20. White. August. France. 1596.
„ „ *rube'lla* (reddish). 20. Reddish. September.
„ „ *ru'bro-margina'ta* (red-edged).
„ *flo'rida* (florid). 10. White. June. Japan. 1776.
„ „ *bi'color* (two-coloured). White, purple.
„ „ *flo're-ple'no* (double-flowered). 10. White. June.
„ „ *Siebo'ldii* (Sieboldt's). 10. Purple, green. June. Japan. 1836.
„ *Fortu'nei* (Fortune's). See C. WILLIAMSII.
„ *Fremo'nti* (Freemont's). Kansas and Missouri. 1890.
„ *fu'sca* (brown). N.E. Asia. 1864.
„ *glau'ca* (milky-green). See C. ORIENTALIS.
„ *Graha'mi* (Graham's). 15. Pale green. July. Mexico. 1846.
„ *grandiflo'ra* (large-flowered).
„ *gra'ta* (grateful). Pink. Himalaya.
„ *Henderso'nii* (Henderson's). Garden hybrid.
„ *heracleæfo'lia* (Heracleum-leaved). Lilac. China.
„ „ *davidia'na* (Davidian). 2. Light blue. Erect shrub. China.
„ „ *Lava'llei* (Lavalle's). Blue.
„ „ *sta'ns* (standing). Pale blue. Japan. 1870.
„ *Hooke'ri* (Hooker's). See C. HERACLEÆFO'LIA.
„ *integrifo'lia* (entire-leaved). 2. Blue. July. Hungary. 1596.
„ „ *elonga'ta* (elongated). 2. Blue. June. Europe.
„ „ *latifo'lia* (broad-leaved). Purple. July.
„ *integrifo'lia Fremo'nti* (Freemont's entire-leaved). See C. FREEMONTI.
„ *intrica'ta* (intricate). Mongolia. 1889.
„ *Jackma'ni* (Jackman's). Purple. (*lanuginosa* × *Viticella*). 1862.
„ „ *a'lba* (white). White. 1884.
„ *lanugino'sa* (woolly). Blue. June. China. 1851.
„ „ *viola'cea* (violet). Violet-purple, 7 in. across.
„ *lathyrifo'lia* (lathyrus-leaved). See C. RECTA.
„ *latifo'lia* (broad-leaved). See C. INTEGRIFOLIA LATIFOLIA.
„ *leioca'rpa* (smooth-fruited). China.
„ *ligusticifo'lia* (Ligusticum-leaved). W. United States.
„ *macrope'tala* (large-petaled). Siberia. 1831.
„ *massonia'na* (Masson's). See C. BRACHIATA.
„ *mongo'lica* (Mongolian). Yellow. 1888.
„ *monstro'sa* (monstrous). See C. PATENS.
„ *monta'na* (mountain). 20. White. May. Nepaul. 1831. Deciduous.
„ „ *grandiflo'ra* (large-flowered). White. May.
„ „ *ru'bens* (reddish). Deep rose. Central China. 1904.
„ „ *Wilso'nii* (Wilson's). Late summer flowering. 1909.
„ *nepale'nsis* (Nepaul). See C. BARBELLATA.
„ *nu'tans* (nodding). Primrose-yellow, fragrant. W. China. 1910.
„ *occidenta'lis* (western). 10. July. 1818.
„ *ochote'nsis* (Ochotsk). 12. White. June. Siberia. 1818.
„ *ochroleu'ca* (yellowish-white). 2. Light yellow. June. N. Amer. 1767. Deciduous.
„ *orienta'lis* (eastern). 8. Yellow, white. August. Levant. 1731. Deciduous.
„ „ *tangu'tica* (Tangutian). Golden yellow. 1900.
„ *ova'ta* (ovate). See C. INTEGRIFOLIA.
„ *panicula'ta* (panicled). 20. White. August. Japan.
C. pa'tens (spreading). White. June. Japan.
„ „ *grandiflo'ra* (large-flowered). Light blue, large.
„ „ *Sophi'a* (Sophia). Purple, green midrib. Japan. 1853.
„ *pedicella'ta* (*long*-flower-stalked). See C. CIRRHOSA.
„ *Piero'ti* (Pierot's). See C. BREVICAUDATA.
„ *Pitche'ri* (Pitcher's). Dull purple. N.W. Amer. 1880.
„ „ *lasio'stylis* (woolly-styled).
„ „ *Sarge'nti* (Sargent's). Flowers smaller. N. Amer. 1888.
„ *Pseu'do-fla'mmula* (false Flammula). Caucasus.
„ *quinquefolia'ta* (five-leaved). Milky-white. Central China. 1907.
„ *re'cta* (upright). 4. White. July. Austria. 1597. Herbaceous perennial.
„ „ *grandiflo'ra* (large-flowered). Garden hybrid (*recta* × *angustifolia*). 1903.
„ „ *mandschu'rica* (Manchurian).
„ „ *pauciflo'ra* (few-flowered).
„ *re'pens* (creeping). Pure white, 2 to 3 in. across. August. China. 1908.
„ *reticula'ta* (netted). 8. Purple. July. N. Amer. 1812. Deciduous.
„ *rhodochlo'ra* (red-green). Garden variety. 1887.
„ *Sco'ttii* (Scott's). N.W. Amer.
„ *semitri'loba* (half-three-lobed). See C. CIRRHOSA.
„ *serratifo'lia* (serrate-leaved). Yellow, fragrant. Corea. 1910.
„ *Si'msii* (Sim's). See C. CRISPA.
„ *songa'rica* (Songarian). N.E. Asia.
„ *Suksdo'rfii* (Suksdorf's). Resembles *C. ligusticifolia*. N.W. United States. 1896.
„ *triterna'ta* (thrice-three-leafleted). 12. White. 1800. Deciduous.
„ *tubulo'sa* (tubular-*flowered*). See C. HERACLEÆFOLIA.
„ „ *Hooke'ri* (Hooker's). See C. HERACLEÆFO'LIA.
„ *verna'lis* (spring). Garden hybrid (*ochroleuca* × *Scottii*). 1901.
„ *verticilla'ris* (whorled). Bluish-purple. N. Amer. 1797.
„ „ *obli'qua* (oblique). 15. Purple. 1797.
„ *Vio'rna* (*American* Traveller's joy). 12. Purple. August. N. Amer. 1730. Deciduous. "Leather Flower."
„ *viornoi'des* (Viorna-like). 8. Lilac. August. N. Amer. 1828. Deciduous.
„ *virginia'na* (Virginian). 15. Green. July. N. Amer. 1767. Deciduous.
„ „ *bractea'ta* (bracted). 15. Greenish-white. June. N. Amer. 1767.
„ *Vita'lba* (white-vine. *Traveller's Joy*). 20. White. August. England. Deciduous.
„ „ *integra'ta* (entire-*leaved*). 20. White. August. England.
„ *Vitice'lla* (vine-bower). 20. Purple. August. Spain. 1569. Deciduous.
„ „ *cæru'lea* (blue-*flowered*). 20. Blue. July. Spain. 1659.
„ „ *flo're-ple'no* (double-*purple*). 20. Purple. August.
„ „ *magni'fica* (magnificent). Purple, 4½ in. across. 1875.
„ „ *purpu'rea* (purple-*flowered*). 20. Purple. July. Spain.
„ „ *tenuifo'lia* (slender-leafleted). 20. Crimson. June.
„ *Willia'msii* (Williams's). White. Japan. 1863.

CLEO'ME. (From *kleio*, to shut; in reference to the parts of the flower. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 15-*Tetradynamia*.)

Those of a shrubby character by cuttings of half-ripe shoots in sand, under glass; perennial herbaceous species, by division of the plant, and seeds; Indian annual species, by seed sown in a hotbed, and bloomed in the greenhouse, as tender annuals. The European and several Mexican annuals, by seed in a gentle hotbed, to be transferred to the flower-borders in May; rich, light soil.

HARDY ANNUALS.

C. ara'bica (Arabian). 2. Yellow. June. Arabia. 1794
„ *dillenia'na* (Dillenius's). See C. ORNITHOPODIOIDES.
„ *fla'va* (yellow). See C. GRAVEOLENS.
„ *grave'olens* (strong-smelling). Yellow. June. N Amer. 1825.
„ *ibe'rica* (Iberian). See C. ORNITHOPODIOIDES.

C lu'tea (yellow). 1. Yellow. N. Amer. 1840. Herbaceous perennial.
„ *ornithopodioi'des* (bird's-foot-like). 1. White. June. Asia Minor. 1732.
„ *pube'scens* (downy). 2. White. July. Panama. 1815.
„ *speciosi'ssima* (most showy). Purple. July. Mexico. 1827.
„ *trine'rvia* (three-nerved). Yellow. Arabia. 1837.
„ *viola'cea* (violet-coloured). 1. Purple. June. Portugal. 1776.
„ *virga'ta* (twiggy). See C. ORNITHOPODIOIDES.

STOVE SHRUBS AND HERBACEOUS.

C. arbo'rea (tree). 8. White. June. Caraccas. 1817. Evergreen.
„ *dendroi'dea* (tree-like). 5. Purple. Brazil. 1828.
„ *droserifo'lia* (Drosera-leaved). Yellow, violet. May. Egypt. 1837. Greenhouse shrub.
„ *gigante'a* (gigantic). 6. White. June. S. Amer. 1774.
„ „ *hy'brida* (hybrid). Pure white to lilac or purple. 1909.
„ *micra'ntha* (small-flowered). White. June. Guiana. 1824.
„ *procu'mbens* (lying-down). Yellow. June. W. Ind. 1798.

STOVE ANNUALS.

C. aculea'ta (prickly). 2. White. June. S. Amer. 1817.
„ *Burma'nni* (Burman's). 1½. White. E. Ind. 1795.
„ *cardina'lis* (cardinal-flower-*like*). 2. Red. July. Mexico. 1823.
„ *Chelido'nii* (Chelidonium-like). 1½. Rose. E. Ind. 1792.
„ *diffu'sa* (spreading). 1. Green. June. Brazil. 1823.
„ *heptaphy'lla* (seven-leaved). 1. White. June. Jamaica. 1817.
„ *Housto'ni* (Houston's). 1. White. June. W. Ind. 1730.
„ *monophy'lla* (one-leaved). 1. Yellow. June. Trop. Asia. 1759.
„ „ *zeyla'nica* (Ceylon). 1. Yellow. June. E. Ind. 1759.
„ *poly'gama* (various-flowered). See C. SERRATA.
„ *pu'ngens* (stinging). See C. SPINOSA.
„ *ro'sea* (rosy). 2. Red. June. Brazil. 1825.
„ *serra'ta* (saw-edged). 2. White. June. W. Ind. 1824.
„ *spino'sa* (prickly). 2. White. June. W. Ind. 1731. Biennial.
„ *uniglandulo'sa* (one-glanded). 1. White, red. June. Mexico. 1823.
„ *visco'sa* (clammy). 2. Yellow. Java. 1730.
„ „ *icosa'ndra* (twenty-stamened). 1½. Yellow. Ceylon. 1730.

CLERODE'NDRON. (From *kleros*, chance, and *dendron*, a tree; said to be owing to the uncertainty of the medicinal qualities. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 11-*Didynamia*, 2-*Angiospermia*.)

Seeds sown when ripe, or in the following March, in a hotbed. Cuttings of the firm, short side-shoots, when growth is commencing, in March or April, in sandy peat, under a glass, and in bottom-heat. Loam and peat, with a little charcoal and dried cowdung, assisted with heat, until they show flower; kept cool and dry in winter, and pruned back in spring, that vigorous shoots may be formed. Summer temp., 60° to 85°; winter, 45° to 50°.

GREENHOUSE EVERGREENS.

C. attenua'tum (attenuated). See C. FLORIBUNDUM.
„ *costa'tum* (ribbed). 6. N. Holland. 1823.
„ *Farge'sii* (Farges's). White. Fruit blue. China. 1907. Hardy.
„ *floribu'ndum* (free-flowering). 6. Australia. 1824.
„ *fœ'tidum* (stinking). 5. White. China. 1820. Half-hardy.
„ *fortuna'tum* (fortunate). 3. White. November. China. 1824.
„ *fra'grans* (fragrant). 6. White, red. October. China. 1790.
„ „ *flo're-ple'no* (double-flowered). 6. White, red. October. China. 1790.
C. gla'brum (smooth). S. Africa.
„ *japo'nicum* (Japan). White. July. Japan. 1823.
„ *li'vidum* (livid). See C. FORTUNATUM.
„ *sero'tinum* (late). See C. TRICHOTOMUM.
„ *tomento'sum* (thickly-downy). 5. White. April. N. S. Wales. 1794.
„ *tricho'tomum* (three-forked). 6. Japan. 1800. Hardy.
„ *ugande'nse* (Uganda). Violet-blue. Brit. E. Africa. 1909.

STOVE EVERGREENS.

C. aculea'tum (prickly). 4. White. September. W. Ind. 1739.
„ *angustifo'lium* (narrow-leaved). See C. FORTUNATUM.
„ *Balfou'rii* (Balfour's). See C. THOMSONÆ.
„ *bethunia'num* (Capt. Bethune's). 10. Scarlet. Borneo. 1847.
„ *Bucha'nani* (Buchanan's). India.
„ *buxifo'lium* (box-leaved). 4. White. 1820.
„ *calamito'sum* (calamitous). 4. August. E. Ind. 1823.
„ *capita'tum* (head-*flowered*). 5. Cream. August. Sierra Leone. 1846.
„ *cephala'nthum* (headed-flowered). Calyx purplish. Corolla creamy-white. Zanzibar. 1888.
„ *ce'rnuum* (drooping). 4. E. Ind. 1823.
„ *cocci'neum* (scarlet). See C. SQUAMATUM.
„ *corda'tum* (heart-*leaved*). See C. INFORTUNATUM.
„ *coromandelia'num* (Coromandel). 6. Mauritius. 1823.
„ *Cunningha'mii* (Cunningham's). Australia.
„ *dele'ctum* (select). Magenta-rose. Calyx white. Seedling from *C. Thomsonæ*. 1885.
„ *denta'tum* (tooth-*leaved*). See C. SQUAMATUM.
„ *disparifo'lium* (unequal-leaved). Malaya.
„ *e'legans* (elegant). Country unknown.
„ *emirne'nse* (Emirne). 3. White. February. Madagascar. 1822.
„ *fa'llax* (deceptive). Scarlet. September.
„ „ *a'lbum* (white).
„ *floribu'ndum* (bundle-flowered) of gardens. See C. EMIRNENSE.
„ *glandulo'sum* (glanded). Scarlet. September.
„ *glau'cum* (milky-green). 4. E. Ind. 1825.
„ *grandiflo'rum* (large-flowered). 2. Yellow. November. Havannah. 1843.
„ *hasta'tum* (halberd-*leaved*). 6. White. June. E. Ind. 1825.
„ *helianthemifo'lium* (sunflower-leaved). See CARYOPTERIS WALLICHIANA.
„ *heterophy'llum* (various-leaved). 3. White. August. Madagascar. 1805.
„ *Huge'lii* (Hugel's). 5. Crimson. Sierra Leone. 1842.
„ *illu'stre* (illustrious). Bright scarlet. Celebes. 1884.
„ *ine'rme* (unarmed). 4. White. July. E. Ind. 1692.
„ *infortuna'tum* (unfortunate). 6. E. Ind.
„ *Kæmpfe'ri* (Kæmpfer's). See C. SQUAMATUM.
„ *laurifo'lium* (laurel-leaved). Scarlet. E. Ind.
„ *leucosce'ptrum* (white-sceptred). See LEUCOSCEPTRUM CANUM.
„ *ligustri'num* (privet-*leaved*). 3. White. September. Mexico. 1789.
„ *macrophy'llum* (large-leaved). See C. SERRATUM.
„ *macro'siphon* (long-tubed). Corolla pure white. Stamens purple. Zanzibar. 1883.
„ *Minaha'ssæ* (Mrs. Minahassa's). Yellowish-white. Calyx red. Celebes. 1886.
„ *myricoi'des* (Myrica-like). White, blue. Spring. Trop. Africa.
„ *myrmeco'philum* (ant-loving). Singapore.
„ *neriifo'lium* (oleander-leaved). White. May. E. Ind. 1824.
„ *nu'tans* (nodding). 6. White. November. E. Ind. 1825.
„ *odora'tum* (scented). See CARYOPTERIS WALLICHIANA.
„ *panicula'tum* (panicled). 6. Scarlet. August. Java. 1809.
„ *phlomoi'des* (phlomis-like). 4. White. August. E. Ind. 1820.
„ *pube'scens* (downy). White. July. E. Ind. 1824.
„ *pyramida'le* (pyramidal). See C. PANICULATUM.
„ *rumphia'num* (Rumphian). Flesh, then red and crimson. Java. 1887.

C. salicifo'lium (willow-leaved). 4. E. Ind. 1824.
„ *sca'ndens* (climbing). See C. UMBELLATUM.
„ *serra'tum* (saw-edged). 6. Nepaul. 1822.
„ *sinua'tum* (wavy-edge-*leaved*). 3. White. February. Sierra Leone. 1846.
„ *Siphona'nthus* (siphon-flowered). 6. White. E. Ind. 1796.
„ *speciosi'ssimum* (most-showy). See C. GLANDULOSUM and C. SQUAMATUM.
„ *specio'sum* (showy). Garden hybrid (*splendens* × *Thomsonæ*).
„ *splе'ndens* (shining). 10. Scarlet. June. Sierra Leone. 1840. Climber.
„ *squama'tum* (scaled). 10. Scarlet. August. China. 1790.
„ *ternifo'lium* (three-leaved). See C. SERRATUM.
„ *Thomso'næ* (Mrs. Thomson's). Calyx white. Corolla scarlet. Old Calabar. 1862.
„ *umbella'tum* (umbelled). S. Africa.
„ *urticæfo'lium* (nettle-leaved). See C. SQUAMATUM.
„ *verticilla'tum* (whorled-*leaved*). See C. SIPHONANTHUS.
„ *viola'ceum* (violet-coloured). 4. Violet. 1822.
„ *visco'sum* (clammy). See C. INFORTUNATUM.
„ *volu'bile* (twining). 6. White. Guinea. 1823. Climber.

CLE'THRA. (From *klethra*, the Greek name of the Alder; alluding to a supposed resemblance between their leaves. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Andromeda.)

Cuttings of half-ripe shoots, of the tenderer species, in April, under glass, and in sandy soil. The North American species are hardy enough for our shrubberies; are propagated by layers in autumn, or by firm cuttings in sand, under a handlight, in summer; for all, peat is necessary.

HARDY DECIDUOUS SHRUBS.

C. acumina'ta (long-pointed-*leaved*). 10. White. September. Carolina. 1806.
„ *alnifo'lia* (alder-leaved). 4. White. September. N. Amer. 1731.
„ „ *ro'sea* (rosy). Rose and white base. Massachusetts. 1907.
„ *cane'scens* (grey). White. China and Japan.
„ *mexica'na* (Mexican). 10. White. Mexico. 1840. Evergreen.
„ *na'na* (dwarf). 2. White. August. 1820.
„ *panicula'ta* (panicled). See C. ALNIFOLIA.
„ *sca'bra* (rough-*leaved*). See C. ALNIFOLIA.
„ *tomento'sa* (downy-*leaved*). See C. ALNIFOLIA.

GREENHOUSE EVERGREENS.

C. arbo'rea (tree). 8. White. September. Madeira. 1784.
„ „ *mi'nor* (smaller). 2. White. September. Madeira.
„ „ *variega'ta* (variegated). 3. White. August. Madeira.
„ *ferrugi'nea* (rusty). 4. White. Peru. 1800.
„ *quercifo'lia* (oak-leaved). 10. White. June. Mexico. 1840.
„ *secundiflo'ra* (one-sided-flowered). White. Madeira. 1879.
„ *tinifo'lia* (Tinus-leaved). 20. White. Jamaica. 1825. Stove.

CLEYE'RA. (Named after *Dr. Cleyer*, a Dutch botanist. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Cuttings of half-ripe shoots in sand, under glass; sandy, fibrous peat. Summer temp., 60° to 70°; winter, 45° to 50°.

C. Fortu'nei (Fortune's). Japan? B. M., t. 7434.
„ *japo'nica* (Japan). 5. Yellowish-white. Japan and China. 1820.
„ „ *tri'color* (three-coloured). Edges of leaves creamy-white, tinged rose. Japan. 1882.
„ „ *variega'ta* (variegated). Leaves edged pale yellow, fading white.
„ *theoi'des* (tea-tree-like). 4. Creamy-white. Jamaica. 1818.

CLIA'NTHUS. (From *kleios*, glory, and *anthos*, a flower. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Sutherlandia.)

The Parrot-Beak plant and the Glory Pea of New Zealand. Half-hardy evergreen shrubs. Cuttings in sandy soil, under a glass, root freely. *C. Dampieri* is the most showy, and may be raised from seeds; sown early in the year the plants will flower the same season, but are liable to die off just as they should be coming into flower; peat and loam, with a little sand or charcoal. Young plants are best grown rapidly, old plants are so subject to red spider; do well in pots, planted out in a conservatory, or against a wall, where a little protection can be given in winter.

C. ca'rneus (flesh-*coloured*). See STREBLORRHIZA SPECIOSA.
„ *Dampie'ri* (Dampier's). 2. Red. Australia. 1852. "Glory Pea of Australia."
„ „ *germa'nica* (German). Garden variety. 1889.
„ „ *margin'ata* (margined). White, edged red and black blotch. 1866.
„ „ *tri'color* (three-coloured). Standard white at base; outside, black, scarlet. 1903.
„ *puni'ceus* (crimson *corolla*). 3. Crimson. May. New Zealand. 1832.
„ „ *a'lbus* (white). Flowers white. 1902.
„ „ *magnı'ficus* (magnificent). Reddish. Navigator's Island. 1853.

CLIBA'DIUM. (Nat. ord. Compositæ.)

Stove herb, with small heads of yellow or whitish flowers in corymbs. Cuttings in sandy soil in summer, in a case. Loam, leaf-mould, and sand.

C. surinamе'nse (Surinamese). Yellow. S. Amer.

CLICK BEETLES. The winged forms of species of Elater, the grubs of which are known as Wireworms, which see.

CLIDA'NTHUS FRA'GRANS. See CHLIDANTHUS FRAGRANS.

CLIDE'MIA. (Commemorative of *Clidemi*, an ancient Greek botanist. Nat. ord. Melastomaceæ.)

Stove shrubs, allied to Miconia and requiring similar treatment.

C. hi'rta (hairy). White. September. Jamaica. 1294? The first Melastomad to bloom in Britain.
„ *vitta'ta* (striped). Rose. Peru. 1875.

CLIFFO'RTIA. (A commemorative name. Nat. ord. Rosaceæ.)

Greenhouse shrub with densely leafy branches. Cuttings in sand under a bell-glass. Fibrous loam, leaf-mould, sand.

C. ilicifo'lia (holly-leaved). S. Africa.

CLIFTO'NIA. (A commemorative name. Nat. ord. Cyrillaceæ.)

Greenhouse shrub. Cuttings of half-ripe shoots in sand under a bell-glass. Fibrous loam, leaf-mould, and sand.

C. ni'tida (shining). 8. Pink and white. May. N. Amer. "Buckwheat Tree." Syn. *C. ligustri'na*.

CLIMATE controls the growth of plants most imperatively; and, in the cultivation of his fruits, flowers, and culinary vegetables, it forms the first object of the gardener's inquiry. He must first know the climate of which any given plant is native; and, secondly, the soil which it affects, before he can cultivate it successfully. How all-influential is climate appears from the fact, that different countries, though in the same degrees of latitude, have often a totally different Flora on soils similar in constitution.

Now the reason for these differences is, that the countries thus contrasted differ in climate; that is, they differ in the intensity and duration of the light and heat they enjoy; they differ in the contrast of their day and night temperatures; they differ in the relative length of the day and night; they differ in the length of their summer and winter, or, which is synonymous, in the relative lengths of their periods of vegetable activity and rest; they differ, also, in the amount of rain which falls, not only annually, but at particular seasons; they differ

in having much atmospheric moisture deposited, in the form of rain, or dew, or snow, at the different periods of vegetable activity or rest. Now, whatever these differences are, whatever the peculiarities of a climate from which a plant comes, the gardener cannot cultivate it successfully unless he secures to that plant those climatal differences and peculiarities. We often see long tables of the average monthly temperature of places; but these are useless. They are no guides to the gardener unless they show the average highest and lowest temperatures of each month, as well as the highest and lowest degrees the thermometer is known to reach during the same period.

CLIMBERS are plants which attach themselves to supporters by their natural appendages, as by their tendrils, by their hooks, or by other modes of attachment.

CLINA'NTHUS. See STENOMESSON.

CLINO'GYNE. (From *klinon*, a bed, and *gyne*, the ovary. Nat. ord. Scitaminaceæ.)

Stove herbs requiring the same treatment as Alpinia.

C. gra'ndis (large). Burma, Malaya.
„ *si'milis* (similar). 2½. White. Trop. Africa? 1903.

CLINTO'NIA. (Named, by the unfortunate Douglas, after his friend, *De Witt Clinton*, Governor of the State of New York. Nat. ord. Liliaceæ.)

Hardy perennials of dwarf habit, allied to Trillium and like it having a short creeping rhizome. Suitable for peaty beds at the base of the rockery, or where leaf-mould is used and a little shade given. Seeds and offsets.

C. alpi'na (alpine). Himalaya.
„ *andrewsia'na* (Andrewsian). 1 to 1½. Claret-purple. California. 1888.
„ *borea'lis* (northern). 1. Yellow-green. May. N. Amer. 1778.
„ *e'legans* (elegant). See DOWNINGIA ELEGANS.
„ *pulche'lla* (beautiful). See DOWNINGIA PULCHELLA.
„ *umbella'ta* (umbelled). ½. White. May. N. Amer. 1778.
„ *uniflo'ra* (one-flowered). ½. White. July. California.

CLIOCO'CCA TENUIFO'LIA. See LINUM SELAGINOIDES.

CLIPPING hedges should be confined to those of the commonest and hardiest varieties of shrubs, as those of hawthorn and privet; for the bruising and mangling of the branches which accompany this operation are very injurious to evergreens, as the laurels and holly. Those are always much better kept in order, and within bounds, by the knife. In clipping, many of the leaves of those are cut in half; and their decayed edges are very unsightly. Clipping of deciduous hedges is most advantageously performed in the spring and early summer. A multitude of shoots are then induced, which secure that chief desideratum in hedges—thickness and closeness of texture.

CLISIOCAMPA NEUSTRIA. See LACKEY MOTH.

CLITA'NTHES HU'MILIS. See STENOMESSON HUMILE.

CLITA'NTHES LU'TEA. See STENOMESSON RECURVATUM.

CLITA'NTHES MACLEA'NICA. See STENOMESSON RECURVATUM.

CLITO'RIA. (From *kleio*, to shut up; in reference to its seeding within the flower long before the flower drops off. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Phaseolus.)

Stove evergreen twiners, except where otherwise mentioned. Cuttings of stubby side-shoots in heat, in sandy soil, in close frame with bottom-heat; and seeds, when procurable; sandy peat and fibrous loam, with sand and charcoal. Summer temp., 60° to 65°; winter, 50° to 55°.

C. arbore'scens (tree-like). 8. Pink. August. Trinidad. 1804. Shrub.
„ *berteria'na* (Bertera's). See PERIANDRA BERTERIANA.
„ *brasilia'na* (Brazilian). See CENTROSEMA BRASILIANUM.
„ *Broussone'tii* (Broussonet's). See COLOGANIA BROUSSONETII.
C. cajanifo'lia (Cajana-leaved). Tropics.
„ *cocci'nea* (scarlet). See PERIANDRA COCCINEA.
„ *ere'cta* (upright). S. Amer. 1822.
„ *formo'sa* (beautiful). See CENTROSEMA BRASILIANUM.
„ *fu'lgens* (bright-*flowered*). See GALACTIA SCARLATINA.
„ *gra'cilis* (slender). 2. Blue. July. S. Amer. 1824.
„ *heterophy'lla* (various-leaved). 1. Blue. July. E. Ind. 1812.
„ *lasci'via* (wanton). 4. July. Madagascar. 1826.
„ *maria'na* (Maryland). 3. Blue. August. N. Amer. 1759. Deciduous, half-hardy.
„ *mexica'na* (Mexican). See C. MARIANA.
„ *multiflo'ra* (many-flowered). See VILMORINIA MULTIFLORA.
„ *Plumie'ri* (Plumier's) See CENTROSEMA PLUMIERI.
„ *polyphy'lla* (many-leaved). See BARBIERIA POLYPHYLLA.
„ *Terna'tea* (Ternatea). 4. Blue. July. Tropics. 1739.
„ „ *a'lba* (white). White. May. E. Ind.
„ „ *cæru'lea* (sky-blue). Blue. May. E. Ind.
„ „ *ma'jor* (larger-*flowered*). 4. Bright brown. August. Sydney. 1845. Greenhouse.
„ *virginia'na* (Virginian). See CENTROSEMA VIRGINIANUM.

CLI'VIA. (Named after the *Duchess of Northumberland*, a member of the Clive family. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Both of the names, *Clivia nobilis* and *Imantophyllum Aitoni*, were published on October 1, 1828, and refer to the same plant. Most writers, botanists, and gardeners now adhere to the name Clivia for the genus, and *C. miniata* having long since been determined to belong to the same genus, it is convenient to include all of them under one name. Greenhouse plants with fleshy roots. Divisions and seeds; a high temperature, and plenty of moisture, when growing; cooler and drier when at rest; rich, sandy loam. Summer temp., 60° to 80°; winter, 48° to 55°.

C. cyrtanthiflo'ra (curved-flowered). Garden hybrid (*miniata* × *nobilis*).
„ *Garde'ni* (Garden's). Red, yellow, green. December. S. Africa. 1854.
„ *minia'ta* (vermilion). 2. Orange-scarlet, yellow. Natal. 1854.
„ „ *au'rea* (golden). Soft yellow. 1904.
„ „ *citri'na* (lemon-yellow). Cream, tinged orange. Zululand. 1899.
„ „ *Coope'ri* (Cooper's). S. Africa. 1872.
„ „ *stri'ata* (striped). Leaves freely variegated. 1903.
„ „ *sulphu'rea* (sulphur). Yellow. 1888.
„ *no'bilis* (noble). 2. Red, yellow. July. S. Africa. 1823.

CLOMENO'COMA MONTA'NA. See DYSODIA GRANDIFLORA.

CLOUDBERRY. *Ru'bus Chamæmo'rus.*

CLOVE. *Dia'nthus Caryophy'llus.*

CLOVE-TREE. *Euge'nia caryophylla'ta.*

CLOWE'SIA. (Named after the late *Rev. J. Clowes*, a great orchid-grower near Manchester. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cycnoches.)

Stove orchid. Division; peat and loam, with charcoal. Summer temp., 60° to 80°; winter, 50° to 60°.

C. ro'sea (rosy). ½. White, pink. Brazil. Now referred to *Cataseium roseum*.

CLUB-MOSS. *Lycopo'dium.*

CLUB ROOT. See AMBURY.

CLUMPS, most generally applied to plants grown in patches of several of a sort together. It was only recently that we noted in one large estate that various choice Conifers were planted in clumps, and this allows of some being cut away as the trees advance in growth, besides which they shelter each other when young.

The occasions on which independent clumps may be applied are many. They are often desirable as beautiful objects in themselves; they are sometimes necessary to break an extent of lawn, or a continued line, whether

of ground, or of plantation; but, on all occasions, a jealousy of art constantly attends them, which irregularity in their figure will not always alone remove. Though elevations show them to advantage, yet a hillock evidently thrown up on purpose to be crowned with a clump is artificial to a degree of disgust. Some of the trees should, therefore, be planted on the sides, to take off that appearance. The same expedient may be applied to clumps placed on the brow of a hill, to interrupt its sameness: they will have less ostentation of design if they are, in part, carried down either declivity.

A line of clumps, if the intervals be closed by others beyond them, has the appearance of a wood, or of a grove; and, in one respect, the semblance has an advantage over the reality in different points of view. The relations between the clumps are changed; and a variety of forms is produced, which no continued wood or grove, however broken, can furnish. These forms cannot all be equally agreeable, and too anxious a solicitude to make them everywhere pleasing may, perhaps, prevent their being ever beautiful.

The effect must often be left to chance; but it should be studiously consulted from a few principal points of view; and it is easy to make any recess, any prominence, any figure in the outline, by clumps thus advancing before, or retiring behind one another.

CLU'SIA. Balsam-tree. (Named after *C. de l'Ecluse*, a French botanist. Nat. ord. *Guttifers* [Guttiferæ]. Linn. 23-*Polyyamia*, 1-*Monœcia*.)

Stove evergreen trees; cuttings of half-ripe shoots in sand, under a glass, and with good bottom-heat; rich, sandy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. a'lba (white-*flowered*). 30. White. S. Amer. 1752.
„ *brogniartia'na* (Brogniartian). White. W. Ind. 1862. Shrub.
„ *fla'va* (yellow-*flowered*). 30. Yellow. Jamaica. 1759.
„ *Jenma'ni* (Jenman's). Guiana.
„ *Melino'ni* (Melinon's). Trop. Amer. 1869.
„ *odora'ta* (scented). Rosy-pink. August. Central Amer. 1869.
„ *ro'sea* (rose-*coloured*). 30. Red. July. W. Ind. 1692.
„ *tetra'ndra* (four-stamened). White. S. Amer. 1820.
„ *veno'sa* (veiny-*leaved*). White. S. Amer. 1733.

CLUY'TIA. (Named after *Cluyt*, a professor of botany at Leyden. Nat. ord. *Euphorbiads* [Euphorbiaceæ]. Linn. 22-*Dicœcia*, 3-*Triandria*.)

Greenhouse evergreen shrubs, except where otherwise specified. Cuttings of small side-shoots; but, if not to be got, points of shoots before they become hard, in sand, over a layer of sandy peat, and covered with glass; sandy loam and fibrous peat. Summer temp., 55° to 75°; winter, 40° to 48°. The East Indian species require more heat in winter.

C. alaternoi'des (alaternus-like). 2. White. July. Cape of Good Hope. 1692.
„ *colli'na* (hill). See CLEISTA'NTHUS COLLI'NUS.
„ *daphnoi'des* (Daphne-like). 3. White. May. Cape of Good Hope. 1731.
„ *ericoi'des* (heath-like). 2. White. April. Cape of Good Hope. 1790.
„ *heterophy'lla* (variable-leaved). 3. White. May. Cape of Good Hope. 1818.
„ *pa'tula* (spreading). See CLEISTANTHUS PATULUS.
„ *polifo'lia* (poly-leaved). 2. White. May. Cape of Good Hope. 1790.
„ *polygonoi'des* (polygonum-like). 2. White. April. Cape of Good Hope. 1790.
„ *pube'scens* (downy). 3. White. April. Cape of Good Hope. 1800.
„ *pulche'lla* (neat). 2. White. June. Cape of Good Hope. 1739.
„ *tenuifo'lia* (slender-leaved). 3. White. June. Cape of Good Hope. 1817.
„ *tomento'sa* (thickly-downy). 3. White. April. Cape of Good Hope. 1812.

CNEO'RUM, Widow's-wail. (An adopted name from Theophrastus, the derivation not explained. Nat. ord. Simarubaceæ. Linn. 3-*Triandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Cuttings in sand, under a glass, in April; peat and fibrous loam, with a little silver-sand. Winter temp., 40° to 45°.

C. pulverule'ntum (powdery). 6. Yellow. June. Madeira. 1822.
„ *trico'ccon* (three-grained). 6. Yellow. June. S. Europe. 1793.

CNE'STIS. (From *knео*, to scratch; referring to the prickly capsules. Nat. ord. *Connarads* [Connaraceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)

Stove evergreens. Cuttings of ripe young shoots in sand, under glass, in sweet bottom-heat. Loam and peat; both fibrous, with sand. Summer temp., 60° to 80°; winter, 50° to 60°.

C. cornicula'ta (small-horned). 10. Purple. Guinea. 1793.
„ *gla'bra* (smooth). 10. White, green. Mauritius. 1823.
„ *polyphy'lla* (many-leaved). 6. Purple. Mauritius. 1823.

CNI'CUS. (From *chnizein*, to injure; in reference to the prickly character of the plants. Nat. ord. Compositæ.)

Biennials from seeds; perennials by seeds and division. Any garden soil.

HARDY BIENNIALS.

C. Aca'rna (Acarna). 2. Purple. August. Spain. 1683.
„ *a'fer* (African). 2. Purple. June. Greece. 1800.
„ *candidi'ssimus* (whitest). 10. Rose. Cappadocia. 1898.
„ *Casabo'næ* (Casabonæ). 2. Purple. July. Italy and N. Africa. "Fishbone Thistle."
„ *cilia'tus* (ciliated). 2. Purple. June. Europe. 1803.
„ *conspi'cuus* (conspicuous). 4 to 6. Red, orange. September. Mexico. 1825.
„ *dealba'tus* (whitened). 3. Purple. July. Caucasus. 1820.
„ *Diaca'ntha* (cross-spined). 2. Purple. July. Asia Minor. 1800.
„ *erio'phorus* (wool-bearing). 4. Purple. July. Britain.
„ *fe'rox* (fierce). 3. White. July. S. Europe. 1683.
„ *inca'nus* (hoary). See C. ARVENSIS.
„ *lanceola'tus* (lance-shaped). 2. Purple. August. Britain. "Burr Thistle."
„ *lappa'ceus* (Burdock-like). 4. Purple. July. Caucasus. 1821.
„ *niva'lis* (snowy). 4. Purple. July. Mexico. 1827.
„ *palu'stris* (marsh). 3 to 5. Purple. August. Britain.
„ *pazcuare'nsis* (Pazcuara). 3. Purple. July. Mexico. 1827.
„ *pu'ngens* (pungent). 3. Purple. July. S. Europe. 1820.
„ *squarro'sus* (spreading). 3. Purple. July. Siberia. 1818.
„ *stella'tus* (starred). 2. Purple. June. Italy. 1665.
„ *strigo'sus* (coarsely hairy). 2. Purple. August. Caucasus. 1825.
„ *Veleno'skyi* (Velenosky's). 4½. Red. Servia. 1896.

HALF-HARDY BIENNIALS.

C. Gra'hami (Graham's). 4 to 5. Crimson. Arizona. 1871.
„ *mexica'nus* (Mexican). 4. White. September. Mexico. 1837.

HARDY HERBACEOUS PERENNIALS.

C. acau'lis (stemless). ½. Purple. July. Britain.
„ *alti'ssimus* (tallest). 6. Purple. August. N. Amer. 1726.
„ *ambi'guus* (ambiguous). See CN. HETEROPHYLLUS.
„ *angula'tus* (angled). 2. Purple. July. Switzerland. 1819.
„ *arachnoi'deus* (cobweb-like). 2. Purple. July. Caucasus.
„ *arma'tus* (armed). Bulgaria.
„ *arve'nsis* (field). 2 to 4. Purple. July. Britain. "Field Thistle."
„ *bæ'ticus* (Bætian). 3. Yellow. July. Spain. 1824.
„ *benedi'ctus* (blessed). See CARBENIA BENEDICTA.

C. Bertolo'nii (Bertoloni's). 3. Yellow. July. Italy. 1820.
„ *candela'brus* (candelabra). Greece.
„ *ca'nus* (grey). Europe.
„ *carnio'licus* (Carniolian). See CN. RIVULARIS.
„ *Carolo'rum* (The Kings Charles). Scotland.
„ *Chamæpeu'ce* (Chamæpeuce). 2 to 3. Yellow. Greece; Asia Minor. 1640.
„ *cynaroi'des* (Artichoke-like). 2. Purple. July. Crete. 1827.
„ *deserto'rum* (desert). 3. Purple. July. Siberia. 1824.
„ *echina'tus* (hedgehog-like). 1. Purple. August. N. Africa. 1817.
„ *echinoce'phalus* (hedgehog-headed). 2. Purple. July. Caucasus. 1826.
„ *ela'tius* (taller). See CN. POLYANTHEMUS.
„ *Falcone'ri* (Falconer's). Himalaya.
„ *fimbria'tus* (fringed). 4. Purple. July. Caucasus. 1816.
„ *Forste'ri* (Forster's). Natural hybrid (*palustris* × *pratensis*).
„ *glutino'sus* (clammy). See CN. OCHROLEUCUS.
„ *Gmeli'ni* (Gmelin's). See CN. ACAULIS.
„ *gnaphalo'des* (Gnaphalium-like). Italy.
„ *Halle'ri* (Haller's). 4. Purple. July. S. Europe. 1816.
„ *helenioi'des* (Helenium-like). 6. Purple. July. Siberia. 1804.
„ *heterophy'llus* (various-leaved). 2. Purple. July. Britain. "Melancholy Thistle."
„ *ho'rridus* (very prickly). Caucasus.
„ *hypoleu'cus* (white beneath). Asia Minor.
„ *laniflo'rus* (woolly-flowered). 2. Purple. July. Tauria. 1819.
„ *monspessula'nus* (Montpelier). 2. Purple. June. Montpelier. 1596.
„ *muri'tus* (armed). 3. Purple. July. Caucasus. 1816.
„ *mu'ticus* (snipped). 2. Purple. July. N. Amer. 1820.
„ *nudiflo'rus* (naked-flowered). 2. Purple. August. Switzerland. 1818.
„ *occidenta'lis* (western). N. Amer.
„ *ochroleu'cus* (yellow-white). 2. Pale yellow. July. Switzerland. 1801.
„ *olera'ceus* (pot-herb). 3. Pale yellow. July. Europe. 1570.
„ *orgya'lis* (six-foot). 6. Purple. July. 1823.
„ *paludo'sus* (marshy). 3. Purple. July. Switzerland. 1819.
„ *panno'nicus* (Pannonian). 3. Purple. August. Europe. 1752.
„ *parviflo'rus* (small-flowered). See CN. OLERACEUS.
„ *polya'nthemus* (many-flowered). 2. Pink. June. Italy. 1739.
„ *prate'nsis* (meadow). 1. Purple. July. Britain.
„ *Provo'stii* (Provost's). Purple. N. China. 1899.
„ *pyrena'icus* (Pyrenean). Europe.
„ *rhizoce'phalus* (head close to roots). ½. Yellowish. Caucasus. 1836.
„ *ri'gens* (stiff). 2. Yellow. July. Switzerland. 1775.
„ *rivula'ris* (brook). 3. White. July. Hungary. 1804.
„ *rufe'scens* (somewhat rusty). 3. White. July. Pyrenees. 1816.
„ *salisburge'nsis* (Salisburyan). 3. Purple. July. Europe. 1816.
„ *serratuloi'des* (Serratula-like). 3. Purple. August. Siberia. 1752.
„ *serrula'tus* (finely-sawed). 4. Purple. July. Tauria. 1819.
„ *spathula'tus* (spathulate). Italy.
„ *spinosi'ssimus* (most spiny). 3. Pale yellow. July. Switzerland. 1759.
„ *stri'ctus* (upright). 2. Purple. August. Naples. 1819.
„ *syri'acus* (Syrian). 2. Purple. July. Levant. 1771.
„ *tarta'ricus* (Tartarian). Temperate Asia.
„ *tubero'sus* (tuberous). 3. Purple. July. England.
„ *uligino'sus* (marshy). 3. Purple. June. Caucasus. 1820.
„ *Walli'chii* (Wallich's). Himalaya.

COAL. See FUEL.

COAL-ASHES. See ASHES.

COBÆ'A. (Named after *M. Cobo*, a Spanish botanist. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Half-hardy evergreen climbers. Cuttings of firm side-shoots, in summer; but best from seeds sown in a hot-bed, in March. Poor, sandy soil, otherwise they will grow too freely to bloom profusely. Greenhouse, or poles, or wall, during summer, in open air.

C. lu'tea (yellow). See C. MACROSTEMMA.
„ *macroste'mma* (long-crowned). 20. Green, yellow. October. Guatemala. 1839.
„ *sca'ndens* (climbing). 20. Purple. August. Mexico. 1792.
„ „ *a'lba* (white). White.
„ „ *variega'ta* (variegated). Leaves variegated with creamy white.
„ *stipula'ris* (*large*-stipuled). 20. Yellow. October. Mexico. 1839.

COBU'RGIA. Now referred to Stenomesson, which see.

C. acu'ta. See STENOMESSON INCARNATUM ACUTUM.
„ *cocci'nea*. See S. COCCINEUM.
„ *fu'lva*. See S. INCARNATUM.
„ *hu'milis*. See S. HUMILE.
„ *incarna'ta*. See S. INCARNATUM.
„ *minia'ta* (vermilion). 3. Vermilion. April. Peru. 1842.
„ *stylo'sa* (long-styled). Orange-red. March. Quito. 1847.
„ *trichro'ma*. See S. INCARNATUM.
„ *versi'color*. See S. INCARNATUM.

COCCINE'LLÆ. Lady-Birds. There are about thirty species of this useful and beautiful insect. Let no one destroy a coccinella, for it is one of the greatest destroyers of the plant-louse, or aphis. This is much better appreciated on the Continent than in England; for there the gardeners collect lady-birds, and place them upon rose-trees, &c., infected with aphides. They are most effective in destroying aphis on Chrysanthemums.

COCCOCY'PSELUM. (Derived from *kokkos*, a berry, and *kupsele*, a little hollow vessel; in reference to the form of the fruits. Nat. ord. Rubiaceæ.)

C. buxifo'lium (box-leaved). See FERNELIA BUXIFOLIA.
„ *campanuliflo'rum* (bell-flowered). ½. Blue. July. Brazil. 1825.
„ *cordifo'lium* (heart-leaved). White, lilac. Brazil.
„ *di'scolor* (two-coloured). See C. HIRSUTUM.
„ *hirsu'tum* (hairy). Fruits blue. 1882.
„ *meta'llicum* (metallic). White. Leaves metallic in hue. Guiana. 1865.
„ *re'pens* (creeping). Purple. W. Ind. 1860.
„ *Tonta'nea* (Tontanea). White. Fruits blue. S. Amer.
„ *umbella'tum* (umbelled). Peru.

COCCO'LOBA. Sea-side Grape. (From *kokkos*, a berry, and *lobos*, a pod; in reference to the fruit. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 8-*Octandria*, 3-*Trigynia*.)

Stove evergreen trees. Cuttings of young, firm shoots, in spring or summer, in sand, under a glass, and in bottom-heat. Summer temp., 60° to 80°; winter, 50° to 55°.

C. acumina'ta (pointed-*leaved*). 20. White, green. New Grenada. 1820.
„ *caracasa'na* (Caracasan). Venezuela.
„ *corona'ta* (crowned). 15. White. W. Ind. 1733.
„ *excoria'ta* (barked). 80. White, green. W. Ind. 1733.
„ *fagifo'lia* (beech-leaved). 5. Pale green. S. Amer.
„ *flave'scens* (pale yellow). 15. White. St. Domingo. 1820.
„ *grandifo'lia* (large-leaved). White, green. Trop. Amer. 1690.
„ *guatemale'nsis* (Guatemalan).
„ *laurifo'lia* (laurel-leaved). 20. White, green. August. Caraccas. 1822.
„ *longifo'lia* (long-leaved). 30. White, green. W. Ind 1810.
„ *macrophy'lla* (large-leaved). See C. RUGOSA.
„ *microsta'chya* (small-spiked). 16. White, green W. Ind. 1822.
„ *ni'vea* (white-*leaved*). See C. EXCORIATA.

C. nymphæifo'lia (Nymphæa-leaved). See C. PELTATA.
,, *obova'ta* (reversed-egg-*leaved*). 50. White, green. S. Amer. 1824.
,, *obtusifo'lia* (blunt-leaved). See C. MICROSTACHYA.
,, *orbicula'ris* (round-*leaved*). See MUEHLENBECKIA ORBICULARIS.
,, *pelta'ta* (peltate). Brazil. 1858.
,, *platy'clada* (flat-branched). See MUEHLENBECKIA PLATYCLADA.
,, *pube'scens* (downy). See C. GRANDIFOLIA.
,, *puncta'ta* (dotted). See C. CORONATA.
,, *retu'sa* (blunt). 30. White, green. W. Ind. 1820.
,, *rugo'sa* (wrinkled). 30. Scarlet. W. Ind.
,, *tenuifo'lia* (narrow-leaved). See C. RETUSA.
,, *uvi'fera* (grape-bearing). 60. White, green. W. Ind. 1690.
,, *vi'rens* (green). See C. CORONATA.

CO'CCULUS. (From *coccus*, cochineal-colour; in reference to the scarlet colour of the fruit. Nat. ord. *Menispermads* [Menispermaceæ]. Linn. 22-*Diœcia*, 6-*Hexandria*.)

Stove evergreen climbers, from the East Indies. The *Co'cculus i'ndicus* of the druggists' shops is the berry of *Anami'rta Co'cculus*. Cuttings of half-ripened, small side-shoots, in sandy soil, under a glass; peat and loam, both fibrous and sandy. Summer temp., 60° to 68°; winter, 50° to 55°.

C. caroli'nus (Carolinian). 9. White. Berries scarlet. N. Amer. 1759.
,, *cordifo'lius* (heart-leaved). See TINOSPORA CORDIFOLIA.
,, *cri'spus* (curled). See TINOSPORA CRISPA.
,, *diversifo'lius* (diverse-leaved). Mexico.
,, *heterophy'llus* (various-leaved). White. W. China. 1910.
,, *inca'nus* (hoary). See PERICAMPYLUS INCANUS.
,, *laurifo'lius* (laurel-leaved). 10. White, green. 1816.
,, *orbicula'tus* (round-*leaved*). See CISSAMPELOS PAREIRA.
,, *palma'tus* (hand-*leaved*). See JATEORHIZA MIERSII.
,, *Plukene'tii* (Plukenet's). See PACHYGONE OVATA.
,, *populifo'lius* (poplar-leaved). See ANAMIRTA COCCULUS.
,, *rotundifo'lius* (round-leaved). 20. White, green. 1820.
,, *subero'sus* (cork-*barked*). See ANAMIRTA COCCULUS.
,, *tomento'sus* (woolly). See TINOSPORA TOMENTOSA.
,, *villo'sus* (long-haired). 6. Green, yellow. India and Africa. 1800.

COCCUS. Scale Insect. The species of this family are most usually, but not exclusively, found upon the tenants of our greenhouses and hothouses. The males are active, but the females usually fixed to a part of the plant. The former have wings, and are so small as to require a magnifier to distinguish them clearly: they then appear somewhat like a gnat in form. The females are much larger, and in shape not unlike a bed-bug, but with a scaly skin. When hatching they envelop themselves in a woolly case. The eggs are oval, but no larger than dots. Brushing the stems and branches of trees and shrubs with a hard scrubbing-brush will destroy many of these vermin; and, if spirit of turpentine, with a painter's brush, is applied, so as to visit every cranny of the bark, the application is perfectly effectual. Smaller and more delicate plants in pots may be placed under a sea-kale or other cover, with a little of the spirit in a saucer, and then submitted to a gentle heat: the vapour of the turpentine will destroy the insect in an hour or two. If the first application fails, the second will not fail.

C. adonidum. Mealy Bug. If this insect is attacked the moment the first is seen the pest may be usually avoided. Vines attacked by it should have every branch and stem brushed over sedulously with a hard brush, and then with a painter's brush as thoroughly painted over with this mixture:—Soft soap, 2 lbs.; flowers of sulphur, 2 lbs.; tobacco, 1 lb.; and a wineglass of spirit of turpentine. Mix the sulphur, turpentine, and soap into a paste with warm water; boil the tobacco for an hour in a covered saucepan in some more water, strain it, mix it with the soapy mixture, and then add enough water to make five gallons. More tender plants can only have their stems and leaves sponged with water at a temperature of 115°, frequently, and so long as a single insect can be detected. The Mealy Bug on pine-apples may be destroyed by shutting these up in a frame, over a bed of hot, fermenting horse-dung. The female is somewhat like a woodlouse in form, but reddish, and covered with a white, mealy powder. The male is slender, gnat-like, with two broad wings, and two brush-like filaments behind.—*The Cottage Gardener*, v. 157.

C. vitis. Vine Scale. It preys upon the stems and branches of the grape-vine both in the open air and under glass. It seems to be the same species which also attacks, occasionally, the peach, nectarine, and plum. It is, says Mr. Curtis, a longish-brown insect, which, in old age, assumes a blackish-brown colour, and becomes hemispherical and wrinkled. The females are shield-like, being convex above, and flat, or concave, below. They are furnished with six small legs, which, when the insect is old, become part of the substance of the body. On the under side of the insect is a sucker, with which it pierces the cuticle of the plants, and extracts their juices. Soon after impregnation the female dies, and her body becomes a protection for the eggs, which are covered with long, white wool, and sometimes completely envelop the shoots of the vines, or of plants growing underneath them. Their powers of propagation are immense; and, where they once become very numerous, they are exceedingly difficult to eradicate. This species belongs to the true genus *Coccus*, characterised by the female having a scale inseparable from her body. While young, both sexes are alike; but the male larvæ produce two-winged insects, with two tail threads. The females have no wings; and their dead bodies, beneath which the young are sheltered, remain upon the plants.

Whilst the leaves are on the vine, if any species of scale appears on its stem and branches, the least offensive remedy is to paint over the whole with a strong solution of gum arabic or starch; allow it to remain on for a week, and then wash it off. But the most effectual remedy is to brush them over thoroughly twice, after an interval of a day, with spirit of turpentine. To prevent the recurrence of the plague, a very effective mode, in autumn, is to scrape away and burn all the rough bark, and then, with a rough brush, to paint over the stem and branches with a creamy mixture, composed of ½ lb. of soft soap, 1 lb. of sulphur, and ¼ oz. of black pepper, to four gallons of water; boil together for twenty minutes, and make it thick enough to adhere to the wood like paint. If it does not, thicken it with lime, adding sufficient soot to take off the glaring white colour of the lime. There are many special preparations for the eradication of all these pests.

C. bromeliæ, Pine-Apple Scale, infests that fruit, the *hibi'scus*, *justi'tia*, *&c.*

C. hesperidum is found in greenhouses, especially on orange-trees. It infests leaves as well as stems.

C. testudo. Turtle Scale. This is found chiefly on stove plants requiring a high temperature. The scale is oval, very convex, and dark brown. They may be all destroyed by the applications recommended against the preceding species.

A genus of insects closely allied to the *Coccus*, and usually confounded with it, is *Aspidiotus;* and, as all remedial observations applicable to the one are equally applicable to the other, the prevailing kinds of it are here enumerated.

A. neriis, Oleander Scale, is found in our stoves and greenhouses, chiefly on the Oleanders, Palmæ, Aloes, and Acacias.

A. ostreæformis, Pear-tree Oyster Scale, is found upon the pear-tree.

A. rosæ, Rose Scale; *A. echinocacti*, Cactus Scale; *A. lauri*, Sweet-Bay Scale; infest chiefly the plants by the names of which they are distinguished.

COCHLEA'RIA. Scurvy-grass. (From *kochliarion*, a spoon; in reference to the concave leaves. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Seeds, divisions, and cuttings, the first in the open border. They are of little ornamental interest. *Armora'cia* is well known as horse-radish.

C. acau'lis (stemless). Lilac. April. Portugal. N. Africa. 1845.
,, *alpi'na* (alpine). ¼. Flesh. May. Scotland.
,, *Armora'cia* (horse-radish). 3. White. May. England.
,, *groenla'ndica* (Greenland). See C. ALPINA.

P

C. integrifo'lia (entire-leaved). See EUTREMA ALPESTRE.
„ *officina'lis* (shop. *Scurvy-grass*). ½. White. May. Britain.
„ *pyrena'ica* (Pyrenean). See C. OFFICINALIS.
See HORSE-RADISH and SCURVY-GRASS.

COCHLIO'DA. (From *kochliodes*, resembling a snail; the shape of the flowers in some species. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. For culture see ODONTOGLOSSUM.
C. brasilie'nsis (Brazilian). ½–¾. Greenish. Brazil. 1904.
„ *densiflo'ra* (dense-flowered). Andes. 1872.
„ *nœtzlia'na* (Nœtzlian). 1. Scarlet. Spring. Peru. 1891.
„ „ *auranti'aca* (orange). 1. Orange-scarlet. 1895.
„ *ro'sea* (rosy). ½. Rosy-carmine. Winter. Peru. 1851.
„ *sangui'nea* (blood-red). ½. Bright rose. June to October. Ecuador. 1867.
„ *vulca'nica* (volcanic). 1. Rosy-carmine. Peru. 1872.
„ „ *grandiflo'ra* (large-flowered). Flowers much larger.

COCHLIOSTE'MA. (Derived from *kochlion*, spiral, and *stema*, a stamen; in allusion to the twisted stamens. Nat. ord. Commelinaceæ.) Two very closely allied stove perennials of handsome appearance. Seeds are freely produced if the flowers are hand-fertilised, and should be sown when ripe. A compost of fibrous loam, peat, and leaf-mould in equal proportions, with some sharp sand, will suit them admirably. Moist stove treatment.
C. jacobia'num (Jacobian). 1½. Blue; bracts and scape rose. May. Ecuador. 1867.
„ *odorati'ssimum* (sweetest-scented). 1½. Blue; bracts and scape rose. Ecuador. 1859.

COCHLOSPE'RMUM. (From *cochlo*, to twist, and *sperma*, seeds. Nat. ord. *Bixads* [Bixaceæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)
Stove evergreen trees. Cuttings of ripe shoots in April, in sand, in bottom-heat; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.
C. Gossy'pium (cottony). 60. Yellow. May. E. Ind. 1824.
„ *hibiscoi'des* (Hibiscus-like). 60. Yellow. Mexico. 1820.
„ *serratifo'lium* (saw-edged-leaved). See C. HIBISCOIDES.
„ *tincto'rium* (dyer's). Trop. Africa.
„ *vitifo'lium* (Vine-leaved). Mexico.

COCKCHAFER. See MELOLONTHA.

COCKSCOMB. See CELO'SIA. *Rhina'nthus Cri'sta-ga'lli* and *Erythri'na Cri'sta-ga'lli* are also so-called.

COCKSPUR THORN. *Cratæ'gus Crus-ga'lli.*

COCOA-NUT FIBRE. This material consists of the outer covering of *Cocos nucifera*. The actual fibre is not much used in gardens except for brushes, &c.; it is the refuse that is much appreciated, being used for the propagating frames (which see). It is also valuable as a covering for all bulbs and other plants that want such until they are well started into growth. And also for covering flower-beds to prevent evaporation of moisture. Formerly it could be purchased at a very low price, but in more recent years it became much more expensive, owing to other uses having been found for it.

COCOA-NUT TREE. *Co'cos nuci'fera.*

COCOA PLUM. *Chrysoba'lanus.*

COCOA ROOTS. *Cala'dium.*

CO'COS. Cocoa-nut tree. (From the Portuguese word *coco*, a monkey; in reference to the end of the nut being like a monkey's head. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*.)
Seeds in hotbed, in spring; rich, loamy soil, somewhat shaded.
C. acule'ata (prickly). See ACROCOMIA SCLEROCARPA.
„ *am'ara* (bitter). 50. W. Ind. 1850.
„ *arechavaleta'na* (Arechavaletan). Uruguay. 1908.
C. austra'lis (southern). 50. Paraguay. 1849.
„ *Bonne'ti* (Bonnet's).
„ *botryo'phora* (bunch-bearing). 40. Yellow. Brazil.
„ *butyra'cea* (buttery). S. Amer. 1850.
„ *campe'stris* (field). 10–15. S. Brazil. 1908.
„ *capita'ta* (headed). 10. Brazil.
„ *como'sa* (long-haired). 10. Brazil.
„ *corona'ta* (crowned). 50. Brazil. 1836.
„ *Da'til* (Datil). 30. Argentine. 1889.
„ *erio'spatha* (woolly-spathed). Brazil.
„ *flexuo'sa* (zigzag). 50. Brazil. 1825.
„ *fusifo'rmis* (spindle-shaped). See ACROCOMIA SCLEROCARPA.
„ *graminifo'lia* (grass-leaved). Brazil.
„ *insi'gnis* (remarkable). Brazil.
„ *lapi'dea* (stony). Brazil. 1847.
„ *leio'spatha* (smooth-spathed). Brazil.
„ *maldi'vica* (Maldivian). See LODOICEA SECHELLARUM.
„ *Ma'rie-Ro'se* (Marie-Rose). See C. PROCOPIANA.
„ *mikania'na* (Mikanian). Brazil. 1853.
„ *nuci'fera* (*common* nut-bearing). 50. Pale green. E. Ind. 1690. "Cocoanut."
„ „ *au'rea* (golden). Sheaths, petioles, and midribs orange. 1908.
„ *odora'ta* (scented). Dwarf, like *C. campestris*. 1893.
„ *olera'cea* (pot-herb). 80. Brazil. 1846.
„ *pernambuca'na* (Pernambucan). Brazil.
„ *petræ'a* (rocky). 3 to 4. Andes of Bolivia. 1889.
„ *plumo'sa* (feathery). 50. Pale green. Brazil. 1825.
„ *procopia'na* (Procopian). Brazil.
„ *pulpo'sa* (pulpy). Fruit pulp delicious. S. Brazil. 1908.
„ *romanzoffia'na* (Romanzoffian). Brazil.
„ *schizophy'lla* (cut-leaved). 8. Brazil. 1846.
„ *Sya'grus* (Syagrus). 20. Brazil. 1824.
„ *sylve'stris* (wood).
„ *Walli'sii* (Wallis's). Brazil. 1870.
„ *weddellia'na* (Weddellian). 1 to 3. Brazil.
„ „ *Pynæ'rtii* (Pynært's). Pinnæ very narrow. 1891.
„ *Ya'tay* (Yatay). Argentine.
„ *Yurumagu'as* (Yurumaguas). Peru.

CODIÆ'UM. (Derived from Codebo, the native name for *C. variegatum*, amongst the Malays. Nat. ord. Euphorbiaceæ.)
Beautiful stove evergreens with variegated foliage, requiring a moist atmosphere, and to be well exposed to the light. Cuttings from the young tops in sand, loam, and peat, and placed in a close frame with bottom-heat. When potting, after they are rooted, some well-dried stable dung may be added. Croton is the name that they have been most generally known under in nurseries and in gardens, but the above is now being adopted by many.
C. appendicula'tum (appendaged). Polynesia. 1875.
„ *au'reo-linea'tum* (golden-lined). Margins and midrib yellow. Fiji. 1878.
„ *au'reo-macula'tum* (golden-spotted). Spotted yellow; neat. 1878.
„ *au'reo-marmora'tum* (golden-marbled). Marbled yellow. 1882.
„ *austinia'num* (Austinian). Marbled creamy-white. 1883.
„ *Barrone James de Rothschild*. Broad, crimson.
„ *Bergma'nni* (Bergman's). Central band ivory-white. 1880.
„ *Bisma'rcki* (Bismarck's). Fiddle-shaped, variegated yellow. S. Sea Islands. 1876.
„ *Broomfie'ldii* (Broomfield's). Blotched and lined yellow. 1881.
„ *Carrie'ri* (Carriere's). Variegated golden yellow. 1880.
„ *cauda'to-to'rtile* (tailed, twisted). Twisted yellow and crimson. 1883.
„ *Chelso'ni* (Chelsea). Orange-pink, shaded crimson. New Guinea. 1879.
„ *chrysophy'llum* (golden-leaved). Leaves mostly yellow. Polynesia. 1875.
„ *conci'nnum* (neat). Midrib with broad yellow band. 1876.
„ *Coope'ri* (Cooper's). Yellow blotches turning red. Polynesia. 1874.
„ *Disræ'lii* (Disræli's). Three-lobed; yellow veins. Polynesia. 1875.
„ *Dodgso'næ* (Mrs. Dodgson's). Margins and rib golden. 1882.

C. ebu'rneum (ivory). White central band. 1881.
„ *eleganti'ssimum* (most elegant). Rib bright yellow. 1881.
„ *evansia'num* (Evansian). Green, yellow, bronzy crimson. S. Sea Islands. 1879.
„ *Eyre'i* (Eyre's). Twisted, freely variegated yellow. 1882.
„ *fascia'tum* (fasciated). Yellow veins and spots. S. Sea Islands. 1877.
„ *Fo'rdii* (Ford's). Trilobed, yellow, crimson. Polynesia. 1880.
„ *glorio'sum* (glorious). Marbled creamy-yellow. New Hebrides. 1878.
„ *Goedenou'ghtii* (Goedenought's). Variegated golden yellow. Santa Cruz Islands. 1876.
„ *Hawke'ri* (Hawker's). Creamy-yellow. Polynesia. 1879.
„ *illu'stre* (illustrious). Leaves 3- to 4-lobed, blotched yellow. 1882.
„ *imperia'le* (imperial). Twisted, yellow, crimson. New Hebrides. 1875.
„ *insi'gne* (remarkable). Yellow and rosy crimson. 1882.
„ *Joha'nnis* (John's). Veins and edges yellow. Polynesia. 1871.
„ *linea're* (linear). Marbled yellow, suffused pink. 1882.
„ *Maca'rthuri* (Macarthur's). Twisted, crisped, yellow rib. 1877.
„ *maje'sticum* (majestic). Midrib yellow, crimson. Polynesia. 1876.
„ *massangea'num* (Massangean). Creamy-white, carmine-rose. 1879.
„ *multi'color* (many-coloured). Variously coloured. Polynesia. 1871.
„ *multifo'rme* (many-formed). Spiral or interrupted, yellow, crimson. 1881.
„ *musa'icum* (mosaic). Cream, changing to crimson markings. 1882.
„ *Nevi'lliæ* (Mrs. Neville's). Yellow bars, changing to crimson. Polynesia. 1880.
„ *no'bile* (noble). Crimson and yellow markings. S. Sea Islands. 1877.
„ *pictura'tum* (painted). Blotched yellow and red. New Hebrides. 1876.
„ *pri'nceps* (chief). Yellow, bronze, and crimson. New Hebrides. 1878.
„ *Regi'næ* (queen's). Yellow, crimson, orange. Pacific Islands. 1878.
„ *Re'x* (king's). Bronzy green, crimson. S. Sea Islands. 1877.
„ *spira'le* (spiral). Spirally twisted, bronze, yellow, red. Polynesia. 1873.
„ *supe'rbiens* (superb). Yellow, coppery red, crimson. New Guinea. 1878.
„ *torqua'tum* (twisted). Leaves narrow in chain-like segments. S. Sea Islands. 1878.
„ *tor'tile* (twisted). Spirally twisted, yellow, crimson. S. Sea Islands. 1877.
„ *tri'color* (three-coloured). Blotched yellow, rosy-crimson. 1882.
„ *Van-Oosterze'ei* (Van-Oosterzee's). Leaves linear, spotted yellow. 1883.
„ *variega'tum* (variegated). The parent of many forms. Malaya.
„ *Warre'ni* (Warren's). Leaves pendent, 2 to 2½ ft. long, orange yellow and carmine. Polynesia. 1880.
„ *Willia'msii* (Williams's). Midrib and veins yellow, then crimson. 1879.
„ *You'ngii* (Young's). Variegation creamy and rosy. Polynesia. 1873.

CODLIN MOTH. See CARPOCA'PSA POMONE'LLA.

CODLINS AND CREAM. *Epilo'bium hirsu'tum.*

CODONA'NTHE. (From *kodon*, a bell, *anthos*, a flower; the flowers being bell-shaped. Nat. ord. Gesneraceæ.)

Stove herbs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, leaf-mould in equal parts, and sharp sand.

C. flo'rida (flowery). White, fading brown-yellow. Brazil. 1908.
„ *gra'cilis* (graceful). White. Brazil. 1850.

CODONO'PSIS. (From *kodon*, a bell, and *opsis*, resemblance; the flowers being bell-shaped. Nat. ord. Campanulaceæ.)

Hardy or nearly hardy herbs, some of them twining. Positions on the rockery, in well-drained soil should be selected for them, using a little peat or leaf-mould. Seeds in a little warmth in spring.

C. clemati'dea (Clematis-like). See C. OVATA.
„ *convolvula'cea* (Convolvulus-like). Bright blue. Upper Burma. 1900.
„ *corda'ta* (heart-shaped). See CAMPANUMŒA JAVANICA.
„ *lanceola'ta* (lance-shaped). Greenish-white, with purple veins. Temperate Asia. 1900.
„ *lur'ida* (lurid). See C. ROTUNDIFOLIA.
„ *ova'ta* (ovate). 2 to 3. White, tinted blue. Western Himalaya.
„ *rotundifo'lia* (round-leaved). Yellow-green, purple. Western Himalaya. Annual.
„ „ *grandiflo'ra* (large-flowered). Markings more numerous and darker.
„ *ussurie'nsis* (Ussurian). N. Temperate Asia.
„ *vinciflo'ra* (Vinca-flowered). Lilac. W. China. 1910.
„ *viridiflo'ra* (green-flowered). Eastern Asia.

CŒLEBO'GYNE. (Derived from *cælebs*, not married, and *gune*, the ovary. Nat. ord. Euphorbiaceæ. Now referred to *Alchornea ilicifolia*.) Greenhouse shrub. Cuttings in sand under a bell-glass; also seeds. Fibrous loam, leaf-mould, and sand. It has produced seeds at Kew, where only the female plant was grown.

C. ilicifo'lia (Holly-leaved). See ALCHORNEA ILICIFOLIA.

CŒLESTI'NA. See AGERATUM.

CŒ'LIA. (From *koilos*, hollow; the dorsal sepal being concave. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Ornithidium and Maxillaria.)

Stove orchids. Divisions; sphagnum, peat, and a little charcoal, in a shallow basket. Growing temp., 60° to 90°; rest, 55° to 60°.

C. baueria'na (Bauer's). White. June. Mexico. 1790.
„ *be'lla* (pretty). White, purple, yellow. Guatemala.
„ *macrosta'chya* (large-spiked). Red. February. Mexico. 1840.

CŒLIO'PSIS. (From *Cœlia*, and *opsis*, like; the flowers resembling those of Cœlia. Nat. ord. Orchidaceæ.) For cultivation see ORCHIDS.

C. hyacintho'sma (hyacinth-scented). White, crimson. Panama. 1871.

CŒLO'GYNE. (From *koilos*, hollow, and *gune*, female; in reference to the female organ, or pistil. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

To cultivate this genus successfully, divide it into two sections:—The first, *C. barba'ta*, *crista'ta*, *Cumi'ngii*, *ela'ta*, *fuligino'sa*, *ocella'ta*, *specio'sa*, and some other new species from Borneo not yet bloomed in this country. The second section, *C. gardneria'na*, *macula'ta*, *præ'cox*, and *wallichia'na*.

The compost for *the first section* should be chopped sphagnum, turfy peat, using only the fibrous part, and small potsherds. The season for potting is when they begin to grow, about February. Some of the species have long rhizomes (creeping stems), and would soon run over the edges of the pot. To keep them at home, place an upright block of wood in the centre of the pot; clothe it with moss, and, as the plant advances in growth, train to it, and fasten it with fine copper wire. When growing, they require a liberal amount of water; but the water must not lodge in the hearts of the young leaves. In very hot weather syringe the plants in the morning, and give air, to dry up the extra moisture. Shade from bright sunshine, removing it off by four or five o'clock. The annual growths should be finished early in the autumn, and then the heat and moisture should be reduced; and, when winter approaches, cease watering altogether.

For *the second section* the soil should be a compost of sandy peat, fibrous loam, and half-decayed leaves, with a small portion of river-sand. Drain moderately well, and place four or five bulbs in a 6-inch pot, excepting *C. gardneria'na*, which is a strong grower, and requires

a larger pot, and fewer pseudo-bulbs in it. Pot as soon as the bloom is over, because, as soon as the flowers decay, the young leaves begin immediately to push forth from the same sheath, and will soon begin to put out new roots. Before that takes place the plants should be potted. THIS RULE APPLIES TO ALL ORCHIDS.

Place this section of *Cœlo'gyne* on a shelf near the glass, in a cool stove. Whilst growing, freely water—moderately, till the leaves are considerably grown, and then abundantly. In potting, place the bulbs just on the surface of the soil.

Resting-period Treatment.—As soon as the pseudo-bulbs are fully formed cease watering, and allow the leaves to turn yellow and die; remove them, and continue the plants in the same situation, keeping them dry and cool. Pay attention to them occasionally, to see that the bulbs continue plump and fresh. Should they appear to shrivel, give a little water, which will cause them to swell again; but be careful not to overdo it, or you may induce them to start prematurely.

C. a'lbo-lu'tea (white, yellow). Pure white, deep yellow. N. India. 1908.
„ *arthuria'na* (Arthurian). Deep purple, green spots. Burma. 1881.
„ *aspera'ta* (rough). Cream. May. Borneo. 1848.
„ *balfouria'na* (Balfourian). Cinnamon, orange, white. 1896.
„ *barba'ta* (bearded). White, yellow. December. N. India. 1827.
„ *biflo'ra* (two-flowered). White, brown. Burma. 1866.
„ *birma'nica* (Burmese). White, brown. Burma. 1882.
„ *bornee'nsis* (Bornean). White, red-brown markings. Borneo. 1893.
„ *brachy'ptera* (short-winged). Green, white, brown. Burma. 1881.
„ *bru'nnea* (russet). Greenish-yellow. November. E. Ind. 1844.
„ *carina'ta* (keeled). Whitish-green, brown. New Guinea. 1883.
„ *chloro'ptera* (green-winged). Green, white, brown. Philippines. 1883.
„ *Cla'rkii* (Clark's). Light brown, yellow-brown. 1893.
„ *confe'rta* (crowded). White, yellow. Burma. 1875.
„ *cornicula'ta* (horned). Yellow. Assam. 1865.
„ *corona'ria* (crowned). See TRICHOSMA SUAVIS.
„ *corruga'ta* (corrugated). White, yellow. India. 1866.
„ *corymbo'sa* (corymbose). White, orange. Himalayas. 1876.
„ *crista'ta* (crested). White, yellow. Himalayas. 1837.
„ „ *a'lba* (white). Pure white.
„ „ *hololeu'ca* (wholly white). 1881.
„ „ *lemonia'na* (Lemonian). White, pale yellow. 1888.
„ „ *ma'xima* (largest). Larger flowers.
„ *Cumi'ngii* (Cuming's). 2. Creamy-white, yellow. June. Singapore. 1840.
„ *cu'prea* (copper). Yellow-brown. 1892.
„ *daya'na* (Dayan). Ochre-yellow, brown. Borneo. 1884.
„ *deco'ra* (becoming). White. India. 1837.
„ *ela'ta* (tall). White, yellow. N. India. 1837.
„ *e'legans* (elegant). See C. HUETTNERIANA.
„ *fimbria'ta* (fringed). 1. White, brown. September. Nepaul.
„ *fla'ccida* (drooping). 1. White. January. Nepaul.
„ *fla'vida* (yellowish). Yellow. April. India. 1838.
„ *flexuo'sa* (flexuous). Java.
„ *Fœsterma'nni* (Fœstermann's). White, brown. Sunda Islands. 1886.
„ *fuligino'sa* (dusky). Cream, brown. June. N. India. 1837.
„ *fusce'scens* (brownish). Greenish-yellow.
„ *gardneria'na* (Gardnerian). 1. White, yellow. November. N. India. 1837.
„ *glandulo'sa* (glandular). Pure white. Neilgherries. 1882.
„ *Gowe'ri* (Gower's). White, red, yellow. Assam. 1869.
„ *graminifo'lia* (grass-leaved). White, veined brown. Burma. 1888.
„ *hookeria'na* (Hookerian). Bright rose-purple, yellow. Himalayas. 1878.
„ *huettneria'na* (Huettnerian). Burma.
„ *hu'milis* (dwarf). Lilac, yellow. Himalayas.
„ „ *alba'ta* (white). 1888.
„ „ *tri'color* (three-coloured). Marbled brown. 1880.
C. interme'dia (intermediate). E. Ind. 1840.
„ *interru'pta* (interrupted). White. N. India. 1837.
„ *java'nica* (Javanese). Java.
„ *la'ctea* (milky). Creamy-white, brown veins. Burma. 1888.
„ *lagena'ria* (bottle-shaped). White, purple. Khasia. 1856.
„ *lamella'ta* (having plates). Whitish-green. New Hebrides. 1895.
„ *lauterbachia'na* (Lauterbachian). Allied to *C. carnea*. New Guinea. 1896.
„ *lentigino'sa* (freckled). Green, white, yellow. Burma. 1872.
„ *longicau'lis* (long-stemmed). White, yellow. N. India. 1837.
„ *Lo'wii* (Low's). See C. ASPERATA.
„ *lu'rida* (lurid). Greenish-yellow, tinged purple.
„ *macula'ta* (spotted). White, crimson. N. India. 1837.
„ „ *virgi'nea* (virgin). Light sulphur, unspotted.
„ *massangea'na* (Massangean). Light ochre, maroon. Assam. 1891.
„ *mayeria'na* (Mayerian). Green, black. Trop. Asia. 1877.
„ *me'dia* (middle). White, yellow. Khasia. 1837.
„ *micholitzia'na* (Micholitzian). White and brown. Macassar. 1891.
„ *Micholi'tzii* (Micholitz's). 2. Pure white. 1895.
„ *micra'ntha* (small-flowered). Brown. Burma. 1855.
„ *Mo'ssiæ* (Mrs. Moss's). Pure white, yellow. Neilgherries. 1894.
„ *nervo'sa* (nerved). Neilgherries.
„ *nigre'scens* (blackish). Blackish. March. India. 1838.
„ *ni'tida* (shining-*leaved*). 1. Yellow. Himalayas. 1822.
„ *ocella'ta* (eyed). White, yellow. E. Ind. 1822.
„ *ochra'cea* (ochre-*spotted*). ¾. White, yellow. April. E. Ind. 1844.
„ *odorati'ssima* (sweetest). White. India. 1864.
„ *ova'lis* (oval). White, brown. October. Himalayas.
„ *pandura'ta* (fiddle-shaped). Green, black. Borneo. 1853.
„ *Pari'shii* (Parish's). Yellow, brown. Burma. 1862.
„ *pelta'stes* (shield). Yellow, white, brown. Borneo 1880.
„ *perake'nsis* (Perak). Buff, green, yellow. Perak. 1903.
„ *plantagi'nea* (plantain-*leaved*). Pale yellow. Singapore. 1840.
„ *pogonioi'des* (Pogonia-like). See C. YUNNANENSIS.
„ *præ'cox* (early-*flowering*). ½. Rose, white. October. Nepaul. 1845.
„ „ *wallichia'na* (Wallichian). Rose, white. November. Khasia. 1837.
„ *proli'fera* (many-offseted). Yellowish. N. India. 1837.
„ *psittaci'na* (parrot-like). Green, white. Moluccas.
„ *pulche'lla* (pretty). Pure white, brown blotch. Trop. Asia. 1898.
„ *punctula'ta* (dotted). See C. NITIDA.
„ *purpura'scens* (purplish). Ceylon.
„ *reichenbachia'na* (Reichenbachian). Rose, white, purple. Burma. 1868.
„ *rhodea'na* (Rhodean). White, brown. Moluccas. 1867.
„ *ri'gida* (stiff). Yellow. Moulmein. 1837.
„ *Rochusse'ni* (Rochussen's). Java.
„ *rossia'na* (Rossian). White, yellowish. Burma. 1884.
„ *salmoni'color* (salmon-coloured). Salmon-coloured. Java or Sumatra. 1883.
„ *Sande'ræ* (Mrs. Sander's). White, yellow blotch. Upper Burma. 1893.
„ *sanderia'na* (Sanderian). White, yellow. Sunda Isles. 1887.
„ *schilleria'na* (Schillerian). Yellow, blood-red. Burma. 1858.
„ *spa'rsa* (scattered). White, with brown spot. Philippines. 1883.
„ *specio'sa* (showy-*flowered*). ¾. Brown, white. September. Java. 1845.
„ *stella'ris* (starry). Green, white. Borneo. 1886.
„ *sulphu'rea* (sulphur). Yellow, white. Java. 1871.
„ *swania'na* (Swanian). White and brown lip. Philippines. 1894.

C. te'nuis (thin). Light buff. Borneo. 1893.
„ *testa'cea* (light brown). Brown. May. Singapore. 1842.
„ *thunia'na* (Thunian). See C. UNIFLORA.
„ *tomento'sa* (felted). Malaya.
„ *tri'fida* (three-lobed). See C. ODORATISSIMA.
„ *trine'rvis* (three-nerved). White, yellow. February. Singapore.
„ *trisacca'ta* (three-pouched). See C. GARDNERIANA.
„ *undula'ta* (waved-*leaved*). White. Khasia. 1837.
„ *unifio'ra* (one-flowered). Northern India.
„ *Vei'tchii* (Veitch's). Pure white. New Guinea. 1895.
„ *ventrico'sa* (ventricose). Java.
„ *venu'sta* (lovely). Light buff; lip white, yellow. S.W. China. 1904.
„ *vire'scens* (greenish). Pale green, dark spots. Annam. 1908.
„ *virgina'lis* (virginal). Pure white, fragrant. 1896.
„ *visco'sa* (clammy). White, brown. Khasia. 1870.
„ *wallichia'na* (Wallichian). See C. PRÆCOX WALLICHIANA.
„ *yunnane'nsis* (Yunnan). ½. Rosy-purple; lip lilac, with purple blotches. Yunnan, China. 1906.

COFFE'A. Coffee-tree. (From *Coffee*, the name of a province of Narea, in Africa. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen shrubs. Cuttings of ripe shoots in sand, under a glass, in moist heat; peat and loam. Summer temp., 60° to 85°; winter, 55° to 60°.

C. ara'bica (Arabian). 20. White. September. Yemen. 1696. "Arabian Coffee."
„ *bengale'nsis* (Bengalese). White. India and Malaya.
„ „ *hy'brida* (hybrid). "Tampis Coffee."
„ *Laure'ntii* (Laurent's). Congo Free State. 1900.
„ *libe'rica* (Liberian). White. Berries red. Trop. Africa. 1874. "Liberian Coffee."
„ *lodœge'nsis* (Lodœgean). White.
„ *mauritia'na* (Mauritian). White. Mascarene Islands.
„ *myrtifo'lia* (myrtle-leaved). White. Mauritius.
„ *panicula'ta* (panicled). 8. White. Guiana. 1822.
„ *robu'sta* (robust). See C. LAURENTII.
„ *stenophy'lla* (narrow-leaved). White. Sierra Leone.
„ *travancore'nsis* (Travancoran). White. S. India.

COGWOOD-TREE. *Ceano'thus Chloro'xylon.*

CO'IX. Job's Tears. (Adopted name from *Theophrastus*. Nat. ord. *Grasses* [Gramineæ]. Linn. 21-*Monœcia*, 3-*Triandria*. Allied to Indian Corn.)
Stove perennial grasses. Seeds; divisions; rich, light soil. Summer temp., 60° to 80°; winter, 50° to 55°.

C. arundina'cea (reed-like). 2. July. Mexico. 1818.
„ *exalta'ta* (tall). See C. LACHRYMA-JOBI.
„ *la'chryma* (tear). See C. LACHRYMA-JOBI.
„ *La'chryma-Jo'bi* (Job's Tears). 2. June. Trop. Asia. 1596.

COKE. See FUEL.

CO'LA. (The native name Kola or Cola. Nat. ord. Sterculiaceæ.)
Stove tree from Tropical Africa, now naturalised in Jamaica. Kola nuts are the seeds of the tree, used by the natives to satisfy hunger and enable them to work without fatigue. They contain more caffeine than the best coffee, and are about the size of a large gooseberry. Ripe cuttings in sand in a close case, with bottom-heat; also seeds. Sandy loam, or fibrous loam and one-third peat. Summer temp., 65° to 80°; winter, 60° to 65°.

C. acumina'ta (long-pointed). 40. Yellow. Trop. Africa. 1820.
„ *digita'ta* (fingered). Trop. Africa.
„ *ve'ra* (true). This also furnishes the Cola nut. W. Trop. Africa. 1900.

CO'LAX. Now included in Lycaste.

COLBE'RTIA. See DILLENIA. *C. coromandelia'na.* See DILLENIA PENTAGYNA.

CO'LCHICUM. Meadow Saffron. (Named after *Colchis*, its native country, in Asia Minor. Nat. ord. *Melanths* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)
Dr. Lindley says, "Few orders of plants are more universally poisonous than this." *C. autumna'le*, a gout medicine, is a virulent poison. Hardy herbaceous bulbs. Offsets, planted in common border.

C. agrippi'num (Agrippa). ½. Purple. August. S. Europe. 1600.
„ *alpi'num* (alpine). ½. Purple. July. Apennines. 1820.
„ *arena'rium* (sand). ½. Purple. September. Hungary. 1816.
„ „ *umbro'sum* (shady). See C. UMBROSUM.
„ *Argæ'i* (Argæ's). Flowers small, rosy. Palestine. 1904.
„ *autumna'le* (autumnal. *Common meadow saffron*). 1. Purple. September. Britain.
„ „ *a'lbum* (white-*flowered*). ½. White. September. Britain.
„ „ *a'lbum ple'num* (double white).
„ „ *flo're-ple'no* (double-flowered). ½. Purple. September. Britain.
„ „ *fo'liis-variega'tis* (variegated-leaved). ½. Purple. September. Britain.
„ *Bertolo'nii* (Bertoloni's). S. Europe.
„ *Bisigna'ni* (Bisignan's). See C. TENOREI.
„ *Bivo'næ* (Mrs. Bivon's). Large, purple. S. Europe.
„ *Bornmue'lleri* (Bornmueller's). Large rosy lilac, cup-shaped. Orient. 1892.
„ *bulbocodioi'des* (Bulbocodium-like). See C. MONTANUM.
„ *byzanti'num* (Byzantine). ½. Purple. September. Levant. 1629.
„ „ *cili'cicum* (Cilician). See C. CILICICUM.
„ *ca'ndidum* (white). White, flushed pale rose. Asia Minor. 1897.
„ *cauca'sicum* (Caucasian). See MERENDERA CAUCASICA.
„ *chione'nse* (Chio). See C. VARIEGATUM.
„ *cili'cicum* (Cilician). Rose, tipped red. Asia Minor. 1897.
„ *crocifio'rum* (Crocus-flowered) of Regel. ½. White, striped purple. Turkestan. 1883.
„ *crocifio'rum* (crocus-flowered) of Sims. See C AUTUMNALE.
„ *Cupa'ni* (Cupan's). See C. MONTANUM.
„ *Decas'snei* (Decaisne's). Delicate flesh colour. Lebanon. 1892.
„ *fascicula're* (fascicled). Pink and white. Greece. 1896.
„ *gigante'um* (giant). Large, long tubed, rose, with spreading segments. 1901.
„ *hololo'phum* (whole-podded). See C. MONTANUM.
„ *hydrophy'llum* (water-loving). Red-pink, fragrant. Asia Minor. 1901.
„ *Kotschy'i* (Kotschy's). See C. LÆTUM.
„ *la'tum* (bright). Purple. Orient.
„ *latifo'lium* (broad-leaved). See C. SIBTHORPII.
„ *liban o'ticum* (Lebanon). White, tinted rose. February. Syria.
„ *lingula'tum* (tongued). Greece.
„ *lusita'nicum* (Portuguese). Portugal.
„ *lu'teum* (yellow). Yellow, purple throat outside. Kashmir, Afghanistan. 1874.
„ *monta'num* (mountain). ½. Purple. August. S. Europe. 1819.
„ *Parkinso'ni* (Parkinson's). White, chequered purple. Asia Minor. 1874.
„ *parvifo'rum* (small-flowered). See C. MONTANUM.
„ *pa'rvulum* (small). See C. ALPINUM.
„ *procu'rrens* (running). Bright lilac. Smyrna. 1890.
„ *Ri'tchei* (Ritche's). Purple. Spring. Asia Minor. 1897.
„ *Sibtho'rpii* (Sibthorp's). Large, chequered lilac-purple. Armenia. 1890.
„ *siehea'num* (Siehean). Reddish-purple. Asia Minor. 1903.
„ *specio'sum* (showy). ½. Rosy-purple, large, cup-shaped. Cancasus. 1874.
„ „ *ma'ximum* (largest). Rosy-mauve, white base. 1902.
„ *Steve'ni* (Steven's). Rosy-lilac. Syria and Arabia. 1905.
„ *Szovi'tsii* (Szovits's). Caucasus.
„ *Teno'rei* (Tenore's). Italy.
„ *tessella'tum* (chequered). See C. AGRIPPINUM.
„ *Trod'dii* (Trood's). White. Cyprus. 1887.
„ *umbro'sum* (shaded). ½. Pink. September. Crimea. 1819.

C. variega'tum (variegated-*flowered*). ½. Purple. September. Greece. 1629.
,, *veratrifo'lium* (Veratrum-leaved). Rosy-red. 1910.
,, *versi'color* (changing colour). See BULBOCODIUM VERNUM VERSICOLOR.

COLDE'NIA. (Named after *C. Colden*, a North American botanist. Nat. ord. *Chretiads* [Boraginaceæ]. Linn. 4-*Tetrandria*, 3-*Trigynia*. Allied to the Heliotrope).

Stove trailing annual. Seeds sown in a hotbed, in March, and flowers in the greenhouse, in summer. Light, rich soil.

C. procu'mbens (lying-down). 2. White. July. E. Ind. 1699.

CO'LEA. (Named after *General Cole*, governor of the Mauritius. Nat. ord. *Crescentiads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to the Calabash-tree.)

Stove evergreen shrub. Cuttings of ripe shoots in sand, under a glass, and in moist bottom-heat; peat and loam, both fibrous, and mixed with a little sand and charcoal. Summer temp., 60° to 80°; winter, 48° to 55°.

C. floribu'nda (abundant-flowering). 8. Yellow. August Madagascar. 1839.
,, *mauritia'na* (Mauritian). Mascarene Islands.
,, *undula'ta* (waved). Lilac, yellow. Madagascar. 1870.

COLEBROO'KIA. (Named after *H. F. Colebrooke*, a botanist. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Mint.)

Greenhouse evergreen shrubs. Cuttings of half-ripe shoots, in April or May; sandy peat and fibrous loam. Winter temp., 40° to 45°.

C. oppositifo'lia (opposite-leaved). 3. White. Nepaul. 1820.
,, *ternifo'lia* (three-leafleted-leaved). 3. White. E. Ind. 1823.

COLENSO'A. See PRATIA.

COLEONE'MA. (From *koleos*, a sheath, and *nema*, filament; in reference to the way the filaments, or anther-threads, are combined with the base of the flower. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Diosma.)

Greenhouse evergreen shrubs, from Cape of Good Hope. Cuttings of young shoots, getting firm at the base, in sand, under a glass; peat one part, loam two parts, with sand, to keep it open. Winter temp., 40° to 45°.

C. a'lbum (white). 2. White. June. 1798.
,, *pu'lchrum* (beautiful). 6. Rose. May.
,, *tenuifo'lium* (slender-leaved). See C. PULCHRUM.

COLEOSPA'DIX. (From *koleos*, a spathe, and *spadix*, a flower spike; the spadix is enclosed in a spathe. Nat. ord. Palmaceæ.)

Stove palm. Seeds. Loam, peat, and sand.

C. onine'nsis (Oninan). New Guinea.

COLESAT, COLESEED, or **COLZA.** *Bra'ssica campe'stris olei'fera.*

CO'LEUS. (From *koleos*, a sheath; referring to the way that the bottom of the stamens, or anther-threads, are combined. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Plectranthus.)

The numerous hybrid varieties of this genus are among the most beautiful foliage plants we have. The original seed parents appear to have been *Blumei* and *C. Verschaffeltii*, one of the first with highly coloured foliage (this is now used extensively for summer bedding), later on a large number of beautiful varieties were raised at the Chiswick gardens of the Royal Horticultural Society, and since then many others have been added. In later years seed selected from the best has proved an easy means of getting good varieties. Sown in February good plants may soon be established by June, and a selection of the best made for growing. They are also readily propagated from cuttings. Short tops should be taken and put in light, sandy compost, the finer varieties are not so hardy as Verschaffeltii, and are difficult to keep through the winter unless a temperature of 60° can be sustained, but they will do well in an ordinary greenhouse during summer. Pot in a compost of loam, leaf-mould, with some manure, and sand.

C. aroma'ticus (aromatic). 2. Violet. May. India. 1826. Stove.
,, *barba'tus* (bearded). 3. Blue. October. Abyssinia. 1806. Stove.
,, *Blu'mei* (Blume's). 1½. Purple and white. June. Java.
,, ,, *Verschafe'ltii* (Verschaffelt's). 1861.
,, *frutico'sus* (shrubby). See PLECTRANTHUS FRUTICOSUS.
,, *Gibso'ni* (Gibson's). Leaves blotched crimson-purple. New Caledonia. 1866.
,, *ignia'rius* (fiery). Trop. Africa.
,, *infla'tus* (inflated). Lilac. Ceylon.
,, *Macræ'i* (Macrae's). See C. MALABARICUS.
,, *Maho'ni* (Mahon's). Blue-purple. British Central Africa. 1901.
,, *malaba'ricus* (Malabar). 2½. Purple and white. August. Ceylon. 1852.
,, *ni'gricans* (blackening). Indian Archipelago. 1863.
,, *Penzi'gii* (Penzig's). Blue. Abyssinia. 1892.
,, *pi'ctus* (painted). Leaves variegated yellow and brown. Duke of York's Island. 1877.
,, *scutellarioi'des* (Scutellaria-like). Blue, white. Malaya. Australia.
,, *shire'nsis* (Shirese). 3. Dark blue. British Central Africa. 1905.
,, *spica'tus Rondine'lla* (Rondinella-spiked). Blue. Abyssinia. 1895.
,, *thyrsoi'deus* (thyrse-like). 3. Deep blue. Winter. Trop. Africa. 1898.
,, *Tryo'ni* (Tryon's). Hybrid. 1872.
,, *tubero'sus* (tuberous). Trop. Africa.
,, *Vei'tchii* (Veitch's). South Sea Islands. 1867.
,, *Verschafe'ltii* (Verschaffelt's). See C. BLUMEI VERSCHAFFELTII.

COLEWORT or **COLLET.** See CABBAGE.

COLIC-ROOT. *Ale'tris farino'sa.*

COLLA'BIUM. (Derived from *collum*, a neck, and *labium*, lip; the base of the lip encloses the column. Nat. ord. Orchidaceæ.)

Warm stove Orchid.

C. si'mplex (simple). Green, purple, white. Borneo. 1881.

COLLA'NIA. See BOMAREA.

COLLE'TIA. (Named after *M. Collet*, a French botanical writer. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings of ripe shoots in sand, under a glass, in spring; sandy loam. Winter temp., 50° to 55°.

C. crucia'ta (cross-*spined*). 4. Pale yellow. Chili. 1824.
,, *Ephe'dra* (Ephedra). 4. Cream. Peru. 1823.
,, *ho'rrida* (horrid). See C. CRUCIATA.
,, *obcorda'ta* (obcordate). 2. Yellow. Peru. 1822.
,, *serratifo'lia* (saw-leaved). See DISCARIA SERRATIFOLIA.
,, *spino'sa* (spiny). See C. CRUCIATA.
,, *uli'cina* (furze-like). 2. Pale yellow. May. Chili.

COLLIFLOWER. See CAULIFLOWER.

COLLI'NSIA. (Named after *Collins*, a North American naturalist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Hardy annuals. Seeds in March, in open borders; some in autumn, and slightly protected during winter; or some in a slight hotbed, in March, and transplanted in patches, in April and May; autumn-sown ones will bloom earliest.

C. arve'nsis (field). Purple. California.
,, *bartsiæfo'lia* (Bartsia-leaved). 1. Purple. June. California.
,, *bi'color* (two-coloured). 2. Purple, white. June. California. 1833.
,, *corymbo'sa* (corymbose). Blue, white. California. 1868.
,, *grandiflo'ra* (large-flowered). 1. Pink. blue. June. Columbia. 1826.

C. heterophyl'lla (various-leaved). See C. BICOLOR.
„ *hirsu'ta* (hairy). See C. BARTSIÆFOLIA.
„ *multi'color* (many-coloured). Purple, crimson. California. 1852.
„ *Pa'rryi* (Parry's). California.
„ *parviflo'ra* (small-flowered). 1. Purple, blue. June. Columbia. 1826. Trailer.
„ *sparsiflo'ra* (scattered-flowered). 1. Violet. May. California, 1836.
„ *tincto'ria* (dyer's). 1. Pale pink. May. California. 1848.
„ *Torre'yi* (Torrey's). California.
„ *ve'rna* (spring). 1. Purple, blue. June. N. Amer. 1826.
„ *viola'cea* (violet). Violet. N. Amer. 1871.

COLLINSO'NIA. (Named after *P. Collinson*, a great promoter of botany. Nat. ord. *Labiates* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Cunila and Hyssop.)

Hardy herbaceous perennials. Division; common soil in moist places.

C. anisa'ta (anise-scented). 3. Yellow. October. Carolina. 1806.
„ *canade'nsis* (Canadian). 3. Lilac, yellow. September. N. Amer. 1735.
„ „ *corda'ta* (heart-*leaved*). 3. Lilac, yellow. September. N. Amer. 1734.
„ „ *ova'ta* (egg-*leaved*). 3. Lilac, yellow. September. N. Amer. 1734.
„ *ova'lis* (oval-*leaved*). See C. SCABRIUSCULA.
„ *scabriu'scula* (roughish). 2. Red, yellow. August. East Florida. 1776. Greenhouse.
„ *tubero'sa* (tuberous). 2. Yellow. August. Carolina. 1806.

COLLO'MIA. (From *kolla*, glue; referring to the mucous which surrounds the seeds. Nat. ord. *Phlox-worts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Gilia.)

Hardy annuals. The best is *C. cocci'nea*. Seeds in open border; spring or autumn.

C. Cavanille'sii (Cavanilles's). See C. GRANDIFLORA.
„ *cocci'nea* (scarlet). Scarlet. July. Chili. 1832.
„ *gilioi'des* (Gilia-like). 1. Pink. August. California. 1833.
„ *glutino'sa* (glutinous). See C. GILIOIDES.
„ *gra'cilis* (slender). ½. Rose. June. N. Amer. 1827.
„ *grandiflo'ra* (large-flowered). 2. Pink. July. Columbia. 1826.
„ *heterophyl'la* (various-*leaved*). 1. Pink. June. Columbia. 1826.
„ *lateri'tia* (brick-red). See C. COCCINEA.
„ *linea'ris* (narrow-*leaved*). 1. Red. June. N. Amer. 1826.

COLOCA'SIA. (From *kolokasia*, the Greek for the root of an Egyptian plant. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 7-*Heptandria*. Allied to Caladium.)

The Colocasias are remarkable alike for their milky juice and for producing eatable tubers, though belonging to an order which an acrid principle generally pervades. Divisions; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°; greenhouse not quite so warm.

C. affi'nis (allied. Himalayas. 1867.
„ *antiquo'rum* (ancient). 2. Green. June. Levant. 1551. Tuberous-rooted. Greenhouse.
„ „ *escule'nta* (edible). Whitish. Sandwich Islands. 1739.
„ „ *nymphæifo'lia* (Nymphæa-leaved). White. India. 1800.
„ *devansaya'na* (Devansayan). Leaves veined purple. New Guinea. 1886.
„ *escule'nta* (eatable-*rooted*). See C. ANTIQUORUM ESCULENTA.
„ *fa'llax* (deceitful). Himalaya.
„ *i'ndica* (Indian). Now referred to *Alocasia indica*.
„ *Marcha'lli* (Marchall's). Leaves with dark blotches and silvery band. India. 1811.
„ *ne'o-guinee'nsis* (New Guinea). Leaves blotched white. New Guinea. 1880.
„ *odora'ta* (fragrant). 3. Green, yellow. May. Peru. 1810. Now referred to *Alocasia odora*.
„ *viola'cea* (violet).
„ *Wendla'ndii* (Wendland's). See C. FALLAX.

COLOCYNTH. See CITRULLUS COLOCYNTHIS.

COLOGA'NIA. (Named after *M. Cologan*, who hospitably entertained naturalists visiting Teneriffe. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Clitoria.)

Stove evergreen twiners, natives of Mexico, &c.; cuttings of half-ripe shoots in sand, under a glass, in April; seeds sown in a hotbed, in March; peat and loam. Summer temp., 60° to 80°; winter, 40° to 45°.

C. angustifo'lia (narrow-leaved). 3. Violet. 1827. N.W. Amer.
„ *bi'loba* (two-lobed). 20. Purple. Mexico. 1827.
„ *Broussone'tii* (Broussonet's). 3. Violet. 1827.
„ *pulche'lla* (pretty). 3. Rose. September. 1837. N.W. Amer.

COLPOON-TREE. *Cassi'ne cape'nsis.*

COLT'S-FOOT. *Tussila'go Fa'rfara.*

COLUBRI'NA. (From *coluber*, a snake; in reference to the twisted stamens. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Ceanothus.)

Stove evergreen shrubs; cuttings of young shoots in sand, under glass; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

C. asia'tica (Asiatic), 12. Pale yellow. July. Ceylon. 1691.
„ *cube'nsis* (Cuba). Now referred to *Ceanothus cubensis*.
„ *ferrugino'sa* (rusty). 20. Green. July. Bahama. 1762.
„ *reclina'ta* (bent-down). 5. Green. August. Jamaica. 1758. Now referred to *Ceanothus reclinatus*.
„ *triflo'ra* (three-flowered). Pale yellow. Mexico. 1826.

COLUMBINE. *Aquile'gia.*

COLUMBO-ROOT or **CALUMBA-ROOT.** *Jateorrhi'za Calu'mba.*

COLUME'LLIA. (Commemorative of *L. J. M. Columella*, who lived about A.D. 42. Nat. ord. Columelliaceæ.)

A small order of three shrubs, natives of Peru and Ecuador. They require greenhouse culture and treatment like Thibaudia in peat and loam.

C. oblo'nga (oblong). Yellow. Peru. 1875.

COLU'MNEA. (Named after *Fabius Columna*, an Italian nobleman. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Besleria.)

Stove evergreens. Cuttings in sandy soil and in heat, under a hand-light; peat and loam, with pieces of charcoal and rotten wood, well drained. Summer temp., 60° to 85°; winter, 45° to 55°.

TWINERS.

C. auranti'aca (orange). Orange. June. Andes of Colombia. 1851.
„ *au'reo-ni'tens* (bright-golden). 1½. Orange, red. September. Colombia. 1843.
„ *sca'ndens* (climbing). 6. Scarlet. August. W. Ind. 1759.
„ *schiedia'na* (Schiede's). ½. Orange. June. Mexico. 1840.
„ *re'pens* (creeping). Yellow, red. Costa Rica. 1845.
„ *rotundifo'lia* (round-leaved). Trinidad.

SHRUBS.

C. crassifo'lia (thick-leaved) 1. Rose. October. 1837.
„ *erythropha'a* (red-brown). Dusky red. November. Mexico. 1858.
„ *hirsu'ta* (hairy). 2. Pale purple. September. Jamaica. 1780.
„ *hi'spida* (bristly). Scarlet. September. Jamaica. 1824.
„ *kalbreyeria'na* (Kalbreyerian). Yellow. Colombia. 1882.
„ *magni'fica* (magnificent). 1. Flame. Central Amer. 1902.
„ *oerstedia'na* (Oerstedian). Scarlet. Costa Rica. 1910.
„ *pi'cta* (painted). Colombia.

C. ru'tilans (red-*leaved*). 2. Purple. September. Jamaica. 1823.
,, *sple'ndens* (shining). See NEMATANTHUS LONGIPES.
,, *trifolia'ta* (three-leaved). See STEMODIA TRIFOLIATA.
,, *zebri'na* (zebra-marked). See ALLOPLECTUS DICHROUS.

COLU'RIA. (From *kolouros*, deprived of a tail; in reference to the seeds. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Trigynia*. Allied to Geum and Potentilla.)

Hardy herbaceous perennial. Divisions; loam and leaf-mould.

C. potentilloi'des (Potentilla-like). 1. Orange. June. Siberia. 1780.

COLU'TEA. Bladder-senna. (From *koloutea*, a name adopted from Theophrastus. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Caragana.)

The leaves of the bladder-senna are used to adulterate the Senna of the druggists. Cuttings planted in the end of summer; seeds sown in spring; common soil.

C. arbore'scens (*common* tree-like). 10. Yellow. July. France. 1548. "Bladder senna."
,, *cili'cica* (Cilician). Yellow. Asia Minor.
,, *crue'nta* (bloody). 4. Scarlet. June. Levant. 1710.
,, *frute'scens* (shrubby). See SUTHERLANDIA FRUTESCENS.
,, *galegifo'lia* (Galega-leaved). See SWAINSONIA CORONILLIFOLIA.
,, *hale'pica* (Aleppo). See C. ISTRIA.
,, *i'stria* (Istrian). 6. Yellow. June. Asia Minor.
,, *longiala'ta* (long-winged). Yellow. Asia Minor. 1892.
,, *me'dia* (intermediate). 10. Orange. July.
,, *melano'calyx* (black-calyxed). See C. LONGIALATA.
,, *nepale'nsis* (Nepaul). See C. ARBORESCENS.
,, *pere'nnans* (perennial). See LESSERTIA PERENNANS.
,, *pe'rsica* (Persian). Persia.
,, *Poco'kii* (Pocock's). See C. ISTRIA.

COLUTEOCA'RPUS. (From *Colutea*, and *karpos*, a fruit; the fruits are bladdery as in Colutea. Nat. ord. Cruciferæ. Allied to Vesicaria.)

Hardy herb. Seeds; cuttings under a hand-light in summer. Well-drained garden soil.

C. reticula'tus (netted). 1. Yellow. May. Asia Minor. 1700.

COLVI'LLEA. (Named after *Sir Charles Colville*, governor of Mauritius. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 19-*Decandria*, 1-*Monogynia*. Allied to Cæsalpinia.)

Stove evergreen tree. Cuttings in sand, under glass, and in bottom-heat; seeds when procurable; loam and leaf-mould. Summer temp., 60° to 80°; winter, 45° to 55°.

C. racemo'sa (*large*-racemed). 45. Scarlet. April. Madagascar.

COLY'SIS MEMBRANA'CEA. See POLYPODIUM MEMBRANACEUM.

COMACLI'NIUM AURANTI'ACUM. See DYSODIA GRANDIFLORA.

COMANTHOSPHA'CE. (From *kome*, hair, *anthos*, a flower, and *sphake*, the Greek name for a Salvia; in allusion to the long, hair-like stamens. Nat. ord. Labiatæ.)

A hardy undershrub from Japan with terminal spikes of small, yellow flowers. Cuttings of half-ripe wood in autumn or summer in sandy soil under a hand-light or in a cold frame. Ordinary garden soil.

C. japo'nica (Japanese). Yellow. Japan. 1894.

COMARE'LLA MULTIFOLIA'TA (many-leafleted). See POTENTILLA DEPAUPERATA.

COMARO'PSIS DONIA'NA and **C. FRAGARIOI'DES.** See WALDSTEINIA FRAGARIOIDES.

COMAROSTA'PHYLIS. (From *komaros*, the Arbutus, and *staphule*, a grape; referring to the clusters of fruit. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Now referred to Arctostaphylos.)

Pretty bushes from the alpine regions of Guatemala, bearing succulent fruit, which is eatable. Seeds; cuttings under a hand-light, in the beginning of autumn; grafted on the Arbutus in spring; loam and peat. If not kept in a cold greenhouse, will require protection out of doors.

C. arbutoi'des (Arbutus-like). See ARCTOSTAPHYLOS ARBUTOIDES.
,, *formo'sa* (beautiful). See PIERIS FORMOSA.
,, *ni'tida* (shining). See ARCTOSTAPHYLOS ARGU'TA.
,, *polifo'lia* (Polium-leaved). See ARCTOSTAPHYLOS POLIFOLIA.

COMAROU'NA ODORA'TA. See DIPTERIX ODORATA.

COMA'RUM PALU'STRE. See POTENTILLA PALUSTRIS.

COMBRE'TUM. (An ancient name adopted from Pliny. Nat. ord. *Myrobalans* [Combretaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Stove evergreen climbers, except two shrubs. Cuttings of young shoots, or rather, stiffish side-shoots, taken off with a heel, in sand, under glass, and in bottom-heat; sandy peat and loam, with a little charcoal and broken pots, to keep the soil open. Summer temp., 60° to 90°; winter, 50° to 60°. *C. purpureum* is one of the best-known species and is a good climber for the stove, having branching racemes of crimson flowers. The best means of propagating is to graft half-ripe wood on the roots taken from the same plant.

C. Afze'lii (Afzel's). See C. GRANDIFLORUM.
,, *a'ltum* (tall). Red. Trop. Africa.
,, *argе'nteum* (silvery). Guatemala.
,, *barba'tum* (bearded). 10. White. Madagascar 1820.
,, *bracteo'sum* (bracted). S. Africa.
,, *cocci'neum* (scarlet). 25. Scarlet. September. Madagascar. 1818.
,, *como'sum* (long-haired). 20. Scarlet. Trop. Africa. 1822.
,, *deca'ndrum* (ten-anthered). 20. White. April. India. 1826.
,, *e'legans* (elegant). 15. Scarlet. May. Brazil. 1820.
,, *exle'nsum* (extended). 10. India. 1845.
,, *farino'sum* (mealy). 10. Orange, red. May. Mexico. 1825.
,, *formo'sum* (handsome). Yellow, red. March. Brazil. 1824.
,, *grandiflo'rum* (large-flowered). 5. Scarlet. May. Sierra Leone. 1824. Shrub.
,, *interme'dium* (intermediate). See C. COMOSUM.
,, *latifo'lium* (broad-leaved). Scarlet. May. E. Ind. 1838.
,, *la'xum* (loose). Yellow. W. Ind.
,, *Lœfli'ngii* (Lœfling's). Green, orange. Trop. Amer. 1867.
,, *micra'nthum* (small-flowered). See C. ALTUM.
,, *micropе'talum* (small-petaled). See C. LŒFLINGII.
,, *na'num* (dwarf). 2. White. Nepaul. 1825. Shrub.
,, *panicula'tum* (panicled). 50. Scarlet. September. Guinea. 1824.
,, *pincia'num* (Pince's). Purple, red. May. Sierra Leone. 1845.
,, *pilo'sum* (pilose). India, Burma.
,, *purpu'reum* (purple). 25. Scarlet. Madagascar. 1818.
,, *racemo'sum* (racemose). 12. White. May. Benin. 1826.
,, *Raimbau'ltii* (Raimbault's). Trop. Africa.
,, *secu'ndum* (side-*flowering*). 10. Yellow-striped. May. Trinidad. 1818.
,, *sundai'cum* (Sundaic). Sumatra.
,, *wightia'num* (Wight's). See C. EXTENSUM.

COMESPE'RMA. (From *kome*, hair, and *sperma*, a seed; in reference to the seeds being enveloped with hairs. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 16-*Monadelphia*, 5-*Octandria*. Allied to Polygala.)

Greenhouse evergreens, from Australia. Cuttings of young shoots in April, under a glass; peat and loam. Summer temp., 55° to 80°; winter, 40° to 45°.

C. cordifo'lium (heart-leaved). 2. Purple. June. 1822.
,, *coridifo'lium* (Coris-leaved). See C. ERICINUM.
,, *eri'cinum* (heath-like). 3. Purple. June. 1822.
,, *gra'cile* (slender). See C. VOLUBILE.
,, *virga'tum* (twiggy). Purple. May. 1826.
,, *volu'bile* (twining). 2. Blue. April. 1834.

COMFREY. *Sy'mphytum.*

COMMELI'NA. (Named after *J.* and *G. Commelin*, Dutch botanists. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

The fleshy roots, or rhizomes, of most of the species of Commelina are eatable when cooked. Hardy kinds, by sowing in the open ground, whether annual or perennial, and by dividing the roots of the latter. Evergreen trailing kinds, whether greenhouse or stove, chiefly by cuttings in sandy soil, under a hand-light, in a gentle hotbed. All the herbaceous species, whether from tropical regions or New Holland, &c., by seeds, sown in a hotbed, early in spring, pricked off, and potted and planted out towards the end of May, will flourish in the flower-garden, and constitute a pleasing feature until the end of autumn. Before frost, the tuberous kinds should be taken up and kept like dahlias, but not over dry; started a little in spring, in heat, and then transplanted at the end of May, will bloom stronger than the seedlings. The soil should be light and rich, using either rotten dung or leaf-mould, with sandy loam. Summer temp. for stove species, 50° to 75°; winter, 40° to 45°.

ANNUALS.

C. commu'nis (common). 2. Purple, blue. June. China. 1732. Hardy.
„ *cuculla'ta* (hooded). See C. BENGHALENSIS.

HERBACEOUS PERENNIALS.

C. caripe'nsis (Caripe). See C. VIRGINICA.
„ *cæle'stis* (sky-*blue*). Blue. June. Mexico. 1813.
„ „ *a'lba* (white-*flowered*). 3. White. June.
„ *defi'ciens* (deficient), of Hooker. See C. VIRGINICA.
„ *defi'ciens* (deficient), of Van Houtte. See C. NUDIFLORA.
„ *elli'ptica* (elliptic). Blue. Trop. Amer.
„ *ere'cta* (upright). 1. Blue. August. Virginia. 1732. Hardy.
„ *fasciculà'ta* (fascicled). 1. Blue. July. Lima. 1817. Hardy.
„ *gla'bra* (smooth), of Baker. See C. FASCICULATA.
„ *gra'cilis* (slender). See C. NUDIFLORA.
„ *graminifo'lia* (grass-leaved). Mexico.
„ *hirte'lla* (hairyish). 1. Blue. June. N. Amer. 1820. Hardy.
„ *hi'spida* (coarsely hairy). Rich blue. Peru. 1845.
„ *prostra'ta* (prostrate). See C. BENGHALENSIS.
„ *sca'bra* (rough). Purple. July. Mexico. 1852.
„ *sellowia'na* (Sellowian). Cobalt-blue. Argentina. 1897. Greenhouse.
„ „ *ro'sea* (rosy). Rose variety. 1901.
„ *tubero'sa* (tuberous). 1. Blue. June. Mexico. 1732. Stove.

HARDY EVERGREEN TRAILERS.

C. carolinia'na (Carolina). See C. NUDIFLORA.
„ *virgi'nica* (Virginian). 1. Blue. June. Virginia. 1779.

GREENHOUSE EVERGREEN TRAILERS.

C. africa'na (African). 1. Blue. July. Cape of Good Hope. 1759.
„ *angustifo'lia* (narrow-leaved). 1. Blue. June. Carolina. 1827. Half-hardy.
„ *cya'nea* (bright blue). 1. Blue. July. Australia. 1820.

STOVE EVERGREEN TRAILERS.

C. benghale'nsis (Bengal). 3. Blue. June. Bengal. 1794.
„ *cayenne'nsis* (Cayenne). See C. NUDIFLORA.
„ *defi'ciens* (deficient). 6. Blue. August. Brazil. 1823.
„ *dianthifo'lia* (pink-leaved). 1. Blue. July. Mexico. 1816. Twiner.
„ *du'bia* (doubtful). See C. CŒLESTIS.
„ *longicau'lis* (long-stalked). See C. NUDIFLORA.
„ *mo'llis* (soft). See C. BENGHALENSIS.
„ *nudiflo'ra* (naked-flowered). 2 to 3. Blue. August. Tropical Regions.
„ *obli'qua* (twisted-*leaved*). 1. Blue. June. India. 1820.
C. pa'llida (pale). 1. Blue. June. Mexico. 1820.
„ *parviflo'ra* (small-flowered). See C. GRAMINIFOLIA.
„ *poly'gama* (various-flowered). See C. BENGHALENSIS.
„ *Zano'nia* (Zanonia). See CAMPELIA ZANONIA.

COMMERSO'NIA. (Commemorative of *Philibert Commerson*. Nat. ord. Sterculiaceæ.)

Stove shrub. Cuttings of half-ripe wood in sand, in a close case with bottom-heat; also imported seeds. Fibrous loam, a little peat and sand.

C. dasyphy'lla (thick-leaved). See RULINGIA PANNOSA.
„ *platyphy'lla* (broad-leaved). White. June. Malaya. 1816.

COMOCLA'DIA. Maiden Plum. (From *kome*, hair, and *klados*, a branch; in reference to the dense, silky covering on the young branches. Nat. ord. *Anacards* or *Terebinths* [Anacardiaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Pistacia.)

Stove evergreen trees. For cultivation, see BARRINGTO'NIA.

C. denta'ta (tooth-*leaved*). 30. Red. July. W. Ind. 1790.
„ *ilicifo'lia* (holly-leaved). 15. Red. Caribbee Isles. 1789.
„ *integrifo'lia* (whole-leaved). 15. Red. Jamaica. 1778.

COMPARE'TTIA. (Named after *Comparetti*, an Italian botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Inopsis and Trichocentron.)

Stove orchids. Divisions and offsets; fibrous peat, sphagnum, and broken potsherds. Plants raised above the surface of the pot, or fastened in a very shallow, well-drained basket. Summer temp., 60° to 90°; winter, 50° to 55°.

C. cocci'nea (scarlet). 1. Scarlet. August. Brazil. 1838.
„ *crypto'cera* (hidden-spurred). Pink, crimson. 1851.
„ *falca'ta* (sickle-shaped). ½. Rose. May. Peru. 1836.
„ *macrople'ctron* (large-spurred). White, spotted rose-red. Colombia. 1879.
„ *ro'sea* (rosy). See C. FALCATA.
„ *specio'sa* (showy). Ochre yellow, orange. Ecuador. 1878.

COMPOST is a mixture of manures, or of earths and manures, in such proportions and of such qualities as are considered particularly applicable to the plant or crops to which the composition is to be applied. If leaves are required to be largely developed, the compost can be scarcely too rich; for the greater the quantity of food imbibed by the roots, the greater will be the surface of leaves requisite for its elaboration. But if flowers and fruit, as well as leaves, are desired, the composts, if excessively rich, will cause these to diminish in number and size, the flower buds passing into leaf-buds, for the reason already alleged.

Composts must also duly regulate the amount of moisture supplied to the roots, totally independent of drainage, as compost retains to them moisture by its chemical and capillary powers. The richer in decomposing animal and vegetable matter, and the looser its texture, the better does a compost retain moisture. And this power is diminished in proportion as siliceous sand, or calcareous (chalky) matters preponderate.

Gardeners prepare their composts from strong, tenacious loam, half-rotten leaf-mould, heath-soil, horse-manure, cow-manure, charcoal and wood-ashes, bone-dust, sharp sand, burnt turf, and moss, well-scalded; and, from these materials, there is no doubt that a compost could be prepared, embracing any desired degree of fertility. See MANURES and POTTING.

COMPOST-GROUND. This should be an enclosure concealed from sight, but in the vicinity of the hotbeds, hothouses, and other similar structures, for the convenience of moving the pots to it in the potting season, conveyance of manures, &c. All the earths and manures should be under a shed; and the dungs, being liable to lose much of their fertile components in drainage, should be in water-tight tanks; and if these are covered, all the better. All composts are improved by being frosted, but for potting, great care should be taken that it is at least as warm as the temperature of the house when using for potting.

CO'MPTERIS. (Nat. ord. *Ferns* [Filices].)
A distinct fern, with bipinnate barren fronds and oblong simple ones.
C. brazzia'na (Brazzian). 1901.

COMPTO'NIA ASPLENIFO'LIA. See MYRICA ASPLENIFOLIA.

CONA'NDRON. (Derived from *konos*, a cone, and *aner*, a man; in allusion to the union of the apices of the stamens in a cone. Nat. ord. Gesneraceæ.)
A dwarf herb with the habit of Ramondia, but with numerous flowers in a cyme. Semi-shady places on the rockery or a cold frame in winter.
C. ramondioi'des (Ramondia like). ½. Lilac-purple with orange centre. Japan. 1879.

CONANTHE'RA. (From *konos*, a cone, and *anthera*, an anther, or pollen-bag; in reference to the six anthers forming a cone in the early stage of the flower. Nat. ord. Hæmodoraceæ. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Cumingia.)
Pretty little half-hardy bulbs, very scarce, being difficult to preserve, like others of this Chilian class of plants. Sandy soil and a dry border in front of a greenhouse suit them best, and to be protected from wet and frost in winter. Propagated by offsets.
C. bifo'lia (two-leaved). 1. Blue. April. 1823.
„ *Si'msii* (Sims's). 1. Blue. April. 1823.

CONCRETE WALKS. From personal inspection we can say these are the best we ever saw. A layer of stones, brick-bats, shells, or clinkers, six inches deep, to form a dry bottom; on this a good coaling of cinder ashes well washed in and rolled down; then prepare the surface, which should consist of fine ashes four parts to one of good cement, and keep the centre well above the sides—say, a rise of three inches in an ordinary garden walk.

CONDA'LIA. (Named after *Condal*, a Spanish botanist. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Zizyphus, or Christ's Thorn.)
Half-hardy evergreen. Cuttings of half-ripe shoots; common soil. Requires a little protection in winter.
C. microphy'lla (small-leaved). 2. Green. Chili. 1824.

CONDAMI'NEA. (Nat. ord. Rubiaceæ.)
Evergreen tree requiring stove treatment. Cuttings of mature wood in sand, in a close case, with bottom-heat. Loam and leaf-mould or a little peat.
C. tincto'ria (dyer's). 30. Red. September. Venezuela. 1820.

CONDOR VINE. *Marsde'nia Cundura'ngo.*

CONI'FERÆ, or **CONE-BEARERS,** are such trees and shrubs, with their allied genera, as are commonly known as the Pines, Larches, Firs, Cedars, Junipers, and Arbor Vitæs.

CONIOGRA'MME. See GYMNOGRAMME.

CONI'UM. Hemlock. (From *konao*, to whirl round; in reference to the giddiness caused by eating the leaves. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Arracacha.)
Division of the roots, and sowing the seeds in spring; common soil.
C. mosch'tum by offsets.
C. Arraca'cia (Arracacia). See ARRACACIA XANTHORRHIZA.
„ *croa'ticum* (Croatian). See C. MACULATUM.
„ *macula'tum* (spotted. *Common Hemlock*). 5. White. June. Britain. Hardy biennial.
„ *mosch'a'tum* (musk). See ARRACACIA MOSCHATA.

CO'NNARUS. (From *connaros*, name of a tree; adopted from the Greek of Athenæus. Nat. ord. *Connarads* [Connaraceæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)
Stove evergreen shrubs. Cuttings of firm shoots in April, in sand, in close frame, and in bottom-heat. Summer temp., 60° to 80°; winter, 50° to 55°.
C. africa'nus (African). 8. Trop. Africa. 1822. "Zebra Wood."
„ *monoca'rpus* (one-fruited). 8. India.
C. ni'tidus (shining). 8. White. Silhet. 1824.
„ *panicula'tus* (panicled). 8. White. Chittagong. 1824.
„ *pube'scens* (downy). 6. White. Trop. Africa. 1822.

CONOCA'RPUS. Button-tree. (From *konos*, a cone, and *carpos*, fruit; in reference to the fruit growing so closely together on the spikes as to resemble cones. Nat. ord. *Myrobalans* [Combretaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Terminalia.)
The bark of *C. racemo'sus*, one of those plants called Mangroves in Brazil, is in general use for tanning at Rio. Stove evergreen shrubs. Treatment similar to Connarus.
C. acutifo'lius (pointed-leaved). See C. ERECTUS.
„ *ere'ctus* (upright). 10. White. Jamaica. 1752.
„ „ *procu'mbens* (lying-down). 1. Pale yellow. Cuba. 1730.
„ *racemo'sus* (racemed). See LAGUNCULARIA RACEMOSA.

CONOCLI'NIUM. See EUPATORIUM.

CONOPHA'LLUS TITA'NUM. See AMORPHOPHALLUS TITANUM.

CONOSPE'RMUM. (From *konos*, a cone, and *sperma*, a seed; the fruit, or carpels, growing close together, and forming a cone. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)
Greenhouse evergreen shrubs, from Australia. Cuttings in sand, under a glass, either in spring or autumn; sandy peat and loam. Summer temp., 55° to 75°; winter, 35° to 45°.
C. acero'sum (fine-leaved).
„ *acinacifo'lium* (scimitar-leaved). 3. White. June. 1824.
„ *cæru'leum* (blue). Blue. 1830.
„ *capita'tum* (flower-headed). 3. Blue. July. 1824
„ *densiflo'rum* (thickly-flowered).
„ *elli'pticum* (oval-*leaved*). 3. White. July. 1822.
„ *ericifo'lium* (heath-leaved). White. 1820.
„ *gluma'ceum* (chaffy).
„ *Huege'lii* (Baron Huegel's).
„ *incu'rvum* (incurved-*leaved*).
„ *longifo'lium* (long-leaved). 4. White. July. 1824.
„ *sclerophy'llum* (hard-leaved).
„ *Stæ'chadis* (Stœchadis).
„ *taxifo'lium* (yew-leaved). 3. White. July. 1824.
„ *tenuifo'lium* (thin-leaved). 3. White. July. 1824.
„ *tripline'rvium* (three-nerved). 1830.
„ *undula'tum* (waved-*leaved*).

CONOSTE'GIA. (From *konos*, a cone, and *stege*, a covering; alluding to the lobes of the calyx clasping the angles of the ovary. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Aplectrum.)
Stove evergreen shrubs. Cuttings of shoots, well ripened, and the cut ends allowed to get dry; peat and sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.
C. balbisia'na (Balbis's). See C. PROCERA.
„ *pro'cera* (tall). 12. White. June. Jamaica. 1822.
„ *semicrena'ta* (half-scolloped-edged). See MICONIA SEMICRENATA.

CONOSTE'PHIUM. (From *konos*, a cone, and *stephane*, a crown; referring to the disposition of the flowers. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Styphelia.)
This belongs to the berry-bearing section of Epacrids. The berries, though not much liked by Europeans, are eatable and wholesome. The "Native Currant" of Australia and the Tasmanian Cranberry belong to this section. They are all favourite plants with gardeners for the beauty of their flowers and the great skill required to grow them into fine specimens. Greenhouse evergreen shrubs. Cuttings of young shoots in sand, in April; peat and sandy loam. Summer temp., 60° to 75°; winter, 40° to 50°.
C. pe'ndulum (hanging-down). Swan River.

CONOSTY'LIS. (From *konos*, a cone, and *stulos*, a style; the style, or female organ, grows in the shape of a cone at the bottom. Nat. ord. *Bloodroots* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anigozanthos.)
Greenhouse herbaceous perennials, from Australia.

Divisions; sandy loam. Summer temp., 55° to 75°; winter, 40° to 45°.

C. aculea'ta (prickly). 1. 1820.
„ *america'na* (American). See LOPHIOLA AUREA.
„ *au'rea* (golden-*flowered*). Yellow.
„ *dealba'ta* (mealy-*stemmed*).
„ *serrula'ta* (fine-saw-edged). 1824.
„ *seti'gera* (bristle-bearing). 1825.
„ *seto'sa* (bristly). Yellow. September. 1843.

CONOTHA'MNUS. (From *konos*, a cone, and *thamnos*, a shrub; from the form of the shrubs. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Greenhouse evergreen shrubs, from Swan River. Cuttings of young firm shoots in sand, under a bell-glass. For culture, see CALOTHA'MNUS.

C. erioca'rpus (woolly-fruited). See CALOTHAMNUS SANGUINEUS.
„ *latera'lis* (spreading). See CALOTHAMNUS LATERALIS.
„ *trine'rvis* (three-nerved). Red. June. 1840.

CONRA'DIA. (Named after *Conrad Gesner*, a botanist of Zurich. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Gloxinia.)

Stove evergreen shrubs. Cuttings of ripe shoots under a glass, in bottom-heat; loam, sand, and peat. Common temperature of stove.

C. caly'cina (large-calyxed). See PENTARHAPHIA CALYCINA.
„ *calyco'sa* (large-calyxed). See PENTARHAPHIA CALYCOSA.
„ *floribu'nda* (many-flowered). See PENTARHAPHIA LIBANENSIS.
„ *longiflo'ra* (long-flowered). 1½. June. Jamaica. 1823.
„ *sca'bra* (rough). 2. Scarlet. July. Jamaica. 1820.

CONRI'NGIA. (Derivation not clear. Nat. ord. Cruciferæ.)

Hardy annual. Seeds. Ordinary garden soil.

C. orienta'lis (oriental). 1. White. May. Europe. 1818.

CONSERVATIVE WALLS. See WALLS.

CONSERVATORY is often used synonymously with *Greenhouse*, and then it denotes a suitable structure for the cultivation of those exotic plants which are just too tender for our climate, yet do not require the hot temperatures of plant-stoves, orchid-houses, &c., which are set apart chiefly for plants from the tropical regions. With the greenhouse should be associated the idea of plants cultivated in pots or boxes; but with conservatory we would associate the idea of plants growing in suitable soil, without at least the apparent intervention of pots and boxes, and the structure connected with the residence. To keep up the interest of such places, it is necessary that plants in bloom should be introduced; but in every case the pot should be *plunged*, so that the plant may *appear* to be growing in the soil. We would only make one exception in the case of very small ornamental plants, or even those not so very small, but to which particular attention is wished to be directed. We would elevate them in groups into ornamental vases or baskets, for which suitable places should be formed, and which would be quite as much in harmony in such a place as in ornamenting a regular geometrical flower-garden. For several reasons, therefore, the planting out in conservatory fashion should not be attempted, except with climbers for the rafters, where the space is but limited, as a few plants, however beautiful at times, when seen every day all the year round in the same position, lose, to a certain extent, the power of pleasing. The having the plants in large pots or tubs would enable you at any time to effect fresh combinations. Where the range of glass is varied and extensive, though the plants be chiefly turned out in the soil, the same feeling of sameness is not engendered, as the owner may easily enter his house at different points; and in such circumstances the very number of objects will constitute variety.

Unity of expression is, to a certain extent, maintained by a mixture of the two modes, the centre of the house being supplied with plants that are really turned out, or which, brought for a temporary purpose, appear to be so, while all round the house there is a broad shelf for the accommodation of plants in pots. In saying "all round the house," we are, of course, alluding to houses that have glass on all sides. Where there is an opaque back wall, the shelf could be only at the front and ends. However desirable it is to have light on all sides, where expense for heating in winter is no great object, yet very pleasing effects are produced, even in lean-to roofs, where a little attention is paid to unity of idea. This has been strikingly exemplified in the range of plant-houses at the Duke of Devonshire's, at Chiswick, most of which, with the exception of the centre, the old conservatory, formerly consisted of lean-to forcing-houses. The heating medium, to be most effectual, should be above-ground; but, to save room, the flues or pipes may be beneath the pathways, which will also be of importance for keeping the soil in the beds in a nice warm condition, and in such a house will render the flowering of many of the hardier stove climbers a matter of certainty. The more modern conservatory may have some climbers, or large plants put into the ground, but taking it generally, it is what may be termed a show-house; plants are taken from various quarters as they come into flower. The conservatory is usually attached to the house, and has generally an entrance from the drawing-room. Plants from the stove and from the ordinary greenhouse may be introduced, but tender plants should only remain a short time; even hardy plants may be introduced during their flowering season, but they should be arranged together in the coldest part of the house.

CONTRAJE'RVA ROOT. *Dorste'nia Contraje'rva.*

CONVALLA'RIA. Lily of the Valley. (From the Latin *convallis*, a valley, and *rica*, a mantle; in reference to the dense covering formed by the leaves. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy herbaceous perennial, native of Britain. Divisions; common soil, shady situation. See LILY OF THE VALLEY and RETARDED PLANTS.

C. maja'lis (May). 1. White. May.
„ „ *flo're-ple'no* (double-flowered). 1. White. May.
„ „ *ru'bra* (red). 1. Flesh. May.
„ „ *proli'ficans* (proliferous). Flowers deeply divided and abnormal.
„ „ *variega'ta* (variegated). Leaves striped with yellow.

CONVO'LVULUS. Bindweed. (From *convolvo*, to entwine; in reference to their twining habit. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The roots of most of the plants in this order abound in a milky juice, which is acrid, and in some cases highly purgative, as the Jalap and Scammony plants. Cuttings, divisions, and seeds of perennials, and seeds of annuals; loam, leaf-mould, and manure for the greenhouse and stove species, and common soil for the hardy. Seeds of hardy, sown in open border, in March or April, or in hotbed for those which need protection.

HARDY ANNUALS.

C. elonga'tus (long-*flower-stalked*). 1. White. July. Canaries. 1815. Twiner.
„ *Forska'lei* (Forskale's). See C. TENUISSIMUS.
„ *pentapetaloi'des* (five-petaled). 1. Light blue. July. Majorca. 1789. Trailer.
„ *si'culus* (Sicilian). 2. Light blue. July. S. Europe. 1640. Trailer.
„ *stri'ctus* (straight). See C. UNDULATUS.
„ *tene'llus* (delicate). See BREWERIA HUMISTRATA.
„ *tri'color* (three-coloured). 3. Striped. July. S. Europe. 1629.
„ „ *albiflo'rus* (white-flowered). 1. White. July S. Europe. 1629.
„ *undula'tus* (waved-*leaved*.) White, red. June. S. Europe, N. Africa. 1816.

TENDER ANNUALS.

C. bi'color (two-coloured). See IPOMŒA PILOSA.
„ *erube'scens* (blushing). 6. Pink. July. N.S. Wales. 1803. Greenhouse biennial.

C. erube'scens genicula'tus (kneed). Red. July. 1826.
,, *evolvuloi'des* (Evolvulus-like). 15. Red. July. S. Europe. 1820. Greenhouse.
,, *genicula'tus* (kneed). See C. ERUBESCENS GENICULATUS.
,, *hi'rtus* (hairy-*stalked*). 3. Blue. July. E. Ind. 1804. Stove trailer.
,, *macroca'rpus* (large-fruited). 10. Purple. July. W. Ind. 1752. Stove twiner.
,, *quinquefo'lius* (five-leaved). See IPOMŒA QUINQUEFOLIA.

GREENHOUSE EVERGREENS.

C. alceifo'lius (alcea-leaved). Yellow, purple. June. Cape of Good Hope. 1823. Herbaceous.
,, *bryoniæfo'lius* (bryony-leaved). See IPOMŒA PESTIGRIDIS.
,, *canarie'nsis* (Canary). 20. Pink. June. Canaries. 1690. Twiner.
,, *cane'scens* (hoary). 1. Blue. Bogota. 1846. Twiner.
,, *Cneo'rum* (Cneorum). 3 Pink. June. Levant. 1640. Shrub.
,, *crena'tus* (crenate). See C. HERMANNIÆ.
,, *Fa'lkia* (Falkia). White, tinted pink. May. S. Africa.
,, *farino'sus* (mealy-*stalked*). 6. Pink. May. Madeira. 1777. Twiner.
,, *flo'ridus* (flowery). 2. Pink. August. Canaries. 1799. Trailer.
,, *Herma'nniæ* (Mrs. Hermann's). 5. White. August. Peru. 1799. Twiner.
,, *lana'tus* (woolly). See C. TENUISSIMUS.
,, *linea'ris* (narrow-*leaved*). See C. OLEÆFOLIUS.
,, *maurita'nicus* (Moroccan). Blue. N. Africa. Trailer.
,, *oleæfo'lius* (olive-leaved). 2. Pink. June. Greece. 1770. Shrub.
,, *pannifo'lius* (cloth-leaved). 15. Blue. August. Canaries. 1805. Twiner.
,, *saxa'tilis* (rock). 1. White. S. Europe. 1796. Trailer.
,, *scopa'rius* (broom). 2. White. August. Canaries. 1733. Trailer.
,, *suffrutico'sus* (sub-shrubby). 3. Pink. July. Madeira. 1788. Twiner.
,, *tenui'ssimus* (most-slender). Lilac. July. Levant. Herbaceous climber.
,, *tilia'ceus* (lime-tree-like). See IPOMŒA FASTIGIATA.

STOVE EVERGREENS.

C. albive'nius (white-veined-*leaved*). See IPOMŒA ALBIVENIA.
,, *arbore'scens* (tree-like). See IPOMŒA ARBORESCENS.
,, *chrysorhi'zus* (yellow root). See IPOMŒA BATATAS.
,, *cilia'tus* (hair-fringed). See JACQUEMONTIA TAMNIFOLIA.
,, *gla'ber* (smooth). 12. White. May. Cayenne. 1806. Twiner.
,, *glaucifo'lius* (sea-green-leaved). See C. INCANUS.
,, *guiane'nsis* (Guiana). See JACQUEMONTIA GUYANENSIS.
,, *inca'nus* (hoary). N. and S. Amer.
,, *ma'ximus* (greatest). See IPOMŒA SEPIARIA.
,, *ocella'tus* (*purple*-eyed). 1½. White, purple. July. S. Africa. 1844. Herbaceous climber.
,, *ochra'ceus* (yellow). See IPOMŒA OCHRACEA.
,, *penta'nthus* (five-flowered). See JACQUEMONTIA VIOLACEA.
,, *re'ptans* (creeping). See IPOMŒA AQUATICA.
,, *Roxbu'rghii* (Dr. Roxburgh's). See ARGYREIA ROXBURGHII.
,, *scrobicula'tus* (small-furrowed). See IPOMŒA SCROBICULATA.
,, *verticilla'tus* (whorled). See JACQUEMONTIA HIRSUTA.

HARDY DECIDUOUS.

C. althæoi'des (Althæa-like). 2. Pink. June. Levant. 1597. Twiner.
,, *arve'nsis* (field). Rosy-pink. August. Britain. Trailer.
,, *bicuspida'tus* (two-pointed). See C. ARVENSIS.
,, *bonarie'nsis* (Buenos Ayres). See C. INCANUS.
,, *califo'rnicus* (Californian). White, canary-yellow throat. California. 1888. Half-hardy.
,, *canta'brica* (Cantabrian). 1. Pink. June. S. Europe. 1640. Trailer.
C. chine'nsis (Chinese). See C. ARVENSIS.
,, *co'rsicus* (Corsican). See C. ARVENSIS.
,, *ebracte'atus* (unbracted). See IPOMŒA EBRACTEATA.
,, *emargina'tus* (end-notched). 2. Purple. July. 1817. Twiner.
,, *Gera'rdi* (Gerard's) See C. LINEATUS.
,, *hirsu'tus* (hairy). 1. White. July. Greece, Asia Minor. 1823. Trailer.
,, *holoseri'ceus* (all-silky). Pale yellow. June. Tauria. 1824.
,, *interme'dius* (intermediate). See C. LINEATUS.
,, *ita'licus* (Italian). See C. ALTHÆOIDES.
,, *lanugino'sus* (rather woolly). 6. White. July. Levant. 1818. Climber.
,, *linea'tus* (lined). 1. Purple. June. S. Europe. 1770. Trailer.
,, *macroste'gius* (large-bracted). Creamy-white. California. Climber.
,, *Malco'lmii* (Malcolm's). See C. ARVENSIS.
,, *occidenta'lis* (western). N. Amer.
,, *pe'rsicus* (Persian). White. June. Persia. 1829.
,, *platyca'rpus* (broad-fruited). See PHACELIA PLATYCARPA.
,, *salvifo'lius* (sage-leaved). See C. SECUNDUS.
,, *Scammo'nia* (scammony). White, purple. July. Levant. 1726. Twiner.
,, *secu'ndus* (one-sided). 1. Pink. July. Syria. 1825.
,, *Sibtho'rpii* (Sibthorp's). See C. HIRSUTUS.
,, *spithamæ'us* (span). 1. White. July. N. Amer. 1796.
,, *terre'stris* (earthy). See C. CANTABRICA.

CONY'ZA. (Derived from *chonos*, imperfect. Nat. ord. Compositæ.) Annual or perennial herbs. Seeds; division of perennials. Ordinary garden soil.

C. ægypti'aca (Egyptian). Egypt.
,, *ambi'gua* (ambiguous). See C. CHILENSIS AMBIGUA.
,, *chilen'sis* (Chilian). 2½. Yellow. September. Chili. 1816.
,, ,, *ambi'gua* (ambiguous). 1. Purple. July.
,, *ivæfo'lia* (Iva-leaved). 3. White. July. S. Africa. 1696.

COO'KIA PUNCTA'TA. See CLAUSENA WAMPI.

COOPE'RIA. (Named after *Mr. Cooper*, gardener at Wentworth House, in Yorkshire, for many years. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Zephyranthes.)

We would have named this genus "The Evening Star." It is anomalous amongst its race for first opening its starry-white flowers in the cool of the evening. They possess the fragrance of the primrose. Although probably hardy, they are best treated as half-hardy, in a border of deep, sandy soil, under a west wall, where they flower all the summer, and produce seeds. Each stalk produces but one flower; but a tuft of bulbs would produce a fine effect. Offsets and seeds, sown in spring; sandy loam.

C. chloroso'len (green-tubed). See C. DRUMMONDII CHLOROSOLEN.
,, *Drummo'ndii* (Drummond's). 1. White, red. Mexico. 1835.
,, ,, *chloroso'len* (green-tubed). Tube stouter, tinged green. 1835.
,, *peduncula'ta* (*long*-flower-stalked). White, orange. July. Texas. 1835.

COPAI'FERA. (From *copaiba*, the Brazilian name for its balsamic juice, the balsam of Copaiba, and *fero*, to bear. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Cynometra.)

Stove evergreen trees; cuttings of firm shoots in March, in heat, under a glass; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

C. gorskia'na (Gorskian). Trop. Africa. "Inhambane Copal."
,, *guiane'nsis* (Guiana). 30. White. Guiana. 1826.
,, *guibourtia'na* (Guibourtian). Trop. Africa. "Sierra Leone Copal."
,, *Lansdo'rfii* (Lansdorf's). Brazil. "Balsam of Copaiba."
,, *Mopa'ne* (Mopane). Trop. Africa.
,, *officina'lis* (shop). 20. White. S. Amer. 1774. "Balsam of Copaiba."

COPERNI'CIA. (*Copernicus*, an astronomer. Nat. ord. Palmaceæ.)

Palms requiring stove treatment.

C. Cara'nda (Caranda).
„ *ceri'fera* (wax-bearing). Brazil. "Wax Palm."
„ *miragua'na* (Miraguan). See THRINAX MIRAGUANA.
„ *na'na* (dwarf). Mexico. 1889.
„ *Pu'mos* (Pumos). Cuba.
„ *tecto'rum* (roof Palm). Colombia.

COPEO'SMA. (Derived from *kopros*, dung, and *osme*, smell; some of the species give off a bad odour. Nat. ord. Rubiaceæ.)

Greenhouse shrubs valued chiefly for their foliage. Cuttings of ripe wood in sand in a case. Loam, peat, and sand.

C. Baue'ri (Bauer's). Norfolk Islands.
„ „ *pictura'ta* (painted). Leaves variegated in the middle. 1876.
„ „ *variega'ta* (variegated). Variegation round the edges. 1866.
„ *Cunningha'mii* (Cunningham's). New Zealand.
„ *grandifo'lia* (large-leaved). New Zealand.
„ *lu'cida* (shining). New Zealand.
„ *pe'ndula* (pendulous). New Zealand.
„ *Petri'ei* (Petrie's). ½. Fruit purplish. New Zealand. 1909.
„ *robu'sta* (robust). New Zealand.

COPTIS. (From *kopto*, to cut; in reference to the division of the leaves. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Helleborus.)

The roots of this plant are used in the United States medicinally, under the name of Gold Thread. Hardy herbaceous perennial; division of the roots and seeds; sandy, peaty soil; requires the protection of a cold pit in winter.

C. asplenifo'lia (Asplenium-leaved). White, brown. Northern Hemisphere. 1782. "Gold Thread."
„ *brachype'tala* (short-petaled). White. Japan.
„ *occidenta'lis* (western). N.W. Amer.
„ *orienta'lis* (oriental). Japan.
„ *trifo'lia* (three-leaved). ½. Brown. May. N. Amer. 1782.

CORALLO'BOTRYS. (From *korallion*, red coral, and *botrus*, a bunch; the bunches of flowers and their stalks are coral red. Nat. ord. Vacciniaceæ.)

Greenhouse evergreen epiphytical shrub. Cuttings in sand under a bell-glass; layers. Sandy peat.

C. acumina'ta (long-pointed). 2–3. Coral red. Eastern Himalaya.

CORBULA'RIA. See NARCISSUS BULBOCODIUM and its varieties.

CO'RCHORUS. (Derived from *koreo*, to purge, and *kore*, the pupil; in reference to the supposed value of *C. olitorius* in medicine. Nat. ord. Tiliaceæ.)

Annuals requiring stove heat. Seeds. Light soil. Jute is manufactured from the fibre of *C. capsularis*.

C. capsula'ris (capsular). 6. Yellow. June. Tropics. 1725. "Jute."
„ *japo'nicus* (Japanese). See KERRIA JAPONICA.
„ *olito'rius* (pot-herb). 6. Yellow. June. Tropics. 1640. "Jews' Mallow."

CO'RDIA. (Commemorative of *E. Cordius*, a German botanist. Nat. ord. Boraginaceæ.)

Evergreen shrubs and trees, requiring stove treatment. Cuttings in sand, in a close case, with bottom-heat. Loam, peat, and sand.

C. a'lba (white). White. W. Ind.
„ *Colloco'cca* (Collococca). White. Jamaica.
„ *deca'ndra* (ten-stamened). Pure white. Chili. 1875.
„ *Gerasca'nthus* (Gerascanthus). 30. White. May. Mexico. 1789. "Spanish Elm."
„ *gla'bra* (smooth). White. Autumn. Brazil. 1868.
„ *grandiflo'ra* (large-flowered). White. August. S. Amer.
„ *Gre'ggii Palme'ri* (Palmer's variety). 6 to 10. White. Mexico. 1889.
„ *ipomœæfo'lia* (Ipomœa-leaved). 20. White. Brazil (?).
C. la'vis (smooth). Red. September. Colombia.
„ *My'xa* (Myxa). 15. Trop. Asia and Australia. 1640.
„ *Patago'nula* (Patagonula). See PATAGONULA AMERICANA.
„ *Sebeste'na* (Sebestena). Trop. Amer.
„ *specio'sa* (showy). See C. SEBESTENA.
„ *supe'rba* (superb). White. September. Brazil.

CORDYLI'NE. Club Palm. (From *kordule*, a club. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Dracena.)

Stove and greenhouse evergreen shrubs. Suckers; peat and loam; or light, sandy loam and vegetable mould. Summer temp., 60° to 80°; winter, 50° to 55°.

C. austra'lis (southern). 10. Blue, white. New Zealand. 1823. Nearly hardy.
„ „ *dallierea'na* (Dallierean). Striped yellow. 1890.
„ „ *Douce'tii* (Doucett's). Edged and striped white. 1880.
„ „ *Eeckhau'tei* (Eeckhaut's). Leaves green, gracefully recurved. 1899.
„ „ *lentigino'sa* (freckled). Tinted and spotted brownish-red. New Zealand. 1871.
„ „ *linea'ta* (lined). Leaves with creamy lines. New Zealand.
„ „ *Pa'rrei* (Parre's). Green, with red band beneath. 1901.
„ „ *Rigou'tsi* (Rigouts'). Variegated seedling. 1896.
„ „ *Russe'llii* (Russell's). Leaves dull brown, midrib yellow. 1897.
„ „ *Schneide'ri* (Schneider's). Leaves narrow, dark green. Dwarf. 1899.
„ „ *variega'ta* (variegated). Variegated with yellow. 1881.
„ *Ba'nksii* (Banks's). White. New Zealand. 1860.
„ *Baue'ri* (Bauer's). See C. OBTECTA.
„ *calo'coma* (beautiful hair). See C. AUSTRALIS.
„ *cannæfo'lia* (canna-leaved). See C. TERMINALIS CANNÆFOLIA.
„ *colo'ssea* (colossal).
„ *conge'sta* (crowded). See C. STRICTA.
„ *Douce'tii* (Doucett's). See C. AUSTRALIS DOUCETTII.
„ *erythro'rachis* (red-rachis). See C. BANKSII.
„ *floribu'nda* (free-flowering). 4. Mauritius. 1825.
„ *Forste'ri* (Forster's). See C. AUSTRALIS.
„ *haagea'na* (Haagean). White. Australia. 1871.
„ *hemichry'sa* (half-golden). 2. Isle of Bourbon. 1823.
„ *Hooke'ri* (Hooker's). New Zealand.
„ *indivi'sa* (undivided) of Regel. See C. AUSTRALIS.
„ *indivi'sa* (undivided) of Steud. 10. Blue. New Zealand.
„ *lentigino'sa* (freckled). See C. AUSTRALIS LENTIGINOSA.
„ *mauritia'na* (Mauritian). Bourbon.
„ *Ma'yi* (May's). Young leaves red, old ones edged red. 1901.
„ *no'bilis* (noble). See C. TERMINALIS NOBILIS.
„ *nu'tans* (nodding).
„ *obte'cta* (covered beneath). Norfolk Island.
„ *Pumi'lio* (Pumilio). New Zealand.
„ *ru'bra* (red). 10. Leaves pale red. New Zealand 1864.
„ *Ru'mphii* (Rumph's). See DRACÆNA ANGUSTIFOLIA.
„ *Russe'llii* (Russell's). See C. AUSTRALIS RUSSELLII.
„ *Siebo'ldi* (Siebold's). Green. Java.
„ *stri'cta* (erect) of Hooker fil. See C. PUMILIO.
„ *stri'cta* (upright). 10. Blue. March. Australia 1820.
„ *Stu'rmii* (Sturm's). New Zealand.
„ *supe'rbiens* (superb). See C. AUSTRALIS.
„ *termina'lis* (terminal). Trop. Asia.
„ „ *cannæfo'lia* (canna-leaved).
„ „ *cu'prea* (copper). Coppery brown. 1876.
„ „ *ex'cellens* (excellent). Bronze and rosy-red. 1885.
„ „ *fe'rrea* (rusty). Metallic red.
„ „ *no'bilis* (noble). Japan. 1852.
„ *Vei'tchii* (Veitch's). See C. AUSTRALIS.

CORE'MA. (*Korema*, a broom; in allusion to the appearance of the plant. Two dwarf heath-like plants, closely allied to the Crowberry, *Empetrum nigrum*.)

Peaty soil on the rockery or in front of a shrubbery bed or border. Layers.

C. a'lba (white). 1. White. Spring. S.W. Europe and Azores. 1774.
„ *Conra'dii* (Conrad's). Purple. April. N. Amer.

COREO'PSIS. (From *koris*, a bug, and *opsis*, like; referring to the appearance of the seeds. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*.)

Hardy annuals, seeds in common soil, in March; hardy perennials, division of the roots in the autumn or spring; West Indian species require a hotbed; and the perennial herbaceous and evergreen species are multiplied by divisions and cuttings. Light, sandy soil.

C. abyssi'nica (Abyssinian). Rich yellow. Abyssinia. 1895.
„ *ala'ta* (winged). See VERBESINA OCCIDENTALIS.
„ *a'lba* (white, *climbing*). See BIDENS PILOSA.
„ *alternifo'lia* (alternate-leaved). See ACTINOMERIS SQUARROSA.
„ *angustifo'lia* (narrow-leaved). 2. Yellow. July. N. Amer. 1778.
„ *argu'ta* (sharp-*notched*). See C. AUREA.
„ *aristo'sa* (bearded). Golden yellow. United States.
„ *artemesiæfo'lia* (Artemisia-leaved). See COSMOS SULPHUREUS.
„ *atkinsonia'na* (Atkinsonian). 2. Yellow, brown. N.W. Amer. 1826.
„ *au'rea* (golden). 3. Yellow. August. N. Amer. 1785.
„ *auricula'ta* (ear-*leaved*). 6. Yellow. July. N. Amer. 1699.
„ *be'lla* (beautiful). 3. Yellow. British East Africa. 1907.
„ *bi'color* (two-coloured). 2½. Yellow. June. Arkansas. 1822.
„ *chrysa'ntha* (golden-*flowered*). See BIDENS CHRYSANTHA.
„ *corona'ta* (crowned). 2. Yellow, brown. July. Mexico. 1835.
„ *crassifo'lia* (thick-leaved). See C. LANCEOLATA.
„ *delphinifo'lia* (Delphinium-leaved). 3. Yellow. August. N. Amer. 1759.
„ *dicho'toma* (forked). See C. GLADIATA.
„ *diversifo'lia* (various-leaved). See C. DRUMMONDII.
„ *Drummo'ndii* (Drummond's). 2. Yellow, purple. September. Texas. 1833.
„ *ferulæfo'lia* (Ferula-leaved). See BIDENS FERULÆFOLIA.
„ *filifo'lia* (thread-leaved). See THELESPERMA FILIFOLIUM.
„ *gladia'ta* (sword-like). 1. Yellow. September. N. Amer. 1827.
„ *grandiflo'ra* (large-flowering). 3. Yellow. August. N. Amer. 1826.
„ „ *supe'rba* (superb). Flowers large. 1904.
„ *Gra'ntii* (Grant's). 2. Bright yellow. E. Trop. Africa. 1906.
„ *heterophy'lla* (various-leaved). See ECHINACEA HETEROPHYLLA.
„ *inci'sa* (cut-*leaved*). See BIDENS RUBIFOLIA.
„ *integrifo'lia* (whole-leaved). 3. Yellow. July. Carolina.
„ *japo'nica* (Japanese). Canary-yellow. Japan. 1895.
„ *lanceola'ta* (spear-head-*leaved*). 3. Yellow. August. Carolina. 1724.
„ *latifo'lia* (broad-leaved). 3. Yellow. August. N. Amer. 1786.
„ *lo'ngipes* (long-stalked). See C. GRANDIFLORA.
„ *ma'jor* (larger). See C. SENIFOLIA.
„ *mari'tima* (maritime). See LEPTOSYNE MARITIMA.
„ *nuda'ta* (naked). 2 to 4. Purple-rose, yellow. Florida. 1870.
„ *palma'ta* (hand-*leaved*). 3. Yellow. June. Louisiana. 1823.
„ *parviflo'ra* (small-flowered). See COSMOS PARVIFLORUS.
„ *pauciflo'ra* (few-flowered). See C. PALMATA.
„ *præ'cox* (early). See C. PALMATA.
„ *pro'cera* (tall). See ACTINOMERIS SQUARROSA.
„ *radia'ta* (rayed). 1. Ray florets rolled up. 1909.
„ *re'ptans* (creeping). See BIDENS RUBIFOLIA.
„ *ro'sea* (roseate). 2. Red. July. N. Amer. 1778.
„ *senifo'lia* (six-leaved). 4. Yellow. September. N. Amer. 1812.
„ *Ste'ppia* (Steppia). Trop. Africa.
„ *Stillma'nnii* (Stillmann's). See LEPTOSYNE STILLMANNII.
„ *tenuifo'lia* (slender-leaved). See C. VERTICILLATA.
C. tincto'ria (colouring). Yellow, crimson. N. Amer.
„ „ *a'tro-purpu'rea* (dark purple). 3. Dark purple. June.
„ „ *a'tro-sangui'nea* (dark crimson). Dark crimson. July. N. Amer. 1823.
„ *trichospe'rma* (hairy-seeded). 3. Yellow. August. N. Amer. 1818.
„ *Tri'pteris* (Tripteris). 6. Yellow. August. N. Amer. 1837. "Golden Crown."
„ *verticilla'ta* (whorl-*leaved*). 3. Yellow. August. N. Amer. 1759.

CORETHRO'GYNE. (Derived from *korethron*, a broom, and *gune*, the ovary; because the styles resemble a brush. Nat. ord. Compositæ.)

Hardy border herb, with woolly stems and leaves. Division. Ordinary soil.

C. obova'ta (obovate). 1. Pink. California. 1873.
„ *spathula'ta* (spathulate). See C. OBOVATA.

CORETHROSTY'LIS BRACTEA'TA. See LASIOPETALUM BRACTEATUM.

CORIA'NDRUM. Coriander. (From *koris*, a bug; referring to the smell of the leaves. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

A hardy annual; seeds sown in March; common soil.

C. sati'vum (cultivated). 2. White. June. England.

CORIA'RIA. (From *corium*, a hide; in reference to the crustaceous covering of the fruit. Nat. ord. Coriariaceæ. Dr. Lindley says, "It is very difficult to say what is the affinity of this plant."

The hardy species by suckers; the New Zealand one by cuttings in sand, under glass. Winter temp., 40° to 45°.

C. himalaye'nsis (Himalayan). Fruiting petals black. Himalayas. 1904.
„ *japo'nica* (Japanese). Fruiting petals cherry to coral-red. Japan.
„ *myrtifo'lia* (myrtle-leaved). 6. Green. June. S. Europe. 1629.
„ *nepale'nsis* (Nepaulese). 10. Brown. May. Nepaul.
„ „ *ma'xima* (largest). 10 to 13. Fruits black. Himalaya. 1907.
„ *sarmento'sa* (twiggy). 3 Green. June. New Zealand. 1823.
„ *si'nica* (Chinese). Leaves roundish. Central China. 1907.
„ *termina'lis* (terminal). Fruiting petals black. Himalaya. China. 1897.
„ *thymifo'lia* (thyme-leaved). Fruiting petals black. Peru. 1889.

CO'RIS. (A name adopted from Dioscorides. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*. 1-*Monogynia*. Allied to Lubinia.)

A greenhouse biennial. Increased by seeds, in March; sand and peat and loam. Interesting little plant for the greenhouse shelf.

C. monspelie'nsis (Montpelier). 1. Lilac. June. S. Europe. 1640.

CORK-TREE. *Que'rcus Su'ber.*

CORK WOOD. *Ano'na palu'stris.*

CO'RMUS FOLIOLO'SA. See PYRUS FOLIOLOSA.

CORNELIAN CHERRY. *Co'rnus Ma's.*

CORN FLAG. *Gla'diolus.*

CORNISH MONEYWORT. *Sibtho'rpia europæ'a.*

CORN SALAD, or **LAMB'S LETTUCE** (*Valeriane'lla olito'ria*), is grown for winter and spring salads. The first dish, formerly brought to table, was a red herring set in a corn salad.

Soil and Situation.—Any soil that is not particularly heavy; the best is a sandy, moderately fertile loam, in an open situation.

Time and Mode of Sowing.—Sow in February and the two following months, and once a month during the summer, if in request; but it is not so palatable during this season. Lastly, during August and early in September, the plants from which will be fit for use in early spring, or during the winter, if mild. Three sowings are,

in general, quite sufficient for a family, viz. one at the end of February, a second early in August, and a third early in September.

Sow in drills, six inches apart. The only cultivation required is frequent hoeing, the plants being thinned to four inches asunder. They should always be eaten quite young. In summer, the whole plant may be cut, as they soon advance to seed at this season; but in spring and winter the outer leaves only should be gathered, as for spinach.

To obtain Seed.—Some of the spring-raised plants must be left ungathered from. They flower in June, and perfect their seed during the two following months.

CO'RNUS. Dogwood. (From *cornu*, a horn; in reference to the hardness of the wood. Nat. ord. *Cornels* [Cornaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Hardy deciduous trees, shrubs, &c., except where otherwise specified. Propagated by seeds, layers, or cuttings, and root divisions; common soil and moist situation.

C. a'lba (white-*berried*). 16. White. July. Siberia. 1741.
" " *Frœ'beli* (Frœbel's).
" " *Gouchou'lti* (Gouchoult's). Leaves variegated. 1888.
" " *Rosentha'li* (Rosenthal's). Similar to *C. a. Spæthii*.
" " *ro'ssica* (Russian). 8. White. July. Siberia. 1820.
" " *sibi'rica* (Siberian). 10. White. August. Siberia. 1824.
" " *sibi'rica variega'ta* (variegated Siberian).
" " *Spæ'thii* (Spæth's). Heavy golden variegation.
" " *splé'ndens* (splendid). Bark scarlet-red. 1909.
" " *variega'ta* (variegated). Silvery variegation.
" *alternifo'lia* (alternate-leaved). 15. White. July. N. Amer. 1760.
" *Amo'mum* (Amomum). White. N. Amer. " Kinnikinnik."
" *asperifo'lia* (rough-leaved). White. N. Amer.
" *Baile'yi* (Bailey's). N. Amer. 1890.
" *brachy'poda* (short-stalked). See C. MACROPHYLLA.
" *Bretschnei'deri* (Bretschneider's). White. China. 1899.
" *canade'nsis* (Canadian). 1. Yellow. July. Canada. 1774. Herbaceous perennial.
" *candidis'sima* (whitest). 6. White. June. N. Amer. 1758.
" " *variega'ta* (variegated).
" *capita'ta* (headed). 10. White. Fruit like a Raspberry. N. India to China. 1825. Half-hardy.
" *circina'ta* (round-*leaved*). 6. White. July. N. Amer. 1784.
" *controve'rsa* (disputed). India; China; Japan; Corea. 1909.
" *corynosty'lis* (clubbed-styled). White. Himalayas. 1896.
" *flo'rida* (flowery). 15. White. April. N. Amer. 1731.
" " *flo're-ru'bro* (red-flowered). Tinted bright red. N. Amer. 1889.
" " *pen'dula* (pendulous).
" *glabra'ta* (glabrous). White. Western United States.
" *gra'cilis* (graceful). Probably a form of *C. candidissima*. 1903.
" *gra'ndis* (grand). Green. Mexico. 1838. Half-hardy evergreen.
" *Hesse'i* (Hesse's). White. Eastern Asia? 1899
" *japo'nica* (Japanese). See C. KOUSA.
" *Kou'sa* (Kousa). 8. Yellow-red. Spring. Japan. 1847. Syn. *Benthamia japonica*.
" *macrophy'lla* (large-leaved). White. July. N. India to Japan. 1827.
" " *variega'ta* (variegated).
" *Ma's* (male). 15. Yellow. February. Europe. 1596. " Cornelian Cherry, Cornel."
" " *au'rea elegantis'sima* (most elegant golden). Leaves edged yellow and violet or rose. 1877.
" " *fru'ctu ce'ræ colora'to* (fruit wax-coloured). 20. Yellow. February.
" " *fru'ctu viola'ceo* (fruit violet).
" " *Mie'tzschii* (Mietzsch's). Leaves marbled and spotted grey and white. 1894.
" " *variega'ta* (variegated). 8. Yellow. June. Europe. 1596.
C. Ma's xanthoca'rpa (yellow-fruited).
" *Nutta'llii* (Nuttall's). 50–85. White. Western N. Amer. 1837.
" *oblo'nga* (oblong). 15. Purple. Nepaul. 1818.
" *officina'lis* (officinal). White. Japan.
" *panicula'ta* (panicled). See C. CANDIDISSIMA.
" *pube'scens* (pubescent). White. Western N. Amer.
" *Purpu'si* (Purpus's). White. Berries dull blue. Ohio. 1899.
" *sangui'nea* (bloody). 8. White. June. Britain.
" " *candidi'ssima* (whitest).
" " *fo'liis au'reo-margina'tis grandifo'lia*. (Leaves large, golden-variegated.) 1889.
" " *fo'liis variega'tis* (variegated-leaved). 10. White. June. Britain.
" " *variega'ta* (variegated). 8. White. June. Britain.
" " *viridi'ssima* (greenest).
" *seri'cea* (silky). See C. AMOMUM.
" " *asperifo'lia* (rough-leaved). See C. AMOMUM.
" " *oblongifo'lia* (oblong-leaved). See C. AMOMUM.
" *sibi'rica* (Siberian). See C. ALBA SIBIRICA.
" *stoloni'fera* (sucker-bearing). White. N. Amer. " Red-Osier Dogwood."
" " *flavira'mea* (yellow-branched). Bark yellow. N. Amer. 1899.
" *stri'cta* (erect). 10. White. June. N. Amer. 1758.
" " *asperifo'lia* (rough-leaved). 10. White.
" " *sempervi'rens* (*sub*-evergreen) 10. White. June.
" " *variega'ta* (variegated). 10. White. June. N. Amer. 1758.
" *sue'cica* (Swedish). 1. White. April. Britain. Herbaceous perennial.
" *tarta'rica* (Tartarian). See C. ALBA.
" *Thelica'nis* (Thelican). See C. MACROPHYLLA.

CORNU'TIA. (Named after *Cornutus*, a French physician. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Callicarpa.)

Stove evergreen shrubs. Loam and peat; cuttings in bottom-heat, under glass, in February or March.

C. longifo'lia (long-leaved). 6. Blue. July. Mexico. 1826.
" *puncta'ta* (dotted). Blue. Trop. Amer.
" *pyramida'ta* (pyramidal). 6. Blue. July. Mexico. 1733.

CORO'KIA. (From the native name, Korokia. Nat. ord. Cornaceæ.)

Evergreen shrubs of an ornamental character, requiring the shelter of a wall in the neighbourhood of London. Cuttings in sand in a cold frame during summer; also layers.

C. buddleoi'des (Buddleia-like). 10. Yellow. New Zealand. 1870.
" *Cotonea'ster* (Cotoneaster-like). 10. Yellow. New Zealand. 1876.

CORONI'LLA. (From *corona*, a crown, or garland; in reference to the disposition of the flowers. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

The juice of *C. va'ria* is poisonous. Both greenhouse and hardy species are handsome, free-blooming plants. Seeds and cuttings; cuttings root readily during the summer months under a close frame, even without bottom-heat.

HARDY HERBACEOUS, &c.

C. cappado'cica (Cappadocian). 1. Yellow. July. Cappadocia. 1800. Prostrate.
" *corona'ta* (crowned). 2. Yellow. S. Europe. 1776. Herbaceous perennial.
" *cre'tica* (Cretan). Striped. Europe, Asia Minor. 1731. Annual.
" *e'legans* (elegant). 1. Yellow. Servia.
" *emeroi'des* (Emerus-like). Yellow and red. S.E. Europe. Shrub.
" *E'merus* (*scorpion-senna*). 3. Red, yellow. April. France. 1596. Deciduous shrub.
" *globo'sa* (globe-form). 1. White. September. Crete. 1800. Deciduous creeper.
" *ibe'rica* (Iberian). See C. CAPPADOCICA.

C. ju'ncea (rush). 3. Yellow. June. France. 1656. Evergreen shrub.
„ *mi'nima* (smallest). 1. Yellow. S. Europe. 1658. Herbaceous perennial.
„ *monta'na* (mountain). 2. Yellow. June. Caucasus, Persia. 1776. Herbaceous perennial.
„ *repa'nda* (waved). ½. Yellow. July. Spain. 1805.
„ *scorpioi'des* (scorpion-like). ½. Yellow. July. Mediterranean region. 1506.
„ *squama'ta* (scaly). See HIPPOCREPIS SQUAMATA.
„ *vagina'lis* (sheathing). Yellow. Europe.
„ *va'ria* (various). 1. Pink. September. Europe. 1597. Deciduous creeper.

GREENHOUSE EVERGREENS, &c.

C. arge'ntea (silvery-*leaved*). 2. Yellow. May. Crete. 1664.
„ *glau'ca* (milky-green). 2. Yellow. July. France. 1722.
„ „ *variega'ta* (variegated-*leaved*). 4. Yellow. August. Gardens.
„ *pentaphy'lla* (five-leaved). 2. Yellow. June. Algiers. 1700.
„ *stipula'ris* (stipuled). See C. VALENTINA.
„ *valenti'na* (Valencia). 2. Yellow. August. S. Europe. 1596.
„ *vimina'lis* (twiggy). 3. Yellow. August. Mogador. 1798.

CORRE'A. (Named after *Correa*, a Portuguese botanist. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

The settlers in New Holland employ the leaves of Correas, particularly those of *C. a'lba*, for tea. Greenhouse evergreen shrubs, from Australia. Cuttings of half-ripened shoots in sand, under glass, in bottom-heat, in spring. The finer sorts are also grafted on the commoner ones, such as *C. a'lba*. *C. specio'sa* will scarcely strike at all; three parts sandy peat and one of turfy loam. Summer temp., 55° to 75°; winter, 40° to 48°.

C. a'lba (white). 6. White. June. 1793.
„ *backhousia'na* (Backhousian). See C. SPECIOSA BACKHOUSIANA.
„ *bi'color* (two-coloured). See C. SPECIOSA BICOLOR.
„ *cardina'lis* (scarlet). 2½. Scarlet. Australia.
„ *ferrugi'nea* (rusty). See C. LAWRENCIANA.
„ *Harri'sii* (Harris's). See C. SPECIOSA HARRI'SII.
„ *lawrencia'na* (Lawrencian). 3. Green, white. April. 1836.
„ *longiflo'ra* (long-flowered). Pale rose. December. Hybrid. 1839.
„ *magni'fica* (magnificent). See C. SPECIOSA MAGNIFICA.
„ *pi'cta* (painted). See C. SPECIOSA.
„ *pulche'lla* (pretty). See C. SPECIOSA PULCHELLA.
„ *ru'fa* (reddish). See C. ALBA.
„ *specio'sa* (showy). 3. Scarlet. June. Australia. 1800.
„ „ *backhousia'na* (Backhousian).
„ „ *bi'color* (two-coloured). Crimson, tipped white. 1840.
„ „ *Harri'sii* (Harris's). Crimson, or deep scarlet.
„ „ *magni'fica* (magnificent). White, large.
„ „ *ma'jor* (larger). Scarlet, large.
„ „ *pulche'lla* (pretty). 3. Scarlet. June. 1824.
„ „ *ventrico'sa* (inflated). Crimson, tipped green.
„ *ventrico'sa* (inflated). See C. SPECIOSA VENTRICOSA.
„ *vi'rens* (green). See C. SPECIOSA.

CORRUGATE. Wrinkled.

CORTADE'RIA. (Nat. ord. Gramineæ.)

Strong-growing, autumn-flowering, and highly ornamental perennial grasses. Seeds and division. Ordinary garden soil.

C. arge'ntea (silvery). Silvery white. Brazil. 1848. "Pampas Grass."
„ *conspi'cua* (conspicuous). Grey. New Zealand. "Silvery Reed-grass."
„ *juba'ta* (maned). Andes of Ecuador. 1878.
„ *kermesi'na* (carmine). Reddish. 1866.

CORTEX. The bark or corky layer.

CORTICAL. Like bark, or belonging to the bark.

CORTU'SA. Bear's-ear Sanicle. (Named after *Cortusus*, an Italian botanist. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy perennials, with frame protection in winter; do best as pot-plants; root division; loam and peat.

C. hirsu'ta (hairy). Country unknown.
„ *Matthi'oli* (Matthioli's). 1. Red. April. Austria 1596.
„ „ *grandiflo'ra* (large-flowered). Flowers large, deep red. Central Asia. 1879.
„ *pu'bens* (downy). Magenta-purple. May. Transylvania. 1878.
„ *Semeno'vii* (Semenow's). See KAUFMANNIA SEMENOVII.
„ *villo'sa* (long-haired). Country unknown.

CORYA'NTHES. Helmet-flower. (From *korus*, a helmet, and *anthos*, a flower; in reference to the shape of the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Division; in pots well-drained; fibrous peat, chopped sphagnum, and small-broken potsherds. Growing temp., 75° to 85°; rest, 50° to 60°. See ORCHID CULTURE.

C. Bungero'thii (Bungeroth's). Green, white, orange, red-spotted. Venezuela. 1890.
„ *Co'bbii* (Cobb's). See C. MACAULATA COBBII.
„ *elega'ntium* (more elegant). Rio Negro. 1868.
„ *Fieldi'ngi* (Colonel Fielding's). Yellow, brown. May. S. Amer. 1845.
„ *lentigino'sa* (freckled). Yellow. May. Guiana. 1837.
„ *leuco'corys* (white helmet). Greenish-yellow; lip purple with white hood. Peru.
„ *macra'ntha* (large-flowered). 1. Brown, yellow. June. Caraccas.
„ *macro'corys* (large helmet). Large, pale yellow spotted purple. Peru.
„ *macrosta'chya* (large-spiked). Orange, yellow, brown. Mexico. 1843.
„ *macula'ta* (spotted-*lipped*). 1. Yellow-spotted. June. Demerara. 1829.
„ „ *Alberti'næ* (Mrs. Albertine's). Yellow, spotted crimson.
„ „ *Co'bbii* (Cobb's). Yellow-white, orange, unspotted. 1903.
„ „ *Parke'ri* (Parker's). 1. Yellow, purple. June. Demerara. 1839.
„ „ *puncta'ta* (spotted). Yellow, spotted red.
„ „ *vitri'na* (glass-green). Light greenish-yellow. 1895.
„ *mastersia'na* (Mastersian). Yellowish, freckled light claret-crimson. Colombia. 1901.
„ *Sande'ri* (Sander's). Yellow, spotted with purple; hood apricot. 1910.
„ *specio'sa* (showy). 1½. Yellow, green. May. Brazil. 1826.
„ „ *a'lba* (white-*flowered*). 1½. White. June. Demerara. 1840.
„ *sumneria'na* (Sumnerian). Chocolate-brown. July. Brazil. 1854.
„ *Wo'lfii* (Wolf's). Yellow and brownish-red. Ecuador. 1893.

CORY'CIUM. (From *korus*, a helmet; referring to the shape of the flower. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

One of those terrestrial orchids from the Cape of Good Hope which rarely succeeds in this country.

C. cri'spum (curled). 1. Yellow. July. 1825.
„ *orobanchoi'des* (Orobanche-like). 1. Yellow. July. 1825.

CORY'DALIS. (From *korudaios*, a lark, the spur of the flower resembling that of the lark. Nat. ord. *Fumeworts* [Papaveraceæ]. Linn. 17-*Diadelphia*, 2-*Hexandria*.)

Beautiful hardy plants. The perennial kinds are increased by root division at any season; and the annuals sown in the open ground, in spring or autumn, in common soil.

ANNUALS AND BIENNIALS

C. acau'lis (stemless). See C. OCHROLEU'CA.
„ *au'rea* (golden). 1. Yellow. June. N. Amer. 1812. Biennial.

C. brevifló'ra (short-flowered). 2. Pale yellow. June Kamtschatka. 1824.
„ *capnoi'des* (capnus-like). 2. White. July. S. Europe. 1596. Biennial.
„ *clavicula'ta* (tendrilled). 6. White, yellow. June. Britain. Climber.
„ *glau'ca* (milky-green). 2. Yellow, purple. July. N. Amer. 1683.
„ *impa'tiens* (impatient). See C. SIBIRICA.
„ *ochroleu'ca* (yellow, white). 1. Pale yellow. July. Italy. 1825.
„ *stri'cta* (straight). 1. Yellow. June. Siberia. 1827. Biennials.
„ *urale'nsis* (Ural). 1. Pale yellow. August. Ural Mountains. 1824. Biennials.

HERBACEOUS.

C. fla'vula (yellowish). ½. Yellow. June. N. Amer. 1838.
„ *lu'tea* (yellow). 2. Yellow. July. England.
„ *pæoniæfo'lia* (peony-leaved). 2. Purple. February. Siberia. 1820.
„ *sibi'rica* (Siberian). 1. Yellow. July. Siberia. 1810.

TUBEROUS-ROOTED.

C. Alle'ni (Allen's). Yellow-white, tinged purple. Apparently a hybrid. 1908.
„ *angustifo'lia* (narrow-leaved). 1. Purple. February. Iberia. 1819.
„ *bicalcara'ta* (two-spurred). See C. RUTÆFO'LIA.
„ *bractea'ta* (*large*-bracted). 1. Pale yellow. February. Siberia. 1829.
„ *bulbo'sa* (bulbous). 1. Pink. February. Britain. "Holewort."
„ „ *densiflo'ra* (dense-flowered).
„ *cauca'sica* (Caucasian). 1. Purple. February. Caucasus. 1823.
„ *ca'va* (hollow). See C. TUBEROSA.
„ *cheilanthifo'lia* (Cheilanthus-leaved). Pale yellow. Central China. 1902.
„ *faba'cea* (bean-*leaved*). 3. Purple. February. Germany. 1815.
„ *Gèble'ri* (Gebler's). See C. CAPNOIDES.
„ *Gortschako'wi* (Gortschakow's). 1 to 1½. Golden-yellow. Turkestan.
„ *kolpakowskya'na* (Kolpakowskian). Purple. Turkestan. 1879.
„ *ledebouria'na* (Ledebourian). Purple, pale purple. Siberia. 1879.
„ *longiflo'ra* (long-flowered). ¾. Pale rose. April. Altai. 1832.
„ *macrophy'lla* (large-leaved). See C. SCOULERI.
„ *marshallia'na* (Marshall's). 1. Purple. February. Tauria. 1824.
„ *no'bilis* (noble-flowered). 1. Lilac, yellow. May. Siberia. 1783.
„ *pa'llida* (pale). Golden yellow, tipped brown. China and Japan.
„ *pauciflo'ra* (few-flowered). 1. Purple. February. Siberia. 1819.
„ *racemo'sa* (racemed). Japan.
„ *rutæfo'lia* (rue-leaved). 1. Pink. June. Asia Minor.
„ *Scoule'ri* (Scouler's). N.W. Amer.
„ *Semenow'ii* (Semenow's). 1½. Golden-yellow. April. Turkestan.
„ *Sewerzo'wi* (Sewerzow's). Flowers large, yellow. W. Turkestan. 1883.
„ *so'lida* (solid). See C. BULBOSA.
„ *specio'sa* (showy). See C. PALLIDA.
„ *thalictrifo'lia* (Thalictrum-leaved). 1. Yellow. China. 1901.
„ *tomento'sa* (felted). ½. Light yellow. Central China. 1903.
„ *tubero'sa* (tuberous-*hollow-rooted*). 1. Purple. February. Europe. 1596.
„ „ *albiflo'ra* (white-flowered). 1. White. February. Europe. 1596.
„ *Wilso'ni* (E. H. Wilson's). ½. Deep yellow. Central China. 1903.

CORYLO'PSIS. (From *korulos*, a hazel, and *opsis*, resemblance; the foliage resembles that of a hazel. Nat. ord. Hamamelidaceæ.)

Deciduous trees requiring the protection of a wall in the latitude of London. Cuttings of half-ripe wood under a hand-light or cold frame. Ordinary soil.

C. Griffi'thii (Griffith's). See C. HIMALAYANA.
„ *himalaya'na* (Himalayan). Pale yellow. Eastern Himalayas. 1879.
„ *pauciflo'ra* (few-flowered). Pale primrose. March Japan.
„ *sine'nsis* (Chinese). Yellow; anthers yellow; seeds white. Central and W. China. 1906.
„ *spica'ta* (spiked). Yellow. February. Japan. 1864. Fragrant.
„ *veitchia'na* (Veitchian). Yellow; anthers red-brown. Central China. 1910.

CO'RYLUS. Nut-tree. (From *korus*, a hood, or helmet; in reference to the calyx covering the nut. Nat. ord. *Mastworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

Hardy deciduous shrubs, mostly cultivated for their fruits; common soil; readily increased either by seeds sown in October or November, or by layers or suckers.

C. america'na (American). 10. April. N. Amer. 1798.
„ *Avella'na* (filbert). 10. February. Britain.
„ „ *a'lba* (white Filbert). See C. MAXIMA ALBA.
„ „ *barcelone'nsis* (Barcelona). See C. MAXIMA BARCELONENSIS.
„ „ *cri'spa* (frizzled). 8. February.
„ „ *glomera'ta* (clustered). 8. February.
„ „ *gra'ndis* (great *Cob*). See C. MAXIMA BARCELONENSIS.
„ „ *heterophy'lla* (various-leaved). 20. Yellow, red. February. Danube. 1829.
„ „ *Lambe'rti* (Lambert's). See C. MAXIMA.
„ „ *ova'ta* (egg-*fruited*). 8. February.
„ „ *pu'mila* (dwarf). 6. February.
„ „ *purpu'rea* (purple-*leaved*). See C. MAXIMA ATROPURPUREA.
„ „ *ru'bra* (red Filbert). See C. MAXIMA.
„ „ *te'nuis* (thin *Cosford*). See C. MAXIMA TENUIS.
„ „ *tubulo'sa* (tubular-*calyxed*). See C. MAXIMA.
„ „ *tubulo'sa a'lba* (white-tubular-Filbert). See C. MAXIMA ALBA.
„ „ *variega'ta* (variegated). 8. February.
„ *Colu'rna* (hazel, *Constantinople*). 10. Apetal. February. Constantinople. 1665.
„ „ *chine'nsis* (Chinese). Cupule longer than the nut. W. China. 1907.
„ *fe'rox tibe'tica* (Tibetan spiny). Central and Western China. 1904.
„ *heterophy'lla* (various-leaved). Japan.
„ „ *sutchuene'nsis* (Sutchuen). Leaves smooth or nearly so. Central China. 1910.
„ *hu'milis* (humble). See C. AMERICANA.
„ *mandshu'rica* (Manchurian). Amurland, Japan, &c.
„ *ma'xima* (largest). 10. February. S. Europe, &c. 1759.
„ „ *a'lba* (white Filbert). 10. February. Spain.
„ „ *atropurpu'rea* (dark purple-leaved). 10. February
„ „ *barcelone'nsis* (Barcelonan). 8. February. Spain
„ „ *te'nuis* (thin Cosford). 10. February.
„ *rostra'ta* (beaked). 5. February. N. Amer. 1745.

FILBERT CULTURE.—The following are the most esteemed kinds:—*White Filbert;* well known. *Red;* similar, but having a red skin. *Cob Nut, Kentish Cob, Reigate Cob, Cosford Cob, Daviana Prize Exhibition Cob.*

Propagation.—Layers, cuttings, grafting, and seed. Shoots of the previous year's growth root readily if *layered* any time during the rest-season. *Cuttings* should be made similar to those of the currant, the lower buds cut out in order to destroy their propensity to suckering. If they are to form neat little bushes, on a dwarfing system for small gardens, the cuttings may be nearly half a yard in length. *Grafting* is performed as with the apple or pear, and at the period when the buds first begin to swell. The common hazel-nut and the Spanish nut are generally used for stocks; the latter, it is affirmed, will not produce suckers.

Seed.—This practice is resorted to for the sake of raising new varieties, or for producing the ordinary hazels. In the former case, there is much room for progress still; and certainly no plant offers greater facilities to the hybridiser. Bearing, as it does, male and female blossoms separately, every opportunity exists for depriving any given kind of its catkins betimes. Seedlings

vary very much in regard to productiveness. We have visited many woods year by year and have found some bushes always crop while others have none.

Soil.—Any ordinary soil, if pretty good, will answer, provided it is not stagnant. A free, upland, light loam, however, is what they prefer, yet they will grow in almost any soil.

Culture during the Growing Period.—Very little is requisite after the regular winter pruning, unless it be the extirpation of suckers, and the removal, during summer, of those loose and ill-placed watery growths which only serve to confuse and darken the tree. We may here notice, that some little training may be necessary for those under a dwarfing-system in small gardens, in order to bring them into a compact and handsome shape.

Culture during the Rest Period.—Commencing with the training when young. They are best in single stems of about two feet in height; and the head should branch off equally, to accomplish which, some pruning back is requisite during the first year or two, whilst the head is forming, and the latter should be kept thin in the centre. When the trees are well established an annual pruning should be resorted to, consisting of still keeping the centre of the bush somewhat open, and in thinning out any cross shoots and superfluous spray. It must be observed, that the fruit is produced on shoots of the preceding year, and generally on portions which have been well exposed to the light. Any coarse or robust shoots should be shortened back nearly half their length; these will frequently produce axillary branches of a fruitful character. Do not prune until the blossoms are showing; this will be about the beginning of February. The female blossom is like a minute brush, of a pinkish colour; the male is the well-known catkin. In pruning, much regard must be paid to these blossoms, especially the female; scarcely a twig may be cut away containing them. This makes it evident that most of the pruning, or rather, thinning, requisite should have been well carried out prior to the commencement of fruitfulness.

It often happens that filbert-trees will possess female blossoms with few or no male catkins. When such is the case there will be no crop, unless means be taken to bring the male farina within their reach. Catkins must be sought about the period when the male dust is just beginning to burst. Branches containing these may be tied here and there amongst the bushes most needing them It matters not what kind of nut they are from; probably the wild hazel is best.

Fruit: How to Keep.—When gathered, the fruit must be kept in jars, in a cool cellar, with husks on. If it is desired to impart a fine, fresh-looking colour to the husks, they must be placed in a close vessel, and a small pan of sulphur gently burned, or rather, smouldered, beneath them. An old Sussex practice was to burn the jars after sprinkling a little salt over the nuts.

Insects.—See CURCULIO NUCUM and APHIS CORYLI.

CORYMBS, a spike of flowers, the flower-stalks of which are longer in proportion as they stand lower down the main stalk supporting them, so that the flowers are with a top nearly level. Those of *Spiræa opulifolia* and of the Mountain Ash are examples.

CORYNE'LLA. (From *korune*, a club; referring to the shape of the style. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Clianthus.)

Stove evergreen shrub. Cuttings in sand under a glass, and in bottom-heat; peat and loam; summer temp., 60° to 80°; winter, 50° to 55°.

C. polya'ntha (many-flowered). 5. Purple. W. Ind. 1824.

CORY'NEUM BEIJERI'NCKI. A fungus responsible for the frequent gumming in stone-fruit trees, causing limbs or the whole tree to die away.

CORYNOCA'RPUS. (From *korune*, a club, and *carpos*, a fruit; referring to the form of the fleshy seed. Nat. ord. Anacardiaceæ. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Theophrasta.)

Greenhouse evergreen tree; readily increased by layers in light, rich soil.

C. lævigata (smooth). 20. White. New Zealand. 1823.
" " *au'reo-margina'ta* (golden-edged). Leaves with broad golden margin. New Zealand. 1886.

CORYNOPHA'LLUS LEONE'NSIS. See AMORPHOPHALLUS LEONENSIS.

CORYNOSTY'LIS. (Derived from *korune*, a club, and *stylos*, a style; the style being club-shaped. Nat. ord. Violaceæ.)

Climbing stove perennials. Seeds and cuttings of the young wood, getting firm, or taken off with a heel of the older wood, in sand in a close case, with bottom-heat.

C. albiflo'ra (white-flowered). See C. HYBANTHUS.
" *Aublе'tii* (Aublet's). White. Guiana. 1823.
" *Hyba'nthus* (Hybanthus). White. Trop. Amer. 1870.

CORY'PHA. Fan Palm. (From *koruphe*, the summit; in reference to the leaves growing in tufts on the top of this palm. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Stove palms, except where otherwise mentioned; soil, rich, sandy loam; increased by seeds.

C. austra'lis (southern). See LIVISTONA AUSTRALIS.
" *deco'ra* (handsome). See LIVISTONA HUMILIS.
" *du'lcis* (sweet). See BRAHEA DULCIS.
" *ela'ta* (tall). 150. E. Ind. 1825.
" *Geba'nga* (Gebanga). 60. Java. 1847.
" *glauce'scens* (milky-green). 100. E. Ind. 1820. *Sabal glaucescens* (?).
" *glaucophy'lla* (glaucous-leaved). Bourbon. 1826.
" *heterophy'lla* (various-leaved). Danube. 1829. Greenhouse.
" *mi'nor* (smaller). See SABAL ADANSONII.
" *Palme'tto* (Palmetto). See SABAL PALMETTO.
" *Pu'mos* (Pumos). See COPERNICIA PUMOS.
" *sylve'stris* (wood). 50. Moluccas Islands. 1825.
" *Talie'ra* (Taliera). 100. E. Ind. 1823.
" *tecto'rum* (roof). See COPERNICIA TECTORUM.
" *umbraculi'fera* (umbrella-bearing). 100. E. Ind. 1742.
" *U'tan* (Utan). See C. SYLVESTRIS.
" *Woga'nii* (Wogan's). See LIVISTONA WOGANII.

CORYSA'NTHES. (From *korus*, a helmet, and *anthos*, a flower; in allusion to the helmet-shaped flowers. Nat. ord. Orchidaceæ.)

Terrestrial Orchids requiring warm treatment. Loam, leaf-mould, and a liberal quantity of sand.

C. limba'ta (bordered). Purple, white. Java. 1863.
" *pic'ta* (painted). Purple and yellow. Java. 1867.

CORYTHO'LOMA. (From *korus*, a helmet, and *tholos*, a dome; in reference to the shape of the flowers. Nat. ord. Gesneraceæ.)

A stove herb, closely allied to Gesnera, and requiring treatment similar to *G. cardinalis*.

C. macro'podum (long-stalked). ½. Cinnabar red, blotched purple. S. Brazil. 1908.

COSBÆ'A COCCI'NEA. See SCHIZANDRA HANCEANA.

COSCI'NIUM. (From *koskinon*, a sieve; in reference to the large vessels of the wood. Nat. ord. Menispermaceæ.)

A stove climber. Cuttings of young wood getting firm at the base, in a close frame with bottom-heat. Fibrous loam, peat, and sand.

C. fenestra'tum (windowed). Brown. India and Ceylon. 1852.

COSMA'NTHUS FIMBRIA'TUS. See PHACELIA FIMBRIATA.

COSME'LIA. (From *kosmeo*, to adorn. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrub. Cuttings in summer months; sandy peat and sand.

C. ru'bra (red-*flowered*). Red. Australia. 1826.

COSMIBUE'NA. (In compliment to *Cosmæ Bueno*, a Spanish physician, who wrote a natural history of Peru. Nat. ord. Rubiaceæ.)

Evergreen stove tree, or shrub. Seeds, and cuttings of mature wood in sand in a close case, with bottom-heat. Fibrous loam, peat, and sand.

C. obtusifo'lia latifo'lia (broad-leaved, blunt-leaved). 20. White. Colombia. 1876. Syn. *Cascarilla grandifolia*.

COSMI'DIUM FILIFO'LIUM. See THELESPERMA FILIFOLIUM.

CO'SMOS. (From *kosmos*, beautiful; in reference to the ornamental flowers. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Bidens.)

Cosmea is united to this. Both the annual and perennial species are all readily increased from seeds, sown early in spring, and treated as tender annuals; planted out in the open borders in the summer months.

PERENNIALS.

C. diversifo'lius (various-leaved). 3. Lilac. September. Mexico. 1835. Hardy tuber.
„ *scabiosoi'des* (scabious-like). 4. Scarlet. September. Mexico. Greenhouse tuber.

ANNUALS.

C. atrosangui'neus (dark blood-red). 3. Deep purple-red. Mexico. 1861.
„ *bipinna'tus* (doubly-leafleted). 3. Purple. July. Mexico. 1799.
„ „ *albiflo'rus* (white-flowered). White. 1890.
„ *chrysanthemifo'lius* (chrysanthemum-leaved). 2. Yellow. July. S. Amer. 1826.
„ *crithmifo'lius* (samphire-leaved). 2. Yellow. September. Mexico. 1826.
„ *hy'bridus* (hybrid). White or pale rose. Mexico. 1888.
„ *lu'teus* (yellow). 2. Yellow. October. Mexico. 1811.
„ *parviflo'rus* (small-flowered). 2. White. July. Mexico. 1800. Hardy.
„ *sulphu'reus* (sulphur). 2. Yellow. July. Mexico. 1799. Hardy.
„ *tene'llus* (delicate). 2. Yellow. October. Mexico. 1824.
„ *tenuifo'lius* (slender-leaved). 2. Purple. September. Mexico. 1836. Hardy.

COSSI'NIA. (Named after *Cossigny*, a French naturalist. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 6-*Hexandria*, 2-*Digynia*. Allied to Kœlreuteria.)

Admired for its golden-veined leaves. Stove evergreen shrub. Soil, peat and loam. Cuttings root readily under glass, in bottom-heat.

C. borbo'nica (Bourbon). See C. PINNATA.
„ *pinna'ta* (pinnate). 10. Mauritius. 1824.

COSSUS LIGNIPERDA. Goat Moth. The caterpillar of the Goat Moth is most destructive to the wood of fruit-trees, though the elm, oak, willow, poplar, and walnut, also, are liable to its attacks. It is the *Cossus ligniperda* of some naturalists, and the *Bombyx* and *Xyleutes cossus* of others. The caterpillar measures more than four inches in length, is smooth and shining, beset only here and there with single short hairs. It is dark red on the back, and the breathing-holes situated at both sides are of the same colour. The sides and lower part of the body are flesh-coloured; the head is black; the first segment, also, marked with black above. After remaining more than two years in the larva state, and casting its skin eight times, the caterpillar becomes of a light ochrish-yellow hue shortly before becoming a chrysalis, which usually takes place in spring, when it makes a strong cocoon of chips of wood and small pieces of bark, which it has gnawed off. The chrysalis is yellow, and the segments are deeply indented and capable of much extension; its back is furnished with strong, pointed spines, sometimes of a reddish-brown colour. The cocoon is situated immediately within the opening in the tree, so that the pupa, when arrived at maturity, can press itself half out of the hole when the shell bursts, and the moth comes forth usually in the month of June or July, after having reposed in the pupa state for an indefinite time. When at rest the wings are folded together over the back in the form of a roof; it sits quietly in the daytime on the stems of trees, and is difficult to be distinguished on account of its grey colour. Its wings measure, from one tip to the other, nearly three inches, and many specimens more than this; the female is usually larger than the male. The fore-wings are ashy-white, clouded with brown, especially across the middle, and marked with very numerous streaks, like net-work; the hind-wings are brown; thorax ochrish in front, pale in the middle, with a black bar behind. The female is provided with a strong egg-depositor, with which she introduces her eggs into the bark of the tree —often 1000 in number; the young caterpillars living, at first, in and between the outer and inner bark, and afterwards, when they are stronger, penetrating into the wood. When the existence of one of these creatures is detected in a trunk, by its excrement, relief comes too late for the tree, even if we are able to kill the caterpillar, the mischief being already done. Notwithstanding this, the caterpillar should never be left undisturbed; and an attempt should be made to reach it by enlarging the opening with a garden-knife, or endeavouring to kill it by thrusting a piece of garden-wire up the hole. It is called the Goat Moth from the peculiar smell both of the insect and its larva.—*The Cottage Gardener*, iii. 137.

COSTMARY. See CHRYSANTHEMUM BALSAMITA.

CO'STUS. (An ancient name, adopted from Pliny. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

The roots are very bitter, and without the aromatic pungent odour peculiar to the Costus of the continental shops, which is the root of a very different plant, a native of Arabia, and allied to Cardopatum. The Costus of Cashmere, employed to protect bales of shawls from moths, is the root of *Aukla'ndia co'stus*. Stove herbaceous perennials of easy growth, and readily increased by root division; sandy loam, with a little peat.

C. a'fer (African). 2. White. June. Sierra Leone. 1822.
„ *albe'scens* (whitish). Central Amer. 1868.
„ *ara'bicus* (Arabian). See C. SPECIOSUS.
„ *cine'reus* (grey). Central Amer. 1868.
„ *como'sus* (tufted). 4. Yellow. S. Amer. 1752.
„ *cyli'ndricus* (cylindrical). 5. Yellow. Trinidad.
„ *di'scolor* (two-coloured-*leaved*). 4. White. June. Brazil. 1823.
„ *e'legans* (elegant). Yellow, orange. Costa Rica. 1862.
„ *engleria'nus* (Englerian). White and yellow. W. Trop. Africa. 1892.
„ *Friedrichse'nii* (Friedrichsen's). 6. Bright yellow. Central Amer. (?) 1903.
„ *i'gneus* (fiery). 1. Bright orange. Brazil. 1884.
„ *lana'tus* (woolly). 3. May. S. Amer. 1820.
„ *lucanusia'nus* (Lucanusian). Purple, yellow. Cameroons.
„ *lu'cidus* (shining). Central Amer. 1868.
„ *macula'tus* (spotted). 2. White. July. Sierra Leone. 1822.
„ *malortiea'nus* (Malortiean). See E. ELEGANS.
„ *mexica'nus* (Mexican). Mexico.
„ *micra'nthus* (small-flowered). 5 to 6. Red, orange-red, yellow. Martinique. 1903.
„ *musa'icus* (mosaic). Leaves variegated. Congo. 1887.
„ *nepale'nsis* (Nepaul). See C. SPECIOSUS.
„ *pi'ctus* (painted-*flowered*). 2. Yellow, purple. July. Mexico. 1832.
„ *Piso'nis* (Pison's). See C. SPIRALIS.
„ *specio'sus* (showy). 3. White. August. E. Ind. 1752.
„ *spica'tus* (spiked). 1. Yellow. June. W. Ind. 1793.
„ *spira'lis* (spiral). 4. Scarlet. November. Venezuela. 1823.
„ *verschaffeltia'nus* (Verschaffeltian). 3. Pale yellow. Brazil.
„ *villosi'ssimus* (most hairy). 6. Yellow. November. St. Vincent. 1822.

COTONEA'STER. (From *cotonea*, Pliny's name for the quince, and *aster*, a corruption of *ad instar*, generally used to express likeness; literally, quince-like. Nat. ord. *Appleworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Digynia*.)

Hardy shrubs, easily increased by layers or seed. Common soil.

C. acumina'ta (pointed-*leaved*). 4. Pink. April. Nepaul. 1820.
„ *acutifo'lia* (acute-leaved). Pale rose. Berries red. China; Mongolia. 1910.
„ *adpre'ssa* (adpressed). White. China. 1904.
„ *affi'nis* (similar). 4. Pink. April. Nepaul. 1820.
„ *angustifo'lia* (narrow-leaved). 6 to 7. White. Yunnan, China. 1902.
„ *applana'ta* (flattened). White. Fruit scarlet. China (?). 1907.

C. arbore'scens (tree-like). White. Himalaya.
„ *bacilla'ris* (rod). Nepaul. 1841.
„ *bulla'ta* (wrinkled). See C. MOUPINENSIS FLORIBUNDA.
„ *buxifo'lia* (box-leaved). 3. White. April. Nepaul. 1824.
„ „ *margina'ta* (*white*-margined). See C. BUXIFOLIA.
„ *conge'sta* (crowded). See C. MICROPHYLLA GLACIALIS.
„ *denticula'ta* (fine-toothed-*leaved*). 6. White. Mexico. 1826.
„ *dis'ticha* (two-ranked). White. Himalaya.
„ *emargina'ta* (notched). See C. MICROPHYLLA.
„ *Fontane'sii* (Fontanes's). See C. NUMMULARIA.
„ *Franche'tii* (Franchet's). 3 to 5. White. Fruit, orange-yellow. Yunnan, China. 1902.
„ *fri'gida* (cold). 10. White, green. April. Nepaul. 1824.
„ *himala'ica* (Himalayan). White. Himalaya. 1875.
„ *Hooke'ri* (Hooker's). See C. MICROPHYLLA GLACIALIS.
„ *horizonta'lis* (horizontal). 2 to 3. White. Fruit red. China. 1879.
„ *humifu'sa* (spread on the ground). White. Fruit scarlet. Central China. 1907.
„ *intege'rrima* (very entire). 4. Pink. April. Great Orme's Head, England, also Europe. 1656.
„ „ *erythroca'rpa* (red-fruited). 4. White. Europe.
„ *lana'ta* (woolly). White. Himalaya.
„ *laxiflo'ra* (loose-flowered). 4. Pink. April. 1826.
„ „ *uniflo'ra* (one-flowered). See C. BUXIFOLIA.
„ *Lindle'yi* (Lindley's). 10. White. Himalaya. 1824.
„ *microphy'lla* (small-leaved). 4. White. April. Nepaul. 1825.
„ „ *glacia'lis* (glacial). A dense bush. 1 to 1½ ft. 1868.
„ *moupine'nsis* (Moupine) White, tinted red. Western China. 1870.
„ „ *floribu'nda* (free-flowering). 1902.
„ *multiflo'ra* (many-flowered). 4. White. May. Altai. 1837.
„ *Nummula'ria* (Moneywort-leaved) of Fischer and Meyer. Europe, Asia.
„ *Nummula'ria* (Moneywort-*leaved*) of Lindley. See C. LINDLEYI.
„ *panno'sa* (woolly). 4 to 6. White. Fruit red. China. 1905.
„ *prostra'ta* (prostrate). See C. ROTUNDIFOLIA PROSTRATA.
„ *rotundifo'lia* (round-leaved). 3. White. April. Nepaul. 1820.
„ „ *prostra'ta* (prostrate). White. Himalaya. 1868.
„ *Ro'ylei* (Dr. Royle's). See C. ACUMINATA.
„ *rugo'sa Henry'i* (Henry's wrinkled). White. Fruit crimson-brown. China. 1908.
„ *sikkime'nsis* (Sikkim). White Fruit coral-red. Sikkim. 1890.
„ *Simo'nsii* (Simon's). White or pink. Berries scarlet. Himalaya. 1868.
„ *thymifo'lia* (thyme-leaved). 2. White. April. Himalaya.
„ *tomento'sa* (woolly). 4. Pink. April. Europe. 1759.
„ *uniflo'ra* (one-flowered) of Bunge. Siberia.
„ *vulga'ris* (common). See C. INTEGERRIMA.
„ „ *erythroca'rpa* (red-fruited). See C. INTEGERRIMA ERYTHROCARPA.

COTTON. See GOSSYPIUM.

COTTON GRASS. See ERIOPHORUM.

COTTO'NIA. (A commemorative name. Nat. ord. Orchidaceæ.)

Stove epiphytal orchid, with the habit of a Vanda. Divisions. Fibre of peat, sphagnum, and plenty of crocks in baskets.

C. macrosta'chya (long-spiked). 1. Greenish; lip purple. July. India; Ceylon. 1840.

COTTON THISTLE. See ONOPORDON ACANTHIUM.

COTTON-TREE. See BOMBAX.

COTTON-WOOD. See POPULUS DELTOIDEA.

CO'TULA. (From *kotule*, a little hollow or cup; in allusion to the cup-like heads of some of the species. Nat. ord. Compositæ.)

Dwarf, creeping herbs, with finely cut leaves, as a rule. *C. dioica*, sometimes named *Leptinella dioica*, is used for carpeting the ground in carpet bedding and alpine gardening. Seeds and divisions. Ordinary soil.

C. dioi'ca (dicœcious). ½. Leaves fern-like. Plant creeping. New Zealand.
„ *pyrethrifo'lia* (Pyrethrum-leaved). Leaves small, fern-like. New Zealand. 1898.
„ *qui'nqueloba* (five-lobed). See LIDBECKIA LOBATA.
„ *squa'lida* (dirty). Leaves like *Asplenium fontanum*. Plant creeping. New Zealand. 1898.

COTYLE'DON. Navelwort. (From *kotule*, a little hollow or cup; in allusion to the hollow in the leaves of some species, such as *C. Umbilicus*. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*. Allied to Sedum.)

These plants feed as much, if not more, by the myriads of pores or mouths all over their leaves, than by the roots, which seem only necessary for holding them stationary in the driest and most barren situations. Greenhouse evergreens, from the Cape of Good Hope, except where otherwise mentioned; sandy loam, with a little old mortar mixed with it, and plenty of drainage; cuttings at any season.

C. acutifo'lia (acute-leaved). 1. Scarlet, yellow. April. Mexico. 1841.
„ *adu'nca* (hooked). 2 to 4. Yellow, pink. Mexico.
„ *agavoi'des* (Agave-like). 1. Orange. Mexico.
„ *Aizo'on* (Aizoon). Asia Minor.
„ *alte'rnans* (alternate-*leaved*). See C. MACULATA.
„ *ame'na* (pleasing). Mexico.
„ *atropurpu'rea* (dark purple). Coral-red. Mexico. 1869.
„ *Barbe'yi* (Barbey's). Abyssinia.
„ *bracteola'ta* (small-bracted). Red, yellow. Colombia. 1840.
„ *bracteo'sa* (large-bracted). Mexico.
„ *cacalioi'des* (Cacalia-like). 1. Yellow. May. 1818.
„ *cæspito'sa* (tufted). 1. Yellow. July. N.W. Amer. 1796.
„ *califo'rnica* (Californian). ½. Light yellow. California. 1855.
„ *canalicula'ta* (small-channelled) of Haworth. See C. UNGULATA.
„ *canalicula'ta* (small-channelled) of Baker. Mexico.
„ *carni'color* (flesh-coloured). ½. Coral-red. Mexico. 1869.
„ *chrysa'ntha* (yellow-flowered). ½. Yellow. Asia Minor. "Houseleek Penny-wort."
„ *clavifo'lia* (club-leaved). 1. Purple. September. 1824.
„ „ *crista'ta* (crested). 1. Variegated. September. 1818.
„ *cocci'nea* (scarlet). 2. Scarlet. Mexico. 1816.
„ *Coope'ri* (Cooper's). ½. Pink. S. Africa. 1860.
„ *Cordero'yi* (Corderoy's). 1½. Red, yellow. Mexico. 1874.
„ *coru'scans* (glittering). 1. Orange. June. 1818.
„ *crassifo'lia* (thick-leaved). 2. 1824.
„ *crena'ta* (round-toothed). See KALANCHOE CRENATA.
„ *cunea'ta* (wedge-like). 1. May. 1818.
„ *cuneifo'rmis* (wedge-shaped-*leaved*). 1. 1823.
„ *curviflo'ra* (curve-flowered). 2. Orange. October. 1818.
„ *cymo'sa* (cymose). 1. Yellow. Mexico. 1869.
„ *deci'piens* (deceiving). ½. White. Peru. 1868.
„ *decussa'ta* (cross-*leaved*). 2. Scarlet. August. 1819.
„ *desmetia'na* (De Smet's). Mexico.
„ *dicho'toma* (fork-*spined*). 1. June. 1818.
„ *ecklonia'na* (Ecklonian). S. Africa.
„ *edu'lis* (edible). Pale green. August. California. 1883.
„ *ela'ta* (tall-*powdered*). See C. ORBICULATA.
„ *e'legans* (elegant). Bright red, yellow inside. Mexico. 1905.
„ *ere'cta* (erect). See C. LUSITANICA.
„ *farino'sa* (mealy). California.
„ *fascicula'ris* (fascicled). 1. Red. July. 1759.
„ *fu'lgens* (shining). 1. Coral-red, yellow inside. Mexico.
„ *Fu'nkii* (Funk's). Country unknown.
„ *gibbiflo'ra* (bulging-flowered). 2. Yellow, pink. September. Mexico. 1826.
„ „ *deco'ra* (adorned). Leaves variegated.

C. gibbiflo'ra Fu'lini (Fulin's).
„ „ *meta'llica* (metallic-leaved). Leaves metallic in colour. Mexico.
„ *gigante'a* (gigantic). 6. Yellow. Mexico. 1910.
„ *gla'bra* (smooth). Pale yellow, purplish. Turkestan. 1880. Hardy.
„ *glau'ca* (sea-green). ½. Scarlet, tipped yellow. Mexico.
„ *globulariæfo'lia* (globular-leaved). White, red. Asia Minor. 1869.
„ *gra'cilis* (slender). 1. July. 1800.
„ *grandiflo'ra* (large-flowered). See C. TUBERCULOSA.
„ *hemisphæ'rica* (half-globular). 1. White, purple. June. 1731.
„ *hispa'nica* (Spanish). ½. Red. June. Spain, Morocco. 1796. Hardy biennial.
„ *insi'gnis* (remarkable). 2. Light red, greenish inside. British Central Africa. 1905.
„ *interje'cta* (cast-down). ½. July. 1824.
„ *jasminiflo'ra* (jasmine-flowered). 1. White, purple. July. 1818.
„ *lanceola'ta* (lance-shaped). California. 1879.
„ *lancifo'lia* (lance-leaved). See C. LANCEOLATA.
„ *Lieve'nii* (Lieven's). ½. Red. May. Altai. 1832.
„ *linguæfo'lia* (tongue-leaved). 1. Yellowish. Mexico.
„ „ *pulveule'nta* (powdery).
„ *lu'rida* (lurid). Mexico. 1830. (Bot. Mag., t. 3570.)
„ *lusita'nica* (Portuguese). ½. Yellow. Europe. Hardy.
„ *macula'ta* (spotted). 1. White, purple. June. 1818.
„ *malacophy'lla* (soft-leaved). 1. Pale yellow. June. Davuria. 1815. Hardy.
„ *mamilla'ris* (nippled). 1. White, purple. June. 1818.
„ *na'na* (dwarf). 1 to 1½ in. S. Africa. 1901.
„ *navicula'ris* (little-boat-shaped). Country unknown.
„ *nodulo'sa* (knotted). ½. Yellow, red. Mexico.
„ *nu'da* (naked). ½. Yellow, red. Mexico.
„ *oblo'nga* (oblong-*leaved*). See C. ORBICULATA.
„ *orbicula'ta* (round-*leaved*). 2. Red. July. 1690.
„ *ova'ta* (egg-leaved). See C. ORBICULATA.
„ *Pachyphy'tum* (Pachyphytum). 1. Red. Mexico.
„ *papilla'ris* (papillose). 2. Red. June. S. Africa. 1822.
„ *Peaco'chii* (Peacock's). 1. Orange-red. July. N. Amer. 1874.
„ *peruvia'na* (Peruvian). 1. Orange-red. Peru.
„ *Pestalo'zzæ* (Mrs. Pestalozz's). Pink. Orient. 1877.
„ *platyphy'lla* (broad-leaved). ½. White. Altai. 1880. Hardy.
„ *pubes'cens* (downy). Coral-red, yellow inside. Mexico.
„ *pulveule'nta* (dusty). White, red. September. California. 1840.
„ *pulvina'ta* (cushioned). Orange-red. Mexico. 1903.
„ *pu'mila* (dwarf). ½. Yellow-red. Mexico.
„ *Purpu'sii* (Purpus's). Red. Sierra Nevada. 1896.
„ *quite'nsis* (Quitan). ½. Scarlet. August. Quitto. 1851.
„ *racemo'sa* (racemed). 2. Scarlet. October. Mexico. 1836.
„ *ramo'sa* (branched). See C. ORBICULATA.
„ *ramosi'ssima* (most-branched). 1. May. S. Africa. 1816.
„ *reticula'ta* (netted). Small, whitish. S. Africa. 1897.
„ *retu'sa* (retuse). 1½. Yellow. Mexico. 1846.
„ „ *floribu'nda* (free-flowering). Orange-red. Mexico. 1874.
„ *rhombifo'lia* (diamond-leaved). 1. June. 1823.
„ *ro'sea* (rosy). 1. Rose, yellow. April. Mexico. 1840.
„ *rosea'ta* (roseate). Rose. Mexico. 1840.
„ *rotundifo'lia* (round-leaved). See C. ORBICULATA.
„ *Salzma'nni* (Salzmann's). See C. HISPANICA.
„ *Schee'rii* (Scheer's). 1½. Creamy-yellow. Mexico. 1841.
„ *secu'nda* (one-sided). 1. Reddish-yellow. Mexico. 1837.
„ „ *glau'ca* (sea-green). Leaves sea-green. The most popular variety.
„ *Semeno'vii* (Semenow's). Siberia.
„ *Sempervi'vum* (houseleek-*like*). ½. Deep red. Caucasus. 1836.
„ *serra'ta* (saw-edged). Purple. June. Asia Minor. 1732. Hardy.
C. seto'sa (bristly). ¼–1. Red, yellow at apex Mexico. 1910.
„ *spino'sa* (spiny). ½. White. June. Northern Asia. 1790. Hardy.
„ *spu'ria* (spurious). 1. July. 1731.
„ *stoloni'fera* (runner-bearing). Scarlet, yellow. Mexico.
„ *subalpi'na* (subalpine). 1. Vermilion-red, yellowish inside. Mexico. 1910.
„ *teretifo'lia* (round-leaved). 1½. Yellow. July. S. Africa. 1862.
„ *tricuspida'ta* (three-spined). See C. PAPILLARIS.
„ *trifo'ra* (three-flowered). 1. Pink, white. June. 1821.
„ *tuberculo'sa* (knotted). 1. Orange. July. 1820.
„ *turkesta'nica* (Turkestan). ½. White, purple. Turkestan. 1880. Hardy.
„ *Umbi'licus* (Umbilicus). Yellow. June. Europe (England). 1828. Hardy.
„ *undula'ta* (waxed-*leaved*). 1. June. 1818.
„ *ungula'ta* (nail-*shaped*). 2. May. Purple. 1818.
„ *uniflo'rum* (one-flowered). San Luis Potosi, Mexico. 1905.
„ *veluti'na* (velvety). 2 to 3. Yellow, red. S. Africa. 1840.
„ *ventrico'sa* (inflated). S. Africa.
„ *vi'ridis* (green). 2. 1824.
„ *Wa'lli'chii* (Wallich's). S. Africa.

COUCH GRASS. (*Agropy'rum re'pens*). A weed, the creeping underground stems of which render it very difficult to be destroyed: constantly and carefully forking it out of the soil whenever seen, and burning it, is the most effectual remedy.

COULTE'RIA. See CÆSALPINIA.

COUROU'PITA. (The native name. Nat. ord. Myrtaceæ.)
Stove, deciduous tree. Seeds when obtainable, and cuttings of ripe wood in sand, in a close case with bottom-heat. Fibrous loam, peat, and sand. *C. guianensis*, the Cannon-ball Tree, is the best known.
C. guiane'nsis (Guianan). Flowers from the trunk and branches. Guiana.

COURSE'TIA. (Named after *Courset*, a botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Robinia.)
Stove evergreens. Cuttings of firm young shoots, in spring or beginning of summer, in sand, under glass, and in a mild bottom-heat; loam and peat, well drained. Summer temp., 60° to 80°; winter, 45° to 55°.
C. tomento'sa (downy). Yellow. June. Peru. 1824.
„ *virga'ta* (twiggy). Yellow. June. Trinidad. 1820.

COUSI'NIA. (Named after *Cousin*, a French botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Carlina.)
Hardy plants. Annuals and biennals, by seeds at the end of March, in the garden-border; perennials, by division in autumn or spring.
C. carduifo'rmis (thistle-form). Purple. July. Iberia. 1804.
„ *cynaroi'des* (Cynara-like). White. Caucasus. Biennial.
„ *Hohena'keri* (Hohenaker's). Yellow. July. Caucasus. 1836.
„ *Hy'strix* (porcupine). Purple. June. Russia. 1838.
„ *macroce'phala* (large-headed) Pale yellow. Caucasus. 1823. Biennial.
„ *tene'lla* (tender). Purple. America. 1837. Annual.
„ *uncina'ta* (hooked). Northern Asia.
„ *volge'nsis* (Wolga). Purple. Wolga. 1804.

COUSSA'POA. (A native name. Nat. ord. Urticaceæ.)
A stove evergreen related to Ficus. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
C. dealba'ta (whitened). Leaves covered with silvery hairs. Brazil. 1867.

COUTA'REA. (From *Coutari*, its name in Guiana. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cinchona.)
The Cinchona bark of French Guiana is the produce of *C. speciosa*. Stove evergreens. Sandy peat and loam; cuttings in heat, under glass, in spring months.
C. scherffiia'na (Scherffian). White. Colombia. 1878.
„ *specio'sa* (beautiful). 12. Purple. Guiana. 1803.

COUTOU'BEA. (From *Coutoubi*, its name in Guiana. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Leianthus and Lisianthus.)

It is used in Guiana as a substitute for Gentian. Stove annual and biennial plants. Sow in a mixture of loam and peat, early in spring, in hotbed, frame, or stove.

C. ramo'sa (branchy). 3. White. July. Brazil. 1824. Annual.

„ *spica'ta* (spiked). 2. White. July. Maran. 1823. Biennial.

„ *verticilla'ta* (whorled-*headed*). See ENICOSTEMA LITTORALE.

COVE'LLIA. See FICUS.

COWA'NIA. (Named after *Mr. Cowan*. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Trigynia*. Allied to Geum.)

Greenhouse evergreen shrubs. Sandy peat and loam; propagated by cuttings under glass, in heat, but not easily.

C. ericæfo'lia (Heath-leaved). White. California.

„ *mexica'na* (Mexican). 1 to 6. Yellow. N.W. Amer.

„ *plica'ta* (plaited-*leaved*). 2. Red. June. N.W. Amer. 1835.

COWBERRY. *Vacci'nium Vi'tis-idæ'a.*

COWDIE PINE. *Aga'this austra'lis.*

COW-DUNG. See DUNG.

COW-GRASS. *Trifo'lium me'dium.*

COW-HERB. *Sapona'ria Vacca'ria.*

COW-ITCH. *Mucu'na.*

COW-ITCH CHERRY. *Malpi'ghia u'rens.*

COW-PARSNIP. *Hera'cleum.*

COW-SLIP. (*Pri'mula officina'lis.*) There are several varieties, varying in colour from almost white to a very deep yellow: some are single; but others are double, in the form that florists distinguish as *hose-in-hose*, the calyx in these being converted into a corolla. Some specimens will produce one hundred pips upon a single truss; and they have been known to yield even more than one hundred and fifty. The cultivation is the same as that of the Auricula.

COW-TREE. *Bro'simum Galactode'ndron.*

CRAB or **WILD APPLE.** *Py'rus Ma'lus ace'rba.*

CRA'CCA. (Meaning not obvious. Nat. ord. Leguminosæ.)

Greenhouse evergreen. Seeds. Cuttings of short side-shoots, under a bell-glass. Loam, peat, and sand.

C. ochroleu'ca (yellow-white). 3. Cream. Peru. 1789.

CRA'MBE. Sea-kale. (The Greek name for Sea-kale. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

The Tartar bread, or large, fleshy roots of *Cra'mbe Tata'rica*, is eaten in Hungary in slices, with oil, salt, and vinegar. Hardy herbaceous-rooted perennials, of easy growth in rich garden-soil by root division, or seeds sown in March.

C. cordifo'lia (heart-leaved). 6. White. May. Caucasus. 1822.

„ *hispa'nica* (Spanish). White. S.W. Europe. "Spanish Kale."

„ *ju'ncea* (rush-like). 2. White. May. Iberia. 1828.

„ *mari'tima* (*common* sea-*kale*). 1½. White. May. Britain.

„ *orienta'lis* (oriental). White. Orient.

„ *pinnati'fida* (pinnatifid-leaved). White. Caucasus.

„ „ *grandiflo'ra* (large-flowered). White.

„ *renifo'rmis* (kidney-shaped). White. Spain.

„ *Tata'ria* (Tataria). 3. White. June. Eastern Europe. 1754.

CRA'MBE MARI'TIMA or **SEA-KALE** should be grown in an open situation. It is readily increased by division of its roots, or by seeds. Raising from seed is rarely resorted to by modern growers, the branching roots from those taken up for early forcing, which are cut off before the main stems are put in, afford excellent stock. They should be cut in lengths of about three inches, the top portion being cut straight across and the lower part diagonally; this prevents the sets being planted the wrong way upwards. The sets may be prepared as soon as the roots for forcing are dug up, which will be after foliage has ripened off or been cut off by frost. Kept in moist sand until a favourable opportunity occurs for planting, they will, in good ground, make strong crowns for forcing the following winter. We remember the time when seedlings were raised, but compared with the propagation from the roots it was a very slow process. From rich, well-manured ground very strong crowns may be grown in one season, and when forcing we have had a second crop from the same roots, but this would be much smaller though equally good to eat. For forcing we have used any large bulb cases or other boxes, placing them under the stages of a warm house, covered over with an ordinary bast mat, which should be kept moist; it will be only a short time before the kale is ready to cut. Market-growers use pits, and cover with heated manure. For later use the roots may be left in the ground and covered with pots or, as is done on the south coast, with sea-weed, and this is the best kale we get. And the sea-weed is also a good manure for the next year's crop. Some gardeners cut from the same roots year by year; yet most modern growers make new plantings every season, even if some of the old are left over. We have seen kale which has done well for some years; but no trade growers keep it over a year, except where it may have to be left in the ground through unavoidable circumstances. Yet we have seen it in private gardens, where the same roots have done fairly well for several seasons. Much depends upon manuring and forking the ground up. Good ground is the chief essential for growing, but when once strong stems or crowns are established, any soil may be used for those dug up for forcing. The chief thing being to cover, to keep out daylight. Yet we have found that when grown fully exposed it has been equally palatable, though for ordinary purposes it is only the blanched that is appreciated.

When forcing, never give too much heat. A moderate heat and good covering are most essential. And to have it ready to cut at Christmas it should be started about the middle of November, and for succession some should be put in every fortnight.

When left in the ground the liberal use of lime and some salt will be beneficial, and stable manure may be used liberally.

CRANBERRY. *Oxyco'ccus palu'stris.*

CRANE'S-BILL. *Gera'nium.*

CRANIO'STOMA. From *kranion*, a cup, and *stoma*, a mouth. Nat. ord. Labiatæ.)

Greenhouse evergreen, sub-shrub. Cuttings under a bell-glass. Loam, peat, and sand.

C. versi'color (changeable-coloured). 1. Blue. August. Himalaya. 1824.

CRASPE'DIA. (From *crassus*, thick, and *pes*, a foot; peduncles thickened. Nat. ord. Compositæ.)

Half-hardy, silky, perennial herbs. Seeds; divisions. Loam, leaf-mould, and sand, and kept in a frame during winter.

C. alpi'na (alpine). Flower-heads white. New Zealand. 1909.

„ *uniflo'ra* (one-flowered). 1. Deep yellow. New Zealand. 1909.

CRA'SSULA. (From the diminutive of *crassus*, thick, or succulent; in reference to their leaves, &c. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse plants from the Cape of Good Hope, except where otherwise mentioned.

ANNUALS.

C. calici'na (large-calyxed). White. June. Australia. 1823. Hardy.

„ *diffu'sa* (diffuse). ½. Pink. June. 1774.

„ *expa'nsa* (expanded). ½. White. June. 1774.

„ *gla'bra* (smooth-*cluster*). ½. White. August. 1774.

„ *glomera'ta* (round-*headed*). ½. White. September. 1774.

„ *Magno'lii* (Magnol's). See SEDUM CÆSPITOSUM.

C. mosch'a'ta (musky). See TILLÆA MOSCHATA.
„ *pulch'e'lla* (pretty). ½. Red. May. 1810.
„ *retrofle'xa* (bent-back). ½. Yellow. June. 1788.
„ *ru'bens* (red). See SEDUM RUBENS.
„ *subula'ta* (awl-shaped). ½. June. 1800.
„ *verticilla'ris* (whorl-*flowered*). See SEDUM C.ÆSPITOSUM.

BIENNIALS.

C. aloi'des (aloe-like). Pale yellow. July. 1774.
„ *capite'lla* (little-headed). White. July. 1774.
„ *capitella'ta* (small-headed). See C. CAPITELLA.
„ *centauroi'des* (centaury-like). ½. Pink. May. 1774.
„ *corymbulo'sa* (sub-corymbed). 1. White. November. 1818.
„ *lineola'ta* (small-lined). ½. Yellow. July. 1774.
„ *linguæfo'lia* (tongue-leaved). ½. White. August. 1803.
„ *obova'ta* (reversed-egg-*leaved*). White. June. 1818.
„ *pertu'sula* (dotted-*leaved*). 1. White. October. 1824.
„ *spa'rsa* (scattered-*leaved*). ½. White. 1774.
„ *thyrsiflo'ra* (thyrse-flowered). 1. White. S. Africa.
„ *tomento'sa* (downy). White. April. 1818.
„ *tu'rrita* (tower-formed). White. March. 1818.

EVERGREENS AND HERBACEOUS.

C. abyssi'nica (Abyssinian). S. Africa.
„ *aculifo'lia* (pointed-leaved). ½. White. July. Greece. 1795.
„ *albiflo'ra* (white-flowered). ½. White. June. 1800.
„ *alpe'stris* (alpine). ½. White. S. Africa. 1878.
„ *arbore'scens* (tree-like). 3. Pink. May. 1739.
„ *atrosangui'nea* (dark blood-red). 1 to 1½. Dark red. Transvaal. 1907.
„ *bibractea'ta* (two-bracted). ½. White. August. 1823.
„ „ *ma'jor* (larger). ½. White. August. 1823.
„ *biconve'xa* (double-convex). ½. White. August. 1800.
„ *biplana'ta* (flat-sided-*leaved*). 1. White. September. 1823.
„ *Bolu'sii* (Bolus's). ½. White. June to September. S. Africa. 1875.
„ *bullula'ta* (small-studded). 1. Yellow. August. 1800.
„ *cane'scens* (greyish). ½. White. July. 1800.
„ *cilia'ta* (hair-fringed). ½. Yellow. July. 1732.
„ „ *me'dia* (middle). ½. Yellow. July. 1818.
„ „ *mi'nor* (smaller). ½. Yellow. July. 1818.
„ *cocci'nea* (scarlet). See ROCHEA COCCINEA.
„ *coccine'lla* (small-scarlet). ½. Scarlet. July. 1823.
„ *columna'ris* (columnar). ½. White. 1789.
„ *conci'nna* (neat). ½. White. July. 1818.
„ *conge'sta* (crowded). ½. White. S. Africa. 1902.
„ *conju'ncta* (joined). White. S. Africa. 1902.
„ *Coope'ri* (Cooper's). 2. White. S. Africa. 1862.
„ *corda'ta* (heart-*leaved*). ½. Pink. July. 1774.
„ *Cotyle'donis* (cotyledon-*leaved*). 1. White. 1800. Herbaceous.
„ *cultra'ta* (coulter-shaped). 1. White. July. 1732.
„ *cymo'sa* (cymose). ½. Red. August. 1800.
„ *deci'piens* (deceiving). 1½. White. S. Africa. 1903.
„ *deje'cta* (thrown-down). 1. White. July. 1820.
„ *ericoi'des* (heath-like). ½. White. September. 1820.
„ *falca'ta* (sickle-shaped). Yellow, red. S. Africa. 1785.
„ *filicau'lis* (thread-stemmed). ½. White. August. 1820.
„ *fla'va* (yellow). Yellow. June. 1802.
„ *fruticulo'sa* (under-shrubby). White.
„ *globiflo'ra* (globe-flowered). See C. SEPTAS GLOBIFLORA.
„ *gra'cilis* (graceful). Red. 1884.
„ *hemisphe'rica* (hemispherical). S. Africa.
„ *Hooke'ri* (Hooker's). See C. IMPRESSA.
„ *imbrica'ta* (imbricated). 1. White. June. 1760.
„ *impre'ssa* (impressed). Rose-pink. S. Africa. 1879.
„ *jasmi'nea* (Jasmine-like). See ROCHEA JASMINEA.
„ *la'ctea* (milky). ½. White. September. 1774.
„ *lycopodioi'des* (Lycopodium-like). S. Africa.
„ *margina'lis* (marginal). 2. Pale yellow. July. 1774.
„ *Mari'æ* (Maria's). ½ to ¾. White. Mozambique. 1908.
„ *monti'cola* (mountain-inhabiting). ½. Pinkish. S. Africa. 1882.
„ *multica'va* (many-hollowed). S. Africa (?).
„ *nemoro'sa* (grove). S. Africa.
„ *nudicau'lis* (naked-stemmed). ½. White. July. 1732.
C. obli'qua (unequal-*leaved*). See C. FALCATA.
„ *obtu'sa* (blunt-*leaved*). ½. 1812.
„ *obvalla'ta* (trenched-round). ½. White. July. 1795.
„ *odorati'ssima* (sweetest). See ROCHEA ODORATISSIMA.
„ *orbicula'ris* (round-*leaved*). ½. Pink. August. 1731. Herbaceous.
„ *pa'llida* (pale). 3. White. S. Africa. 1874.
„ *pellu'cida* (pellucid). 1. Pink. August. 1732.
„ *perfila'ta* (threaded). See C. PERFOSSA.
„ *perfolia'ta* (stem-pierced-leaved). 4. Scarlet. July. 1700.
„ „ *albiflo'ra* (white-flowered). 4. White. July. 1800.
„ *perfora'ta* (perforated). White. S. Africa.
„ *perfo'ssa* (dug through). 1. Pink. September. 1785.
„ *portula'cea* (Portulaca-like). S. Africa.
„ *profu'sa* (profuse-flowering). See C. MARGINALIS.
„ *puncta'ta* (dotted). 1. White. June. 1759.
„ *pyramida'lis* (pyramidal). S. Africa.
„ *quadri'fida* (four-times-cut). Pinkish-white. Summer. S. Africa. 1872.
„ *radi'cans* (rooting). S. Africa.
„ *ramo'sa* (branchy). 2. Pink. July. 1774.
„ *ramuliflo'ra* (branchlet-flowered). 1. White. June. 1822.
„ *recu'rva* (recurved). 1. Crimson. Zululand. 1890.
„ *revo'lvens* (revolving). 1. White. August. 1820.
„ *rhomboi'dea* (diamond-shaped). ½. Flesh. Transvaal. 1886.
„ *rosula'ris* (small-rosy). ½. White. July. 1819. Herbaceous.
„ *rotundifo'lia* (round-leaved). 1. White. August. 1820.
„ *rubicu'nda* (reddish). Red. S. Africa.
„ *rubricau'lis* (red-stemmed). S. Africa.
„ *sarcocau'lis* (fleshy-stemmed). S. Africa.
„ *Saxi'fraga* (Saxifraga-like). ½. Pinkish. June. S. Africa. 1873.
„ *sca'bra* (rough-*leaved*). ½. Pale yellow. June. 1730.
„ *scabre'lla* (roughish). ½. White. 1810.
„ *Schmi'dtii* (Schmidt's). See C. IMPRESSA.
„ *Schweinfu'rthii* (Schweinfurth's). ½. White. Abyssinia. 1892.
„ *sedifo'lia* (Sedum-leaved). 1/12 to ½. White. S. Africa. 1902.
„ *Se'ptas* (Septas). ½. White. August. S. Africa. 1774.
„ „ *globiflo'ra* (globe-flowered). White. March. 1809.
„ *spathula'ta* (spathulated). ½. White. August. 1774.
„ *squamulo'sa* (scaly). ½. White. July. 1817.
„ *sulca'ta* (furrowed). ½. White. August. S. Africa. 1813.
„ *telephioi'des* (telephium-like). 1. White. July. 1818.
„ *tetrago'na* (four-angled). 2. White. August. 1711.
„ *torqua'ta* (collared). 1. Pale green. S. Africa.
„ *trachysa'ntha* (rough-flowered). S. Africa.
„ *Umbe'lla* (small umbelled). 1. Pale pink. S. Africa. 1800.
„ *varia'bilis* (variable). ½ to ½. White or red. S. Africa. 1901.
„ *versi'color* (various-coloured). See ROCHEA VERSICOLOR.

Culture.—Of the *annual* and *biennial* species the seeds should be sown in pots, in spring, and, when the seedlings will bear handling, separated and planted singly in other pots. The same soil suits them as the *perennial* succulent species, which are those most in request. The culture of these is as follows, whether for bedding-out or growing constantly under glass:—Make short cuttings, about the end of August or in September, of the tops of the young shoots which have not flowered, and, after the cuttings are rooted, place singly in small pots, and grow till the end of October, when the pots are filled with roots. From this time to the end of February keep in a cool greenhouse, on a shelf close to the glass, and give two or three waterings during the winter. As soon as the plants begin to move in the spring, stop them at about three or four inches from the pot, and a few of the top leaves take off, to facilitate the growth of new shoots. As soon as these are well formed, thin them, so as to leave but from three to six shoots on each plant, according to its strength; and, as soon as the shoots are two inches long, shift into pots a size or two larger, in a mixture of yellow loam and pounded bricks, well drained.

After the spring potting, indulge with a little more than greenhouse-heat, by placing them for two or three weeks in a peach-house, or vinery, or a close pit, to have them in full vigour by the middle of May; because, the earlier in the summer they complete their annual growth, the more time and sun they have to finish their ripening process. About midsummer, or before the beginning of July, their growth is finished, and then turn out of doors, and plunge in sand close to the front wall of a hothouse, where the heat, in the dog days, will often range from 80° to 100°, and where little rain can get at them, the spouting which receives the water from the roof passing over their heads. The sand in which they are plunged gets very hot also; and, by watering it occasionally between the pots, the roots are kept sufficiently moist without any water being given on the soil in the pots. This treatment is more uniform and more natural to them than any mode of pit or greenhouse culture.

On the first indication of frost remove into shallow, cold pits, where the lights can be drawn off them every mild day till the end of November; then move them to a dry shelf in the greenhouse; but they could be wintered in a dry pit from which the frost could be kept.

During the following spring keep as cool as possible, being among the first set of greenhouse plants to be removed into cold pits when plants begin to grow in the spring, and about the last plants to be bedded out at the end of May; and they make the most brilliant bed for the whole season, flowering for six weeks to two months, according to the situation of the beds. We prefer the tall, dark scarlet, or old *C. cocci'nea*, for beds; but there are three or four distinct sorts that do equally well in pots.

It often happens that plants with only two shoots will produce but one head of bloom, and then the second shoot will be sure to follow the year after, and thus a plant may be made to flower every year.

If this plant with two shoots offers to flower on both instead of one, and you wish the plant to flower every year, you must forego the pleasure of having both shoots to flower the first season. In that case, as soon as you can perceive the flower-buds in the spring, you must cut down one of the two shoots, and let the other one flower. The lower down the shoot is cut the better. If there is only an inch or two of it left, it is sure to produce three times the number of young shoots that will be necessary to retain. If you select three of the best placed, these will be enough for a plant so young; therefore, instead of two flower-heads, we have only one of them, and three others coming up to flower next season. As soon as the single truss of flowers begins to fade, about the middle of August, this flowering shoot must be cut down close likewise, and from it succession-shoots will be obtained, so that, in a large, old specimen, there are many flowering shoots and succession ones growing on at the same time; and, as soon as the plants are done flowering, the shoots which have borne the flowers are cut back to different lengths, according to the size or shape the plant is intended to be grown. The best cuttings are those taken from the tops of growths which have failed to flower the previous season.

CRATÆ'GO-ME'SPILUS. (Nat. ord. Rosaceæ.) Interesting as being one of the few known graft-hybrids, the parents being the Medlar and common Hawthorn. Ordinary soil. It originated in a nursery at Metz.

CRATÆ'GO-ME'SPILUS DARDA'RI (Dardar's). White. 1899.

CRATÆ'GUS. The Hawthorn. (From *kratos*, strength; in reference to the strength and hardness of the wood. Nat. ord. *Appleworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*.)

The family of thorns furnishes a greater number of handsome small trees for ornamental grounds than any other woody family whatever. They are all white-blossomed, except where we have mentioned otherwise; but they vary in another beauty—the colour of their fruit; and this, as far as we know, we have particularised. Young plants are obtained from seed sown in spring; and any particular varieties can be budded or grafted upon one of the most useful—the common whitethorn. Common garden-soil.

C. acuti'loba (sharp-lobed). 12. May. United States and Canada. 1905.
„ *alpi'na* (alpine). 20. May. Italy.
„ *alta'ica* (Altaian). Altai Mountains.
„ *ambi'gua* (doubtful). Russia.
„ *ano'mala* (anomalous). N. United States, Canada. 1905.
„ *apiifo'lia* (parsley-leaved). 15. May. N. Amer. 1812.
„ „ *mi'nor* (smaller). May.
„ *a'prica* (open). S.E. United States. 1905.
„ *arnoldia'na* (Arnoldian). Massachusetts. 1905.
„ *Aro'nia* (Aronia). 15. May. South Europe. 1810. Berries yellow.
„ „ *grandiflo'ra* (large-flowered). 15. May. 1846.
„ *Azaro'lus* (Azarole). 15. May. South Europe. 1640. Berries red.
„ *berberifo'lia* (Barberry-leaved). S. United States.
„ *Boynto'ni* (Boynton's). N. Carolina.
„ *Brua'nti* (Bruant's). See C. Oxyacantha semperflorens.
„ *canade'nsis* (Canadian). Canada. 1905.
„ *Ca'nbyi* (Canby's). S.E. United States. 1905.
„ *carpa'tica* (Carpathian). 20. May. Carpathian Mountains.
„ *Carrie'rei* (Carrière's). Large, white. Fruit scarlet. Garden origin. 1883.
„ *champlaine'nsis* (Champlainan). N. United States and Canada.
„ *chlorosa'rca* (green-fleshed). Mandshuria. 1880.
„ *cocci'nea* (scarlet-*fruited*). 20. May. N. Amer. 1683.
„ „ *coralli'na* (coralline). 15. May. France.
„ „ *glandulo'sa* (glandulose). 20. May. N. Amer. 1759. Berries red.
„ „ *indenta'ta* (indented-*leaved*). See C. acutiloba.
„ „ *macra'ntha* (large-flowered). 20. May. N. Amer. 1819. Berries yellowish-red.
„ „ *ma'xima* (largest). 20. May. N. Amer.
„ „ *mi'nor* (smaller-*fruited*). 20. May. N. Amer.
„ „ *neapolita'na* (Neapolitan). May. Naples.
„ „ *subvillo'sa* (slightly-hairy). 1832.
„ „ *succule'nta* (succulent-*fruited*). Germany.
„ *colli'na* (hill). S. Appalachian foot-hills. 1905.
„ *corda'ta* (heart-*leaved*). 20. May. N. Amer. 1738. Berries bright red.
„ *crenula'ta* (scollop-edged). 10. May. Nepaul. 1820.
„ *Cru's-ga'lli* (cockspur). 20. May. N. Amer. 1691. Berries dark red.
„ „ *linea'ris* (narrow-*leaved*). 20. May. N. Amer.
„ „ *na'na* (dwarf). See C. Crus-galli pyracanthifolia.
„ „ *ovalifo'lia* (oval-leaved). 20. May. N. Amer. 1810.
„ „ *prunifo'lia* (plum-leaved). 20. May. N. Amer. 1818. White. May.
„ „ *pyracanthifo'lia* (pyracantha-leaved). 20. May. N. Amer.
„ „ *salicifo'lia* (willow-leaved). See C. Crus-galli pyracanthifolia.
„ „ *splе'ndens* (shining). 20. May. N. Amer.
„ *cune'ata* (wedge-shaped). White. Japan.
„ *densiflo'ra* (dense-flowered). N. United States and Canada.
„ *dippelia'na* (Dippelian). Origin unknown.
„ *Dougla'sii* (Douglas's). 15. May. N. Amer. 1830. Berries purple.
„ *dsunga'rica* (Songarian). White. Northern Asia.
„ *durobrive'nsis* (Durobrivan). Western New York. 1905.
„ *elli'ptica* (oval-*leaved*). See C. flava elliptica.
„ *fecu'nda* (fruitful). Missouri. 1905.
„ *fi'ssa* (cleft-*leaved*). See C. monogyna laciniata.
„ *flabella'ta* (fan-*leaved*). See C. orientalis.
„ *fla'va* (yellow-*pear-berried*). 20. May. N. Amer. 1724.
„ „ *elli'ptica* (elliptic). 20. May. N. Amer. 1765.
„ „ *loba'ta* (lobed). 15. June.
„ *florenti'na* (Florentine). See Pyrus cratægifolia.
„ *glandulo'sa* (glandular). 20. White. May. N. Amer. 1810.
„ *grignonie'nsis* (Grignonian). Fruit lemon-yellow, tinted red. 1890.

C. Heldrei'chii (Heldreich's). Greece.
„ *heterophy'lla* (various-leaved). 20. May. Orient. 1816.
„ *hiema'lis* (winter). Origin uncertain.
„ *integri'loba* (entire lobed). N. United States and Canada. 1905.
„ *intrica'ta* (intricate). N. Amer.
„ *Korolko'wi* (Korolkow's). Central Asia. 1901.
„ *latifo'lia* (broad-leaved). See C. TOMENTOSA.
„ *laurentia'na* (Laurentian). Canada.
„ *La'yi* (Mr. Tradescant Lay's). See C. PINNATIFIDA MAJOR.
„ *leucophlœ'os* (white-barked). See C. TOMENTOSA.
„ *lobula'ta* (lobulate). Western New England.
„ *lu'cida* (shining-*leaved*). See C. CRUS-GALLI.
„ *macraca'ntha* (large-thorned). United States.
„ *maloi'des* (Apple-like). Eastern Florida.
„ *marocca'na* (Morocco). See C. SINAICA.
„ *melanoca'rpa* (black-berried). 15. May. Tauria. 1820.
„ *mexica'na* (Mexican). 15. May. Mexico. 1823.
„ „ *Carrie're* (Carriere's). See C. CARRIEREI.
„ *mo'llis* (soft). White. Berries red.
„ *mono'gyna* (one-styled). 15. White. May. Britain.
„ „ *aurantia'ca* (orange-berried). May.
„ „ *au'rea* (golden-berried). 15. May.
„ „ *erioca'rpa* (woolly-fruited). 15. White. May. Britain.
„ „ *flexuo'sa* (zigzag-branched). 15. White. May.
„ „ *fo'liis argu'nteis* (white-variegated). 15. White. May.
„ „ *fo'liis au'reis* (yellow variegated). 15. White. May.
„ „ *Gireou'di* (Gireoud's). Leaves marbled white and tender rose. 1899.
„ „ *Gumpe'ri versi'color* (Gumper's variable coloured).
„ „ *ho'rrida* (very spiny). 1898.
„ „ *iné'rmis* (unarmed). A spineless variety. 1899.
„ „ *lacinia'ta* (cut-leaved). 12. White. May. Britain.
„ „ *leucoca'rpa* (white-fruited). 15. White. May. Britain.
„ „ *macroca'rpa* (large-fruited).
„ „ *oliveria'na* (Oliverian). See C. PENTAGYNA.
„ „ *pe'ndula* (pendulous). Weeping variety.
„ „ *pe'ndula variega'ta* (variegated weeping).
„ „ *præ'cox* (early). 15. White. Christmas to April. "Glastonbury Thorn."
„ „ *pteridifo'lia* (fern-leaved). 15. White. May.
„ „ *quercifo'lia* (oak-leaved). White. June. Hamburgh. 1834.
„ „ *ra'mulis au'reis* (golden-branched).
„ „ *Regi'næ* (Queen Mary's). 30. White. May. Scotland.
„ „ *semperflo'rens* (ever-blooming). Said to bloom all summer. 1883.
„ „ *sibi'rica* (Siberian). 15. White. May. Siberia.
„ „ *stri'cta* (upright). Branches erect.
„ „ *variega'ta* (variegated).
„ *ni'gra* (black-*fruited*). 20. May. Hungary. 1819.
„ *ni'tida* (shining). Illinois.
„ *occidenta'lis* (western). Northern Rocky Mountains.
„ *ordorati'ssima* (sweetest-scented). See C. ORIENTALIS.
„ *orienta'lis* (eastern). 15. May. S. Europe. 1810. Berries dark red.
„ „ *sangui'nea* (blood-coloured). 15. May. Crimea. 1810.
„ *ovalifo'lia* (oval-leaved). See C. CRUS-GALLI OVALIFO'LIA.
„ *Oxyaca'ntha* (sharp-spined. *Common hawthorn*). 15. May. Britain.
„ „ *flo're-ple'no-a'lbo* (double-white-flowered). 15. White. May.
„ „ *flo're-ple'no-cocci'neo* (double-scarlet-flowered). Bright scarlet. May.
„ „ *flo're-ple'no-puni'ceo* (double-scarlet-flowered). 15. Scarlet. May.
„ „ *flo're-ple'no-ro'seo* (double-rose-flowered). 15. May.
„ „ *flo're-ple'no-ru'bro* (double-red-flowered). 15. May.
„ „ *flo're-puni'ceo* (scarlet-flowered). Single scarlet. 15. May.
„ „ *fru'ctu lu'teo* (yellow-berried).
„ „ *inci'sa* (cut). Leaves more deeply cut.
C. oxyacanthoi'des (Oxyacantha-like). See C. OXYACANTHA.
„ *parvifo'lia* (small-leaved). 15. May. N. Amer. 1704.
„ „ *flo'rida* (flowery). 6. White. May. N. Amer.
„ „ *grossulariæfo'lia* (gooseberry-leaved). See C. UNIFLORA.
„ *pasto'rum* (shepherds'). Massachusetts.
„ *penta'gyna* (five-styled). 15. White. May. Hungary. 1820.
„ *pinnati'fida* (pinnatifid). 15. White. May. China.
„ „ *ma'jor* (larger). 15. White. May. N. China. 1886.
„ *poiretia'na* (Poiret's). See C. GLANDULOSA.
„ *præ'cox* (early). N. United States and Canada. 1902.
„ *Pri'nglei* (Pringle's). N. United States and Canada. 1905.
„ *prunelli'fo'lia* (Prunella-leaved). See C. CRUS-GALLI OVALIFOLIA.
„ *prunifo'lia* (plum-leaved). See C. CRUS-GALLI PRUNIFOLIA.
„ *pruino'sa* (frosted). N. United States.
„ *puncta'ta* (dotted-*fruited*). 15. White. N. Amer. 1746. Berries red.
„ „ *au'rea* (golden-*fruited*). 36. White. May. N. Amer. 1724.
„ „ *brevispi'na* (short-spined). White. May. N. Amer.
„ „ *ni'gra* (black-*fruited*). White. May. N. Amer.
„ „ *ni'gra stri'cta* (black-*fruited*-upright). White. May. N. Amer.
„ „ *ru'bra* (red-*fruited*). 20. White. May. N. Amer.
„ „ *ru'bra stri'cta* (upright-red). 20. White. May. N. Amer.
„ *purpu'rea* (purple-*fruited*). See C. SANGUINEA.
„ *Pyraca'ntha* (*evergreen-thorn*). 10. White. May. S. Europe. 1629. "Fiery Thorn."
„ „ *crenula'ta* (small-scolloped). 10. White. May. Nepaul. 1820.
„ „ *fru'ctu-a'lbo* (white-fruited). 10. White. May. 1841.
„ „ *Lala'ndi* (Laland's). Fruits much more freely than the type.
„ „ *pe'ndula* (pendulous). Weeping variety.
„ *pyrifo'lia* (pear-leaved). See C. TOMENTOSA.
„ *sali'gna* (willow-leaved). 15. White. Mountains of Colorado. 1902.
„ *sangui'nea* (crimson-*fruited*). 15. May. Siberia. 1810.
„ *sina'ica* (Sinai). 15. May. Arabia and Persia. 1822.
„ *sorbifo'lia* (Sorbus-leaved). Origin unknown.
„ *spathula'ta* (spatula-*leaved*). 15. May. N. Amer. 1805.
„ *spinosi'ssima* (spiniest). See C. SANGUINEA.
„ *stipula'ris* (stipulate). Pink. May. Quito. 1843.
„ *succule'nta* (succulent). N. United States and Canada.
„ *tanacetifo'lia* (tansy-leaved). 15. May. Greece. 1789. Berries yellow.
„ „ *gla'bra* (smooth). 15. May. Germany. 1816.
„ „ *tau'rica* (Taurian). 15. May. Taurica. 1800.
„ *tiliæfo'lia* (Lime-tree-leaved). N. Amer.
„ *tomento'sa* (felted). White. June. Eastern United States. 1763.
„ *unifio'ra* (one-flowered). 6. White. May. Southern United States.
„ *Vai'liæ* (Mrs. Vail's). Virginia and N. Carolina.
„ *virgi'nica* (Virginian). 5. May. Virginia. 1812. Berries green.
„ *vi'ridis* (green-*fruited*). 15. May. Carolina. 1810.

CRATÆVA. Garlic Pear. (Named after *Cratævus*, a Greek botanist. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to the Common Caper.)

The bark of the roots of the Garlic Pear (*C. gyna'ndra*) blisters like Cantharides. Stove evergreen trees; rich, loamy soil; increased by cuttings in sand, under glass, in bottom-heat.

C. capparoi'des (Caper-like). See C. FRAGRANS.
„ *fra'grans* (fragrant). White. Trop. Africa.
„ *gyna'ndra* (gynandrous). 12. White. Jamaica. 1789.
„ *religio'sa* (religious). 15. White. Tropics of the Old World. 1822.
„ *Roxbu'rghii* (Roxburgh's). See C. RELIGIOSA.
„ *Ta'pia* (Tapia). 30. White. S. Amer. 1752.
„ *Tapioi'des* (Tapia-like). 20. White. S. Amer. 1820.

CRATEROSTI'GMA. (From *krater*, a vessel, and *stigma*; the stigma is funnel-shaped. Nat. ord. Scrophulariaceæ.)

Dwarf perennial stove herb, allied to Torenia. Seeds. Loam, leaf-mould, and sand.

C. pu'milum (dwarf). ½. Lilac, purple, white. Abyssinia. 1871.

CRATO'XYLON. (From *kratos*, strength, and *xulon*, wood; in allusion to the hardness of the wood. Nat. ord. Hypericaceæ.)

Evergreen greenhouse shrub. Cuttings in sand under a bell-glass. Loam, peat, and sand.

C. polya'nthum (many-flowered). 3. Red. July. Malaya. 1821.

CRAWFU'RDIA. (In honour of *Sir John Crawford*, governor of Singapore. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

There is little doubt that these herbaceous twiners are as hardy as the Gentians, to which they are allied, and like them may be cultivated.

C. fascicula'ta (fascicle-flowered). 4. Blue. August. Himalaya. 1855.
„ *japo'nica* (Japanese). White and green. Himalayas to Japan.
„ *lu'teo-vi'ridis* (yellow-green). See C. JAPONICA.
„ *specio'sa* (showy). Blue. Himalayas. 1879.

CREAM FRUIT. *Roupe'llia gra'ta*.

CREEPERS or **TRAILERS** are plants which, by having numerous stems and branches resting upon and spreading over the soil's surface, are useful for concealing what would be unpleasing to the eye. They are also handsome objects in pots suspended from the roof of an appropriate structure, and some, as *Gaulthe'ria procu'mbens*, are ornamental round the margin of ponds or other water.

CRE'PIS. (From *crepis*, a slipper. Nat. ord. Compositæ.)

Many of the Hawksbeards are of a weedy character, but the perennial *C. aurea* and the annual *C. rubra* are pretty and worth growing. Seeds at the beginning of April in the open border, and *C. aurea* by division at the same time. Ordinary garden soil.

C. alpe'stris (alpine). ½. Yellow. July. Europe. 1822.
„ *au'rea* (golden). ½ to 1. Orange. Autumn. Alps of S. Europe.
„ *Gmeli'ni* (Gmelin's). 1½. Yellow. June. Siberia. 1798.
„ *incarna'ta* (flesh-coloured). 1½. Pink. June. Carniola. 1815.
„ *Palla'sii* (Pallas'). 1. Yellow. June. Siberia. 1818.
„ *præmo'rsa* (bitten). 1. Yellow. June. Europe. 1818.
„ *pygmæ'a* (pigmy). ½. Yellow. July. Europe. 1820.
„ *ru'bra* (red). ½ to 1. Red. Autumn. S. Europe.
„ *succisæfo'lia* (bitten-leaved). 1. Yellow. June. Europe. 1819.

CRESCE'NTIA. The Calabash-tree. (Named after *Crescenti*, an old author. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

The flowers of the Calabash-tree (*C. Cuje'te*) are intermediate between Gesnerworts and Bignoniads, and in all the species are produced from the old stems or branches. Stove evergreen trees; a mixture of loam and peat; cuttings of ripened shoots root readily in sand, under glass, in heat.

C. acumina'ta (pointed-*leaved*). See C. CUJETE.
„ *cucurbiti'na* (gourd-*fruited*). 10. White. W. Ind. 1733.
„ *Cuje'te* (Cujete). 20. White. Trop. Amer. 1690.
„ *macrophy'lla* (large-leaved). See AMPHITECNA MACROPHYLLA.
„ *plecta'ntha* (plaited-flowered). Brazil.

CRESS. *Lepi'dium sati'vum*.

Varieties.—There are three varieties: Plain-leaved, which is the one commonly cultivated for salads; Curly-leaved, equally good, and employed, likewise, for garnishing; Broad-leaved, seldom cultivated. See MUSTARD.

CRE'SSA. (From *Kressa*, a female Cretan. Nat. ord. Convolvulaceæ.)

A hardy evergreen trailer. Divisions. Well-drained soil.

C. cre'tica (Cretan). ¼. Red. July. Tropical and subtropical regions. 1824.

CRESS ROCKET. *Ve'lla*.

CRINODE'NDRON. See TRICUSPIDARIA.

CRI'NUM. (From *krinon*, the Greek name for lily. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Nearly fifty species of Crinum, with numerous varieties, and many cross-bred seedlings, have been described, Many of them are the most beautiful of this order. *C. longifolium* is perfectly hardy in England if planted six or eight inches deep. It will grow in water, but better on the margins of lakes, ponds, or rivulets. The whole family delight in strong, rich loam, and an abundance of water when they are growing. Bulbous plants of great beauty; rich loam, peat, and sand; readily increased by offsets, and many by seeds.

HARDY.

C. cape'nse (*Common* Cape). See C. LONGIFOLIUM.
„ *grandiflo'rum* (large-flowered). See C. POWELLII.
„ *Herbe'rti* (Herbert's). See C. COMMELYNI.
„ *longifo'lium* (long-leaved). 2 to 3. White and pink midrib. Cape of Good Hope. 1816.
„ „ *farinia'num* (Farinian). White, pink. Kalahari Desert. 1887.
„ *longifo'lium* × *Moo'rei*. See C. POWELLII.
„ *Powe'llii* (Powell's). 3. Reddish. July, August. Garden hybrid. 1877.
„ „ *a'lbum* (white). White. 1888.
„ „ *interme'dium* (intermediate). Pink. 1888.

GREENHOUSE.

C. angustifo'lium (narrow-leaved). 2. White. June. N. Holland. 1822.
„ „ *bla'ndum* (mild-looking). 2. Blue. May. 1821.
„ *austra'le* (southern). See C. PEDUNCULATUM.
„ *crassifo'lium* (thick-leaved). See C. VARIABILE.
„ *fla'ccidum* (flabby). 2. July. N. Holland. 1816.
„ *longifo'rum* (long-flowered). 2. Purple. July. Jamaica. 1816.
„ *lorifo'lium* (strap-leaved). See C. PRATENSE.
„ *macroca'rpum* (large-fruited). See C. SUMATRANUM.
„ *mauritia'num* (Mauritian). 4. Pink. March. Mauritius. 1812.
„ *molucca'num* (Molucca). See C. LATIFOLIUM and C. ZEYLANICUM.
„ *Moo'rei* (Moore's). 1½. Rose. S. Africa. 1874.
„ „ *a'lbum* (white). Natal.
„ „ *variega'tum* (variegated). Leaves striped yellow. 1895.
„ *multiflo'rum* (many-flowered). 2. White. 1822.
„ *peduncula'tum* (*long*-flower-stalked). 3. White. July. N. S. Wales. 1790.
„ „ *paci'ficum* (pacific). White. Lord Howe's Island. 1882. "Wedding Lily."
„ *plica'tum* (plaited). See C. ASIATICUM.
„ *ripa'rium* (river-bank). See C. LONGIFOLIUM.
„ *varia'bile* (variable). 2. Flushed red. S. Africa. 1774.

STOVE.

„ *abyssi'nicum* (Abyssinian). White, fragrant. Abyssinia. 1892.
„ *algoe'nse* (Algoa Bay). Red, white. August. Cape of Good Hope. 1826.
„ *ama'bile* (lovely). 5. Purple. July. E. Ind. 1810.
„ *america'num* (American). 2. White. July. S. Amer. 1752.
„ *amœ'num* (pleasing). 2. White. E. Ind. 1810.
„ „ *angustifo'lium* (*tall*-narrow-leaved). 2. White. E. Ind. 1819.
„ „ *læ've* (smooth-edged). 2. White. E. Ind. 1819.
„ „ *Mea'rsii* (Mears's). Smaller than the type. 1907.
„ *ano'malum* (anomalous). See C. ASIATICUM.
„ *aqua'ticum* (water). See C. ERUBESCENS.
„ *arena'rium* (sand). See C. ANGUSTIFOLIUM.

C. arena'rium bla'ndum (mild-*looking*). See C. ANGUSTIFOLIUM BLANDUM.
„ *asia'ticum* (Asiatic. *Poison-bulb*). 3. White. July. China. 1732.
„ *augu'stum* (August). 1. Pink. July. Mauritius. 1818.
„ *australa'sicum* (Australian). See C. ANGUSTIFOLIUM.
„ *Baine'sii* (Baines's). Trop. Africa.
„ *Balfou'rii* (Balfour's). 1 to 1½. White. Socotra. 1880.
„ *bla'ndum* (mild-looking). See C. ANGUSTIFOLIUM BLANDUM.
„ *brachya'ndrum* (short-stamened). 5. White. July. N. Holland. 1819.
„ *brachyne'ma* (short-stamened). White. E. Ind. 1840.
„ *bractea'tum* (bracted). 2. White. July. Mauritius. 1810.
„ *brevili'mbum* (short-fringed). 2. July. Pacific Islands. 1820.
„ *Broussone'ti* (Broussonet's). See C. YUCCÆFLORUM.
„ *ca'ffrum* (Caffre). See C. CAMPANULATUM.
„ *campanula'tum* (bell-shaped). 3 to 4. Rose red. S. Africa. 1817.
„ *canalicula'tum* (channelled-*leaved*). See C. PEDUNCULATUM.
„ *canalifo'lium* (channelled-leaved). 2. July. E. Ind. 1820.
„ *careya'num* (Carey's). 2. White. July. Mauritius. 1821.
„ *caribæ'um* (Caribæan). 1. White. Jamaica. 1881.
„ *caudi'ceum* (caudexed). See C. AMŒNUM.
„ *Cole'nsoi* (Colenso's). See C. MOOREI.
„ *Commely'nii* (Commelyn's). 2. White. July. S. Amer. 1798.
„ *confe'rtum* (crowded). See C. ANGUSTIFOLIUM.
„ *coranty'num* (Corantynan). See C. ERUBESCENS CORANTYNUM.
„ *crassifo'lium* (thick-leaved). See C. VARIABILE.
„ *cra'ssipes* (thick-scaped). 1. White, red. July. Trop. Africa (?). 1887.
„ *crue'ntum* (bloody-*flowered*). 4. Red. July. Mexico. 1810.
„ „ *loddigesia'num* (Loddigesian). White, purple. August. Mexico.
„ *declina'tum* (curved-down). See C. ASIATICUM.
„ *defi'xum* (defixed). 2. White. August. E. Ind. 1810.
„ „ *ensifo'lium* (sword-leaved). Flowers red outside.
„ *di'stichum* (two-rowed). 2. White, purple. June. Guinea. 1774.
„ *Do'riæ* (Doria's). White, striped red. Abyssinia. 1894.
„ *e'legans* (elegant). See C. PRATENSE.
„ *ensifo'lium* (sword-leaved). See C. DEFIXUM ENSIFOLIUM.
„ *erube'scens* (blushing). 2. Pale white. July. Trop. Amer. 1789.
„ „ *berbice'nse* (Berbice). 2. White. July. Berbice. 1819.
„ „ *coranty'num* (Corantyne). Pale red. June. S. Amer. 1820.
„ „ *gla'brum a'lbum* (smooth-white). White. June. S. Amer. 1820.
„ „ *gla'brum ru'brum* (smooth-red). Red, white. June. Maranham. 1824.
„ „ *ma'jus* (larger). 3. Red, white. July. S. Amer. 1789.
„ „ *mi'nus* (smaller). 1½. Red, white. July. S. Amer. 1789.
„ „ *octoflo'rum* (eight-flowered). White. June. Spanish Main. 1820.
„ „ *rubrili'mbum* (red-fringed). Red. June. S. Amer.
„ „ *viridifo'lium* (green-leaved). 3. White. July. Demerara. 1819.
„ *erythrophy'llum* (red-leaved). 2. Red, white. July. E. Ind. 1825.
„ *exalta'tum* (lofty). See C. PEDUNCULATUM.
„ *falca'tum* (sickle-shaped). See AMMOCHARIS FALCATA.
„ *fimbria'tulum* (slightly-fringed). Angola.
„ *firmifo'lium* (firm-leaved). 1½. White. Madagascar. 1892.
„ *fla'ccidum* (flaccid). 2. White. July. Australia. 1819.
„ *forbesia'num* (Forbesian). 1. White, red. July. Delagoa Bay. 1824.

C. formo'sum (beautiful). 2. July. Brazil. 1820.
„ *gigante'um* (giant). 3. White. July. Guinea. 1792.
„ *gordonia'num* (Gordonian). See C. ERUBESCENS.
„ *gracilifo'rum* (slender-flowered). 2. White. Venezuela. 1844.
„ *herbertia'num* (Herbertian). See C. ZEYLANICUM.
„ *Hildebra'ndtii* (Hildebrandt's). 2. White. September. Johanna Island. 1875.
„ *hu'mile* (low). 1. White. October. India. 1822.
„ *insi'gne* (noble). See C. LATIFOLIUM.
„ *jeme'nse* (Jeman). White. Arabia. 1892.
„ *Johnsto'ni* (Johnston's). White, tinged pink. British Central Africa. 1902.
„ *Ki'rkii* (Kirk's). 1½. White, red. Zanzibar. 1879.
„ *kunthia'num* (Kunthian). 1½. White and red band. Nicaragua. 1890.
„ *La'ncei* (Lance's). Red, white. July. Surinam. 1825.
„ *La'stii* (Last's). Pink. E. Trop. Africa. 1881.
„ *latifo'lium* (broad-leaved). 3. Pink. July. E. Ind. 1806.
„ *Laure'nti* (Laurent's). White. Congo. 1897.
„ *Lesema'nni* (Lesemann's). See C. POWELLII.
„ *leucophy'llum* (white-leaved). 1. Pinkish-white. Damaraland. 1881.
„ *lindleya'num* (Lindley's). See C. COMMELYNII.
„ *linea're* (linear). 2. White, pale red. S. Africa. 1779.
„ *loddigesia'num* (Loddige's). See C. CRUENTUM LODDIGESIANUM.
„ *longisty'lum* (long-styled). See C. LATIFOLIUM.
„ *Luga'rdæ* (Mrs. Lugard's). ½ to 1. White, with pink stripe. S. Central Africa. 1903.
„ *Macke'nii* (Macken's). See C. MOOREI.
„ *Maco'wani* (Macowan's). 2 to 3. Pink. January. Natal. 1878.
„ *makoya'num* (Makoyan). See C. MOOREI.
„ *massaia'num* (Massaian). See C. KIRKII.
„ *natale'nse* (Natal). See C. MOOREI.
„ *na'tans* (floating). 1. White. Guinea. 1902.
„ *no'bile* (noble). See C. GIGANTEUM.
„ *obli'quum* (oblique). See CYRTANTHUS OBLIQUUS.
„ *orna'tum* (adorned) of Herbert. See C. ZEYLANICUM.
„ „ *ru'bro-vitta'tum* (red-striped). White, with crimson midrib. Brazil. 1876.
„ *orna'tum* (adorned) of Bury. See C. SANDERIANUM.
„ *pa'rvum* (small). Zambesia.
„ *Paxto'ni* (Paxton's). Red, white. June. E. Ind.
„ *petiola'tum* (petiolate). See C. GIGANTEUM.
„ „ *specta'bile* (showy). See C. GIGANTEUM.
„ *podophy'llum* (stalked-leaved). 1. White. Old Calabar. 1879.
„ *prate'nse* (meadow). White. June. E. Ind. 1810.
„ *pro'cerum* (tall). See C. ASIATICUM.
„ *purpura'scens* (purplish). Purple. June. Fernando Po. 1826.
„ *quite'nse* (Quitan). See PHÆDRANASSA CHLORACEA.
„ *redu'ctum* (reduced). See C. ZEYLANICUM.
„ *revolu'tum* (rolled-back). See C. COMMELYNII.
„ *rhoda'nthum* (red-flowered). Red. Bechuanaland. 1900.
„ *ri'gidum* (stiff). See C. SUMATRANUM.
„ *roozenia'num* (Roozenian). See C. ERUBESCENS MINUS.
„ *Sa'mueli* (Samuel's). White, flushed pink. Central Africa. 1902.
„ *sanderia'num* (Sanderian). White and red keel. Sierra Leone. 1884.
„ *scabe'rrimum* (very rough). See C. SCABRUM.
„ *sca'brum* (rough). 4. Pink. May. Trop. Africa. 1810.
„ *Schimpe'ri* (Schimper's). White. Abyssinia. 1889.
„ *Schmi'dtii* (Schmidt's). See C. MOOREI ALBUM.
„ *si'nicum* (Chinese). See C. ASIATICUM.
„ *specio'sum* (showy). See C. LATIFOLIUM.
„ *spira'le* (spiral). See CARPOLYZA SPIRALIS.
„ *Stra'cheyi* (Strachey's). 2. White. Himalaya. 1881.
„ *stri'ctum* (straight). 1½. White. September. 1824.
„ *subme'rsum* (submerged). 1½. Pink. July. Rio Janeiro. 1820.
„ *sumatra'num* (Sumatra). 3. White. July. Sumatra. 1810.
„ *supe'rbum* (superb). See C. AMABILE.
„ *taite'nse* (Taitan). See C. PEDUNCULATUM.
„ *tene'llum* (slender). See HESSEA FILIFOLIA.
„ *undula'tum* (waved-*leaved*). 1½. White. November. Maranham. 1824.

C. uniflo'rum (one-flowered). 1. White. Australia. 1879.
,, *urceola'tum* (urn-shaped). See URCEOLINA PENDULA.
,, *vanillodo'rum* (Vanilla-scented). See C. GIGANTEUM.
,, *Va'ssei* (Vasse's). White, with red median stripe. Mozambique. 1907.
,, *venu'stum* (graceful). 1. White, red. July. E. Ind. 1821.
,, *verecu'ndum* (ruddy). See C. AMŒNUM.
,, *verschaffeltia'num* (Verschaffeltian). Leaves striped with white. 1877.
,, *wallichia'num* (Wallichian). See C. ZEYLANICUM.
,, *Wimbu'shi* (Wimbush's). White. Central Africa. 1902.
,, *Woodro'wi* (Woodrow's). 2. White. Bombay. 1897.
,, *yeme'nse* (Yemen). See C. LATIFOLIUM.
,, *yuccæflo'rum* (Yucca-flowered). 2. Red, white. June. Trop. Africa. 1740.
,, *yuccæfo'lium* (Yucca-leaved). 1½. White. Abyssinia. 1892.
,, *yuccæoi'des* (Yucca-like). See C. YUCCÆFLORUM.
,, *zeyla'nicum* (Ceylon). 3. Purple. July. Ceylon. 1771.
,, ,, *redu'ctum* (reduced). White and red stripe. Zanzibar. 1883.

CRIO'CERIS ASPA'RAGI. The Asparagus Beetle sometimes proves very destructive by eating the shoots and twiglets of Asparagus during its growth, from June to September. There are several broods during this time, each of which lays eggs on the slender shoots, when the beetle attains the winged stage. The eggs are spindle-shaped, dark in colour, and should be destroyed when seen. The grubs are olive or slate-coloured, fleshy and curved at the tail, by which they hold on to the plant. They are full fed in fourteen days, when they pass into the ground, pupate, and in the course of another two or three weeks reach the perfect state, ready to repeat their life-cycle and destructiveness. The beetles are about ¼ in. in length, and blue-black or greenish. The shoulders are red, with two black spots. The wing-cases are yellowish, with a line of this colour where they meet on the back; they also have a blue-black band across the middle, and similar patches at the base and apex. Several remedies have been devised for holding the beetle in check. The grubs are the most destructive. White sheets may be laid amongst the plants, and the latter well shaken, to make the grubs fall. Another plan is to get some water about as warm as the hands can bear and syringe the Asparagus with it. The grubs will quickly fall, but if any still hold on, a smart tap on the stems will bring them down, when the cloths may be quickly lifted, carried away from the Asparagus ground and the grubs destroyed. Some growers allow the grubs to fall on the Asparagus beds, in the above process, and then dust them with dry soot. The beds should be examined again in ten days or a fortnight, and the process repeated if need be. The stems should be burnt in autumn, when cut down, in order to destroy eggs that may be upon them.

CRISTA'RIA COCCI'NEA. See MALVASTRUM COCCINEUM.

CRI'THMUM. Samphire. (From *krithe*, barley; resemblance of the seeds to barley. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Seseli.)

Samphire (*C. mari'timum*) is excellent in pickles.

C. latifo'lium (broad-leaved). 1½. Yellow. July. Canaries. 1780. Greenhouse evergreen. The correct name is *Astydamia canariensis*.
,, *mari'timum* (sea). 1. White. August. Britain. Hardy herbaceous.

Culture.—*Cri'thmum mari'timum*, though a native of the seashore, may be cultivated successfully in the garden.

Soil.—It requires a sandy, rich soil and the north side of a wall.

Propagation.—The roots may be planted, or the seed sown, in April; the only cultivation required being to keep the plants free from weeds, and to water them about twice a week with water containing half an ounce of guano, and one ounce of salt per gallon.

CROCKING is putting a piece of potsherd over the hole at the bottom of a flower-pot, previously to adding the drainage, &c.

CROC'OSMA. (From *krokos*, saffron, and *osme*, smell; in allusion to the strong odour of saffron when dried flowers are placed in warm water. Nat. ord. Iridaceæ.)

Nearly hardy bulbous perennial, often grown in pots in a greenhouse, but it may be planted out in March and the corms lifted in November in cold, northern districts, or in clay soils. Seeds and offsets. Light, rich soil.

C. au'rea (golden). 1½ to 2. Bright fulvous yellow. S. Africa. 1846.
,, ,, *imperia'lis* (imperial). 3. Fiery orange-red. S. Africa. 1888.
,, ,, *macula'ta* (spotted). A dark blotch on the three inner segments. S. Africa. 1888.

CRO'CUS. (A name adapted from Theophrastus. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Hardy bulbs. The saffron of the shops is the dried stigmas of *C. sati'vus*. The Sicilian saffron is from those of *C. longiflorus*.

C. aë'rius (air-like). Pale lilac, throat yellow. Asia Minor.
,, ,, *ma'jor* (larger). Very fine form. 1908.
,, *alata'vicus* (Ala Tau). White, yellow, purple. Spring. Ala Tau Mts. 1877.
,, ,, *ochroleu'cus* (yellow-white). Yellow, and white edges. 1878.
,, ,, *porphy'reus* (purple). Bright claret-purple, white. 1878.
,, *ancyre'nsis* (Ancyran). Orange, purple. Spring. Asia Minor.
,, *annula'tus* (ringed). See C. BIFLORUS.
,, *astu'ricus* (Asturian). Purple. Autumn. Asturia. 1842.
,, *au'reus* (golden). Orange-yellow. February and March. Greece, Asia Minor.
,, ,, *a'lbus* (white).
,, ,, *fla'vus* (yellow). Pale yellow. Greece.
,, ,, *hæ'micus* (Hæmus). Light yellow. Mt. Hæmus.
,, ,, *la'cteus* (milky). Cream. Greece. 1629.
,, ,, *la'cteus penicilla'tus* (pencilled-milky). Pale cream with purple lines.
,, ,, *lute'scens* (yellowish). Pale yellow.
,, ,, *sulphu'reus* (sulphur). Pale yellow. S. Europe. 1629.
,, ,, *sulphu'reus pa'llidus* (pale sulphur).
,, ,, *syri'acus* (Syrian). Yellow. Syria.
,, ,, *trilinea'tus* (three-lined). Yellow, with purple lines.
,, *Bala'nsæ* (Mrs. Balansa's). Orange, feathered bronze. February. W. Asia Minor.
,, *bana'ticus* (Banatan). Dark purple. February. March. Transylvania.
,, *biflo'rus* (two-flowered). White to lilac, with 3 purple lines on the back. March. Tuscany. 1629.
,, ,, *Ada'mii* (Adam's). Pale purple. Caucasus.
,, ,, *a'lbus* (white). White. March. Opschina.
,, ,, *Alexa'ndri* (Alexander's). White, striped purple on back of outer segments. Bulgaria. 1900.
,, ,, *argë'nteus* (silvery). Smaller, more purple than the type, striped purple. Italy.
,, ,, *cærule'scens* (bluish). Bluish. February. Naples.
,, ,, *estria'tus* (not striped). Lilac. February. Florence.
,, ,, *græ'cus* (Greek or Grecian). February. Greece.
,, ,, *Leichtli'nii* (Leichtlin's). White or pale purple, fragrant. Asia Minor. 1891.
,, ,, *nubi'genus* (cloud-begotten). White. March. Mount Gargarius. 1845.
,, ,, *Pestalo'zzæ* (Pestalozza's). White. Constantinople.
,, ,, *purpura'scens* (purplish). Purple. March. Dalmatia.
,, ,, *pusi'llus* (dwarf). White. February. Pisa.
,, ,, *tau'ricus* (Taurian). Bluish. February. Odessa.
,, ,, *Welde'ni* (Welden's). White, purple. Dalmatia.
,, *Billio'ttii* (Billiott's). Rich purple, with darker blotch in throat. Asia Minor. 1892.
,, *Boissie'ri* (Boissier's). Pure white. Mts. of Cilicia.

C. Bo'ryi (Bory's). White. Autumn. Ionian Islands. 1845.
" " *marathoni'seus* (Marathon). White. Marathon.
" *byzanti'nus* (Byzantine). See C. IRIDIFLORUS.
" *Cambessede'sii* (Cambessedes's). Lilac, purple. October and November. Majorca. 1845.
" *cancella'tus* (cross-barred). White to lilac. October to December. Asia Minor. 1847.
" " *cili'cicus* (Cilician). Violet, purple. Cilicia.
" " *mazia'ricus* (Maziarian). White, yellow. Caria.
" *ca'ndidus* (white). White, tinged yellow in throat. March. The Troad. 1856.
" " *lu'teus* (yellow). Yellow, veined and mottled purple outside. 1904.
" *carpeta'nus* (Carpetan). Pale lilac or white. March to June. Spain.
" *ca'spius* (Caspian). White. October. Caspian Sea. 1838.
" " *lilaci'na* (lilac). Rosy lilac. 1903.
" *chrysa'nthus* (golden-flowered). Orange-yellow. January to March. Asia Minor. 1847.
" " *a'lbidus* (whitish). White. Bythinian Olympus.
" " *cærule'scens* (bluish). Bluish. Bythinian Olympus.
" " *fu'sco-linea'tus* (brown-lined). Orange, lined reddish-brown. Smyrna. 1876.
" " *fu'sco-ti'nctus* (brown-tinted). Orange, tinted brown. Smyrna. 1876.
" " *supe'rbus* (superb).
" *cili'cicus* (Cilician). See C. CANCELLATUS CILICICUS.
" *Clu'sii* (Clusius's). Lilac. October and November. Portugal. 1845.
" *co'rsicus* (Corsican). Lilac, buff, with 3 feathered lines outside. Corsica. 1882.
" *Cre'wei* (Crewe's). White. February. Sogra. 1874.
" *cy'prius* (Cyprian). Lilac, purple blotch. April. Cyprian Olympus.
" *dalma'ticus* (Dalmatian). Lilac. February, March. Dalmatia.
" " *ni'veus* (snowy). White.
" " *viola'ceus* (violet). Violet.
" *Danfo'rdiæ* (Mrs. Danford's). Pale sulphur-yellow. February, March. Taurus. 1879.
" *etru'scus* (Tuscan). Lilac, cream. March. Tuscany. 1876.
" *Fleische'ri* (Fleischer's). White, three lilac lines. January and February. Asia Minor. 1875.
" *Gaillardo'tii* (Gaillardot's). White, slaty lilac. Palestine to Damascus. December to January.
" *garga'ricus* (Gargarian). Orange-yellow. April. Western Bithynia.
" *granate'nsis* (Granadan). Lilac. September, October. New Granada.
" *hadria'ticus* (Hadriatic). Pure white. September, October. Greece. 1847.
" " *chrysobelo'nicus* (Chrysobelonian). White, yellow. Santa Maura.
" *hermo'neus* (Hermonian). Purple, white. Autumn. Mount Hermon.
" *hyema'lis* (winter). White, purple line. Spring. Palestine.
" " *Fo'xii* (Fox's). Anthers nearly black.
" *Impera'ti* (Imperato's). Bright lilac, buff, 3 feathered stripes. January, February. Italy. 1830.
" " *purpu'reus* (purple). Purple. 1888.
" *insula'ris* (insular). See C. MINIMUS.
" " *ma'jor* (larger). See C. CORSICUS.
" *iridiflo'rus* (Iris-flowered). Purple, lilac. January, February. Italy. 1830.
" *karducho'rum* (Kurdistan). Lilac. September. Kurdistan. 1859.
" *Ki'rkii* (Kirk's). See C. CANDIDUS.
" *Korolko'wi* (Korolkow's). Bright orange-yellow. Spring. Turkestan. 1880.
" *kotschya'nus* (Kotschyan) of Herbert. See C. CANCELLATUS.
" *kotschy'anus* (Kotschyan) of C. Koch. See C. ZONATUS.
" *laviga'tus* (smooth). White, 3 to 5 lilac stripes. October to December. Greece. 1838.
" *lagenæflo'rus* (bottle-flowered). See C. AUREUS.
" *lazi'cus* (Lazistan). Orange-yellow. August. Mts. of Lazistan. 1866.
" *longiflo'rus* (long-flowered). Lilac, purple. Autumn. S. Italy. 1810.
" *lu'teus* (yellow). See C. AUREUS.

C. Ma'lyi (Maly's). White, throat orange. March. Dalmatia. 1872.
" *me'dius* (intermediate). Bright lilac. October. N. Italy. 1843.
" *mi'nimus* (smallest). Violet, buff, and 3 feathered stripes. Corsica. 1805.
" *mœsi'acus* (Mœsian). See C. AUREUS.
" *montenegri'nus* (Montenegran). Creamy white, throat orange. Spring. Montenegro. 1881.
" *Moura'di* (Mourad-dagh). Bright orange. Spring. Smyrna. 1889.
" *nevade'nsis* (Nevadan). White, lilac. December to February. S. Spain. 1861.
" *niva'lis* (snowy). See C. SIEBERI.
" *ni'veus* (snowy). See C. BORYI MARATHONISEUS.
" *nudiflo'rus* (naked-flowered). Lilac. September, October. France, Spain. 1798.
" *ochroleu'cus* (yellowish-white). Creamy-white. October to December. Lebanon. 1862.
" *odo'rus* (scented). See C. LONGIFLORUS.
" *Olivie'ri* (Olivier's). Orange-yellow. March, April. Asia Minor. 1831.
" *Orpha'nidis* (Orphanides). See C. TOURNEFORTII.
" *parviflo'rus* (small-flowered). Pale lilac. Spring. Taurus. 1877.
" *pulche'llus* (pretty). Bright lilac. September to December. E. Europe, Asia Minor. 1670.
" *pusi'llus* (dwarf). See C. BIFLORUS PUSILLUS.
" *reticula'tus* (netted). White to lilac, 3 feathered stripes. February to April. E. Europe. 1808.
" " *micra'nthus* (small-flowered). Small flowers. Cilicia.
" *Salzma'nni* (Salzmann's). Lilac. October. Morocco. 1831.
" *sati'vus* (cultivated). Lilac. October. England to Himalayas. 1753. Cultivated.
" " *cartwrightia'nus* (Cartwrightian). Lilac, striped. Athens.
" " *cashmeria'nus* (Cashmerian). Purple. Cashmir.
" " *Elwe'sii* (Elwes's). Bright purple. Smyrna.
" " *Haussknе'chtii* (Haussknecht's). Purple. Kurdistan.
" " *Orsi'nii* (Orsini's). Purple, lilac. Italy.
" " *Palla'sii* (Pallas'). Lilac. Crimea, &c.
" *Scharo'jani* (Scharojan's). Bright yellow. July, August. Caucasus, &c. 1869.
" *sero'tinus* (late). Bright lilac. November. South of Spain. 1806.
" *sibthorpia'nus* (Sibthorpian). See C. ÆRIUS.
" *Siebe'ri* (Sieber's). Purple, lilac or rosy. January to March. Greece, Crete. 1831.
" " *purpu'reus* (purple). Deep purple. February. 1904.
" " *versi'color* (changing-coloured). White, with 3 feathered nerves outside. Crete. 1909.
" *specio'sus* (showy). Bright lilac-blue, with 3 feathered nerves. September to November. Asia Minor. 1808.
" " *Aitchiso'nii* (Aitchison's).
" " *a'lbus* (white). White. 1907.
" *stella'ris* (starry). Orange, feathered with brown outside. March. Garden hybrid.
" *suave'olens* (sweet-smelling). Purple, buff outside, with 3 purple stripes. February. S. Italy. 1833.
" *susia'nus* (Susian). Orange, with 3 brown stripes. February. Crimea. 1605.
" *suteria'nus* (Suterian). Orange-yellow. March and April. Asia Minor. 1845.
" *Tau'ri* (Taurian). Pale purple. March. Cilicia. 1892.
" " *melanthe'rus* (black-anthered). Anthers black. Smyrna. 1893.
" *tommasinia'nus* (Tommasinian). Pale sapphire lavender. March. Dalmatia. 1847.
" *Tournefo'rtii* (Tournefort's). Bright lilac. November December. Greece. 1831.
" *valli'cola* (valley). Cream. August and September. Caucasus, &c.
" " *lilaci'nus* (lilac). Purple. Stauros.
" " *suwarrovia'nus* (Suwarrow's). Cream, larger. Caucasus.
" *variega'tus* (variegated). See C. RETICULATUS.
" *veluche'nsis* (Veluchan). Dark purple. May. Balkans. 1845.
" *Ve'neris* (Venus's). White, or outer feathered purple. November. Cyprus, Crete. 1842.

C. ve'rnus (spring). Purple. February and March. Europe (England). 1785.
,, ,, *albiflo'rus* (white-flowered). White. Trieste.
,, ,, *leucorhy'nchus* (white-beaked). Purple, tipped white.
,, ,, *parviflo'rus* (small-flowered). White. Splugen.
,, *versi'color* (changing colour). Pale or dark purple. February, March. S. France. 1794.
,, *vitelli'nus* (yolk-of-egg-coloured). Orange, tinted brown outside. N. Palestine. 1879.
,, ,, *grave'olens* (heavy-smelling). Orange, flushed black outside. Aleppo.
,, ,, *syri'acus* (Syrian). Darker orange, feathered dark brown outside.
,, *Welde'ni* (Welden's). See C. BIFLORUS WELDENI.
,, *zona'tus* (zoned). Rosy lilac, veined purple, orange zone in throat. Autumn. Asia Minor. 1855.

CROCUS CULTURE.—*Propagation: by Seed.*—Sow the seed in October, in a prepared bed of light, rich earth, in an open situation, covering it a quarter of an inch. The seedlings will come up in the spring, and should be kept well weeded. When the leaves decay, clear them away, and spread a thin coat of fresh, light earth over the roots. Allow them to remain another season, and then, when the leaves decay, take up the bulbs carefully, sifting the soil so as to find even the smallest. In August prepare a bed of fresh, rich earth, turning it over two or three times to mellow and pulverise. About the middle of September, on a dry day, level the bed, and draw drills across it four inches apart; then plant the young bulbs in the drills three inches asunder, pressing them down gently into the soil; and, when all are planted, level the ridges of the drills with a rake carefully down. In this bed they should remain two years. The second year most of them will flower; and, when in bloom, the colours should be marked, to enable you to separate them into their colours when they are taken up. Any new fine varieties should be especially taken care off.

By Offsets.—When the leaves decay, in the summer, take up the bulbs, keeping them in their various sorts; separate the large-flowering bulbs from the small offsets, and plant the latter in a bed by themselves, in the same way as is described above for seedlings. In two years take them up, sort the large roots out again, and replant the small ones.

Soil.—The crocus delights in a dry situation, and a rich, light, sandy soil. In such a place and soil it flowers profusely, and produces large roots; but in a wet, poor soil it dwindles away.

Culture.—October is the best month for planting, though it may be prolonged to the middle of December. Take the roots up every second year, planting the offsets as described above.

Insects.—Slugs are their chief enemy, which may be destroyed by watering the beds or clumps with lime-water.

Diseases.—The bulbs sometimes become like a mass of starch or meal, and then will not grow. There is no remedy for bulbs actually diseased, but they ought to be carefully picked out, and not mixed with the general stock, for fear of infection. It is caused by an internal fungus, *Bacterium Hyacinthi.*

CROPPING (MIXED) is growing two or more crops together, one of which may be either drawn young, so as to be out of the other's way before it gets high enough to be injured, or one of which benefits the other by shading it. The object of mixed cropping is to obtain the largest amount of produce in the shortest time from a given space. The subject cannot be treated in detail within these limited pages; and we must, therefore, refer our readers to an essay on the subject in *The Cottage Gardener*, v. 274. See ROTATION OF CROPS.

CROSSA'NDRA. (From *krossos*, a fringe, and *aner*, an anther; fringed anthers, or pollen-bags. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Tetradynamia*, 2-*Angiospermia*. Allied to Justicia.)

Showy stove evergreen shrubs; peat and loam; cuttings root readily in sand, in bottom-heat, at any season, under glass.

C. fla'va (yellow-*flowered*). ½. Yellow. January. W. Africa. 1852.
,, *guinee'nsis* (Guinea). Lilac, white, purple. W. Trop. Africa. 1877.
C. infundibulifo'rmis (funnel-shaped). See C. UNDULÆFOLIA.
,, *undulæfo'lia* (wave-leaved). 1½. Orange, scarlet. March. E. Ind. 1800.

CROSSOSO'MA. (From *krossos*, a fringe, and *soma*, a segment. Nat. ord. Dilleniaceæ.)

Greenhouse shrub. Cuttings of nearly ripe wood in sand in a close frame. Fibrous loam, a little peat and sand.

C. califo'rnicum (Californian). White. S. California. 1902.

CROSSY'NE CILIA'RIS. See BUPHANE CILIARIS.

CROTALA'RIA. (From *krotalon*, a castal net, or hand-rattle; the seeds rattle in the pod if shaken. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to the Lupines.)

Notwithstanding the great number of Crotalarias, with their gay-coloured pea-flowers, they are not much prized by gardeners, owing to the difficulty of preserving them from the attacks of the red spider. Seed; perennial kinds easily from cuttings in sand, under glass; loam and peat.

STOVE ANNUALS, &c.

C. acumina'ta (pointed-*leaved*). 1. Yellow. July. Cape of Good Hope. 1820. Half-hardy.
,, *ala'ta* (winged). 1. Pale yellow. July. Nepaul. 1818. Biennial.
,, *angula'ta* (angled). 1. Yellow. June. Honduras. 1700.
,, *angustifo'lia* (narrow-leaved). See LEBECKIA SERICEA.
,, *biala'ta* (two-winged). See C. SAGITTALIS.
,, *bifa'ria* (two-rowed). 3. Yellow. July. E. Ind. 1817.
,, *Burma'nni* (Burmann's). 1. Yellow. July. E. Ind. 1800.
,, *calyci'na* (*large*-calyxed). 1. Blue. June. Trop. Africa. 1816.
,, *cube'nsis* (Cuba). See C. INCANA.
,, *fu'lva* (tawny). 1. Yellow. June. E. Ind. 1817.
,, *glau'ca* (milky-green). 1. Yellow. July. Guinea. 1824.
,, *hirsu'ta* (hairy). 1. Yellow. July. E. Ind. 1818.
,, *inca'na* (hoary). Yellow. July. Trop. Amer. 1820.
,, *ju'ncea* (rush-like). Tropics, Old World. "Sunn Hemp."
,, *Langsdo'rfii* (Langsdorf's). 1. Yellow. June. 1820.
,, *microphy'lla* (small-leaved). ½. Yellow. July. Arabia. 1820. Trailer.
,, *ova'lis* (oval). 1. Yellow. July. Carolina. 1810. Half-hardy.
,, *pu'mila* (dwarf). ½. Yellow. June. Cuba. 1823. Trailer.
,, *purpura'scens* (purplish). 1. Purple. July. Madagascar. 1825.
,, *purpu'rea* (purple). Purple. S. Africa.
,, *Pu'rshii* (Pursh's). 1. Yellow. June. N. Amer. 1800. Half-hardy.
,, *sagitta'lis* (arrow-like). 1. Yellow. June. N. Amer. 1820.
,, *senegale'nsis* (Senegal). 1. Yellow. June. Senegal. 1819.
,, *seri'cea* (silky). 1½. Purple. July. India. 1820.
,, *specta'bilis* (showy). See C. SERICEA.
,, *stipula'ris* (*large*-stipuled). 1. Yellow. July. Cayenne. 1823.
,, *tria'ntha* (three-flowered). 2. Yellow. June. Mexico. 1824.
,, *tubero'sa* (tuberous). See ERIOSEMA CHINENSE.
,, *verruco'sa* (warted). 1. Blue. June. W. Ind. 1731.
,, ,, *acumina'ta* (pointed-*leaved*). 1. Blue. July. E. Ind. 1731.
,, *villo'sa* (soft-haired). 1. Yellow. June. Cape of Good Hope. 1824. Half-hardy.

GREENHOUSE EVERGREENS.

C. arbore'scens (tree-like). See C. CAPENSIS.
,, *arge'ntea* (silvery). See ARGYROLOBIUM PETIOLARE.
,, *axilla'ris* (axillary). Trop. Africa.
,, *cape'nsis* (Cape). Yellow. S. Africa.
,, *dicho'toma* (forked). 1. Yellow. July. Mexico. 1824.

C. longirostra'ta (long-beaked). 3. Rich yellow. Winter. Mexico.
,, *obscu'ra* (obscure). 2. Yellow. June. Cape of Good Hope. 1820.
,, *pa'llida* (pale). Trop. Africa.
,, *pulche'lla* (pretty). See LEBECKIA CYTISOIDES.
,, *theba'ica* (Theban). 2. Yellow. June. Egypt. 1818.

STOVE EVERGREENS.

C. amplexicau'lis (stem-clasping). See RAFNIA AMPLEXICAULIS.
,, *anagyroi'des* (Anagyris-like). 6. Yellow. July. Venezuela. 1823.
,, *anthylloi'des* (Anthyllis-like). 4. Yellow. August. E. Ind. 1789.
,, *berteria'na* (Berter's). See C. FULVA.
,, *bractea'ta* (*large*-bracted). 4. Yellow. July. E. Ind. 1820.
,, *Bro'wnei* (Browne's). See C. SALTIANA.
,, *cajanifo'lia* (cajan-leaved). 6. Yellow. August. Mexico. 1824.
,, *chine'nsis* (Chinese). 2. Yellow. June. China. 1818.
,, *cordifo'lia* (heart-leaved). See HYPOCALYPTUS OBCORDATUS.
,, *Cunningha'mii* (Cunningham's). Pale yellow, purple. N.W. Australia. 1869.
,, *cytisoi'des* (Cytisus-like). 3. Yellow. July. E. Ind. 1826.
,, *fenestra'ta* (windowed). See C. JUNCEA.
,, *floribu'nda* (free-flowering). See WIBORGIA FLORIBUNDA.
,, *folio'sa* (leafy). 3. Yellow. June. Brazil. 1818.
,, *frutico'sa* (shrubby). 2. Yellow. June. Jamaica. 1716.
,, *fu'lva* (tawny). 2. Yellow. June. Trop. Asia. 1818.
,, *heynea'na* (Heynean). White, blue. India. 1868.
,, *laburnifo'lia* (Laburnum-leaved). 5. Yellow. August. Trop. Asia.
,, *latifo'lia* (broad-leaved). Jamaica.
,, *linifo'lia* (flax-leaved). 1. Yellow. July. Nepaul. 1820.
,, *lotifo'lia* (Lotus-leaved). See C. LATIFOLIA.
,, *medicagi'nea* (Medicago-like). 1. Yellow, green. June. E. Ind. 1816.
,, *No'væ-Holla'ndiæ* (New Holland). 2. Purple. June. N. Holland. 1823. Herbaceous perennial.
,, *obcorda'ta* (obversely-heart-shaped). S. Africa.
,, *opposi'ta* (opposite-leaved). See RAFNIA OPPOSITIFOLIA.
,, *panicula'ta* (panicled). 3. Yellow. June. Java. 1820.
,, *pelli'ta* (furred). See C. RAMOSISSIMA.
,, *pe'ndula* (hanging-down). See C. LABURNIFOLIA.
,, *procu'mbens* (lying-down). 1. Yellow. June. Mexico. 1823. Herbaceous perennial.
,, *pu'lchra* (beautiful). See C. PULCHERRIMA.
,, *pulche'rrima* (very beautiful). Yellow. E. Ind. 1807.
,, *ramosi'ssima* (much-branched). 1. Yellow. July. India. 1820.
,, *roxburghia'na* (Roxburgh's). See C. CALYCINA.
,, *saltia'na* (Saltian). 4. Yellow. July. Tropics of the Old World. 1816.
,, *semperflo'rens* (ever-flowering). Golden yellow. Trop. Asia.
,, *stria'ta* (streaked-*flowered*). 3. Yellow, red. Mauritius. 1831.
,, *tenuifo'lia* (fine-leaved). See C. JUNCEA.
,, *tetrago'na* (four-angled). Yellow. November. Trop. Asia.
,, *tu'rgida* (swollen). 3. Yellow. July. 1820.
,, *virga'ta* (twiggy). 3. Yellow. June. E. Ind. 1816.
,, *vilelli'na* (yolk-of-egg-coloured). Yellow, violet. Brazil.
,, *wallichia'na* (Wallichian). See C. SEMPERFLORENS.

CRO'TON. (From *kroton*, a tick; referring to the appearance of the seeds. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*. Allied to Jatropha.)

The most powerful of purgatives is *Croton oil*, obtained from the seeds of *C. Ti'glium*. Stove evergreen shrubs, except *C. rosmarinifo'lia:* loam and peat; cuttings root readily in sand, under glass, in heat. For the plants with highly coloured foliage, sold and grown under the name of Croton, see CODIÆUM.

C. alabamie'nsis (Alabaman). 8 to 10. White. N. Amer. 1889.
,, *castanæfo'lius* (chestnut-leaved). See CAPERONIA CASTANÆFOLIA.
,, *cauda'tus* (tailed). India, Java, &c.
,, *cilia'to-glanduli'ferum* (ciliate-gland-bearing). Mexico.
,, *denticula'tus* (finely-toothed). See C. CAUDATUS.
,, *dis'color* (two-coloured). Dominica.
,, *Eleuté'ria* (*Sea-side balsam*). 6. White, green. July. Jamaica. 1748. "Eleuteria Bark."
,, *glabe'llus* (smoothish. *Laurel-leaved*). 6. White, green. Jamaica. 1778.
,, *linea'ris* (narrow-*leaved*). 6. White, green. July. W. Ind. 1773.
,, *lu'cidus* (shining). W. Ind.
,, *ni'veus* (snowy). Bahamas.
,, *rosmarinifo'lius* (rosmary-leaved). See RICINOCARPUS ROSMARINIFOLIUS.
,, *Ti'glium* (Tiglium). 10. White, green. E. Ind. 1796. "Croton Oil."

CROWBERRY. *Empe'trum ni'grum.*

CRO'WEA. (Named after *J. Crowe*, a British botanist. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Boronia.)

Greenhouse evergreen shrubs, from Australia. Cuttings root readily in sand, under glass; loam and peat.

C. angustifo'lia (narrow-leaved). Pink. Australia.
,, *latifo'lia* (broad-leaved). See C. SALIGNA.
,, *sali'gna* (willow-*leaved*). 3. Purple. September. 1790.

CROWFOOT. *Ranu'nculus.*

CRUCIANE'LLA. Crosswort. (From the diminutive of *crux*, a cross; referring to the way the leaves are arranged. Nat. ord. *Stellates* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Rubia.)

The leaves of all the plants in this tribe are produced in whorls along the stem. Hence the name of the order. The greenhouse species thrive well in loam and peat, and readily increase by cuttings; the hardy perennial kinds by seed and division, in garden-soil. There are several annual species, but not worth cultivating.

GREENHOUSE EVERGREENS.

C. america'na (American). 1. Yellow. July. Mexico. 1780.
,, *mari'tima* (maritime). 1. Yellow. July. France. 1640.

HARDY HERBACEOUS.

C. ægypti'aca (Egyptian). Egypt.
,, *ano'mala* (anomalous). See ASPERULA MOLLUGINOIDES.
,, *a'spera* (rough). See ASPERULA ASPERA.
,, *chlorosta'chys* (greenish-yellow-spiked). Greenish-yellow. July. Persia. 1837.
,, *gila'nica* (Ghilan). See C. GLAUCA.
,, *glau'ca* (sea-green). Yellow. July. Persia. 1837.
,, *glomera'ta* (crowded). See ASPERULA GLOMERATA.
,, *pube'scens* (downy). See ASPERULA INCANA.
,, *stylo'sa* (*large*-styled). See PHUOPSIS STYLOSA.
,, *suave'olens* (sweet-smelling). 1. Yellow. July. Persia. 1838.

CRUCIFERS. Crossworts. Flowers are called cruciferous when composed of four petals placed opposite each other, like those of the cabbage and turnip. They include all those plants arranged by Linnæus in the 15th class of his system *Tetradynamia*. It may be stated that all of this order are non-poisonous, and most are very palatable vegetables. All the various Cabbages, Turnips, Radishes, &c., are included.

CRUCKSHANKSIA. See BALBISIA.

CRUPI'NA. (Nat. ord. Compositæ.) Hardy herb, related to Centaurea.

C. vulga'ris (common). 3. Flesh. June. Mediterranean region. 1596.

CRYPTADE'NIA. (From *kruptos*, hidden, and *aden*, a gland. Nat. ord. Thymeleaceæ.)

Greenhouse evergreen shrubs. Cuttings of half-ripe shoots in sand, under a bell-glass in April. Fibrous loam, peat, and sand.

C. breviflo'ra (short-flowered). 1. White. May. South Africa. 1789.
,, *cilia'ta* (eye-lashed). 2. White. May. South Africa. 1818.
,, *uniflo'ra* (one-flowered). ½. White. May. South Africa. 1759.

CRYPTA'NTHUS. (From *kruptos*, hidden, and *anthos*, a flower; the flowers being nearly hidden by the rosette or crown of leaves. Nat. ord. Bromeliaceæ.)

Stove epiphytes requiring similar cultural treatment to Æchmea.

C. acaulis (stemless). See C. UNDULATUS.
,, ,, *purpu'reus* (purple). See C. UNDULATUS RUBER.
,, *Beucke'ri* (Beucker's). White. Brazil. 1880.
,, *bivitta'tus* (two-striped). White. Brazil. 1865.
,, *di'scolor* (two-coloured). Leaves silvery. Brazil.
,, *Mœ'nsii* (Mœns's). See C. BIVITTATUS.
,, *morrenia'nus* (Morrenian). See C. BIVITTATUS.
,, *undula'tus* (waved). White. August. Brazil. 1826.
,, ,, *ru'ber* (red). Leaves red-purple.
,, ,, *zebri'nus* (zebra striped). See C. ZONATUS.
,, *zona'tus* (zoned). White. August. Brazil.

CRYPTOCA'RPUS. (From *kruptos*, hidden, and *karpos*, a fruit. Nat. ord. Nyctaginaceæ.)

Stove shrub. Cuttings in sand in heat. Loam, peat, and sand.

C. globo'sus (globular). 1 to 3. Variegated. June. Cuba. 1830.

CRYPTOCHI'LUS. (From *kruptos*, hidden, and *cheilos*, a lip; the lip, or labellum, being partly hid by the sepals. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Acanthophippium.)

Stove orchid; root division; soil, rough fibrous peat and rotten wood.

C. lu'tea (yellow). Pale yellow. June. Himalayas. 1882.
,, *reticula'ta* (netted). See ERIA RETICULATA.
,, *sangui'nea* (blood-coloured). 1. Scarlet. June. Nepaul.
,, *Wi'ghtii* (Wight's). See ERIA LICHENORA.

CRYPTOCO'RYNE. (From *kruptos*, hidden, and *korune*, a club; the club-shaped spadix, or spike, in the centre of the flower, is hidden by the hooded spathe peculiar to this order. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 2-*Diandria*. Allied to Arum.)

Stove herbaceous perennial; divisions, and seeds when obtainable; loam and peat. Summer temp., 60° to 80°; winter, 45° to 55°, and dry.

C. cilia'ta (hair-fringed). Green, purple. May. E. Ind. 1824.
,, *corda'ta* (heart-shaped). Malaya.
,, *Griffi'thii* (Griffith's). Spathe purple. Malacca. 1900.
,, *spira'lis* (spiral). 1. Brown. May. E. Ind. 1816.

CRYPTOGRA'MME. (From *kruptos*, hidden, and *gramme*, a letter; in reference to the sori being hidden by the revolute margin of the pinnæ.)

Hardy ferns, except *C. crispa brunoniana*, which requires a greenhouse.

C. cri'spa (crisped). 1. June. Britain.
,, ,, *acrostichoi'des* (Acrostichum-like). N. Amer.
,, ,, *brunonia'na* (Brownian). Fertile segments oblong. Himalayas. 10 to 15,000 ft.

CRYPTO'LEPIS. (From *kruptos*, hidden, and *lepis*, a scale; in allusion to the scales inside the calyx. Nat. ord. Asclepiadaceæ.)

Stove evergreen climber. Cuttings of short, side-shoots in sand, in a close case with bottom-heat. Fibrous loam, peat, and sand.

C. sanguineole'nta (blood-coloured). 6. Green, yellow. July. Trop. Africa. 1822.

CRYPTOME'RIA. Japan Cedar. (From *kruptos*, hidden, and *meris*, part; the structure of all the parts of the flower being hidden, or not easily understood. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*. Allied to Taxodium.)

Fine evergreen conifers, but not quite hardy enough to stand a severe winter. From 60 to 100 feet high, from the north of China, where it grows in damp situations. Seeds imported; some have ripened in Britain; cuttings in sandy soil, under a hand-light; a pure loam seems to suit them best.

C. japo'nica (Japanese). 100. May. Japan. 1844.
,, ,, *araucarioi'des* (Araucaria-like).
,, ,, *dacrydioi'des* (Dacrydium-like).
,, ,, *e'legans* (elegant). Leaves long, slender. Japan 1861.
,, ,, *e'legans na'na* (dwarf).
,, ,, *Lo'bbi* (Lobb's). Java. 1853.
,, ,, *Lo'bbi na'na* (Lobb's dwarf). 2. N. China.
,, ,, *lycopodioi'des* (Lycopodium-like). 1876.
,, ,, *monstro'sa* (monstrous).
,, ,, *ni'gricans* (becoming black). Japan. 1870.
,, ,, *pu'ngens* (prickly).
,, ,, *rubigino'sa* (reddening). Leaves turning reddish in winter. Japan. 1873.
,, ,, *spira'lis* (spiral). Leaves twisted. Japan.

CRYPTOPHORA'NTHUS. (From *kruptos*, hidden, *phoreo*, to bear, and *anthos*, a flower; the sepals partly hide the rest of the flower. Nat. ord. Orchidaceæ.)

Cool Orchids requiring treatment similar to Masdevallia.

C. atropurpu'reus (dark purple). ½. Purple. W. Ind. 1838.
,, *daya'nus* (Dayan). Yellow, orange, purple. July. Colombia. 1872.
,, *gracile'ntus* (slender). Costa Rica.
,, *Lehma'nni* (Lehmann's). Yellow, orange, purple. Colombia. 1903.
,, *macula'tus* (spotted). Yellow, crimson. Brazil. 1887.
,, *minu'tus* (minute). ½. Purple. 1895.
,, *Moo'rei* (Moore's). Red-purple. Trop. Amer. 1903.
,, *oblongifo'lius* (oblong-leaved). Purple and yellow. S. Amer. 1895.
,, *sarcophy'llus* (fleshy-leaved). Venezuela.

CRYPTOPHRA'GMIUM. See GYMNOSTACHYUM.

CRYPTOSTE'GIA. (From *kruptos*, hidden, and *stege*, a covering; the cup, or corolla, is hidden. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Periploca.)

Climbing stove evergreens. Loam and peat; cuttings root readily in sand, under glass, in heat.

C. grandiflo'ra (large-flowered). 6. Pink. June. India. 1818.
,, *madagascarie'nsis* (Madagascar). 10. Pink. July. Madagascar. 1826.

CRYPTOSTE'MMA. (From *kruptos*, hidden, and *stemma*, a crown; the crown of the flower hidden. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Arctotis.)

Tender annuals, from Cape of Good Hope, requiring to be sown on a gentle hotbed; when large enough may be potted two or three plants in a pot, and protected again in the same way, and planted out in the open border the beginning of June.

C. calendula'ceum (marigold-*flowered*). 1. Yellow. July. 1752.
,, ,, *hypochondri'acum* (melancholy). 1. Yellow. July. 1731.
,, ,, *runcina'tum* (saw-*leaved*). 1. Yellow. July. 1794.
,, *forbesia'num* (Forbesian). Yellow. Summer. S. Africa.
,, *lusita'nicum* (Portuguese). See C. CALENDULACEUM.
,, *ni'veum* (snowy). Yellow. S. Africa. Decumbent.

CRYPTOSTY'LIS. (From *kruptos*, hidden, and *stulos*, a style; the column is hidden by the lip. Nat. ord. Orchidaceæ.)

C. Arachni'tes (spider-like). 1. Green, purple, mottled. Khasia. 1863.
,, *longifo'lia* (long-leaved). 2. Yellow-green; lip red, spotted brown. Australia. 1885.

CRYSO'PHILA. See COPERNICIA.

CUBA BAST. See HIBISCUS ELATUS.

CUCI'FERA THEBA'ICA. See HYPHÆNA CUCIFERA.

CUCKOO FLOWER. *Cardami'ne prate'nsis* and *Ly'chnis Flo's-cu'culi.*

CUCKOO-SPIT. See TETTIGONIA SPUMARIA.

CUCU'BALUS. (Derived from *kakos*, bad, and *bolus*, snout. Nat. ord. CARYOPHYLLACEÆ.)

C. ba'ccifer (berry-bearing). White. Europe. N. Asia.
„ *catho'licus* (catholic). See SILENE CATHOLICA.
„ *chloræfo'lius* (green-leaved). See SILENE PERFOLIATA.
„ *stella'tus* (starry). See SILENE STELLATA.

CUCU'LLIA VERBA'SCI. Mullein Moth. This is the parent of a greenish-white or slaty-coloured caterpillar, found from the end of May until August, feeding on the various species of mullein (*Verba'scum*) and figwort (*Scrophula'ria*). On each segment of this caterpillar are four large black dots, sometimes separate, and sometimes running together; there are smaller black dots along the sides, and a double row of yellow spots on the back, with others on the sides. The head is yellow, spotted with black. This moth appears commonly in May. It is about two inches across the expanded forewings, which are of a dark reddish-brown colour, clouded and lined with black, and with a large white spot on each resembling the figure 3, as shown in the annexed drawing. The hind-wings are also reddish-brown, but paler, and sometimes almost white. The female lays her eggs upon the mulleins, and their relative species of plants, which eggs are hatched in a few days if the weather be warm. The caterpillars, when of full growth, descend into the ground at the roots of the plants on which they have been feeding, where they form cocoons in half-rotted leaves and earth, so firmly bound together as to resemble small, hard clods. They remain in the pupa state until the following May, or even for two years.

CUCUMBER. See CUCUMIS SATIVUS.

CUCUMBER-TREE. *Magno'lia acumina'ta* and *M. Frase'rii.*

CUCUMBER DISEASE. The Cucumber is very liable to have its roots attacked by microscopic creatures known as eelworms, from their shape. They penetrate the roots and cause tubercles to form upon them, varying in size till as large as nuts. Here the eelworms live, multiply, and spread from root to root till the Cucumber plant shows signs of weakness and disease. There is no remedy for the plants, which should be dug up and burned. The soil of the bed should be taken out, conveyed to some distance from the house. The latter should be thoroughly cleaned inside, as well as the bed, with paraffin and water. Soil from a fresh source should be obtained and a fresh bed made up before again planting Cucumbers.

The Cucumber is also liable to various other maladies or diseases, including Canker, Mildew, and Sclerotium Disease.

Cucumber and Melon Mildew is caused by *Peronospora cubensis*, which forms a white mould on the under-surface of the leaves, and would ultimately destroy the plants if allowed to spread without check. The under surface of the leaves should be well sprayed with dilute Bordeaux mixture, so as to wet them thoroughly, and embrace the whole of the patches of mildew.

Sclerotium Disease attacks many plants belonging to different orders, including the Cucumber. The disease is caused by *Sclerotinia sclerotiorum*, which attacks the stem, forming a white mould just above the ground-line. It also penetrates the stem, gradually extending upwards, till the stems become dry and brittle. The latter are then found to contain numerous black sclerotia, of varying size in the pith, surrounded by mycelium or thread-like portion of the fungus. These stems should be taken away and burned in the early stages of the disease before the sclerotia are produced, because the latter lie in the ground till spring, and after passing through more than one stage of its life-cycle, again attack the plants, with which the mycelium comes in contact. In order to destroy the mycelium growing upon decaying vegetable matter, the soil should be well sprinkled with soot or quicklime. This will kill the mycelium of the fungus before it attacks the young stems of the Cucumber. Manure on the surface of Cucumber beds greatly favours the spread of the fungus.

Insects.—See APHIS, INSECT PESTS, and RED SPIDER.

CU'CUMIS. Cucumber. (From *cucumis*, the Latin for cucumber. Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

Half-hardy trailing annuals. The whole of the species require to be sown in hotbeds, and, when of sufficient strength, to be planted out either in frames or under hand-glasses.

C. acuta'ngulus (acute-angled). See LUFFA ACUTANGULA.
„ *africa'nus* (African). Yellow. S. Africa.
„ *angui'nus* (serpentine). See TRICHOSANTHES ANGUINA.
„ *Angu'ria* (round-prickly). 2. Yellow. July. Jamaica. 1692.
„ *cantalupe'nsis* (Cantaloupe). See C. MELO CANTALUPO.
„ *Chi'to* (Chito). A variety of C. MELO.
„ *Citru'llus* (Citrul). See CITRULLUS VULGARIS.
„ „ *Ja'ce* (*water-melon*). See CITRULLUS VULGARIS.
„ „ *Paste'ca* (Pasteque *cucumber*). See CITRULLUS VULGARIS.
„ *Colocy'nthis* (*bitter* colocynth). See CITRULLUS COLOCYNTHIS.
„ *delicio'sus* (delicious). See C. MELO.
„ *Hooke'ri* (Hooker's). Yellow. Fruit brown-purple, banded white. Trop. Africa. 1870.
„ *jamaice'nsis* (Jamaica). See C. MELO.
„ *maderaspata'nus* (Madras). See C. MELO.
„ *Me'lo* (melon). 4. Yellow. July. Tropics of Old World. 1570. "Melon."
„ „ *Cantalu'po* (Cantalupe). 4. Yellow. July. 1570.
„ „ *Dudaim* (Dudaim). "Queen Anne's Melon."
„ „ *melite'nsis* (Maltese). 4. Yellow. July. 1570.
„ „ *reticula'tus* (netted). 4. Yellow. July. 1570.
„ *metuli'ferus* (horn-bearing). Yellow. Trop. Africa. "Horned Cucumber."
„ *momo'rdica* (Elaterium-like). See C. MELO.
„ *moscha'tus* (musk). See C. MELO.
„ *murica'tus* (point-covered). See C. SATIVUS.
„ *pi'ctus* (painted). See C. MELO.
„ *Propheta'rum* (prophets'). Trop. Africa.
„ *Sacleu'xii* (Sacleux's). Fruit used for pickling. Zanzibar. 1890.
„ *sati'vus* (cultivated). 4. Yellow. August. E. Ind. 1597. "Cucumber."
„ „ *a'lbus* (white). 4. Yellow. July.
„ „ *fastigia'tus* (peaked). 4. Yellow. July.
„ „ *fla'vus* (yellow). 4. Yellow. July.
„ „ *sikkime'nsis* (Sikkim). Fruit chocolate, netted yellow. Sikkim.
„ „ *variega'tus* (variegated). 4. Yellow. July.
„ „ *vi'ridis* (green). 4. Yellow. July. E. Ind. 1597.
„ *trigo'nus* (three-angled). Yellow. Old World Tropics.
„ *utili'ssimus* (most useful). See C. MELO.
„ *Vilmori'ni* (Vilmorin's). Fruit canary yellow, spiny. 1894.

Garden Varieties.—In recent years varieties have become too numerous to individualise, but there are some distinct types, of these Rollisson's "Telegraph" has taken the lead for many years; there are many improved selections under different names. Sutton's "Improved" is one of the best. Sutton's "Delicacy" is a fine variety, Rochford's "Market" is another good type, and is very prolific; there are several selections from this. There are a few of the old-established names retained, but most modern seedsmen have their own names. Those which have gained certificates are Sutton's A1, Matchless, Every Day, and Peerless.

Since those grown under glass have been so plentiful, very few try to grow them in the open, except the small Gherkin varieties for pickling; these are cut when quite small. The "Ridge" cucumbers are almost a thing of the past. Yet we remember when they were extensively grown, and think the flavour compared with those grown under glass was much better.

In the old editions of this work there were lengthy instructions on the culture of Cucumbers, but we do not consider it necessary to repeat them, except to give a few short details; and have struck out much of the matter previously included.

Taking Culture.—Cucumbers are now generally grown in glass-houses, but in some gardens frames are used. And on a moderate hot-bed they do very well. The

manure has to be carefully prepared by turning it over several times, and a good covering of leaf-soil and loam put on the surface before planting, and this should be done a few days before putting the plants in. For growing in glass-houses the old system of water-tanks has been almost entirely abolished. The hot-water pipes being arranged so that they can be covered with stable manure, and on this some good fresh turfy loam is used, and some lime should be added. Later a surface-dressing may be given, which may include some of the various artificial manures, or bone meal.

Propagation.—We have grown from cuttings which for early fruiting come in sooner than those raised from seeds. The cuttings from clean, healthy side-shoots root freely in the close propagating pit if there is a good bottom-heat; yet in the ordinary way seedlings are the most satisfactory; the seeds should be sown singly in small pots, using light sandy loam and leaf-mould. Cover the seeds well, but do not press the surface soil. When re-potting or planting bring the seed leaves down close to the surface. It may be necessary to twist the stems round to do so, except when planting in the beds early, in which case they can be laid down. Cucumbers root from all parts of their stems, so it is quite safe to bury them up to close below the seed leaves. Care should be taken that the soil used for potting or planting in is warm and not over moist.

Seeding.—Being male and female flowers on the same plants in a close position, it is necessary to fertilise by taking the pollen from the staminate flowers and applying it to the pistillate flowers. In years gone by this used to be done in the ordinary culture; but modern growers never take the trouble, except where seed is required, an indication that proper fertilisation is given by the terminal end of the fruit swelling. The Cucumber is generally included with vegetables, but is quite as equally entitled to be termed a fruit as a Melon has.

Standard of Merit.—*Length*, not less than twelve inches. *Diameter*, one-ninth of the length. *Colour*, dark green. *Spines*, black and numerous. *Bloom*, unremoved. *Circumference*, circular and equal throughout. *Neck* and *Nose*, each not more than a diameter long. *Flesh*, crisp and juicy. *Flower*, remaining on the fruit.

Open Ground Crops.—The sowing for these crops must be performed at the close of May, or early in June. A rich, south-west border, beneath a reed or other fence, is peculiarly favourable, as they then enjoy a genial warmth without suffering from the meridian sun. The border being dug regularly over, and saucer-like hollows, about fifteen inches in diameter and one or two deep, formed five feet apart, the seed may be sown six or eight in each.

Seed may also be sown beneath a hedge of similar aspect, and the plants either trained to it or to bushy branches placed perpendicularly. If the weather be dry, it is requisite to water the patches moderately two or three days after sowing. In four or five days, if the season be genial, the plants will make their appearance, and until they have attained their rough leaves, should be guarded from the small birds, who will often destroy the whole crop by devouring the seminal leaves.

If the season be cold and unfavourable, plants may be raised in pots, under a frame or hand-glasses, as directed for those crops; to be thence transplanted, when of about a month's growth, or when the third rough leaf appears, into the open ground, shelter being afforded them during the night. Water must be given every two or three days, in proportion to the dryness of the season, applying it during the afternoon or early in the morning.

Only three or four plants may be allowed to grow together in a patch, and these pressed far apart. The training must be as carefully attended to as for the other crops; but stopping is seldom necessary, as the plants are rarely super-luxuriant. They will come into production in August and September.

For Melon-culture, see MELON.

CUCU'RBITA. Gourd. (From *curbita*, a gourd. Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

Half-hardy trailing annuals, requiring the same culture as the Cucumber.

C. andrea'na (Andrean). Fruit marked with white and yellow. Uruguay. 1896.
,, *aura'ntia* (orange-*fruited*). See C. PEPO AURANTIA.
,, ,, *orangi'na* (*false* orange). See C. PEPO ORANGINA.
C. ficifo'lia (fig-leaved). Trop. Asia.
,, *ma'xima* (largest). 4. Yellow. July. Tropics, cultivated. "Common Gourd."
,, ,, *Courge'ro* (Courgero). 10. Yellow. July.
,, ,, *Poti'ra* (Potiron). 10. Yellow. July.
,, ,, *sylve'stris* (wild). The supposed origin of the large Gourds. Himalaya. 1893.
,, ,, *vi'ridis* (green). 10. Yellow. July. "Large Green Gourd."
,, *melanospe'rma* (black-seeded). See C. FICIFOLIA.
,, *melonæfo'rmis* (melon-shaped). Japan. 1880.
,, *Melope'po* (melon-pumpkin. *Squash*). See C. PEPO MELOPEPO.
,, *mexica'na* (Mexican). Similar to *C. ficifolia*, but leaves different. Mexico. 1889.
,, *moscha'ta* (musky). 4. Yellow. July. Trop. Asia.
,, *ovi'fera* (egg-shaped). See C. PEPO and varieties.
,, *palma'tus* (hand-shaped). Yellow. California.
,, *Pe'po* (pumpkin). 16. Yellow. July. Levant. 1570.
,, ,, *aura'ntia* (orange). 3. Yellow. July. 1802.
,, ,, *gri'sea* (grey). 3. Yellow. July.
,, ,, *Melope'po* (Melon-pumpkin). 3. Yellow. June. 1597.
,, ,, *oblo'nga* (oblong-*fruited*). 6. Yellow. July. 1570.
,, ,, *orangi'na* (false-orange). 3. Yellow. July. 1802. "Orangine."
,, ,, *ovi'fera* (egg-bearing). 3. Yellow. August. Astrachan.
,, ,, *pyrifo'rmis* (pear-shaped). 3. Yellow. July.
,, ,, *subglobo'sa* (sub-globular). 3. Yellow. July.
,, ,, *subrotu'nda* (nearly-round-*fruited*). 6. Yellow. July. Levant. 1750.
,, ,, *verruco'sa* (warted). 12. Yellow. June. 1658. "Warted Gourd."
,, *Rapalli'to* (Rapallito). See C. MAXIMA.
,, *verruco'sa* (warty). See C. PEPO VERRUCOSA.

CUDRA'NIA. (From *kudros*, glorious. Nat. ord. Urticaceæ.)

Hardy or nearly hardy evergreen tree. Cuttings in sand under a bell-glass. Loam, peat, and sand.

C. javane'nsis (Javan). Australia. 1830.

CULCA'SIA. (Derivation same as *Colocasia*. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 7-*Heptandria*. Allied to Caladium.)

Stove climber. For culture, see COLOCA'SIA.

C. sca'ndens (climbing). White. Guinea. 1822.
,, *striola'ta* (striolated). White. Cameroons. 1899. Not climbing.

CULEN. *Psora'lea glandulo'sa.*

CULLUMBINE or **COLUMBINE.** See AQUILEGIA.

CULLU'MIA. (In compliment to *Sir T. C. Cullum*, who wrote about British plants in 1774. Nat. ord. Compositæ.)

Greenhouse evergreen of easy culture. Seeds and cuttings, under a bell-glass in the greenhouse in summer. Loam, leaf-mould, and sand.

C. pectina'ta (comb-like leaved). 2. Yellow. August. S. Africa. 1818.

CUMIN or **CUMMIN.** See CUMINUM CYMINUM.

CUMI'NUM CYMI'NUM. Common Cumin, an annual, native of Egypt, bearing white flowers, and belonging to the Nat. ord. *Umbellifers*. It is cultivated for its aromatic seeds. Sow in a warm situation in March, in a rich, light soil; the plants flower in June, and ripen their seeds in the autumn.

CUMMI'NGIA. (Named after the late *Lady Gordon Cumming*, of Altyre, in Morayshire. Nat. ord. *Lilyworts*. [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Conanthera.)

Beautiful little half-hardy bulbs from Chili, which succeed best in a light, rich border in front of a greenhouse, with Ixias, Brodiæas, Zephyranthes, Anomathecas, and the like. Offsets; loam and leaf-mould and manure.

C. campanula'ta (bell-*flowered*). See CONANTHERA SIMSII.
,, *tene'lla* (delicate). See CONANTHERA SIMSII.
,, *trimacula'ta* (three-spotted). ½. Blue. December. 1829.

CUNDURA'NGO. *Marsde'nia Cundura'ngo.*

CUNI'LA. (After a town of that name. Nat. ord. *Labiates* [Labiatæ]. Linn. *2-Diandria, 1-Monogynia.* Allied to Balm and Mint.)

North American hardy herbaceous perennials; root divisions; in loam, leaf-mould, and manure.

C. cocci'nea (scarlet). See CALAMINTHA COCCINEA.
„ *maria'na* (Maryland). 1. Red. September. N. Amer. 1759.

CUNNINGHA'MIA. Broad-leaved China Fir. (In honour of two brothers, *J.* and *A. Cunningham*, British botanists in Australia. Nat. ord. *Conifers* [Coniferæ]. Linn. *21-Monœcia, 10-Monadelphia.* Allied to the Spruce Fir.)

Greenhouse evergreen tree, but in some situations hardy; light soil, well drained; cuttings can be rooted, but seldom make handsome plants; seedlings are best.

C. sine'nsis (Chinese). 40. China. 1804.

CUNO'NIA. (Named after *J. C. Cuno*, of Amsterdam. Nat. ord. *Cunoniads* [Saxifragaceæ]. Linn. *10-Decandria, 2-Digynia.*)

Greenhouse evergreen tree; loam and peat, leaf-mould; cuttings in sand, under glass, in heat.

C. cape'nsis (Cape). 20. White. August. Cape of Good Hope. 1816.

CUPA'NIA. (Named after *F. F. Cupani*, an Italian monk, who wrote on botany. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. *8-Octandria, 1-Monogynia.* Allied to Sapindus.)

Stove evergreen trees, all with white flowers; loam and peat; cuttings of half-ripe shoots in sand, under glass, in heat. Summer temp., 60° to 85°; winter, 55° to 60°.

C. america'na (American). 15. Mexico. 1819.
„ *anacardioi'des* (Anacardium-like). Australia.
„ *cane'scens* (hoary). See HEMIGYROSA CANESCENS.
„ *Cunningha'mii* (Cunningham's). See DIPLOGLOTTIS CUNNINGHAMII.
„ *denta'ta* (toothed). 12. Mexico. 1824.
„ *edu'lis* (edible). See BLIGHIA SAPIDA.
„ *e'legans* (elegant). Leaves wavy at the edges. 1893.
„ *eleganti'ssima* (most elegant).
„ *exce'lsa* (lofty). See C. GLABRA.
„ *gla'bra* (smooth). 14. May. Jamaica. 1822.
„ *gra'ndidens* (large-toothed). Leaflets 9, 3 to 4 in. long. Zanzibar. 1884.
„ *Pindai'ba* (Pindaiba). Brazil.
„ *Pseudo'rhus* (Pseudorhus). 20. November. Australia. 1830.
„ *sa'pida* (savoury. *Akee-tree*). See BLIGHIA SAPIDA.
„ *Sapona'ria* (Soapwort). See SAPINDUS SAPONARIA.
„ *saponarioi'des* (saponaria-like). See SAPINDUS SAPONARIA.
„ *seti'gera* (bristly). See C. PSEUDORHUS.
„ *tomento'sa* (downy). See C. AMERICANA.
„ *undula'ta* (wavy). Brazil. 1865.

CUP FLOWER. See NIEREMBERGIA.

CUPHEA. (From *kuphos*, curved; referring to the form of the seed-pods. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. *11-Dodecandria, 1-Monogynia.* Allied to Lythrum.)

Dry, rich soil; seeds; and cuttings in the spring months.

ANNUALS, &c.

C. circæoi'des (Circæa-like). ¾. Purple. September. S. Amer. 1821. Greenhouse.
„ *lanceola'ta* (lance-shaped). Blackish purple. Mexico. 1796. Hardy.
„ *parvifl'ora* (small-flowered). ¾. Pink. November. Demerara. 1824. Stove.
„ *procu'mbens* (lying-down). 1. Pale purple. August. Mexico. 1816. Stove.
„ *silenoi'des* (silene-like). 1½. Bluish. September. 1836. Hardy.
„ *spica'ta* (spiked). Rose. Peru. 1819. Hardy.
„ *viscosi'ssima* (clammiest). 1. Purple. July. America. 1776. Greenhouse.
„ *virga'ta* (twiggy). 1½. Purple. August. Mexico. 1824. Greenhouse.

STOVE AND GREENHOUSE EVERGREENS, &c.

C. æquipe'tala (equal-petaled). 2. Purple. June. Mexico. 1859.
„ *cinnabari'na* (cinnabar). See C. PINETORUM.
„ *commersonia'na* (Commersonian). Argentina. 1884.
„ *corda'ta* (heart-*leaved*). 1½. Scarlet. June. Peru. 1842.
„ *cya'nea* (blue). Blue, red. July. Mexico. 1846.
„ *deca'ndra* (ten-stamened). 1½. Purple. July. Jamaica. 1789.
„ *e'minens* (eminent). See C. MICROPETALA.
„ *fla'va* (yellow). Yellow. Brazil.
„ *gra'cilis* (slender). 1. Purple. July. Orinoco. 1824.
„ *hookeria'na* (Hookerian). 2 to 3. Vermilion. Mexico. 1877.
„ *i'gnea* (fiery). 1 to 2. Scarlet, white. Summer. Mexico. 1845. Greenhouse.
„ „ *a'lba* (white). White. 1848.
„ *jorulle'nsis* (Jorullan). See C. MICROPETALA.
„ *Lla'vea* (Llave's). 1½. Purple. June. Mexico. 1830. Greenhouse.
„ *Melvi'lla* (Melville's). 3. Scarlet. August. Guiana. 1823. Herbaceous perennial.
„ *micrope'tala* (small-petaled). 1. Purple. July. Mexico. 1824.
„ *minia'ta* (vermilion-*coloured flower*). See C. LLA'VEA.
„ *multiflo'ra* (many-flowered). 1½. Purple. September. Trinidad. 1820.
„ *ocymoi'des* (Ocimum-like). See C. ÆQUIPE'TALA.
„ *pineto'rum* (Pine-woods'). Crimson. July. Mexico. 1849.
„ *platyce'ntra* (broad-spurred). See C. IGNEA.
„ „ *a'lba* (white-*flowered*). See C. IGNEA ALBA.
„ *racemo'sa* (raceme-*flowered*). See C. SPICATA.
„ *Rœ'zlii* (Rœzl's). See C. HOOKERIANA.
„ *serpylliflo'lia* (thyme-leaved). See C. MULTIFLORA.
„ *spica'ta* (spiked). 1. Purple. June. Trop. Amer. 1820.
„ *strigillo'sa* (coarse-haired). See C. CYANEA.
„ *tubiflo'ra* (tube-flowered). See C. IGNEA.
„ *Zimapa'ni* (Zimapan's). See C. LANCEOLATA.

CUPIA. See RANDIA.

CUPRE'SSUS. Cypress. (From *kuo*, to produce, and *parisos*, equal; in reference to the symmetrical growth of the Italian cypress, *C. sempervi'rens*. Nat. ord. *Conifers* [Coniferæ]. Linn. *21-Monœcia, 10-Monadelphia.*)

Evergreen trees; hardy, unless otherwise stated; rich, loamy soil; and readily increased from seeds; can be raised from cuttings, and for choice sorts grafting on common seedlings is resorted to.

C. arizo'nica (Arizonian).
„ *aroma'tica* (aromatic). See C. BENTHAMI.
„ *attenua'ta* (attenuated). See C. LAWSONIANA.
„ *austra'lis* (south. *Slender-branched*). See CALLITRIS RHOMBOIDEA.
„ *baccifo'rmis* (berry-shaped). See JUNIPERUS PHŒNICEA.
„ *Bentha'mi* (Bentham's). 60. Mountains of Mexico and Guatemala.
„ *califo'rnica* (Californian). See C. GOVENIANA.
„ *cashmeria'na* (Cashmir). See C. FUNEBRIS GLAUCA.
„ *Coulte'ri* (Coulter's). See C. BENTHAMI.
„ *e'legans* (elegant). See C. BENTHAMI.
„ *exce'lsa* (lofty). See C. BENTHAMI.
„ *formose'nsis* (Formosan). 100–195; and 50–67 ft. in girth. Formosa. 1909.
„ *fune'bris* (funebral). 50. April. China. 1849. Greenhouse.
„ „ *glau'ca* (sea-green). Foliage glaucous. Greenhouse.
„ *glandulo'sa* (glandular). See C. MACNABIANA.
„ *glau'ca* (sea-green). See C. LUSITANICA.
„ *govenia'na* (Mr. Gowen's). 10. April. California. 1848.
„ „ *compa'cta* (compact). Dense, pyramidal habit. 1896.
„ *Hartwe'gii* (Hartweg's). See C. MACROCARPA.
„ *japo'nica* (Japanese). See CRYPTOMERIA JAPONICA.
„ *kashmiria'na* (Kashmir). See C. FUNEBRIS GLAUCA.
„ *knightia'na* (Knightian). See C. LINDLEYI.
„ *lambertia'na* (Lambertian). See C. MACROCARPA.
„ *lawsonia'na* (Lawsonian). 100. N. California, Oregon. 1853. The Lawson Cypress.

C. lawsonia'na a'lbo-spi'ca (white spiked). Tips of twigs silvery. California. 1869.
" *ere'cta vi'ridis* (erect, green).
" *na'na* (dwarf). Dwarf globose bush.
" *pulche'rrima* (fairest). Leaves glistening white. 1909.
" *schongarie'nsis* (Schongarian). Growths steel-green. 1909.
" *spira'lis* (spiral). Stem spirally twisted. 1909.
" *Lindle'yi* (Lindley's). 120. Mexico. 1838.
" *lusita'nica* (Portuguese. *Cedar of Goa*). 50. April. Goa. 1683. Greenhouse.
" *macnabia'na* (Macnabian). 10. Mountains of California. 1853.
" *macroca'rpa* (large-fruited). 60. California. 1847. "Monterey Cypress."
" *lu'tea* (yellow). Foliage yellow.
" *nepale'nsis* (Nepaulese). See C. TORULOSA.
" *niva'lis* (snowy). See C. MACNABIANA.
" *nootkate'nsis* (Nootka). 100. Oregon. British Columbia. "Yellow Cypress."
" *nidi'fica* (nest-making). Branches plumy.
" *obtu'sa* (blunt). 80. Japan. 1869. Several of the so-called Retinosporas of gardens belong here.
" *Cri'ppsii* (Cripps's). Foliage golden-yellow.
" *lycopodioi'des* (Lycopodium-like). Twigs stout.
" *pygmæ'a* (pigmy). ½. Dwarf, dense, bush.
" *variega'ta* (variegated). Twigs variegated.
" *pe'ndula* (hanging-down). See THUYA ORIENTALIS PENDULA.
" *pisi'fera* (pea-bearing). 5 to 10. Island of Niphon, Japan. Many of the Retinosporas belong here.
" *plumo'sa* (plumy). Leaves longer. Branches plumy.
" *plumo'sa au'rea* (golden).
" *squarro'sa* (spreading). Leaves spreading.
" *pygmæ'a* (pigmy). California.
" *sempervi'rens* (*common* evergreen). 20. May. Candia. 1548.
" *fastigia'ta* (upright). 20. May. Mediterranean region.
" *horizonta'lis* (horizontal). See C. SEMPERVIRENS.
" *i'ndica* (Indian). 100. Himalayas. Half-hardy.
" *stri'cta* (erect). See C. SEMPERVIRENS FASTIGIATA.
" *variega'ta* (variegated). 20. May. England. 1848.
" *thuri'fera* (frankincense-bearing). 100. Mexico. 1836.
" *thyoi'des* (thya-like. *White Cedar*). 20. May. N. Amer. 1736.
" *fo'liis-variega'tis* (variegated-leaved). April. Amer. 1736.
" *lepto'clada* (slender branched). Branches slender, erect.
" *torulo'sa* (twisted. *Bhotan*). 30. Nepaul. 1824.
" *uhdea'na* (Uhde's). See C. BENTHAMI and C. LUSITANICA.
" *whitleya'na* (Whitley's). See C. SEMPERVIRENS INDICA.

CURATE'LLA. (From *kureno*, to shave; in reference to the leaves being covered with asperities so hard as to render them fit for polishing. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 2-*Digynia*. Allied to Delima.)

Stove evergreen shrubs; sandy loam and peat; cuttings in sand, under glass, in heat.

C. ala'ta (winged-*leaf-stalked*). 8. White. Guiana.
" *america'na* (American). 8. White. S. Amer.

CURCULIGO. (From *curculio*, a weevil; the seeds have a point like the rostrum, or beak, of the weevil. Nat. ord. *Hypoxids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hypoxids are distinguished from Amaryllids by the absence of bulbs, and by their harsh and hairy leaves. Stove herbaceous perennials, except one; sandy loam and peat or leaf-mould; offsets.

C. brevifo'lia (short-leaved). See C. ORCHIOIDES.
" *de'nsa* (dense). Leaves dark green with a silvery lustre. India. 1885.
" *latifo'lia* (broad-leaved). 1½. Yellow. Poolo Pinang. 1804.
" *orchioi'des* (orchis-like). ½. Yellow. June. E. Ind. 1800.
C. plica'ta (plaited-*leaved*). 1½. Yellow. June. Cape of Good Hope. 1788. Greenhouse.
" " *gla'bra* (smooth). 1½. Yellow. June. Cape of Good Hope. 1788. Greenhouse.
" *recurva'ta* (rolled-back-*leaved*). 1. Yellow. Bengal. 1805.
" " *variega'ta* (variegated). Leaves banded with yellow. 1872.
" *seychelle'nsis* (Seychellan). Mascarene Islands.
" *sumatra'na* (Sumatran). See C. LATIFOLIA.
" *veratrifo'lia* (Veratrum-leaved). 2. Yellow. June. South Africa. 1778.

CURCULIO. This destructive tribe of Beetles are popularly known as *Weevils*. The following are some of the chief species:—

C. alliariæ. (Proper name *Rhynchites Alliariæ.*) Stemboring Weevil. Steel-green colour. Bores the shoots and grafts of young fruit-trees. Appears in June and July.

C. bacchus. (Proper name *Rhynchites Bacchus.*) Purple or Apple Weevil. Pierces the fruit of the apple, depositing within it its eggs. June and July.

C. betuleti. (Proper name *Rhynchites Betulæ.*) Vine Weevil. Colour steel-blue. Attacks the leaf, rolling it up as a nest for its eggs. The pear is liable to its attacks also. Appears in June and July.

C. cupreus. (Proper name *Rhynchites cupreus.*) Copper-coloured Weevil. Attacks the leaves and young shoots of the plum and apricot, as well as their fruit. June and July.

C. lineatus. (Proper name *Sitona lineata.*) Striped Pea Weevil. Every gardener must have observed the edges of the young leaves of his peas, and sometimes of his beans, eaten away in scollops, or semicircular pieces. This is often done by the *Sitona tibialis*, but still more frequently by another of the short-snouted beetles, *Sitona lineata*. In Scotland it is commonly called "the Cuddy," or Donkey, from its grey colour. The length of the weevil varies from 2–2½ lines, being about one-sixth of an inch. The whole body is grey, and marked with black lines; the antennæ reddish; the eyes black. They survive the winter sheltered beneath moss, &c., and in bad weather at all seasons retire under stones, only to reappear with the sunshine.

C. macularius. (Proper name *Sitona crinita.*) Spotted Weevil. Grey colour, April. Also destroys the pea. Soot or lime sprinkled over peas early in the morning before the dew is off from them, and so thickly as to cover the soil about them, would probably save them. To mitigate the attack of the weevils upon trees, the only mode is to spread a sheet beneath them, to shake each branch, and to destroy those beetles which fall. They usually feed at night.

C. nucum. (Proper name *Balaninus nucum.*) Nut Weevil, of which the maggot is so frequent in our filberts. Mr. Curtis thus describes it: "The insect is brown, with darker bands; is about a quarter of an inch long, and has a long horny beak, about the middle of which are placed antennæ. When the nut is in a young state the female weevil deposits a single egg. The maggot is hatched in about a fortnight, and continues feeding in the interior of the nut till it is full grown, when the nut falls. The maggot has no legs, nor, indeed, has it any use for them, being hatched in the midst of its food; and when the nut remains on the tree, it forces itself out of the hole it eats in the nut, and falls almost immediately to the ground. The only remedy we are aware of is, in the course of the summer, to frequently shake the trees, which will cause all the eaten nuts to fall to the ground, when they must be collected and burned."

C. oblongus. (Proper name *Phyllobius oblongus.*) Oblong Weevil. Reddish-brown colour. Feeds on the young leaves of the peach, apricot, plum, pear, and apple. Appears in May.

C. picipes (proper name *Otiorhynchus picipes*) is a dull black, and is very injurious in the vinery.

C. pomorum. (Proper name *Anthonomus pomorum.*) Apple Weevil. Colour, dark brown. Attacks the blossom of the apple, and often destroys the whole crop. More rarely it attacks the pear blossom. Appears in March and April.

C. pyri. (Proper name *Phyllobius Pyri*). Pear Weevil. It attacks the young shoots and leaves.

C. sulcatus. (Proper name *Otiorhynchus sulcatus.*)

During the winter months, succulent plants, such as Sedums, &c., become sickly, and die, apparently without a cause. They are thus destroyed by a small, footless grub feeding upon them just below the surface of the earth. This grub is about half an inch long, colour dirty white, fleshy, slightly curved, bristly, and without legs, but furnished at the sides with tubercles, which aid it in moving. At the latter part of May, these grubs enter the chrysalis state, becoming white, and having the appearance of the body of a beetle stripped of its wings, and in a mummy state. From this state the perfect insect comes forth, at the end of June, in the form of a small beetle, five lines to half an inch long. It is black, slightly glossy, numerously granulated, so as to resemble shagreen, and a few pale-grey hairs scattered over it. The best mode of saving succulents from this pest is to have it very assiduously sought for among them during the month of June. If the beetles are allowed to deposit their eggs the mischief is done, and will soon show itself.

C. tenebricosus (proper name *Otiorhynchus tenebricosus*) infests the apricot. Mr. Curtis says, that "every crevice in old garden-walls often swarms with these weevils; and nothing would prove a greater check to their increase than stopping all crevices or holes in walls with mortar, plaster of Paris, or Roman cement, and the interior of hothouses should be annually washed with lime; the old bark of the vines under which they lurk should be stripped off early in the spring, and the roots examined in October, when they exhibit any unhealthy symptoms from the attacks of the maggots of *O. sulcatus*. When the larvæ are ascertained to reside at the base of the wall, salt might be freely sprinkled, which will kill them as readily as it will the maggots in nuts. Strong infusions of tobacco-water, aloes, and quassia are also recommended."

CU'RCUMA. Turmeric. (From *kurkum*, its Arabic name. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Most of the species possess the same aromatic stimulating properties in the roots or rhizomes, and seeds, as the common ginger, and are objects of some beauty from their coloured bracts. Stove herbaceous perennials; rich, sandy loam; root division.

C. æruginō'sa (bronzed). 5. Red, yellow. May. E. Ind. 1807.
„ *albiflō'ra* (white-flowered). White, yellow. July. Ceylon. 1852.
„ *Amā'da* (Amada-*ginger*). 2. Red, yellow. April. Bengal. 1819.
„ *amarissima* (most bitter). Red, yellow. April. E. Ind. 1822.
„ *angustifō'lia* (narrow-leaved). 3. Yellow. July. E. Ind. 1822.
„ *aromā'tica* (aromatic). 2. Yellow. June. E. Ind. 1804.
„ *australā'sica* (Australasian). Yellow. N.E. Australia. 1867.
bakeriā'na (Bakerian). Orange. New Guinea. 1892.
„ *cæ'sia* (grey). 1. Yellow. May. Bengal. 1819.
„ *comō'sa* (tufted-*flowered*). 2. Red, yellow. May. E. Ind. 1819.
„ *cordā'ta* (heart-shaped). See C. PETIOLATA.
„ *elā'ta* (tall). 3. Crimson. May. E. Ind. 1819.
„ *ferrugi'nea* (rusty). 1. Yellow. May. E. Ind. 1819.
„ *latifō'lia* (broad-leaved). 12. Yellow. May. E. Ind. 1820.
„ *Leopō'ldii* (Leopold's). Leaves striped with cream. 1883.
„ *leucorhi'za* (white-rooted). 1. Red, yellow. May. E. Ind. 1819.
„ *lō'nga* (long-*rooted*). 2. August. E. Ind. 1759.
„ *lu'teo-vi'ridis* (yellow-green). Obliquely variegated with yellow-green. 1882.
„ *montā'na* (mountain). 2. Red, white. May. E. Ind. 1824.
„ *neilgherre'nsis* (Neilgherrian). Nilghiris.
„ *parviflō'ra* (small-flowered). ½. White, violet. January. Burma. 1828.
„ *petiolā'ta* (*long*-flower-stalked). 2. Blue. August. Burma. 1822.
„ *reclinā'ta* (leaning). ½. Pink. April. E. Ind. 1829.
„ *roscoē'na* (Mr. Roscoe's). 1. Scarlet. September. Burma. 1837.
C. rubē'scens (blushing). 3. Red. July. E. Ind. 1805.
„ *rubricau'lis* (red-stemmed). See C. RUBESCENS.
„ *sumatrā'na* (Sumatran). Yellow; bracts orange-red. Sumatra. 1882.
„ *viridiflō'ra* (green-flowered). 2. Yellow, green. July. Sumatra. 1822.
„ *xanthorhi'za* (yellow-rooted). 4. Red. May. Amboyna. 1819.
„ *Zedoā'ria* (zedoary). 3. Red. July. E. Ind. 1797.
„ *Zerumbet* (Zerumbet). See C. ZEDOA'RIA.

CURME'RIA WALLI'SII. See HOMALOMENA WALLISII.

CURRANTS. THE RED, *Ri'bes ru'brum*; THE WHITE, *R. ru'brum*, var. *a'lbum*; and THE BLACK, or *R. ni'grum*, are all deciduous shrubs. The culture of the RED and WHITE differs in some degree from that of the BLACK.

Red Varieties.—The following are the best.

The old types are still recognised, yet there are many varieties of more recent introduction. Taking the Red, *La versaillaise* is a favourite. Cherry is a large variety.

In whites, the White Dutch remains the best type, but there may be some improved selections.

Of black varieties, Carter's Champion should be added, as being one of the largest, and of fine flavour.

White Dutch. Very large and juicy berries.

Red Dutch. A good kind; bunches short, but berries large and sweet.

White Varieties.—White Dutch, the last being the largest and best.

Propagation: by Cuttings.—This is the ordinary way. Young shoots of the most vigorous and straight wood are to be preferred. Shoots of this description should be preserved at the early autumn pruning, and all the immature portion at the point being pruned away, the best of the remainder must form the cutting, and it should be at least one foot in length—if fourteen inches, all the better. Blind all the eyes or buds below the surface of the ground, to prevent suckers springing up, for these cuttings will emit roots from the internodes or points between the joints. Cuttings placed in a somewhat shaded situation, and fastened tolerably firm in the soil, will make two or three shoots the first summer. They may be put in rows eighteen inches apart; the cuttings about eight inches apart in the rows. In the succeeding autumn prune the shoots they have made back to about four or five eyes or buds on each; and by the succeeding autumn they will be fine bushes, possessing some six or eight shoots each, from which a selection must be made, for on this depends the future form of the tree. It is seldom that more than five shoots can be retained; indeed, sometimes the shoots are produced so irregularly, that not more than three can be saved—standing, of course, nearly in a triangular form. However, only those should be reserved which are really well placed, not only with regard to form, but their distance apart. In forming the bush, let there be no central shoot left, but let the whole, if possible, form either a triangle, if three; a square, if four; or a bowl-like character—in fact, about the form of a good tulip, if more than four. The trees are now ready for their final destination, if necessary, or they will stand another year before final removal.

By Layers.—This is seldom resorted to. If, however, any one should possess a choice seedling of which he is desirous to make much profit, he might elevate the soil to the branches, as in the act of layering carnations, and lay the shoots for propagation flat on the surface, cutting a notch below each bud, pegging the shoot down, and soiling it over about an inch: every bud becomes a shoot with a root.

By Seed.—This is resorted to for the sake of raising new varieties. Sow the seeds as soon as ripe, and in the spring place them in a hotbed; the plants will grow above a foot high the same season. Many of them fruit at two years old, and nearly all at three.

Suckers.—They grow readily from suckers. There is little doubt but that plants thus reared are more liable to produce suckers than those from cuttings.

Soil.—The Red and White currants love a free, upland soil; a clayey soil is too cold, and a very sandy one is too hungry. Water lodgments they are quite averse to.

Culture in the Growing Period.—In the first place, if the soil is liable to suffer from drought, let a top-dressing of half-decayed manure, or littery material, be spread

three inches thick over their roots, at the end of May, after rain. The next point is "stop," or remove, what is termed the watery wood. All shoots growing into the interior of the bush, to the exclusion of light and air, may be cut back when about nine inches in length, far enough to render the centre of the bush completely open. This will be necessary about the middle of June. In about another fortnight, the watery or wild-looking breast-spray all round the exterior may be pruned back to within four inches of their base. This leaves a regular tuft of foliage all round, absolutely necessary for a partial shade to the swelling fruit. Some intervening spray between each two branches must be served likewise; and if growing freely, the leading points of the shoots may be stopped also.

Culture in the Rest Season.—Early pruning is the first thing to be thought of, as soon as possible after the leaves are fallen. Every healthy branch in a bearing state will, during the summer, produce abundance of side-shoots from amongst the spurs: this is the wood we have first named as being all the better for stopping in June. All this must be cut back, at the winter's pruning, to within one inch or so of the main stem. An exception must, however, be taken in favour of gaps or blanks, and a shoot here and there must be reserved to fill such, taking care that they are well placed, and that they are low enough down; the lower the better. Pruning being thus far carried, it is best to shorten every terminal point. This induces a liberal production of side-shoots in the ensuing summer; and the base of each becomes a centre, around which a host of fruit-spurs will be engendered. Any decayed or decaying wood must be cut away; but, if there is much of this, it is best to destroy the bush and plant anew; for it seldom makes a good bush again. Those who have not top-dressed in the summer may now do so, and the winter's work will be complete.

Fruit: uses; how to keep.—The fruit commences ripening, under ordinary circumstances, in the end of June, and continues hanging for a length of time, if unmolested by the birds or wasps. The White will hang nearly two months, and the Red we have gathered, uncovered and unprotected, in the first week of November. The ordinary way of retarding the currant is by enclosing the trees in mats when the fruit is rather more than three parts ripe. These mats should be taken off at least once a week on dry days, to dispel the damp. All decaying leaves and berries should, at such times, also be carefully removed. Some train against north walls, where the fruit keeps very late, but is exceedingly acid. A White Currant or two, planted against a south wall or fence, will come in very early for the dessert.

Diseases.—We are not aware of any except a premature decay of the old shoots, after the manner of apricots, the causes of which are not well understood.

Insects.—The caterpillar sometimes attacks them; but their greatest enemy is an aphis, which distorts the leaves in a puckered form, producing red blisters. Tobacco-water is the best remedy.

CURRANT (THE BLACK).

Varieties.—We are not aware of any more than four in this section really deserving of notice, which are—

Boskoop Giant and Victoria resist the mite.

The Common Black. A good bearer, but fruit small.

The Black Naples. A short bunch, but noble berries.

The latter kind is now almost universally cultivated. It both requires and deserves a generous treatment. The "Black Grape" is recommended by some; but we question if it is not synonymous with the Black Naples.

Propagation: by Cuttings, Seeds, and Layers, similarly to the Red and White.

Soil.—Moisture of a permanent character is the great desideratum with this shrub; dry soils can never do justice to it. A soil somewhat adhesive in character suits it best, but not a cold clay; although, with due culture, we have known them succeed well in a soil of which clay or marl formed one of the principal compounds. A soft and darkish-looking soil, such as the scouring of old ditches, resting on a clayey sub-soil, and especially if large trees overhang, becomes, by the action of water, an excellent material for a Black Currant plantation. The clayey principle is generally incorporated with it; and being rich in vegetable matter, it constitutes a fat and pulpy mass. It must, however, be thrown out some time to mellow, previously to its being mixed with the soil. In Cheshire, it is very usual to see them planted on the sides of ditches, which convey the impure drainage from the house or farmstead; and there they luxuriate, with a very inferior course of culture in other respects. It may, nevertheless, be observed, that almost any ordinary garden-soil, if of tolerably sound texture, will grow them pretty well, with the mulchings we shall have to recommend.

Culture in the Growing Period.—There are three essential points of spring and summer culture, viz.—mulching, watering, and the extermination of the aphides. *Mulching* we prefer done in November, as soon as the bushes are pruned; we will, therefore, advert to this under "rest culture." If, however, it has been omitted at that period, apply it in the early part of May, immediately after a liberal rain. If dry weather ensue between the period of the berries attaining the size of small peas and their final change towards ripening, the water-pot must be used freely. The want of a permanency of moisture is the predisposing cause towards a severe visitation from the aphides; but these are easily destroyed if the bushes are syringed two evenings in succession with soap-suds, in which tobacco, after the rate of six or eight ounces to the gallon, has been well soaked.

Culture in the Rest Period.—Prune and then top-dress. The pruning should be done as soon as the leaves have fallen, unless the trees are very gross, when it will, perhaps, be as well to allow them to waste a little of their surplus strength for fear of the bud being impelled too early into action. In pruning, very little of the shortening, as applied to the Red and White kinds, is necessary; in fact, we practise none at all, unless in the case of overgrown bushes, when we merely remove altogether, or shorten back, those which are becoming inconveniently high. The whole of the process of winter pruning, therefore, resolves itself into "thinning out," except in the case of young trees forming their head. In thinning bearing trees, suffer no two shoots to touch in any part of the tree. Endeavour to remove all cross or very oblique shoots, in order to promote easy pruning in subsequent seasons; and where a bare part of the bush occurs, let a strong shoot or two in a proper situation, be shortened back about one-third their length, in order to cause young wood to abound in that part the following year. As a general rule, let the shoots average four inches apart all over the tree when pruned. When trees acquire some age, let the pruner, as his first act, look carefully over the bush, and see what old shoots may be completely pruned away. All those which possess merely a twig or two of young wood at the extremity may be at once cut out, for they take more from the tree than they repay. As to forming young trees, the directions given for the other currants will apply very well; only there is no necessity to preserve the interior of the bush open, as in the Red and White kinds. A young tree, therefore, at three years old, may contain ten or twelve shoots, at equal distances. As soon as such a number can be obtained, shortening may cease.

Fruit: how to keep.—This fruit is soon over; for, once ripe enough for the table, it is gone in a few days; and it is so liable to drop, that this is one of the very few fruits that bid defiance to the art of keeping on the bush. Keeping on the tree, if attempted, must be on the retarding principle; and canvas or mats must be thrown over the bushes when the fruit is about one-third ripe.

CURRANT GALL MITE (*Eriophyes Ribis*). The buds of the Black Currant are very liable to be infested with a minute, oblong, four-legged mite. After the leaves of the bushes fall in autumn, the infested ones are seen to be gradually enlarging, till towards spring they are globular and about the size of a pea. If carefully opened, such buds are seen to be swarming with mites, like white dust to the naked eye, but with the aid of a lens they can be distinctly seen, while with a microscope of low power their whole structure can be made out. Such buds never open, and the mite simply remains feeding in them till the young shoots are plumping up their buds early in summer, when the mites migrate to the new buds, thus continuing and spreading the infestation. The cultivator should examine his bushes at intervals soon after the new year in order to cut off and burn any infested and unduly swollen buds he may find. This is usually effective in keeping the mite in check, if taken in time before the infestation becomes very bad. The

best remedy that has yet been found is to well dust the bushes, when the new growth is being made, by a mixture of two parts of flowers of sulphur, to one of powdered lime. This remedy may be applied when the plantation is extensive and the mite getting troublesome. Should the bushes be very badly infested and the crop relatively worthless, the best plan is to grub up the bushes in March and burn them, root and branch, and make a new plantation on a fresh piece of ground.

CURRANT SPHINX. (*Trochilum tipuliforme.*) Every one acquainted with old gardens must have frequently noticed that one or more of the branches of the currant-trees tenanting them have suddenly withered and died without any apparent cause. In such cases, if the wood of the branch be split down the centre, the pith will be found all consumed, the tube where it had been blackened, and nothing remaining but the excrements of a caterpillar, which may also be caught at his work of destruction if the examination is made so soon as the branch first shows symptoms of withering. This caterpillar —fleshy, whitish, with four yellowish-brown spots near its head—is the larva of the Currant Sphinx. The parent moth is beautiful, and may be seen at the end of May and early in June during hot sunshine, either settled on the leaves of the currant, or flying around the flowers of the syringa and lilac. It is about three-quarters of an inch across the wings when these are quite opened; the prevailing colour is bluish-black, with various parts yellow; the antennæ black; the breast with a yellow line on each side; the abdomen, or lower part of the body, has three yellow rings round it in the females, and four in the males; the four wings are barred and veined with black; it has a brush of fine scales at the end of its abdomen, which fan it can expand as it pleases. The Red, White, and Black Currant, and, we think, the Gooseberry, are all liable to its attacks. It lays its eggs at this time in openings of the bark of a young shoot; and the caterpillar, immediately it is hatched, penetrates to its pith, and eats its way down this until it reaches the pith of the main branch. The only securitive measures are to kill the moth whenever seen, and to split open the withered branches, and serve the caterpillars similarly.—*The Cottage Gardener*, ii. 115.

CURTI'SIA. Hassagay-tree. (In honour of the late *William Curtis*, who originated the Botanical Magazine. Nat. ord. *Cornels* [Cornaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Cornels are entirely distinct from Caprifoils, with which they have long been associated. The Hottentots and Caffres make from this tree the shafts of their javelins. Greenhouse evergreen tree; sandy loam and leaf-mould and manure; cuttings in sand, under glass, in heat.

C. fagi'nea (beech-*leaved*). 30. Pale. Cape of Good Hope. 1775.

CUSCU'TA. Dodder. (From *kechout*, its Arabic name. Nat. ord. *Dodders* [Convolvulaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

One peculiarity in all the Dodders is that their seeds germinate in the earth; but, as soon as the roots of the seedlings are grown sufficiently to take hold of a neighbouring plant, or even of each other, they lose their attachment to the soil. Curious parasitical plants, with white flowers; sow in April. They will live upon almost any plant they can lay hold of, such as the common stinging-nettle, clover, hemp, &c., and are often troublesome where Ericas are grown, for when they get on the plants they cripple them very much.

At one time *Cuscuta aurea*—a variety of one of the English Dodders—was grown as a decorative plant, but it was found a troublesome weed, and it is some years since we have seen it.

STOVE.

C. america'na (American). August. N. Amer. 1816.
,, *Hooke'ri* (Hooker's). See C. REFLEXA.
,, *odora'ta* (sweet-scented). January. Lima. 1820.
,, *verruco'sa* (warted). See C. REFLEXA.

GREENHOUSE.

C. austra'lis (southern). August. N. Holland. 1818.
,, *chile'nsis* (Chilian). August. Chili. 1821.

HARDY.

C. califo'rnica (Californian). July. California. 1847.
,, *chine'nsis* (Chinese). August. China.
,, *Epils'num* (flax-frequenter). July. Britain.
,, *Epi'thymum* (*true dodder*). July. Britain.
,, *europæ'a* (European). July. Britain.
,, *lupulifo'rmis* (hop-like). July. Europe. 1824.
,, *macroca'rpa* (large-seeded). July. Siberia. 1827.
,, *mono'gyna* (one-styled). July. Europe, Orient. 1818.
,, *refle'xa* (reflexed). August. Himalayas. 1821.
,, *Trifo'lii* (clover dodder). July. Britain.
,, *Upcra'ftii* (Upcraft's). Grows successfully on the Potato. Eastern Tibet. 1906.

CUSPA'RIA. (From *cuspis*, a point; in allusion to the filaments, which have no anthers. Nat. ord. Rutaceæ. Sometimes included in Galipea.)

Stove annual and shrub. Seeds and cuttings of half-ripened wood in sand in a close case. Loam, a little peat and sand.

C. heterophy'lla (various-leaved). 2. Blue. July. Brazil. 1813. Annual.
,, *odorati'ssima* (most-scented). 2. White. May. Brazil.
,, *undula'ta* (waved). White. Brazil. 1892. Shrub.

CUSSO'NIA. (Named after *P. Cusson*, a French botanist. Nat. ord. *Ivyworts* [Araliaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Panax.)

Greenhouse evergreen shrubs from the Cape of Good Hope, with green flowers; cuttings in sand, under a glass, with bottom-heat; loam and peat.

C. Krau'ssii (Krauss'). 3 to 6. S. Africa.
,, *panicul'ata* (panicled). 6. S. Africa. 1795.
,, *spica'ta* (spike-*flowered*). 6. 1789.
,, *thrysiflo'ra* (thyrse-flowered). See C. PANICULATA.
,, *tri'ptera* (three-winged). 4. 1816.

CUSTARD APPLE. *Ano'na.*

CUTTING is a part of a plant capable of emitting roots, and of becoming an individual similar to its parent. The circumstances requisite to effect this are a suitable temperature and degree of moisture. Bottom-heat is essential for almost all cuttings, as it draws the sap downwards, while a warm surface takes it upwards, and leaves the base of the cuttings without any power of forming roots. Some plants only root when cut quite close from beneath a joint or leaf-bud; others will root from any part of the stem. Fuchsias and Verbenas are examples of the latter, while Carnations must be cut or broken off close to a joint.

A rooted cutting is not a new plant; it is only an extension of the parent, gifted with precisely the same habits, and delighting in exactly the same degree of heat, light, and moisture, and in the same food. There are numbers of plants which strike most readily from the young shoots; others from partially ripened wood; some from a leaf with a bud at its base; a fourth set from off-shoots from the base of the old plants; and a fifth from leaves or portions of leaves only; and in some rare cases, from the mere scolloped edges of the leaves; whilst several can only be propagated by cuttings of the roots, and a few by cuttings of the flower-stems. Particular cases will be described under the names of the species requiring some peculiar mode. In this place only general hints can be given.

Cuttings of Hardy Flowering Plants.—Most kinds of quick-growing, soft-wooded plants are best propagated by the young shoots or tops of the plants. The following list embraces the principal of them:—*Soft-wooded plants.*—Anagallis, Antirrhinums, Calceolarias, Carnations, Chrysanthemums, Dahlias, Dianthus, Double Wallflowers, Double Stocks, Gorterias, Gaillardias, Dwarf Lobelias, Fuchsias, Pelargonium, Petunias, Pentstemons, Pinks, Salvias, and Verbenas. These may all be placed in pots, in sand, in a frame heated either by leaves, manure, or tan, or in a pit or house built purposely, and heated by a tank and hot-water pipes. *Greenhouse hard wooded plants or shrubs* that strike best from young shoots or tops:—Acacias, Aphelexis, Azalea (Chinese), Boronia, Bossiæa, Chironia, Chorizema, Crowea, Correa, Cytisus, Daviesia, Dilwynia, Epacris, Eriostemon buxifolius (for stocks to graft the other species on), Erica,

Gastrolobium, Gompholobium, Hardenbergia, Leschenaultia, Kennedya, Mirbelia, Oxylobium, Platylobium, Pleroma, Podolobium, Pimelia decussata (for stocks to graft the rest of the genus upon), Pultenæa, Styphelia, Tacsonia, Zichya, and all New Holland shrubs of similar habit. These require to be placed in a gentle tan-bed, planted in pots, in silver sand, closely covered with bell-glasses, which should be wiped dry occasionally, and shaded from clear, bright sunshine. Great numbers of stove plants of woody habit require the same mode of treating their cuttings, for which see the body of the Dictionary.

Cuttings of Partially-ripened Wood.—Camellia, Cape Pelargoniums, Coniferæ, Erythrina, Echites, Gardenia, Gordonia, Hakea, Magnolia, Metrosideros, Nerium, Portlandia, Rosa, especially the China and Tea-scented, and most kinds of hardy evergreen shrubs.

Cuttings of Leaves with a Bud at the Base.—When cuttings of any kind of large-leaved plants are scarce, they may be successfully increased by single leaves with a bud at the base. We need not particularise any species, as most of the last section, and several of the others that have moderate-sized leaves, may be propagated in this mode of making cuttings.

Cuttings of Leaves only, without Buds.—The following will increase readily by this mode: Achimenes, Gesnera, Gloxinia, and all of similar habit, as well as some Begonias.

Cuttings of Offshoots from the Base of the Old Plants.—Cinerarias, tall Lobelias, Statices, and most kinds of herbaceous plants, increase readily by this mode.

Cuttings of the Roots.—There are a few plants that will not readily increase by any of the above modes, particularly some herbaceous plants: Œnothera macrocarpa is one, and Œnothera cæspitosa is another. Amongst hardy shrubs the Pyrus japonica and its varieties will propagate by this mode; also the Abele poplar. In the stove, the Ardisias, Clerodendrons, Dracænas, Ipomœas (the tuberous-rooted species), and the Petrea Stapeliæ.

Cuttings of the Flower-stem.—Double white and yellow Rockets, the tall Lobelias, Double Lychnis, and a few others, may be increased by cutting the flower-stem into lengths, and placing the cuttings under a hand-glass in a shady border.

In all *hollow-stemmed plants* the presence of a node, or joint, to cut through at is essential. This is the reason why cutting through at a joint is also of importance in other cases, and also the reason why taking those little shrubby side-shoots as cuttings is often so successful, what is technically termed the heel—the point of junction between the elder branch and the young shoot—being well-supplied with incipient buds, which readily produce roots. Whatever may be the mode and the time in which a cutting is made, and whether it is necessary, in the peculiar circumstances, to cut clean through at a joint, it is of importance that the cut be made with a clean, sharp knife.

Time when Cuttings should be taken.—When any particular period is mentioned for this operation in this work, it is merely the period when, under general circumstances, the practice would be most suitable. Other things being equal, spring and summer are the best times for propagating greenhouse and stove shrubs, as thus the plants are established before winter.

Leaves of a Cutting.—Unless in particular circumstances, as many leaves should be removed as would enable the cutting to be firmly fixed in the cutting-pot, and if the leaves be large, a portion more may be removed, or lessened in their dimensions, in order to reduce the evaporating surface, success consisting in keeping the cutting healthy, and yet preventing it from parting with its stored-up juices; and hence the reason why we cover them with bell-glasses, and shade them from bright sunshine. The more leaves left, provided they can be kept healthy and vigorous, the sooner will roots be formed by the elaboration of fresh material, and the more quickly and without flagging will this elaboration take place, the more light the leaves receive. Shading, or *diffused light*, is essential at first; but the sooner it can be dispensed with the better. Continued too long, the shading would make the cuttings weak and spindly.

Soil.—Our practice has been to use good loam, peat, and sand in equal parts, with a little extra sand on the surface, and have found the sharp sea-sand preferable to that from inland sources; and the nearer the cuttings are inserted to the side of the pot, the sooner will they protrude roots. An inverted small pot at the bottom of the larger one gives good drainage, and also allows the bottom-heat to rise. For special treatment see instructions for various plants; but we may add that a propagating frame or pit should always be opened early in the morning and closed before the cuttings get withered, and any bad leaves should be removed, or cuttings that may show signs of decay.

Cuttings of Hardy Fruit-trees.—Any time between the fall of the leaf and the first swelling of the bud in the spring, such cuttings may be put out. As a general rule, we should say that the end of October is a very good time, provided the trees in question have cast their leaves. By early planting, the wounded portions become, as it were, healed by the callosity which will frequently form at the lower end, even during the winter. It is of importance to select a good situation: a sunny and dry spot is a bad one; and one too shady, especially if with overhanging trees, is apt to cause the cuttings to grow weakly. The north side of a wall is very good, placing the cuttings not nearer than within four feet of the wall, and not farther than seven feet. Here they will get shading during the more difficult portion of their rooting period, which will be during April and May; and by Midsummer, or soon after, when all those which will succeed will be well rooted, they will both receive and enjoy a liberal amount of sunshine. The cuttings must be made somewhat firm at their lower end; and if a very dry time occurs in March, April, or May, it may become necessary to lightly sprinkle them occasionally.

CUTTING-IN is shortening the branches.

CYANA'NTHUS. (From *kuanos*, blue, and *anthos*, a flower. Nat. ord. *Bellflowers* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Campanula.)

Pretty little hardy herbaceous plants; requires the same treatment as alpine plants. Divisions and cuttings under a hand-light; sandy soil.

C. Hooke'ri (Hooker's). Blue. China. Annual.
,, ,, *hi'spida* (roughly-hairy). Blue. China. 1905. Annual.
,, *inca'nus* (hoary). Yellow. Himalayas.
,, ,, *leio'calyx* (smooth-calyxed). Yellow. W. China and Tibet. 1905.
,, *infla'tus* (inflated). Blue. Himalayas.
,, *linifo'lius* (flax-leaved). See C. MICROPHYLLUS.
,, *loba'tus* (lobed). ½. Purple, blue. August. Chinese Tartary. 1844.
,, *microphy'llus* (small-leaved). Blue, purple. Himalayas. 1905.

CYANA'STRUM. (From *kuanos*, blue, and *aster*, a star; in reference to the starry, blue flowers. Nat. ord. Hæmadoraceæ.)

A stove herb, with a creeping rootstock. Divisions in spring. Loam, peat, and sand.

C. cordifo'lium (heart-leaved). Pale violet, starry. W. Trop. Africa. 1894. Syn. *Schœnlandica gabonensis*.

CYANE'LLA. (From the diminutive of *kuanos*, blue. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anthericum.)

Pretty little bulbous plants, from the Cape of Good Hope, which succeed best planted out in a deep border of light, rich compost in front of a greenhouse, to be protected from frost like Ixias, and such-like bulbs. All the *small* bulbs we recommend to be thus treated may be grown in pots like Ixias. Increased by offsets.

C. a'lba (white). 1. White. July. 1819.
,, *cape'nsis* (Cape). 1. Blue. July. 1768.
,, *linea'ta* (lined). See C. LUTEA LINEATA.
,, *lu'tea* (yellow). 1. Yellow. July. 1788.
,, ,, *linea'ta* (lined). 1. Striped. July. 1816.
,, ,, *odorati'ssima* (sweetest-scented). 1. Red. July. 1826.
,, ,, *ro'sea* (rosy). 1. Rose. 1872.
,, *odorati'ssima* (most fragrant). See C. LUTEA ODORATISSIMA.
,, *orchidifo'rmis* (orchis-like). 1. Blue. August. 1826.
,, *ro'sea* (rosy). See C. LUTEA ROSEA.

CYANOPHY'LLUM. See MICONIA.

C. vitta'tum (striped). See CLIDEMIA VITTATA.

CYANOTHA'MNUS. See BORONIA.

CYANO'TIS. (From *kuanos*, blue, and *ous*, an ear; referring to the shape of the petals. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Tradescantia.)

Rich soil; *C. barba'ta* is increased by root division, the others by seed.

C. axilla'ris (axillary). 1. Blue. August. E. Ind. 1822. Greenhouse biennial.
,, *barba'ta* (bearded). 1. Blue. August. Nepaul. 1824. Hardy perennial.
,, *Beddo'mei* (Col. Beddome's). See C. KEWENSIS.
,, *crista'ta* (crested). 1. Blue. August. Ceylon. 1770. Greenhouse biennial.
,, *hirsu'ta* (hairy). Rose, blue. Abyssinia. 1901.
,, *kewe'nsis* (Kew). Rose. Winter and spring. Malabar. 1874.
,, *nodiflo'ra* (node-flowered). Purple. S. Africa. 1864.
,, *somalie'nsis* (Somali-land). Somali-land. 1897.
,, *tubero'sa* (tuberous). 1½. Blue. July. E. Indies. 1817.

CYATHE'A. (From *kuatheion*, a little cup; in reference to the appearance of the spore or seed-cases on the back of the fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove evergreen tree-ferns, except otherwise specified; loam and peat; root division or spores.

C. aculea'ta (prickly).
,, *angole'nse* (Angolan). Not described. Congo Free State. 1901.
,, *arbo'rea* (tree). 15. W. Ind. 1793.
,, *Bruno'nis* (Brown's). Brown, yellow. April. Malaya.
,, *Bu'rkei* (Burke's). See C. DREGEI BURKEI.
,, *canalicula'ta* (channelled). Frond bipinnate. Mauritius.
,, ,, *Co'ngi* (Congo). Congo. 1905.
,, *Cunningha'mii* (Cunningham's). 12 to 30. Frond tripinnate. N. Zealand. 1860.
,, *dealba'ta* (whitened). New Zealand. Greenhouse.
,, *Dre'gei* (Drege's). 4. Frond bipinnate. S.E. Africa. 1873.
,, ,, *Bu'rkei* (Burke's). Lobes of pinnules broader.
,, *e'legans* (elegant). See C. ARBOREA.
,, *exce'lsa* (tall). 20. Mauritius. 1825.
,, *fune'bris* (funebral). New Caledonia. 1873.
,, *Hooke'ri* (Hooker's). Stem 1½ in. thick. Ceylon. 1868.
,, *insi'gnis* (remarkable). Stalks very scaly. Jamaica, Cuba.
,, *inte'gra* (entire-*leaved*). Isle of Luzon.
,, ,, *petiola'ta* (petiolate). Pinnules petiolate.
,, *mastersia'na* (Mastersian). 2. Stem thin. 1894.
,, *medulla'ris* (pithy). New Zealand. Greenhouse.
,, *microphy'lla* (small-leaved). 3 to 4 ft. Peruvian Andes. 1884.
,, *petiola'ta* (*long*-leaf-stalked). See C. INTEGRA PETIOLATA.
,, *pube'scens* (downy). Fronds large. Jamaica. 1879.
,, *pygmæ'a* (pigmy). 2. Fronds dull green. 1894.
,, *se'rra* (saw-like). Fronds bipinnate. W. Ind. Brazil.
,, *sinua'ta* (sinuated). 2 to 4. Fronds quite simple. Ceylon. 1861.
,, *Smi'thii* (Smith's). See HEMITELIA SMITHII.
,, *spinulo'sa* (finely spiny). Stem prickly, dark purple. India. 1884.

CYATHO'CLINE. (From *kuathos*, a bowl or cup, and *kline*, a bed or receptacle; the receptacle of the flower-head is hollowed out like a bowl. Nat. ord. Compositæ.)

A hardy or half-hardy perennial. Divisions; cuttings under a hand-light in summer. Well-drained garden soil.

C. lyra'ta (lyre-shaped). 1½. Pale red. June. Himalaya. 1811.

CYATHO'DES. (From *kuathos*, a cup, and *oides*, like; referring to the form of the limb, or expanded opening of the flower. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Styphelia.)

Greenhouse evergreens with white flowers, from Australia. Peat and loam; cuttings in sand, with a little peat, under glass.

C. acero'sa (chaffy). 8. July. 1822.
,, *glau'ca* (milky-green). 20. April. 1818.
,, *Oxyce'drus* (prickly-cedar). See C. ACEROSA.

CY'CAS. (Greek name for a Palm. Nat. ord. *Cycads* [Cycadaceæ]. Linn. 22-*Dioecia*, 12-*Polyandria*.)

This order is in close affinity with Conifers. Dr. Lindley says, "The undoubted remains of Cycads attest their having once formed a considerable portion of the vegetation of Great Britain." Stove woody perennials; require plenty of pot room; rich, sandy loam, and moist heat. Young plants are often obtained from suckers.

C. angula'ta (sharp-cornered). 4. Australia. 1824.
,, *Armstro'ngii* (Armstrong's). Australia. 1870.
,, *Beddo'mei* (Col. Beddome's). India. 1883.
,, *Belleto'nii* (Bellefont's). 5. Tongking. 1886.
,, *circina'lis* (round-*leaved*). 3. E. Ind. 1800.
,, *Duivenbo'dei* (Duivenbode's). Trunk spiny. Moluccas. 1886.
,, *glau'ca* (milky-green). See C. RUMPHII.
,, *imperia'lis* (imperial). S. Africa. 1873.
,, *ine'rmis* (unarmed). Cochin-China. 1848.
,, *me'dia* (intermediate). 70. Australia. 1874.
,, *Micholi'tzii* (Micholitz's). Cones yellow. Annam. 1905.
,, *normanbya'na* (Normanbyan). N. S. Wales. 1875.
,, *Plu'ma* (Pluma). Leaves plume-like, bright green. Madras. 1877.
,, *plumo'sa* (plumose). 1865.
,, *revolu'ta* (rolled-back-*leaved*). 3. July. Japan. 1737.
,, *riumini'ana* (Riuminian). Leaves erect, pinnate. Philippines. 1864.
,, *Ru'mphii* (Rumph's). Leaves 4 to 6 ft. long. Indian Archipelago.
,, *Seema'nni* (Seemann's). 5 to 7. Fiji Islands. 1883.
,, *siame'nsis* (Siamese). Leaves 30 in. long. Cochin-China, Siam. 1878.
,, *spha'rica* (spherical). See C. CIRCINALIS.
,, *squarro'sa* (spreading). See C. CIRCINALIS.
,, *undula'ta* (waved). Leaves 3 ft. long. Polynesia. 1881.
,, *Wendla'ndii* (Wendland's). Leaflets not serrated. Madagascar. 1895.

CY'CLAMEN. Sowbread. (From *kuklicos*, circular; referring to the shape of the corm, or bulb-like root. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cyclamens are very acrid, yet are the favourite food of wild boars of Sicily, whence the English name. Beautiful bulbous plants.

HARDY.

C. ægine'ticum (Æginean). Flowers small. Leaves round. Greece. 1908.
,, *africa'num* (African). White, purple. September. N. Africa.
,, *algerie'nse* (Algerian). See C. AFRICANUM.
,, *alpi'num* (alpine). Purple-red with black eye. Probably an alpine form of *C. europæum*. Asia Minor. 1892.
,, ,, *a'lbum* (white). White. 1892.
,, *Atkinso'nii* (Atkinson's). See C. IBERICUM.
,, *balea'ricum* (Balearic). Balearic Isles.
,, *cili'cicum* (Cilician). Rosy white, carmine base. Autumn. Cilicia. 1849.
,, *Clu'sii* (Clusius'). See C. EUROPÆUM.
,, *co'lchicum* (Colchican). Petals wider and blunter than in *C. europæum*. Caucasus. 1897.
,, *co'um* (Cos). ½. Lilac, red. February. South Europe. 1596.
,, ,, *a'lbum* (white). White.
,, ,, *ve'rnum* (spring). See C. IBERICUM.
,, *cy'prium* (Cyprian). Cyprus. 1876.
,, *europæ'um* (European). ½. Lilac, red. August. Switzerland. 1596.
,, *græ'cum* (Grecian). White, bright purple base. Autumn. Greece. 1834.
,, *hederæfo'lium* (ivy-leaved). See C. REPANDUM and C. NEAPOLITANUM.
,, *hyema'le* (winter). Like *C. ibericum*, but flowers in winter. Asia Minor. 1904.
,, *ibe'ricum* (Georgian). ½. Asiatic Georgia. 1831.
,, *Jo'vis* (Jupiter's). Lobes of calyx and corolla longer than in *C. neapolitanum*. Asia Minor. 1908.
,, *libano'ticum* (Libanotic). Pale rose. Lebanon. 1899.
,, *linearifo'lium* (narrow-leaved). ½. Purple. April. South Europe. 1824.

C. littora'le (shore-*inhabiting*). ½. Deep rose. Lake of Como. 1845.
,, *macrophy'llum* (large-leaved). See C. AFRICANUM.
,, *mari'timum* (maritime). Pale rose, carmine base. September. S. Asia Minor. 1908.
,, *Meliaraki'sii* (Meliarakis's). See C. GRÆCUM.
,, *neapolita'num* (Neapolitan). ½. Red. April. Italy. 1824.
,, *pu'nicum* (Punic). White and red base. Fragrant. Tunis. 1907.
,, *pseu'do-græ'cum* (false-Grecian). Pale rosy white. Crete. 1906.
,, *pseu'd-ibe'ricum* (false-iberian). Violet-red, pure white, violet. 1901.
,, *pseu'do-mari'timum* (false maritime). Corolla segments long, pointed. S. Asia Minor. 1908.
,, *pyrena'icum* (Pyrenean). See C. NEAPOLITANUM.
,, *repa'ndum* (scolloped). Rose-red, and bright purple base. Spring. S. Europe. 1816.
,, *tau'ricum* (Taurian). Pure white. Probably an alpine form of *C. europæ'um*. Taurus. 1892.
,, *verna'le* (vernal). See C. IBERICUM.
,, *ve'rnum* (spring). See C. IBERICUM.

GREENHOUSE.

C. latifo'lium (broad-leaved). White, with red base. February. Asia Minor, Cyprus. 1731.
,, ,, *albiflo'rum* (white-flowered). White. Cyprus. 1731.
,, ,, *inodo'rum* (scentless). Red, white. Cyprus. 1731.
,, ,, *lacinia'tum* (jagged-petaled). Red, white. April.
,, ,, *odora'tum* (scented). Red, white. Cyprus. 1731.
,, *per'sicum* (Persian). See C. LATIFOLIUM.

Propagation: by Seed.—This is the only way of propagating Cyclamens. The roots, being a solid corm, will not divide successfully. Gather the seed as soon as ripe, dry it slowly, and sow it in February, in shallow, wide-mouthed pots, in a compost of peat, loam, and sand, covering the seeds scarcely a quarter of an inch deep; the best covering for seeds is sand and sphagnum moss, using just sufficient to cover the seeds; place them in a cold frame, excepting *C. latifolium*, which should be placed in a greenhouse, on a shelf near the glass; sow the seeds thinly, so that they may remain in the seed-pots for one year.

Soil.—Equal parts light, turfy loam, sandy-peat, and leaf-mould; or, if this cannot be had, half a part of very rotten dung may be substituted.

Summer Culture.—Pot in autumn, and when spring comes in most of the kinds will be in flower. They require then a good supply of water. Though some of the species are hardy, yet it is safer to cultivate them in pots in frames, and bring them into the greenhouse when in flower. Some of the varieties of *C. latifolium* are very fragrant; but there is no certainty that the seedlings from them will continue fragrant. Seedlings of a year old should be potted singly into thumb-pots, and be re-potted in April in 3½-inch pots, and kept in a gentle heat, to encourage the bulbs to grow larger. As soon as the flowering season is over, set them out of doors, giving no water; and as soon as the seed is gathered, and all the leaves dead, trim these off, and lay the pots on one side, to keep them dry till the plants require potting.

Winter Culture.—When frost begins, shift them into pots of a size in proportion to that of the bulbs, leaving the bulbs just out of the soil, excepting *C. co'um*, which should be covered about half an inch. The largest bulbs may require pots six inches in diameter. As soon as potted, place them in a cold frame, covering up securely from frost; give air on all favourable occasions, and water very moderately till the leaves are full-grown and the flowers begin to appear, when it may be more liberally given.

Insects.—*Slugs, green fly*, and *wire-worms* prey upon them.

Diseases.—Their greatest enemy is the small brown thrips, which cripple the foliage and cause the flower to be imperfect. Sulphur and lime, with frequent fumigation with vapour insecticide are the best remedies.

Culture in the Open Air.—All the species, excepting *C. pe'rsicum* and its varieties, will live in a warm border of the compost out of doors; but, on account of their early blooming, the flowers are often injured by late frosts. The border should be well drained, and a covering of tanner's bark or coal-ashes should be spread over the roots in autumn, and allowed to remain on till the warm weather of spring arrives, when it may be removed and renewed in the autumn. The bulbs may either be taken up and replanted in October, or allowed to remain for two years.

Modern growers of Cyclamen sow the seed about October and have well-flowered plants the following season. We have grown them from seed sown in January, but this does not give time enough to get thoroughly well-flowered plants.

CYCLANTHE'RA. (From *kuklos*, a circle, and *anthera*, a stamen; alluding to the circular anthers. Nat. ord. Cucurbitaceæ.)

A climber, which may be treated as a half-hardy annual and planted outside at the beginning of June.

C. explo'dens (exploding). Colombia.

CYCLA'NTHUS. (From *kuklos*, a circle, and *anthos*, a flower; in allusion to the circles of stamens. Nat. ord. Cyclanthaceæ.)

Stove perennials. Seeds. Fibrous loam to two parts of peat with sand.

C. biparti'tus (two-parted). Leaves two-parted. Trop. Amer.
,, *crista'tus* (crested). Colombia.
,, *di'scolor* (two-coloured). Young leaves variegated, with tawny orange. Colombia. 1882.
,, *godseffia'nus* (Godseffian). 1892.
,, *Plumie'ri* (Plumier's). 3. Greenish-yellow. Martinique. 1818.

CYCLOBO'THRA. See CALOCHORTUS.

C. e'legans lu'tea. See CALOCHORTUS BENTHAMI.

CYCLO'DIUM. See ASPIDIUM.

CYCLO'GYNE CANE'SCENS. See SWAINSONIA CANESCENS.

CYCLONE'MA. See CLERODENDRON.

CYCLOPE'LTIS SEMICORD'ATA. See ASPIDIUM SEMICORDATUM.

CYCLO'PIA. (From *kuklos*, a circle; the standard has a round blotch on it. Nat. ord. Leguminosæ.)

Greenhouse evergreen. Cuttings of half-ripe wood under a bell-glass. Loam, peat, sand.

C. genistoi'des (Genista-like). S. Africa. 1884.

CYCNO'CHES. Swan-neck. (From *kuknos*, a swan, and *auchen*, the neck; in reference to the long and gracefully-curved column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cyrtopodium.)

Stove orchids. Strong, moist heat whilst growing; rough, fibrous peat, and half-decayed leaves, with a little sand; root division.

C. au'reum (golden). 1. Yellow. Central Amer. 1851.
,, *barba'tum* (bearded). See POLYCYCNIS BARBATA.
,, *chlorochi'lon* (greenish-yellow-lipped). 2. Yellowish. June. Demerara. 1838.
,, *Cummi'ngii* (Cumming's). White, yellow. June. Singapore.
,, *densiflo'rum* (dense-flowered). Yellow, spotted crimson. Female green. Colombia. 1908.
,, *egertonia'num* (Egertonian). 2. Purple, green, pink. June. Guatemala.
,, *Haa'gei* (Haage's). Brazil.
,, *Lehma'nni* (Lehmann's). Salmon, orange. Ecuador. 1880.
,, *Loddige'sii* (Loddige's). 1. White, purple. May. Surinam. 1830.
,, ,, *leucochi'lum* (white-lipped). 1. Yellow, white. June. Guiana.
,, *macula'tum* (spotted). 1. Buff, purple. June. Mexico. 1839.
,, *musci'ferum* (fly-bearing). See POLYCYCNIS MUSCIFERA.
,, *pentada'ctylon* (five-fingered). 1. Yellow, brown. March. Brazil. 1841.

C. peruvia'num (Peruvian). Pale green, spotted purple, white. Peru.
„ *Pescato'rei* (Pescatore's). See LUDDEMANNIA PESCATOREI.
„ *rossia'num* (Rossian). Yellow-green, brown spots. Female flower green, large. 1891.
„ *stelli'ferum* (starry). See C. WARSCEWICZII.
„ *ventrico'sum* (inflated-*lip*). 2. Green, white. Guatemala. 1835.
„ „ *egertonia'num* (Sir P. Egerton's). See C. WARSCEWICZII.
„ *versi'color* (changing colour). Green, white, yellowish. Brazil. 1888.
„ *Warscewi'czii* (Warscewicz's). Green. Female flower 2 in. across. Central Amer. 1840.

CYDO'NIA. Quince. (Its native place *Cydon*, in Candia. Nat. ord. *Appleworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*.)

Hardy deciduous trees and shrubs. *C. japo'nica* is one of our handsomest flowering shrubs; layers in September, and to remain until that time twelve months before taken off; also by seeds. See QUINCE.

C. cathaye'nsis (Chinese). 20. Rosy-pink or nearly white. China. 1820.
, *japo'nica* (Japan). 4. Scarlet. Japan. 1815.
„ „ *a'lba* (white-*flowered*). 4. White.
„ „ *ca'rnea* (flesh-coloured). Flesh-coloured. March.
„ „ *flo're-se'mi-ple'no* (semi-double-flowered). 4. Red. August.
„ „ *semperflo'rens* (ever-flowering). Flowers in spring and in late summer. 1903.
„ „ *Simo'nii* (Simon's). Intense crimson-scarlet. 1907.
„ *Mau'lei* (Maule's). Salmon-orange. April. Japan. 1874.
„ „ *a'lba* (white). White.
„ *Sarge'nti* (Sargent's). Brilliant red. Japan. 1899.
„ *sine'nsis* (Chinese). 15. Pink. May. China. 1818. "Chinese Quince."
„ „ *pyramida'lis* (pyramidal). White. May. 1847.
„ *vulga'ris* (common *Quince*). 20. White. May. Austria. 1573.
„ „ *lusita'nica* (Spanish). 20. White. May. Spain.
„ „ *malifo'rmis* (apple-formed). 20. White. May. 1573.
„ „ *marmora'ta* (marbled). Leaves marbled with white and yellow. 1889.
„ „ *oblo'nga* (oblong-*fruited*). 20. White. May. Europe.
„ „ *pyrifo'rmis* (pear-shaped). Fruit pear-shaped.

CYLI'STA. (From *kulistos*, twining; referring to the habit of the plants. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Rhynchosia).

Stove evergreen twiners. Loam and peat; cuttings in sand, under glass, in bottom-heat.

C. albiflo'ra (white-flowered). See RHYNCHOSIA CYANOSPERMA.
„ *scario'sa* (membranous). 4. Yellow. E. Ind. 1806.
„ *tomento'sa* (woolly). See RHYNCHOSIA CYANOSPERMA.
„ *villo'sa* (shaggy). 6. Yellow. April. Cape of Good Hope. 1776.

CYMBI'DIUM. (From *kumbe*, a boat; referring to a hollow recess in the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Fibrous loam, fibrous peat, and leaf-mould, well drained; root division.

C. affi'ne (related). White; lip dotted purple. India. 1878.
„ *albucæflo'rum* (Albuca-flowered). See C. MADIDUM.
„ *aloifo'lium* (Aloe-leaved). 1. Purple, black. September. E. Ind. 1789.
„ *Anderso'ni* (Anderson's). See CYRTOPODIUM ANDERSONII.
„ *bi'color* (two-coloured-*flowered*). Purple, crimson. April. Ceylon. 1837.
„ *bitubercula'tum* (two-tubercled). See LIPARIS BITUBERCULATA.
„ *canalicula'tum* (channelled). Brownish-purple, green, white. N.E. Australia. 1870.
„ *chlora'nthum* (greenish-yellow-flowered). Yellow, crimson. May. Nepaul. 1840.
C. cocci'neum (scarlet). See ORNITHIDIUM COCCINEUM.
„ *cochlea're* (shell-shaped). See CYPERORCHIS COCHLEARIS.
„ *cyperifo'lium* (Cyperus-leaved). Himalayas.
„ *daya'num* (Dayan). See C. EBURNEUM.
„ *depe'ndens* (hanging-down). See CIRRHÆA LODDIGESII.
„ *devonia'num* (Duke of Devonshire's). 1. White, crimson. March. N. India. 1837.
„ *diu'rnum* (day-*flowering*). Babama.
„ *ebu'rneum* (ivory-*white-flowered*). White, yellow-striped. May. E. Ind. 1846.
„ „ *goodsonia'num* (Goodsonian). White, rose-purple. 1908.
„ „ *philbrickia'num* (Philbrickian). White. 1886.
„ „ *williamsia'num* (Williamsian). Light purple. 1881.
„ *e'legans* (elegant). Yellow. See CYPERORCHIS ELEGANS.
„ *ensifo'lium* (sword-leaved). Yellow, spotted brown. E. Ind., Japan. 1780.
„ „ *estria'tum* (unstriped). Green, white, purple. Assam. 1888.
„ „ *stria'tum* (striped). Yellowish, striped reddish-brown. China.
„ *erythrosty'lum* (red-styled). White, marked purple; column crimson. Annam. 1905.
„ *finlaysonia'num* (Finlayson's). Cochin China. 1840.
„ *gammiea'num* (Gammiean). Tawny yellow, lip spotted purple. Himalaya. 1899.
„ *Gibso'nii* (Gibson's). White, red. January. Sylhet. 1837.
„ *gigante'um* (gigantic). Brown, purple. Nepaul. 1837.
„ „ *di'scolor* (two-coloured). Green, purple. Himalaya. 1860.
„ „ *purpu'reum* (purple). Purple.
„ *grandiflo'rum* (large-flowered). Green, spotted crimson on lip. Himalaya. 1866.
„ „ *tracya'num* (Tracyan). Flowers larger, and handsomely marked. 1890.
„ *hookeria'num* (Hookerian). See C. GRANDIFLO'RUM.
„ *Humblo'tii* (Humblot's). Green and black. Madagascar. 1892.
„ *Hutto'ni* (Hutton's). Light yellow, dotted dusky brown. Java. 1867.
„ *hyaci'nthinum* (hyacinthine). See BLETIA HYACINTHINA.
„ *I'An'soni* (I'Anson's). Natural hybrid between *C. lowianum* and *tracyanum*. 1900.
„ *insi'gne* (remarkable). See C. SANDERI.
„ *iridifo'lium* (iris-leaved). Dark brown. March. E. Ind. 1837.
„ *lancifo'lium* (lance-leaved). ¾. White, red. September. Nepaul. 1822.
„ *leachia'num* (Leachian). White, pale yellow, brown. Formosa. 1878.
„ *Loi'se-Chauvie'ri* (Loise-Chauvier's). Large, scarlet. Madagascar.
„ *longifo'lium* (long-leaved). Olive-green, brown, white. India. 1873.
„ *lowia'num* (Lowian). Green, brown, velvety brown. Spring. Burma.
„ „ *au'reum* (golden). Yellow, with orange blotch on lip. 1893.
„ „ *fla'veolum* (yellowish). Light yellow. 1897.
„ „ *superbis'simum* (most superb). Front of lip maroon.
„ „ *vi'ride* (green). Pale greenish-yellow, without brown on lip. 1892.
„ *ma'didum* (moist). Olive-green. May. Australia. 1839.
„ *margina'tum* (*red*-edged-*sepal*). See MAXILLARIA GRACILIS.
„ *Maste'rsii* (Masters's). See CYPERORCHIS MASTERSII.
„ *ochroleu'cum* (yellowish-white). See MAXILLARIA CAMARIDII.
„ *Pari'shii* (Parish's). Ivory-white; front lobe of lip orange. Burma. 1878.
„ „ *Sande'ræ* (Mrs. Sander's). Ivory-white; lip yellow with purple blotches. Annam. 1904.
„ *pe'ndulum* (hanging-down). 3. Yellow, red, white. June. Nepaul. 1838.
„ „ *atropurpu'reum* (dark purple). Dark purple. Himalaya. 1868.
„ „ *brevila'bre* (short-lipped). 2. Green, red, yellow. June. Singapore. 1840.

C. pube'scens (downy). 1. Purple, yellow. April. Singapore. 1838.
„ *pulche'rrimum* (most beautiful). Waxy white, striped crimson. N. India. 1891.
„ *pu'milum* (dwarf). Reddish-brown; lip white, spotted red-brown. China. 1907.
„ *rhodochi'lum* (red-lipped). Yellow-green; lip rose-red in front. Madagascar. 1901.
„ *Sande'ri* (Sander's). White, suffused rose; lip spotted rose-purple. Annam. 1905.
„ „ *sple'ndens* (splendid). White; lip rose-red, spotted crimson. 1908.
„ „ *supe'rbum* (superb). Pink; lip white, mottled dark red. 1908.
„ *Sanderso'ni* (Sanderson's). See ANSELLIA GIGANTEA.
„ *Schrœde'ri* (Schrœder's). Green, lined red-brown, yellow. Annam. 1905.
„ *simonsia'num* (Simonsian). Greyish-white; lip white, yellow, blood-red, Sikkim and Assam. 1902.
„ *sine'nse* (Chinese). 1½. Purple brown. China. 1793.
„ *Spa'rkesii* (Sparkes's). Lip yellow, with a broad purple margin. 1899.
„ *sua've* (sweet). Green, brown. May. Australia. 1826.
„ *tigri'num* (tiger-striped). Green, white, striped crimson. Burma. 1864.
„ *tracya'num* (Tracyan). See C. GRANDIFLORUM TRACYANUM.
„ *tri'pterum* (three-winged). White. July. Jamaica. 1700.
„ *tri'ste* (sad). See LUISIA TERETIFOLIA.
„ *Wilso'ni* (Wilson's). Green; lip cream, with red marks in front. China. 1904.
„ *xiphiifo'lium* (Xiphium-leaved). Yellow-green. China.

CYNA'NCHUM. (From *kuon*, a dog, and *agche*, to kill; referring to its poisonous qualities. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Asclepias.)

Cuttings root readily; the hardy kinds in common garden-soil; usual stove or greenhouse treatment for the others.

STOVE EVERGREEN TWINERS.

C. bi'color (two-coloured). 6. White. E. Ind. 1806.
„ *fimbria'tum* (fringed). See METAPLEXIS FIMBRIATUM.
„ *formo'sum* (beautiful). Greenish-yellow. Peru. 1895.
„ *heynia'num* (Heynes's). 6. White. E. Ind. 1825.
„ *hirsu'tum* (hairy). 6. Trinidad. 1825.
„ *unda'tum* (waved). Green-yellow. E. Ind. 1803.
„ *viridiflo'rum* (green-flowered). See TYLOPHORA ASTHMATICA.

GREENHOUSE EVERGREEN TWINERS.

C. cape'nse (Cape). 6. White. July. Cape of Good Hope. 1820.
„ *macrorhi'zon* (large-rooted). Greenish-yellow, white. Japan. 1877.
„ *pilo'sum* (soft-haired). 5. White. July. Cape of Good Hope. 1726.

HARDY HERBACEOUS PERENNIALS.

C. acu'tum (pointed-*leaved*). 3. White. July. Spain. 1596.
„ *cirrho'sum* (tendriled). 3. 1825. Deciduous twiner.
„ *exce'lsum* (tall). 10. White. July. Barbary. 1816. Deciduous twiner.
„ *flave'scens* (pale-yellow). Yellow. July. Japan.
„ *lu'teum* (yellow-*flowered*). See VINCETOXICUM LUTEUM.
„ *me'dium* (middle-sized). See VINCETOXICUM NIGRUM.
„ *mela'nthos* (black-flowered). See VINCETOXICUM MEDIUM.
„ *monspeli'acum* (Montpelier). See C. ACUTUM.
„ *ni'grum* (black). See VINCETOXICUM NIGRUM.
„ *purpura'scens* (purplish). Purple. July. Japan. 1852.
„ *ro'seum* (rosy). 3. Purple. July. Davuria. 1818. Deciduous twiner.
„ *villo'sum* (shaggy). See LACHNOSTOMA BALBISII.
„ *Vinceto'xicum* (Vincetoxicum). See VINCETOXICUM OFFICINALE.

CYNARA. Artichoke. (From *kuon*, a dog; the spines on the involucre, or guard-leaves, immediately below the flower, being likened to dogs' teeth. Nat. ord. *Composites* [Compositæ]. Linn. 10-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous perennials, except where otherwise stated. Increased by seeds and root division. See ARTICHOKE and CARDOON.

C. Cardu'nculus (cardoon). 5. Blue. August. Candia. 1658.
„ *fe'rox* (fierce). 5. Blue. July. Italy. 1820.
„ *glomera'ta* (clustered). See PLATYCARPHA GLOMERATA.
„ *ho'rrida* (horrid). See C. CARDUNCULUS.
„ *integrifo'lia* (whole-leaved). 4. Blue. July. Spain.
„ *pygmæ'a* (pigmy). 1. Purple. July. Spain. 1820.
„ *Sco'lymus* (Scolymus. *Artichoke*). 8. Purple. August. South Europe. 1548.
„ *spinosi'ssima* (spiniest). See C. CARDUNCULUS.

CYNIPS ROSÆ, *C. Bedegaris*, or *Rhodites rosæ*, is one of the Gall-forming insects. It deposits its eggs in a bud of the young shoots of the Dog-Rose and Sweet Briar. The grubs or larvæ hatched from these eggs produce those galls, or lumps, covered with green and reddish fibres looking like moss, so frequently found upon Roses.

CYNO'CTONUM. (From *kuon*, a dog, and *ktonum*, slaughter; literally dog's-bane. Nat. ord. Asclepiadaceæ. Should be included with the species of Vincetoxicum, but no botanist has transferred it.)

Greenhouse perennial herb. Divisions. Loam, leaf-mould, and sand.

C. pilo'sum (hairy). White. July. S. Africa. 1726.

CYNOGLO'SSUM. Hound's Tongue. (From *kuon*, a dog, and *glossa*, a tongue; referring to the shape of the leaves. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Nearly all hardy; some are very pretty border-flowers; common soil; seeds or root division.

ANNUALS.

C. cane'scens (hoary). See C. MICRANTHUM.
„ *diffu'sum* (spreading). See BOTHRIOSPERMUM TENELLUM.
„ *hirsu'tum* (hairy). 1. Blue. July. Cape of Good Hope. 1806.
„ *lanceola'tum* (spear-head-*leaved*). White, blue. July. Africa. 1806.
„ *micra'nthum* (small-flowered). 2. Blue. July. Burma. 1819.

BIENNIALS.

C. apenni'num (Apennine). See SOLENANTHUS APENNINUS.
„ *bi'color* (two-coloured). See C. OFFICINALE.
„ *cheirifo'lium* (wallflower-leaved). 1½. Blue. June. W. Mediterranean Region. 1596.
„ *clandesti'num* (clandestine). 2. Brown. July. Spain. 1820.
„ *cœlesti'num* (celestial-*blue*). See PARACARYUM CŒLESTINUM.
„ *Colu'mnæ* (Columna's). 2. Blue. July. Apennines. 1825.
„ *Diosco'ridis* (Dioscorides's). 2. Purple. July. France. 1820.
„ *divarica'tum* (straggling). See C. OFFICINALE.
„ *elonga'tum* (lengthened). See C. DIOSCORIDIS.
„ *emargina'tum* (notched). See PARACARYUM ANGUSTIFOLIUM.
„ *furca'tum* (forked). Himalayas.
„ *glochidia'tum* (burred). 2. Blue. June. India. 1837. Greenhouse.
„ *glomera'tum* (clustered). See KRYNITKIA GLOMERATA.
„ *Hæ'nkii* (Hænke's). See C. MONTANUM.
„ *holoseri'ceum* (velvety). 2. Violet. July. Caucasus. 1821.
„ *lateriflo'rum* (side-flowered). Purple. June. Europe. 1838.
„ *linifo'lium* (Flax-leaved). See OMPHALODES LINIFOLIA.
„ *monta'num* (mountain). 2 to 3. Purple. June. Britain.

C. nebrodé'nse (Nebrodan). South Europe.
„ *nervo'sum* (nerved). Himalayas.
„ *ni'tidum* (shining). See OMPHALODES AMPLEXICAULIS.
„ *officina'le* (shop). 2. Purple, red. June. Britain.
„ *pi'ctum* (painted). 2. Light blue. August. Mediterranean Region. 1658.
„ *sylva'ticum* (wood). See C. MONTANUM.
„ *umbella'tum* (umbel-*flowered*). 2. Purple. June. Hungary. 1817.

PERENNIALS.

C. amplexicau'le (stem-clasping). See C. VIRGINIANUM.
„ *anchusoi'des* (Anchusa-like). See PARACARYUM HELIOCARPUM.
„ *austra'le* (southern). 2. Pale red. June. N. Holland. 1820. Greenhouse.
„ *grandiflo'rum* (large-flowered). See LINDELOPIA SPECTABILIS.
„ *longiflo'rum* (long-flowered). See LINDELOFIA SPECTABILIS.
„ *magellé'nse* (Magellan). 1. Purple. June. Naples. 1823.
„ *no'bile* (noble). See MYOSOTIDEUM NOBILE.
„ *Omphalo'des* (Omphalodes). See OMPHALODES VERNA.
„ *petiola'tum* (petioled). 1. Purple. Himalaya. 1840.
„ *tomento'sum* (downy-*flowered*). Violet. May. Italy. 1823.
„ *virginia'num* (Virginian). Blue. White. June. N. Amer. 1812.
„ *Wallí'chii* (Wallich's). Himalaya.

CYNOME'TRA. (From *kuon*, a dog, and *metra*, matrix; referring to the seed-pods. Nat. Ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Hardwickia.)

Stove evergreen trees, from the East Indies. Loam and sandy peat; cuttings in sand, under glass, with bottom-heat.

C. cauliflo'ra (stem-flowering). 30. Red. 1804.
„ *polya'ndra* (many-stamened). 20. Red. 1822.

CYNO'RCHIS. (From *kuon*, a dog, and *orchis*; literally dog-orchis. Nat. ord. Orchidaceæ. Sometimes spelt Cynosorchis.)

Terrestrial Orchids, with the habit of Habenaria and requiring stove treatment.

C. compa'cta (compact). ½. White, spotted red. Natal. 1906.
„ *e'legans* (elegant). White, rose, lined purple. Madagascar. 1888.
„ *grandiflo'ra* (large-flowered). Green, spotted purple; lip purple. Madagascar. 1893.
„ *lowia'na* (Lowian). Greenish; lip lilac, with purple spot. Madagascar. 1888.
„ *Morla'ndii* (Morland's). ½ to 1. Lilac, becoming greenish-white on the disc. Pemba Island, Mozambique. 1910.
„ *purpura'scens* (purplish). ½ to ¾. Rosy mauve, white. Madagascar. 1900.
„ *villo'sa* (hairy). ½. Rose purple. Madagascar. 1902.

CYPE'LLA. (From *kupellon*, a goblet or cup; referring to the form of the flowers. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Triandria*. Allied to Herbertia.)

Pretty little half-hardy bulbs, requiring the same treatment as Ixias. Sandy loam and peat or leaf-mould; offsets.

C. brachy'pus (short-stalked). See MARICA BRACHYPUS.
„ *cæru'lea* (blue). See MARICA CÆRULEA.
„ *gra'cilis* (graceful). See MARICA GRACILIS.
„ *Herbe'rti* (Herbert's). 1. Vermilion. July. Buenos Ayres. 1823.
„ *peruvia'na* (Peruvian). Bright yellow, spotted red-brown. Peru. 1874.
„ *plu'mbea* (leaden-coloured). Blue. S. Brazil. 1837

CYPERO'RCHIS. (From *cyperus*, a sedge, and *orchis*; in reference to the sedge-like leaves. Nat. ord. Orchidaceæ.)

Intermediate or cool house Orchids requiring treatment similar to Cymbidium, to which they are closely allied.

C. affi'nis (allied). White and crimson. India. 1878.
„ *cochlea'ris* (shell-formed). Yellow and brown. Himalayas. 1880.
„ *e'legans* (elegant). Yellow. Himalayas.
„ *Maste'rsii* (Masters'). White and yellow. Himalayas. 1841.

CYPE'RUS. (The old Greek name. Nat. ord. Cyperaceæ.)

Ornamental sedges, some of which are highly popular as table plants. Seeds and division. Good fibrous loam, a little leaf-mould and sand. Give water liberally when making their growth.

C. alternifo'lius (alternate-leaved). 1½ to 2. Madagascar.
„ „ *gra'cilis* (graceful). Stems and leaves very slender. 1893.
„ „ *variega'tus* (variegated). Stem and leaves striped creamy white.
„ *arista'tus* (bearded). ½. Green. Mexico. 1893. Annual.
„ *compre'ssus* (compressed). 1. Green. Tropics everywhere. 1870.
„ *di'stans spiralifo'rmis* (spiral-formed). Similar to *Juncus spiralis*. 1888.
„ *e'legans* (elegant). 7. July. America. 1820.
„ *esculé'ntus* (esculent). Tropics. Hardy.
„ *fe'rax* (wild). 6. Green. S. Brazil. 1895.
„ *fe'rtilis* (fertile). White. Old Calabar. 1898.
„ *fu'scus* (brown). Europe (England). Annual. Hardy.
„ *giganté'us* (gigantic). 10. July. Jamaica. 1819.
„ *gra'cilis* (graceful). See C. ALTERNIFOLIUS GRACILIS.
„ *Lacou'ri* (Lacour's). See KYLLINGIA MONOCEPHALA.
„ *laxiflo'rus* (loose-flowered). 7. July. Madagascar. 1822.
„ *la'xus* (loose). 1. Green, brown. Mauritius. 1874.
„ „ *variega'tus* (variegated). Leaves striped green and white. 1881.
„ *lo'ngus* (long). 2 to 3. Brown. Europe (England). Hardy. "Galingale."
„ *natalé'nsis* (Natal). See MARISCUS GRANTII.
„ *odora'tus* (scented). See C. GIGANTEUS.
„ *Papy'rus* (Papyrus). 12. Green, brown. August. Syria, Trop. N. Africa. 1803.
„ *reflé'xus* (reflexed). Light green. Argentina. 1895.
„ *rotu'ndus* (round). 1. Green. Cosmopolitan. 1887. "Nut Grass." Hardy.
„ *vege'tus* (sprightly). Green. Chili. Hardy.

CYPHIA. (From *kuphos*, curved; referring to the shape of the style and stigma. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Campanula.)

Greenhouse plants, from Cape of Good Hope. The perennial species root freely from young cuttings; the annual kinds by seed; loam, peat, leaf-mould, and sand.

C. bulbo'sa (bulbous). ½. Pale blue. August. 1791. Annual.
„ *Cardamí'nes* (Cardamine-like). 3. July. 1823. Herbaceous perennial.
„ *inci'sa* (cut-*leaved*). ½. Pale red. July. 1819. Annual.
„ *Phyteu'ma* (rampion). 1½. Pink. February. 1822. Perennial tuber.
„ *to'rtilis* (twisted). Lilac. S. Africa. 1894. Twiner.
„ *volu'bilis* (twining). 1. Pale blue. 1795. Annual.

CYPHOKE'NTIA. (From *kuphos*, an outgrowth, and *Kentia*; a Kentia-like plant with an excrescence on the fruit. Nat. ord. Palmaceæ.)

Stove Palm of easy culture. Seeds. Fibrous loam with a little peat and sand.

C. robu'sta (robust). Leaves pinnate. New Caledonia. 1879.

CYPHOMA'NDRA. (From *kuphoma*, a hump, and *aner*, a stamen; referring to the form of the anthers. Nat. ord. Solanaceæ.)

Cool stove shrubs. Seeds; cuttings in sand in a close case with bottom-heat. Loam, leaf-mould, and sand.

C. argé'ntea (silvery). Leaves silvery. Brazil. 1880.
„ *beta'cea* (beet-like). 12 to 15. Purple to green. S. Brazil. 1803. "Tree Tomato."
„ *fra'grans* (fragrant). 14. Green. June. Argentina. 1835.
„ *Tejo're* (Tejore). 2. Blue. Guiana. 1822.

CYPHOPHŒ'NIX. (From *kuphos*, an excrescence, and *Phœnix*; in allusion to the granular fruits and the Phœnix-like leaves. Nat. ord. Palmaceæ.)
Stove Palm. Seeds. Loam, peat, and sand.
C. élegans (elegant). Leaves without spines. New Caledonia.

CYPHOSPE'RMA. (From *kuphos*, an excrescence, and *sperma*, a seed; in reference to the form of the seed. Nat. ord. Palmaceæ.)
Stove Palm. Seeds. Fibrous loam, a little peat and sand.
C. Vieilla'rdii (Vieillard's). New Caledonia.

CYPRESS. See CUPRE'SSUS.

CYPRIPE'DIUM. Ladies' Slipper. (From *Kupris*, Venus, and *podion*, a slipper. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Both the stove and hardy species of these orchids succeed well in turfy peat, mixed with a little loam, charcoal, and potsherds. The hardy kinds, when grown in pots, should have frame protection during the winter months; root division.

COOL AND WARM ORCHID HOUSE.

C. affi'ne (allied). White, green, violet. Tonquin. 1906.
„ *A'rgus* (Argus). White, rose, green, with many blackish eye-spots. Philippines. 1872.
„ „ *Mœ'nsii* (Mœns'). Philippines. 1888.
„ *barba'tum* (bearded). ½. Purple, white, red. April. Malacca. 1838.
„ „ *ni'grum* (black). Blackish-purple.
„ „ *supe'rbum* (superb).
„ *bella'tulum* (pretty). White, red, blotched purple. Burma. 1888.
„ „ *a'lbum* (white). Pure white. 1895.
„ „ *egre'gium* (uncommon). Sepals nearly three-lobed. 1888.
„ „ *lu'teo-purpu'reum* (yellow-purple). Yellowish, blotched purple. 1893.
„ *Boxa'llii* (Boxall's). Green, white, brown. Burma. 1877.
„ „ *atra'tum* (dark). Green, white, black.
„ *Bulle'nii* (Bullen's). Green, purple. Borneo.
„ „ *anophtha'lmum* (eyeless). Petals without eye-spots. 1884.
„ „ *ocula'tum* (eyed). Petals with dark brown eye-spots. 1881.
„ *Burbi'dgei* (Burbidge's). Upper sepals with 9 green nerves. Borneo. 1881.
„ *callo'sum* (beautiful). White, suffused purple, green. Cochin China. 1886.
„ „ *au'reum* (golden). Nearly white, with pale yellow lip. 1901.
„ „ *Sande'ræ* (Mrs. Sander's). White and pale green. 1894.
„ „ *sublæ've* (nearly smooth). Petals without spots. 1888.
„ *carici'num* (sedge-like). See SELENIPEDIUM CARICINUM.
„ *chamberlainia'num* (Chamberlainian). Rosy purple, white. Sumatra. 1892.
„ *Charleswo'rthii* (Charlesworth's). White, rosy-purple, brown. Upper Burma. 1893.
„ „ *a'lbum* (white). White. 1900.
„ „ *Bromilo'wiæ* (Mrs. Bromilow's). Pale green, pure white. 1909.
„ „ *uni'color* (one-coloured). Whole flower rosy-purple. 1895.
„ „ *virgina'le* (virginal). Upper sepal pure white, green at base, pale purple rib. 1902.
„ *ciliola're* (ciliated). Green, purple, white. Philippines. 1882.
„ „ *miteaua'num* (Miteauan). Deep purple. Philippines.
„ *co'ncolor* (one-coloured). Pale primrose. Burma. 1865.
„ „ *chlorophy'llum* (green-leaved). Leaves not marbled. 1886.
„ „ *longipe'talum* (long-petaled). Petals 2½ in. long. 1896.
„ „ *stria'tum* (striated). Segments narrow, lined purple. Burma. 1893.
C. co'ncolor tonkine'nse (Tongking). Scape twin-flowered. Tongking. 1887.
„ *Crawsha'wæ* (Mrs. Crawshaw's). Pale yellow. Shan States. 1898.
„ *Curti'sii* (Curtis's). White, purple, spotted. Sumatra. 1883.
„ *daya'num* (Dayan). White, green, pale purple. Borneo. 1860.
„ *dile'ctum* (chosen). Pale green, with blackish-purple spots. 1888.
„ *Dru'ryi* (Drury's). Greenish yellow, black line on upper sepal. S. India. 1876.
„ *eilersia'num* (Eilersian). Yellow-white, golden-yellow. 1901.
„ *elliottia'num* (Elliottian). See C. ROTHSCHILDIANUM.
„ *E'xul* (Exul). Yellow, with black spots on the upper sepal. Siam. 1892.
„ „ *auranti'acum* (orange). Petals and lip orange-yellow. 1901.
„ *fairiea'num* (Fairiean). Green, striped purple. Eastern Himalaya. 1855 and 1905.
„ *glaucophy'llum* (glaucous-leaved). Green, red-brown, white, violet-purple. Java. 1904.
„ *Godefro'yæ* (Mme. Godefroy's). White, spotted chocolate. Siam. 1884.
„ „ *La'ingi* (Laing's). Flowers much smaller than the type. 1890.
„ „ *leucochi'lum* (white-lipped). Lip without spots. 1894.
„ „ *lu'teum* (yellow). Pale yellow, spotted lilac. 1891.
„ „ *Mari'æ* (Maria's). Flowers very large. 1889.
„ *gratrixia'num* (Gratrixian). Allied to *C. insigne* and *C. Exul*. 1905.
„ *gutta'tum* (spotted). ¾. Yellow. April. Siberia. 1829.
„ *haynaldia'num* (Haynaldian). Like *C. Lowii*, but petals blotched brown. Philippines. 1877.
„ *hincksia'num* (Hincksian). See SELENIPEDIUM HINCKSIANUM.
„ *hirsuti'ssimum* (hairiest). Green, purple spotted. Khasia.
„ *Hooke'ræ* (Lady Hooker's). Purple and green. Borneo. 1868.
„ „ *volontea'num* (Volontean). See C. VOLONTEANUM.
„ *insi'gne* (striking). 1. Green, red, orange. June. Nepaul. 1819.
„ „ *a'lbens* (whitish). Yellow and white, without markings. 1893.
„ „ *a'lbidum* (whitish). White, greenish. 1910.
„ „ *au'reum* (golden). Yellow. 1882.
„ „ *Chanti'ni* (Chantin's). Heavily blotched violet on the upper sepal. 1878.
„ „ *Erne'sti* (Ernest's). Yellow, with a few small specks on the upper sepal. 1893.
„ „ *gigante'um* (gigantic). Flowers very large.
„ „ *hallea'num* (Hallean). Petals dotted chocolate. 1889.
„ „ *Mau'lei* (Maule's). Upper sepal with violet spots.
„ „ *Sande'ræ* (Mrs. Sander's). Clear citron yellow, wax-like. 1888.
„ *irapea'num* (Irapean). 1. Yellow. June. Mexico. 1844.
„ *japo'nicum* (Japanese). Green, white, rose. Japan. 1874.
„ *java'nicum* (Javanese). Pale green, white, purple. Java.
„ *klotzschia'num* (Klotschian). See SELENIPEDIUM KLOTSCHIANUM.
„ *læviga'tum* (smooth). See C. PHILIPPINENSE.
„ *lawrencea'num* (Lawrencian). White, green, purple. Borneo. 1878.
„ „ *hyea'num* (Hyean). White, veined green; lip green. Borneo. 1886.
„ „ *vi'ride* (green). Green and white.
„ *lindleya'num* (Lindleyan). See SELENIPEDIUM LINDLEYANUM.
„ *longifo'lium* (long-leaved). See SELENIPEDIUM LONGIFOLIUM.
„ *Lo'wii* (Low's). Light green, purple, light brown. Borneo. 1847.
„ *margarita'ceum* (pearly). Deep purple; lip brown, covered with tubercles. Yunnan, China. 1888.
„ *mastersia'num* (Mastersian). Green, white coppery, spotted. Sunda Isles. 1879.

C. miteaua'num (Miteauan). See C. CILIOLARE MITEAUANUM.
„ *mœnsia'num* (Mœnsian). See C. ARGUS MŒNSII.
„ *ni'gritum* (blackish). Like *C. barbatum*, with small differences. Borneo. 1882.
„ *ni'veum* (snowy). White, finely spotted crimson. Malaya. 1869.
„ *pardi'num* (leopard-spotted). See C. VENUSTUM PARDINUM.
„ *Pari'shii* (Parish's). Brownish, green, purple. Burma. 1869.
„ *Pea'rcei* (Pearce's). See SELENIPEDIUM CARICINUM.
„ *Pe'tri* (Peter's). White, brown, sepia brown. Malaya. 1880.
„ *philippine'nse* (Philippine). Yellow, purple. Philippines. 1865.
„ „ *cannartia'num* (Canartian). Variety with 3 sepals.
„ *pitcheria'num* (Pitcherian). See C. ARGUS.
„ *præ'stans* (distinguished). Yellow, red-brown. New Guinea.
„ „ *kimballia'num* (Kimballian). Stripes more numerous, broader.
„ *purpura'tum* (purple). Purple, white. Hongkong. 1836.
„ *Reichenba'chii* (Reichenbach's). See SELENIPEDIUM LONGIFOLIUM.
„ *reticula'tum* (netted). See SELENIPEDIUM BOISSIERIANUM.
„ *Rœbele'nii* (Rœbelen's). Whitish, purplish-white, yellow. Philippines. 1883.
„ *Rœ'zlii* (Rœzl's). See SELENIPEDIUM RŒZLII.
„ *rothschildia'num* (Rothschildian). Yellow-green, with rich brown lines. Borneo.
„ „ *platytæ'nium* (broad-banded). Flowers darker than the type. 1898.
„ *Sande'ræ* (Mrs. Sander's). Crimson, yellow, green, red. 1896.
„ *sanderia'num* (Sanderian). Yellow-green, lined purple-brown. Borneo. 1886.
„ *Schli'mii* (Schlim's). See SELENIPEDIUM SCHLIMII.
„ *schomburgkia'num* (Schomburgkian). See SELENIPEDIUM KLOTZSCHIANUM.
„ *siame'nse* (Siamese). Green, purple. Siam. 1890.
„ *spiceria'num* (Spicerian). Green, white, purple. Assam. 1879.
„ *Sto'nei* (Stone's). Creamy yellow, purple. Borneo. 1852.
„ „ *ca'ndidum* (white). Ivory-white, lilac, rose. 1892.
„ „ *platytæ'nium* (broad-banded). Petals broad, handsomely spotted. Borneo. 1880.
„ *supe'rbiens* (superb). White, green, spotted purple-brown. 1865.
„ *to'nsum* (shaven). Dorsal sepal white with 21 green nerves, brown spots. Sunda Isles. 1883.
„ *veitchia'num* (Veitchian). See C. SUPERBIENS.
„ *venu'stum* (handsome). ½. Green, red. October. Nepaul. 1816.
„ „ *measuresia'num* (Measuresian). White and green. 1893.
„ „ *pardi'num* (leopard spotted). White, green, copper. 1869.
„ „ *specta'bile* (showy). More highly coloured.
„ *villo'sum* (hairy). Orange, green, dark purple. Moulmein. 1890.
„ „ *measuresia'num* (Measuresian). With large black blotches, as in *C. Boxallii*. 1893.
„ *vi'rens* (green). Green. Borneo.
„ *vitta'tum bre've* (striped, short). Mauve and brown. Brazil. 1881.
„ *volontea'num* (Volontean). Purple, green, handsomely blotched. Borneo.
„ „ *giganteum* (gigantic). Flowers twice the size of the type. 1893.
„ *Walli'sii* (Wallis's). See SELENIPEDIUM CAUDATUM WALLISII.
„ *wolteria'num* (Wolterian). Allied to *C. Lowii*, with some small differences. 1895.

HARDY.

C. acau'le (stemless). Rose, purple. May. N. Amer. 1786.
„ *a'lbum* (white). 1½. White. May. N. Amer. 1800.
„ *arieti'num* (ram's-*head*). ½. Green, rose. April. Canada. 1808.
C. bulbo'sum (bulbous). See CALYPSO BOREALIS.
„ *Calce'olus* (*common* slipper). 1. Yellow. June. England.
„ „ *helve'ticum* (Swiss). 1. Yellow. June. Switzerland. 1825.
„ *Calce'olus* × *macra'nthon*. Supposed natural hybrid. W. Siberia. 1892.
„ *califo'rnicum* (Californian). Yellow, white, spotted brown. California. B.M. t. 1788.
„ *ca'ndidum* (white). 1. White. June. N. Amer. 1826.
„ *de'bile* (weak). Green, marked purple. Japan. 1905.
„ *fascicula'tum* (fascicled). ¼ to 1. Green, greenish-yellow, purple-brown. N.W. Amer. 1888.
„ *gutta'tum* (spotted). 1. Yellow, spotted. April. Siberia. 1829.
„ *hu'mile* (dwarf). See C. ACAULE.
„ *macra'nthon* (large-flowered). ¼. Purple. May. Siberia. 1828.
„ „ *a'lbum* (white). White. 1908.
„ „ *ventrico'sum* (inflated). Purple-red; lip longer, more saccate. Siberia. 1829.
„ *monta'num* (mountain). 1. Brownish-purple; lip white. Oregon. 1883.
„ *occidenta'le* (western). See C. MONTANUM.
„ *parvifo'rum* (small-flowered). 1. Yellowish. June. N. Amer. 1759.
„ *pube'scens* (downy). 1. Yellow, purple. June. N. Amer. 1790.
„ *specta'bile* (remarkable). 1½. White, purple. June. N. Amer. 1731.
„ „ *a'lbum* (white). White. June. N. Amer. 1827.
„ „ *incarna'tum* (flesh-coloured). White, purple. June. N. Amer.
„ *Thunbe'rgii* (Thunberg's). Veined and mottled rose and white. Japan. 1908.
„ *tibe'ticum* (Tibetan). Greenish-yellow, blackish-purple. Tibet and China. 1905.
„ *ventrico'sum* (swollen). See C. MACRANTHON VENTRICOSUM.

CYRILLA. (After *D. Cyrillo*, an Italian botanist. Nat. ord. *Cyrillads* [Cyrillaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Heathworts.)
Greenhouse evergreen shrubs. Sandy loam and peat; cuttings in sand, under glass, with slight bottom-heat.
C. antilla'rum (Antilles). 6. White. July. Antilles. 1824.
„ *carolinia'na* (Carolina). See C. RACEMIFLORA.
„ *cocci'nea* (scarlet). See ACHIMENES COCCINEA.
„ *pulche'lla* (pretty). See ACHIMENES COCCINEA.
„ *racemiflo'ra* (racemose-flowered). 6. White. July. S. United States. 1765. "Leatherwood."

CYRTA'NDRA. (From *kurtos*, curved, and *aner*, a stamen; in reference to the curved stamens. Nat. ord. Gesneraceæ.)
Stove shrubs. Cuttings of half-ripe shoots in sand in a close case, with bottom-heat. Lumpy fibrous loam and peat, with some nodules of charcoal.
C. bi'color (two-coloured). White. Sumatra.
„ *pe'ndula* (pendulous). White, dotted purple. Java. 1883.
„ *Pritcha'rdii* (Pritchard's). White. Berries white. Fiji. 1887.

CYRTANTHE'RA. (From *kurtos*, curved, and *anthera*, an anther. Nat. ord. Acanthaceæ. Most of the species are now referred to Jacobinia.)
C. auranti'aca (orange). See BELOPERONE AURANTIACA.
„ *catalpæfo'lia* (Catalpa-leaved). See JACOBINIA AUREA.
„ *chrysoste'phana* (golden-crown). See JACOBINIA CHRYSOSTEPHANA.
„ *ghiesbreghtia'na* (Ghiesbreghtian). See JACOBINIA GHIESBREGHTIANA.
„ *libonia'na* (Libonian). See JACOBINIA PAUCIFLORA.

CYRTA'NTHUS. (From *kurtos*, curved, and *anthos*, a flower; the flowers bend down from the summit of the scape, or stalk. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Vallota.)
Greenhouse bulbs, from Cape of Good Hope. *C. obli'quus* and *C. ca'rneus* have evergreen leaves; they, therefore, require to be watered all the year round. Strong, friable loam suits them best in deep, narrow pots,

and the bulbs covered. Greenhouse culture from April to November, and an airy place in the stove near the glass in winter. The rest are deciduous, and require to be kept dry in winter. Offsets.

C. angustifo'lius (narrow-leaved). 1. Orange. Autumn. 1774.
„ „ *stria'tus* (streaked). Bright red with yellow ribs.
„ „ *ventrico'sus* (inflated). Flower tube more dilated. 1770.
„ *brachyscy'phus* (short-cupped). Pale red. Pondoland. 1886.
„ *breviflo'rus* (short-flowered). See ANOIGANTHUS BREVIFLORUS.
„ *ca'rneus* (flesh-coloured). 1. Flesh. August.
„ *colli'nus* (hill). ½. Crimson. June. 1816.
„ *Galpi'ni* (Galpin's). Bright red. Transvaal. 1892.
„ *heli'ctus* (spirally twisted). White, striped reddish-brown. S. Africa. 1839.
„ *Hutto'ni* (Hutton's). Pale red. S. Africa. 1864.
„ *hy'bridus* (hybrid). Garden hybrid. (*C. sanguineus flammeus* × *Vallota purpurea.*) 1885.
„ *inæqua'lis* (unequal). Coral-red, erect. S. Africa. 1905.
„ *interme'dius* (intermediate). Garden hybrid. (*C. Mackenii* × *angustifolius.*) 1893.
„ *Juno'dii* (Junod's). Cinnabar, tipped yellow. Transvaal. 1907.
„ *lute'scens* (yellow). Yellow. S. Africa. 1863.
„ „ *Coope'ri* (Cooper's). Flowers more freely.
„ *Macke'nii* (Macken's). Pure white. Winter and spring. Natal. 1868.
„ *Maco'wani* (Macowan's). Bright scarlet. S. Africa. 1875.
„ *O'Brie'ni* (O'Brien's). Bright scarlet. S. Africa. 1894.
„ *obli'quus* (twisted-*leaved*). 2. Green, orange. June. 1774.
„ *odo'rus* (sweet-scented). ½. Crimson. June. 1818.
„ *pa'llidus* (pale). 1. Pink. June. 1822.
„ *parviflo'rus* (small-flowered). Bright scarlet. S. Africa. 1891.
„ *sangui'neus* (blood-red). Bright red. S. Africa. 1860.
„ „ *glaucophy'llus* (glaucous-leaved). Orange-red. Leaves glaucus. 1905.
„ *smithia'nus* (Smithian). White, striped red-brown. Kaffraria. 1876.
„ *spira'lis* (spiral-*leaved*). 1. Scarlet. June. 1790.
„ *stria'tus* (streaked). See C. ANGUSTIFOLIUS STRIATUS.
„ *Tu'ckii* (Tuck's). Yellow, blood-red. S. Africa. 1884.
„ *uniflo'rus* (one-flowered). White, with red-brown stripes. Autumn and winter. S. Africa.
„ *ventrico'sus* (swollen). See C. ANGUSTIFOLIUS VENTRICOSUS.
„ *vitta'tus* (striped). White, striped red-brown. S. Africa.

CYRTO'CERAS FLORIBU'NDUM and **C. REFLE'XUM.** See HOYA MULTIFLORA.

CYRTOCHI'LUM. (From *kurtos*, curved, or concave, and *cheilos*, a lip; the form of the labellum, or lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Mostly now referred to Oncidium.)

Stove orchids. On blocks of wood, with moss and sphagnum fastened over their roots. Summer, moist temp., 60° to 90°; winter, 55° to 60°; rather dry.

C. bictonie'nse (Bicton). See ODONTOGLOSSUM BICTONIENSE.
„ *citri'num* (citron). See ONCIDIUM CONCOLOR.
„ *fi'lipes* (thread-stalked). See ONCIDIUM GRAMINIFOLIUM.
„ *flave'scens* (straw-coloured-*flowered*). See MILTONIA FLAVESCENS.
„ *graminifo'lium* (grass-leaved). See ONCIDIUM GRAMINIFOLIUM.
„ *leucochi'lum* (white-lipped). See ONCIDIUM LEUCOCHILUM.
„ *macula'tum* (spotted). See ONCIDIUM MACULATUM and varieties.
„ *micra'nthum* (small-flowered). See ONCIDIUM MICRANTHUM.
„ *mystaci'num* (whiskered). See ODONTOGLOSSUM MYSTACINUM.
„ *stella'tum* (starry-*flowered*). See MILTONIA FLAVESCENS.

CYRTODEI'RA. See EPISCIA.

CYRTOGO'NIUM. (From *kurtos*, curved, and *gonu*, a knee; referring to the creeping stems, or rhizomes. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. These are species of Acrostichum.)

Stove Ferns, with brown spores. Divisions; peat and loam. Summer temp., 60° to 80°; winter, 60° to 55°.

C. costa'tum (ribbed). July. Java.
„ *crispa'tulum* (curled). May. E. Ind.
„ *diversifo'lium* (various-leaved). May. E. Ind.
„ *flagelli'ferum* (rod-bearing). E. Ind. 1825.
„ *lacinia'tum* (jagged-*leaved*). May. Isle of Leyte.
„ *punctula'tum* (small-dotted). May. Java.
„ *repa'ndum* (waved). May. E. Ind.
„ *sca'ndens* (climbing). May. E. Ind.
„ *serratifo'lium* (saw-leaved). May. E. Ind.
„ *sinuo'sum* (crooked). May. Isle of Luzon.
„ *subcrena'tum* (slight-scolloped). May. E. Ind.
„ *vi'rens* (green). May. Java.

CYRTOMIPHLE'BIUM. (From *kurtos*, curved, and *phlebs*, a vein; referring to the disposition of the veins in the leaves. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.) Now referred to Polypodium.

C. decu'rrens (leaf-bordered-*stemmed*). See POLYPODIUM DECURRENS.
„ *ni'tidum* (shining). See POLYPODIUM LUCIDUM.

CYRTO'MIUM. See ASPIDIUM.

CYRTOPE'RA. (From *kurtos*, curved, and *pera*, a small sack; alluding to the sack-like appendage to the labellum, or lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Galeandra.)

Stove orchids. Root division; peat, rotten wood, and potsherds.

C. fla'va (yellow). 3. Yellow. June. E. Ind. 1831.
„ *flave'scens* (yellowish). Pale yellow. June. Mexico. 1830.
„ *flexuo'sa* (flexuous). White, with purple spots, and yellow blotch. E. Trop. Africa.
„ *papillo'sa* (nippled). Yellow, purple-brown. Natal. 1893.
„ *plantagi'nea* (plantain-like). Green, white, bluish-green. Madagascar. 1882.
„ *plica'ta* (plaited-*leaved*). India. 1840.
„ *Regnie'ri* (Regnier's). Flowers large, yellow. Cochin-China. 1886.
„ *sangui'nea* (blood-red). Dark red. E. Ind.
„ *squa'lida* (dirty-coloured). Malaya.
„ *Woodfo'rdii* (Woodford's). Pink. September. S. Amer. 1819.

CYRTOPO'DIUM. (From *kurtos*, curved, and *pous*, *podos*, a foot; referring to the form of the labellum, or lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Divisions; peat, sphagnum, and broken pots; plants raised above the pots, or suspended in shallow baskets. Summer temp., 60° to 90°; winter, 55° to 60°.

C. Ali'ciæ (Alicia's). Green, with brown spots; lip white, crimson spotted. Brazil.
„ *Anderso'nii* (Anderson's). 2. Yellow. April. St. Vincent. 1804.
„ *cardiochi'lum* (heart-lipped). See C. ANDERSONII.
„ *crista'tum* (crested). British Guiana.
„ *flave'scens* (yellow). 3. Yellow. Venezuela.
„ *fla'vum* (yellow). 2. Yellow. 1831.
„ *glutini'ferum* (clammy). Yellow. S. Amer.
„ *pa'lmifrons* (palm-leaved). Lemon, spotted rose-pink. Brazil. 1901.
„ *plantagi'neum* (plantain-like). Madagascar.
„ *puncta'tum* (spotted). 3. Yellow, red. April. Brazil.
„ *saintlegeria'num* (Saintlegerian). Yellow, spotted brown. Paraguay. 1885.
„ *sangui'neum* (blood-red). Red-brown, rosy. Sikkim. 1875.
„ *vire'scens* (greenish). 4. Pale yellow, blotched red. Brazil.
„ *Wilmo'rei* (Wilmore's). See C. PUNCTATUM.
„ *Woodfo'rdii* (Woodford's). See CYRTOPERA WOODFORDII.

CYRTOSPE'RMA. (Derived from *kurtos*, curved, and *sperma*, a seed; the seeds being curved. Nat. ord. Araceæ.)

Perennial herbs for the stove. Offsets and seeds. Fibrous loam, peat, and sand.

C. congole'nse (Congolese). Seems to be *Anchomanes dubius*. Congo Free State. 1900.
„ *fe'rox* (spiny). Greenish-white. Petioles and scapes prickly. Borneo. 1892.
„ *Johnsto'ni* (Johnston's). Leaves with red veins. Solomon Isles. 1875.
„ *matrieffia'num* (Matrieffian). Sumatra. 1884.
„ *senegale'nse* (Senegalese). 5 to 12. Pale green, with maroon bands. Upper Guinea. 1898.

CYRTO'STACHYS. (From *kurtos*, curved, and *stachus*, a spike; in reference to the curved inflorescence. Nat. ord. Palmaceæ.)

Stove Palms. For culture, see PALMS.

C. La'kka (Lakka). Malaya.
„ „ *singapore'nsis* (Singapore). Singapore.
„ *Re'nda* (Renda). Sumatra.
„ „ *duvivieria'num* (Duvivierian). Stems and leaf-stalks bright orange-red. Malaya. 1901.

CYSTACA'NTHUS. (From *kustos*, a bladder, and Acanthus; in reference to the inflated flowers. Nat. ord. Acanthaceæ.)

An evergreen stove herb, flowering in winter. Cuttings in a close case in spring or summer, giving bottom-heat. Loam, fibrous peat, and sand.

C. tu'rgida (inflated). 1. White, veined light rusty brown. Cochin China. 1869.

CYSTO'PTERIS. (From *kustos*, a bladder, and *pteris*, a fern. Nat. ord. Filices.)

Slender growing, hardy ferns for moist, shady positions on the rockery.

C. alpi'na (alpine). ½. Europe (England).
„ „ *re'gia* (royal). Pinnæ more finely divided.
„ *bulbi'fera* (bulb-bearing). Fronds 2–3 times divided. N. Amer. 1638.
„ *fra'gilis* (fragile). 1. Frond 2–3 times divided. Britain.
„ „ *denta'ta* (toothed). Pinnules toothed.
„ „ *dickiea'na* (Dickiean). Pinnæ overlapping.
„ „ *sempervi'rens* (evergreen). Madeira.
„ *monta'na* (mountain). Frond triangular. Europe (Scotland).
„ *te'nuis* (slender). 1. N. Amer.

CYSTO'RCHIS. (From *kustos*, a bladder, and Orchis. Nat. ord. Orchidaceæ.)

Terrestrial, stove herbs, requiring treatment similar to Neottia, or the stove species of Habenaria.

C. java'nica (Javanese). Malaya. 1862.
„ *variega'ta* (variegated). Malaya. 1862.

CY'TISUS. (From *Cythrus*, one of the Cyclades, where one of the species was first found. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

Shrubs and trees. Readily increased by seeds; choice kinds are grafted or budded upon the Laburnum; common garden-soil.

GREENHOUSE AND STOVE EVERGREENS.

C. affi'nis (related). Sicily.
„ *atlea'nus* (Attlean). See C. FRAGRANS.
„ *canarie'nsis* (Canary). 4. Yellow. Canaries. 1774.
„ *ca'ndicans* (white). White. South Europe.
„ *e'legans* (elegant). See C. FRAGRANS ELEGANS.
„ *fi'lipes* (thread-stemmed). White. March. Teneriffe. 1838.
„ *fra'grans* (fragrant). 3 to 4. Yellow. Canaries. 1835.
„ „ *e'legans* (elegant). 3. Yellow. 1821.
„ *glomera'tus* (crowded). See ERIOSEMA PARVIFLORUM.
„ *la'niger* (woolly). 2. Yellow. June. Spain. 1821. Half-hardy.
„ „ *ri'gidus* (stiff-*spined*). 6. Yellow. June.
„ *nubi'genus* (cloud-born). See C. FRAGRANS.
„ *proli'ferus* (proliferous). 2. Yellow. April. Canaries. 1779.
„ „ *a'lbus* (white). White. "Tagasaste."
„ *racemo'sus* (racemed). See C. FRAGRANS.
„ *ramosi'ssimus* (most branched). See C. CANARIENSIS.

HARDY DECIDUOUS, &c.

C. Ada'mi (Adam's). See LABURNUM ADAMI.
„ *æo'licus* (Æolian). 7. Yellow. May. Stromboli. 1836.
„ „ *flo're-ple'no* (double-flowered). White. May. Gardens.
„ „ *fo'liis variega'tis* (variegated-leaved). Yellow. May. Gardens.
„ *a'lbidus* (white). 4. White. June. Canary Islands.
„ *a'lbus* (white. *Portugal Broom*). 8. White. May. Portugal. 1752.
„ „ *incarna'tus* (flesh-coloured). 8. Flesh. May. Portugal. 1752.
„ „ *incarna'tus ma'jor* (larger). Flowers larger, vinous rose. 1875.
„ „ *lu'teus* (yellow-*flowered*). 8. Yellow. May. Gardens.
„ „ *multiflo'rus* (many-flowered). Gardens. 1888.
„ *alpi'nus* (alpine). See LABURNUM ALPINUM.
„ *Ardoi'ni* (Ardoin's). 1. Yellow. Maritime Alps. 1867.
„ *arge'nteus* (silver-*leaved*). 3. Yellow. August. France. 1739. This is *Argyrolobium linnæanum*.
„ *austri'acus* (Austrian). 3. Yellow. July. Austria. 1741.
„ *Bea'nii* (Bean's). Yellow. Garden Hybrid. (*Ardoini* × *biflorus*.) 1907.
„ *biflo'rus* (two-flowered). 3. Yellow. May. Hungary. 1760.
„ *calyci'nus* (*large*-calyxed). 2. Yellow. August. Tauria. 1820. This is *Argyrolobium calycinum*.
„ *capita'tus* (*round*-headed). 3. Yellow. July. Austria. 1774.
„ *cilia'tus* (hair-fringed). 3. Yellow. July. Carpathia. 1817.
„ *decu'mbens* (lying down). 3. Yellow. June. Europe. 1816.
„ *divarica'tus* (divaricate). See ADENOCARPUS INTERMEDIUS.
„ *elonga'tus* (long-*branched*). See C. BIFLO'RUS.
„ *falca'tus* (sickle-*shaped*). See C. HIRSUTUS.
„ *fi'lifer* (thread-bearing). Pale yellow. 1866.
„ *foliolo'sus* (leafy). See ADENOCARPUS FOLIOLOSUS.
„ *glabre'scens* (smoothish). Bright yellow. Mountains of Upper Italy. 1896.
„ *grandiflo'rus* (large-flowered). 4. Yellow. June. Portugal. 1816.
„ *Hillebra'ndtii* (Hillebrandt's). Yellow. Canary Islands. 1905.
„ *hirsu'tus* (hairy). 5. Yellow. July. South Europe. 1739.
„ „ *hirsuti'ssimus* (hairiest). Yellow.
„ *kewe'nsis* (Kew). Primrose yellow. Garden hybrid. (*Ardoini* × *albus*.)
„ *Labu'rnum* (Laburnum). See LABURNUM VULGARE and varieties.
„ *leuca'nthus* (white-flowered). 1 to 4. Pale yellow. June. Balkans. 1806.
„ *linifo'lius* (Flax-leaved). S.W. Europe.
„ *microphy'llus* (small-leaved). 2. Yellow. May. Canaries.
„ *mo'llis* (soft). 4. Yellow. June. 1818
„ *monspessula'nus* (Montpelier). White. Mediterranean region.
„ *multiflo'rus* (many-flowered). See C. HIRSUTUS and C. ALBUS.
„ *na'nus* (dwarf). 1½. Yellow. May. Levant. 1816. This is *Argyrolobium calycinum*.
„ *ni'gricans* (black-*rooted*). 3. Yellow. June. Austria. 1730.
„ „ *na'nus* (dwarf). See C. CAPITATUS.
„ *orienta'lis* (eastern). 3. Yellow. June. Asia Minor. 1818.
„ *pa'tens* (spreading). 4. Yellow. June. Portugal. 1752.
„ *poly'trichus* (many-haired). 1½. Yellow. June. Tauria. 1818.
„ *præ'cox* (early). Pale yellow. Garden hybrid (*purgans* × *albus*).
„ *procu'mbens* (procumbent). ½. June. Europe. 1775. Trailer.
„ *pu'rgans* (purging). 2. Yellow. S.W. Europe. 1886.
„ *purpu'reus* (purple-*flowered*). 2. Purple. Austria. 1792.

C. purpu'reus albiflo'rus (white-flowered). 2. White. June. Austria.
,, *pygmæ'us* (pigmy). 1. Yellow. June. Macedonia.
,, *rhodophe'na* (beautiful). 2. Yellow. May.
,, *ruthe'nicus* (Russian). See C. BIFLORUS.
,, *schipkæ'nsis* (Schipka). See C. LEUCANTHUS.
,, *scopa'rius* (*common* broom). 6. Yellow. June. Britain.
,, ,, *a'lbus* (white-*flowering*). 6. White. June. England.
,, ,, *andrea'nus* (Andrean). Yellow and crimson-brown. Normandy. 1886.
,, ,, *flo're-ple'no* (double-flowered). 6. Yellow. April. England.
,, ,, *fo'liis variega'tis* (variegated-leaved). 6. Yellow. April. Gardens.
,, ,, *pe'ndulus* (pendulous). "Weeping Broom."
,, ,, *sulphu'reus* (sulphur). Sulphur-yellow.
,, *sessiliflo'rus* (stalkless-flowered). See TEPHROSIA BREVIPES.
,, *sessilifo'lius* (sessile-leaved). 2. Yellow. South Europe. 1629.
,, *spino'sus* (spiny. *Broom*). 2. Yellow. June. South Europe. 1596. Evergreen.
,, *supi'nus* (supine). 1. Yellow. June. South Europe. 1755. Trailer.
,, *tomento'sus* (felted). This is *Argyrolobium andrewsianum*.
,, *triflo'rus* (three-flowered). 4. Yellow. June. Spain. 1640.
,, *versi'color* (variable coloured). Garden hybrid (*purpureus* × *hirsutus*).
,, *Welde'nii* (Baron Welden's). See PETTERIA RAMENTACEA.

CZA'CKIA LILIA'STRUM. See PARADISEA LILIASTRUM.

D

DABOË'CIA. (Derived from the Irish name *St. Dabeoc*. Nat. ord. Ericaceæ.)
Hardy, evergreen shrubs of dwarf habit and Heath-like aspect. Cuttings in sandy peat, under a hand-light, and layers in autumn. Sandy peat is the best medium in which to grow the plants.
D. canta'brica calycula'ta (Cambridge). See D. POLIFOLIA CANTABRICA.
,, *polifo'lia* (Polium-leaved). 1 to 2. Purple. August. Ireland. "St. Dabeoc's Heath."
,, ,, *a'lba* (white). White. Ireland.
,, ,, *atropurpu'rea* (dark-purple), 2. Dark purple.
,, ,, *bi'color* (two-coloured). White and rosy-purple.
,, ,, *canta'brica* (Cambridge). Calyx coloured, making the flowers appear double. 1891.
,, ,, *flo're-a'lbo* (white-flowered). See D. POLIFOLIA ALBA.
,, ,, *latifo'lia* (broad-leaved). Purple.
,, ,, *longifo'lia* (long-leaved). Purple.
,, ,, *na'na* (dwarf). See C. POLIFOLIA PYGMÆA.
,, ,, *pa'llida* (pale). Pale purple.
,, ,, *pygmæ'a* (dwarf). ½. Purple. Ireland.
,, ,, *taxifo'lia* (Yew-leaved). See BRYANTHUS TAXIFOLIUS.

DACRY'DIUM. (From *dakru*, a tear; referring to the resinous drops, glands, or exudations. Nat. ord. *Taxads* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Decandria*. Allied to Podocarpus and Yew.)
D. taxifo'lium is the *kakaterro* of the natives; its young branches, like those of the Norway Spruce, afford a beverage of the same qualities as spruce beer. Greenhouse evergreens. Cuttings of firm young wood in sand, under a glass; peat and loam. Summer temp., 60° to 75°; winter, 35° to 45°.
D. araucarioi'des (Araucaria-like). New Caledonia.
,, *cupre'ssinum* (cypress-like). 16. New Zealand. 1825.
,, *ela'tum* (lofty). 20. Pulo Penang. 1830.
,, *exce'lsum* (tall). See PODOCARPUS DACRYDIOIDES.
,, *Fitzgera'ldi* (Fitzgerald's). Australia.
,, *Frankli'ni* (Franklin's. *Huon Pine*). 100. Tasmania. 1844.
,, *Ma'i* (Mai). See PRUMNOPITYS SPICATA.
,, *taxifo'lium* (yew-leaved). See PRUMNOPITYS SPICATA.
,, *taxoi'des* (yew-like). A conical bush. New Caledonia.

DACTYLA'NTHES. See EUPHORBIA.

DACTYLICA'PNOS THALICTRIFO'LIA. See DICENTRA THALICTRIFOLIA.

DA'CTYLIS. (From *daktulis*, a finger's-breadth. Nat. ord. Gramineæ.)
A wild or British grass of which several variegated forms are grown in gardens.
D. glomera'ta (clustered). 2. Green. June. Britain. Cock's-foot grass.
,, ,, *au'rea* (golden). Golden-variegated.
,, ,, *eleganti'ssima* (most elegant). Silver-variegated.
,, ,, *variega'ta* (variegated). Less variegation than *D. g. elegantissima*.

DACTYLOPH'YLLUM. See GILLIA and POTENTILLA.

DADDY LONG LEGS. *Ti'pula olera'cea*.

DÆDALACA'NTHUS. (Derived from *daidaleos*, decorated, and *acanthos*, a spine; in reference to the beauty of the flowers. Nat. ord. Acanthaceæ.)
Evergreen, winter-flowering stove plants. Seeds; cuttings early in spring, inserted in sandy loam and leaf-mould, in a close case with bottom-heat, and potted on when rooted. Fibrous loam, leaf-mould, and sand.
D. macrophy'llus (large-leaved). Pale blue and violet-blue. Winter. Burma.
,, *monta'nus* (mountain). 2. Lilac, purple. March. Ceylon.
,, *nervo'sus* (nerved). 1 to 2. Bright blue. Winter. India. 1795.
,, *pa'rvus* (small). See ERANTHEMUM WATTII.
,, *stri'ctus* (erect). 1 to 2. Purple. April. India. 1818.
,, *suffrutico'sus* (subshrubby). Blue. August. E. Ind. 1824.
,, *Wa'ttii* (Watt's). See ERANTHEMUM WATTII.

DÆ'MIA. (Its Arabic name. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Eustegia.)
Stove evergreen twiners, with white flowers, blooming in July. Cuttings of firm side-shoots in sandy soil, under a glass, and in bottom-heat, in April; peat and loam, both fibrous, with a little silver sand. Summer temp., 60° to 85°; winter, 50° to 55°.
D. bi'color (two-coloured). 6. E. Ind. 1806.
,, *corda'ta* (heart-*leaved*). 10. Arabia. 1824.
,, *exte'nsa* (extended). 3. E. Ind. 1777.
,, *sca'ndens* (climbing). 10. Gambia. 1824.

DÆMO'NOROPS. (Derivation uncertain. Nat. ord. Palmaceæ.)
Stove Palms, with slender stems and spiny leaves. For cultivation, see PALMS.
D. adspe'rsus (scattered). 20. Java. 1866.
,, *calica'rpus* (beautiful fruited). Malaya.
,, *Dra'co* (Draco). 50. Malaya. 1819.
,, *fi'ssus* (split). Borneo.
,, *gra'ndis* (grand). Malaya.
,, *Hy'strix* (Hystrix). Malaya.
,, *interme'dius* (intermediate). Malaya.
,, *jenkinsia'nus* (Jenkinsian). India.
,, *lewisia'nus* (Lewisian). Penang. 1878.
,, *lo'ngipes* (long-stalked). Malaya.
,, *melanochæ'tes* (black-bristled). 150. Malaya.
,, *ni'ger* (black). Malaya. 1824.
,, *orna'tus* (adorned). Java. 1872.
,, *palemba'nicus* (Palembangian). Sumatra. 1872.
,, *periaca'nthus* (spine-encircled). Sumatra. 1872.
,, *plumo'sus* (plumose). India. 1870.
,, *trichro'us* (three-coloured). Sumatra.
,, *verticilla'ris* (whorled). Malaya.

DA'FFODIL. *Narci'ssus Pseu'do-narci'ssus*.

DA'HLIA. (Named after *Dahl*, a Swedish botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy perennial tubers. Division of the tuberous roots; cuttings when they have grown three or four inches in length, in the spring, and inserted in light, sandy soil, with a little bottom-heat, and hardened off by degrees; seeds for insuring the different species; fresh, rich, light soil. The roots, after the stems are

cut down by frost, must be taken up and plunged in dry soil.

D. arbo'rea (tree-like). Trop. Amer.
„ *Barke'riæ* (Miss Barker's). See D. VARIABILIS.
„ *Cervante'sii* (Cervantes'). See D. COCCINEA.
„ *cocci'nea* (scarlet). Scarlet. August to October. Mexico.
„ „ *aura'ntia* (orange-*coloured*). 6. Orange. October. Mexico. 1802.
„ „ *cro'cea* (saffron). 6. Yellow. October. Mexico. 1802.
„ „ *lu'tea* (yellow). 6. Sulphur. October. Mexico. 1802.
„ *croca'ta* (rusty). See D. VARIABILIS.
„ *exce'lsa* (tall). 30. Purple. Mexico. 1834.
„ „ *anemonæflo'ra* (anemone-flowered). 30. Light. September. Mexico. 1830.
„ *frustra'nea* (barren-*rayed*). See D. COCCINEA.
„ *glabra'ta* (smooth). See D. MERCKII.
„ *gra'cilis* (graceful). 4. Scarlet, yellow. October. Mexico. 1873.
„ „ *flo're-ple'no* (double-flowered). 1888.
„ „ *supe'rba* (superb). Crimson-scarlet. 1881.
„ *imperia'lis* (imperial). 8 to 12. Rose or white, yellow. October. Mexico. 1863.
„ *Juare'zii* or *Yuare'zii* (Juarez's). Crimson. August to October. Mexico. 1879. The Cactus Dahlia.
„ *lu'tea* (yellow). See D. VARIABILIS.
„ *maximilia'na* (Maximilian). 7. Mauve. Mexico.
„ *Me'rckii* (Merck's). 2 to 3. Lilac and yellow. August. to October. Mexico. 1839.
„ „ *decaisnea'na* (Decaisnean). Purple. yellow. Mexico. 1864.
„ *pinna'ta* (pinnate). See D. VARIABILIS.
„ *scapi'gera* (*long*-flower-stemmed). 2. White. June. Mexico. 1837.
„ *ste'lla-bia'nca* (white star). See D. VARIABILIS.
„ *supe'rflua* (superfluous). See D. VARIABILIS.
„ *varia'bilis* (variable). Many shades of colour. Mexico. 1789.
„ „ *viridiflo'ra* (green-flowered). Flower-head consisting of green bracts. 1886.
„ *Yuare'zii* (Yuarez's). See D. JUAREZII.

DAHLIA AS A FLORIST'S FLOWER.—The innumerable varieties in our gardens are the descendants of *D. variabilis*.

Propagation by Cuttings.—The time for striking these extends from January to April. The young shoots that spring from the tubers make the best cuttings, and are the most sure to grow; but cuttings of the young tops will strike root if care is taken not to overwater them till they form a callus preparatory to emitting roots. This is an advantage in the case of new and scarce varieties of which it is desired to get up a stock as quickly as possible. If the shoots are few or only one, two buds must be left at the base, and they will give rise to other shoots which may, in turn, be taken off and rooted. The cuttings, or slips, must be put in pots filled with light earth, with a layer of pure white sand on the surface, and placed in a gentle hotbed. If the pot of cuttings can be plunged in coal-ashes, or other material, the cuttings will strike the sooner; water very moderately and carefully, and shade from bright sun. They will strike root in a fortnight or three weeks, and should be immediately potted in 3½-inch pots, and kept close for a few days, till they make a few more roots. They may then be placed in a cold frame, shaded from the sun, and protected from frost and wet. Pot them again into 4½-inch pots, before the roots become matted, and then begin to give air daily, and keep them well watered.

By Division.—The roots may be divided from the crown downwards, taking care to have a bud or two to each division. Pot them, if too early to plant out, or plant the division out at once in their places, but not earlier than the middle of April. Harden off the plants in frames, first by giving plenty of air, then by taking the lights off during the day, and finally by standing them in a sheltered place out of doors. It is seldom safe to plant them out before the first or second week of June because of late frosts.

By Seed.—Save the seed from such double flowers as are partially fertile, having bright distinct colours and good form. Gather it as soon as ripe, and hang the heads up in a dry place. When the scales of the head turn brown, separate the seeds, dry them in the sun in the morning only, and when dry store them in a dry room. Sow them in March, in shallow pans, and transplant the seedlings singly into small pots. As soon as the frosts are passed plant them out a foot apart every way, and allow them to flower. All bad-shaped or dull-coloured throw away; there is no hope of their improving by culture. Such as have good-formed petals and bright colours, though not perfectly double, may be kept another year for a further trial; and such as are excellent should be propagated from the young tops, to preserve the kinds, as the old root might perish.

Soil.—The dahlia requires a rich, deep, friable soil; and, as the branches are heavy and brittle, a sheltered situation should be chosen, neither too low nor too high. The ground should be trenched, if it will allow it, eighteen inches or two feet deep, a good coating of well-decomposed dung spread on the surface after the trenching is completed, and immediately dug in one spit deep. Lay the soil so mixed up in slight ridges, to be levelled down just before planting. This is best done in autumn or early winter. If the soil is sandy or gravelly, it will help the Dahlias to make good growth if some well-rotted cow manure is dug into the bottom of the holes taken out for planting them.

Summer Culture.—The season for planting is as soon as there is no fear of any more frost. To grow them fine, and to obtain high colours, they should have plenty of room between each plant—five feet apart every way for the dwarf-growing kinds, and six feet for the tall ones, will not be too much. It is a good method to have the places for each marked out, by driving in the stakes in the exact places first, and then there is no danger of the stakes injuring the roots. As late frosts might possibly occur, it is safe to cover the plants at night with clean empty garden-pots of a sufficient size to cover them without touching the leaves, until all fear of frost has subsided. When the plants have obtained a considerable growth, cover the surface round each plant with some half-rotted, littery stable-dung; this will preserve them from drought, and afford nutriment when the plants are watered.

Tying is a very important operation. As soon as the plants are high enough, they should be tied to the stakes with some rather broad shreds of soft bass matting; and the side-shoots must also be secured by longer pieces of matting, to prevent the winds and heavy rains from breaking them off. It may sometimes be necessary to place three or four additional stakes at a certain distance from the central one, to tie the side-branches to. The best kind of stakes are the thinnings of larch plantations; but oak, ash, sweet chestnut or hazel stakes will also serve. Square stakes, planed and painted green are neatest, and in some districts the only ones obtainable. They should be stout, and six or seven feet long, at least in the case of the taller growing varieties. As the plants grow, if the weather is hot and dry, abundance of water should be supplied.

Protecting the Flowers.—This will be necessary if intended for exhibition. Caps of oiled canvas stretched upon a wire frame are very good for the purpose; even a common garden-pot turned upside down is no bad shelter. They may easily be suspended over each flower by being fastened to a stake, and the flower gently brought down and tied to the stake under them. The best shade, however, is a square box with a glass front, and a slit at the bottom to allow the stem of the flower to slide into it, and thus bring the flower within the box. The flower then has the advantage of light and air, and is still protected from the sun, wind. and rain.

Winter Treatment.—As soon as the autumn frosts have destroyed the tops of the plants, cut down the stems, and take up the roots immediately. If the roots come up clean out of the ground, they will only require gently drying, and may be stored at once in some place where they will be safe from frost. If the soil clings much to the tubers, these should be washed and dried, and then stowed away. The place should not only be free from frost, but from damp also, yet not so dry as to cause them to shrivel up too much. It is a good plan to have two or three of each kind struck late and kept in pots through the winter. If kept in small pots and plunged in coal cinders, sifted to take out the dust, they will not require much attention during the summer,

and tubers so grown usually keep well. The soil must be perfectly dry before they are put to rest, and no wet or frost allowed to reach them. A good place for them is to lay the pots on one side under the stage of a greenhouse. In these winter quarters they must be frequently examined, and all decaying roots or stems removed.

Types of Dahlia.—Besides the show Dahlia of the old florist's type several others have now been raised to the dignity of exhibition flowers. The show Dahlia proper is defined by size, symmetry of form, circular outline, by being perfectly double, high in the centre, with neat, compact, quilled florets, of uniform colour, or darker round the edge. Striped and mottled flowers of this type are classed as fancy Dahlias. The most popular for exhibition at the present time are the Cactus Dahlias, descended from Dahlia Juarezii, introduced from Mexico in 1879, and brought to great perfection within the last twenty years. These are distinguished by their long, pointed florets rolled back at the edges, narrow and graceful. The old forms with flat petals are now classed as decorative Dahlias, and are used for garden ornamentation for the sake of their bright colours and free-flowering habit. Pompon Dahlias have the neat, regular, and closely built flower of the show type, but are distinguished by their very small size. Single Dahlias are now exhibition flowers and are characterised by a single row of outside florets or rays, broad, rounded, overlapping, and of some bright colour or even two, besides the yellow centre.

Insects.—In the early stages of growth, the great pest to the Dahlia is the slug. Watering with clear lime-water is the best article to destroy them, or a dusting of quick-lime in dewy mornings will be useful; a circle of lime round each plant will be a good preventive, and also a carefully gathering up, very early in the morning, of these vermin will greatly reduce their numbers. When the plants are in flower, *the earwig* is almost sure to attack them, and frequently in one night will disfigure the finest and most perfect bloom, and render it unfit for exhibition. Traps must be set to catch them. Small garden-pots with a little hay or moss put in them, and then turned upside down upon the stakes, are a good trap for them. They should be examined every morning, and the insects in them destroyed. Dried bean stalks are also a good trap: place them among the branches, and the insects will creep into them as a hiding place. Also, as they feed chiefly in the night, take a lantern at that time, and examine every flower.

Preparing for Exhibition.—Cut the flowers the night before, and if they are to be conveyed a considerable distance, have a box or boxes made with watertight tin tubes securely fixed in the bottom, to hold water; pass the stem of each flower through a plug of wood with a hole in the centre, just wide enough to allow the stem to pass through it, and just thick enough to fit like a cork into the tin tube. Make the flower quite firm in the wooden plug, and let the lid of the box be so elevated as not to touch the flower.

DA'IS. (From *daio*, to heat; referring to the causticity of the bark. Nat. ord. *Daphnads* (Thymeleaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Mezereon.)

Greenhouse evergreen. Seeds sown in slight hotbed, in March; cuttings of half-ripened shoots, or of the roots, in April, in sand, under a glass, and with a little heat; peat and loam. Summer temp., 55° to 75°; winter, 40° to 45°.

D. cotinifo'lia (Cotinus-leaved). 10. White, green. June. Cape of Good Hope. 1776.

DAISY. (*Be'llis pere'nnis.*) There are many double varieties of this hardy perennial; some white, others crimson, and many variegated. A more curious variety is the Proliferous or Hen-and-Chicken Daisy. They all will flourish in any moist soil, and almost in any situation. They bloom from April to June. Propagated by divisions; the smallest fragment of root almost enables then to grow. To keep them double and fine, they require moving occasionally. Planted as an edging round the Ranunculus-bed their roots tempt the wire-worm from those of the choicer flower.

DALBE'RGIA. (Named after *Dalberg*, a Swedish botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

The wood of *D. Si'ssoo* is remarkable for its excellence. East Indian stove evergreen trees, almost all with white flowers. Cuttings of firm young shoots in March, in sand, under a glass, and in a little bottom-heat; fibrous peat and turfy loam, with a portion of sand. Summer temp., 60° to 85°; winter, 50° to 55°.

D. arbo'rea (tree). See PONGAMIA GLABRA.
,, *Barcla'yi* (Barclay's). 15. Blue. Madagascar. 1823.
,, *Dipha'ca* (Diphaca). See ORMOCARPUM SENNIODES.
,, *dominge'nsis* (St. Domingan). See LONCHOCARPUS SERICEUS.
,, *frondo'sa* (fronded). See D. LANCEOLARIA.
,, *lanceola'ria* (lance-leaved). 30. India. 1818.
,, *latifo'lia* (broad-leaved). 30. India. "Black Wood."
,, *margina'ta* (bordered). See DERRIS MARGINATA.
,, *ougeine'nsis* (Ougein). See OUGENIA DALBERGIOIDES.
,, *panicula'ta* (panicled). 30. 1811.
,, *rimo'sa* (chinky). 20. 1823.
,, *rubigino'sa* (rusty). 10. 1811.
,, *sca'ndens* (climbing). See DERRIS SCANDENS.
,, *Si'ssoo* (Sissoo). 30. 1820.
,, *spino'sa* (spiny). India.
,, *tamarindifo'lia* (tamarind-leaved). 15. 1820.
,, *Telfai'rii* (Telfair's). See MUNDULEA TELFAIRII.
,, *volu'bilis* (twining). 20. 1818.

DALEA. (Named in compliment to *Samuel Dale*, M.D., the writer of the book *Materia Medica*. Nat. ord. Leguminosæ.)

Greenhouse shrubby plants chiefly. Seeds and cuttings under a hand-light. Fibrous loam, peat, and sand for the greenhouse species.

D. alopecuroi'des (Fox-tail). 1 to 2. Pale blue. N. Amer. Hardy annual.
,, *bi'color* (two-coloured). See D. MUTABILIS.
,, *Kuhnisté'ra* (Kuhnistera). See PETALOSTEMON CORYMBOSUS.
,, *muta'bilis* (changeable). Purple, white. October. Mexico, Cuba. 1821.
,, *Muti'sii* (Mutis'). Purple. July. Mexico. 1828.

DALECHA'MPIA. (Named after *Dalechamp*, a French botanist. Nat. ord. *Euphorbiads* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 1-*Monandria*. Allied to Poinsettia.)

Stove evergreen climbers, with yellowish-green flowers. Cuttings a little dried at their base before insertion into sandy soil, under a hand-light, in April; peat and loam. Summer temp., 60° to 85°; winter, 50°.

D. brasilié'nsis (Brazilian). See D. SCANDENS.
,, *ficifo'lia* (fig-leaved). 6. July. Brazil. 1820.
,, *rœzlia'na* (Rœzlian). Rose and yellow. Mexico.
,, *sca'ndens* (climbing). 12. June. W. Ind. 1739.

DALIBA'RDA VIOLÆOI'DES. See RUBUS DALIBARDA. *D. fragarioides*. See WALDSTEINIA FRAGARIOIDES. *D. repens*. See RUBUS DALIBARDA.

DALMATIAN CAP. See TULIPA.

DAMASK ROSE. See RO'SA DAMASCE'NA.

DAMASK VIOLET. See HE'SPERIS MATRONA'LIS.

DAMASO'NIUM. (Derivation obscure. Nat. ord. Alismaceæ.)

A British aquatic which should be grown in the bog garden, the banks of a pond, or in shallow water.

D. Ali'sma (Alisma). ½. White, yellow. Britain. Syn. *D. stellatum*.

DAME'S ROCKET or **VIOLET.** See HESPERIS MATRONA'LIS.

DA'MMARA. (The Dammar Pine of New Zealand. The Kauri of the natives. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.) All the species are now referred to Agathis.)

The finest masts are now prepared from the *D. austra'lis* for our navy; it also yields a brittle, resin-like copal. Cuttings of young, ripe, firm shoots, inserted in sand, in the spring, in a gentle bottom-heat, under a

bell-glass; loam, with a little sand. Summer temp., 55° to 80°; winter, 38° to 45°.

D. austra'lis (southern. *Kauri Pine*). 200. New Zealand. 1821.
„ *loranthifo'lia* (Loranthus-leaved). 50. Malaya. 1804.
„ *Moo'rei* (Moore's). New Caledonia. 1851.
„ *obtu'sa* (blunt). New Hebrides. 1851.
„ *orienta'lis* (eastern). See D. LORANTHIFOLIA.
„ *robu'sta* (robust). N.E. Australia. 1860.
„ *vitie'nsis* (Fijian). Fiji.

DAMNACA'NTHUS. (Derived from *damnao*, to conquer, and *acanthos*, a spine; in allusion to the strong, opposite spines. Nat. ord. Rubiaceæ.)

Shrubs requiring greenhouse treatment. Cuttings in a close case, with mild, bottom-heat. Fibrous loam, peat, and sand. Summer temp., 60° to 80°; winter, 55° to 60°.

D. i'ndicus (Indian). White. India and Japan. 1889.
„ „ *ma'jor* (greater). White. Japan. 1868.
„ „ *submi'tis* (sub-mild). White. Spines nearly absent. Japan. 1868.

DAMPIE'RA. (Named after the circumnavigator, *Capt. W. Dampier*. Nat. ord. *Goodenoviads* [Goodenoviaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Scævola.)

Greenhouse herbaceous perennials, with blue flowers, from Australia. Division; and cuttings of young shoots in sand, under a glass; peat and loam. Summer temp., 55° to 75°; winter, 38° to 45°.

D. ala'ta (winged-*leaved*). May. 1842.
„ *Bro'wnii* (Brown's). ½. July. 1824.
„ *corona'ta* (crowned-*flowered*). May.
„ *cunea'ta* (wedge-*leaved*). May.
„ *fascicula'ta* (bundle-*flowered*). May. 1841.
„ *lavandula'cea* (lavender-*leaved*). 1843.
„ *linea'ris* (narrow-*leaved*). 1840.
„ *ovalifo'lia* (oval-leaved). See D. BROWNII.
„ *stri'cta* (upright). 1. July. 1814.
„ *te'res* (round-*leaved*). June.

DAMPING OFF is a name applied by gardeners to the premature decay of the stems of seedlings, and other tender plants. It is caused by a fungus, *Py'thium debarya'num*, owing to the soil and air in which they are vegetating being kept too moist or damp. Flower seedlings are especially liable to be thus affected; and, to prevent this, one third of the depth of the pot should be filled with drainage, and the soil employed, instead of being sifted, allowed to retain all moderately sized stones. The seeds should be sown very thinly, pressed down, and a little white sand be sprinkled over the surface, because this is not easily disturbed by watering, and is not a medium that retains moisture to the neck of the seedlings, where dampness most affects them. A pot of sand should be kept hot, and whenever symptoms of the disease appear, a little whilst hot sprinkled on the soil. The latter should be kept somewhat drier. In bad cases the seedlings should be pricked off as soon as they can be handled, into fresh soil.

DA'NAË. (*Danaë*, the Greek name of the Alexandrian Laurel. Nat. ord. Liliaceæ. Allied to Ruscus and Asparagus.)

A hardy, evergreen shrub, which thrives best in sheltered situations amongst other shrubs or trees in ordinary garden soil.

D. Lau'rus (Laurus). 2 to 4. Green. Greece, Asia Minor, &c. "Alexandrian Laurel."

DA'NÆA. (Named after *P. M. Dana*, who wrote on the Flora of Piedmont. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove, herbaceous ferns. Division. Fibrous peat and loam. Summer temp., 60° to 90°; winter, 48° to 55°.

D. ala'ta (winged). W. Ind. 1823.
„ *ellí'ptica* (elliptic). W. Ind. to S. Brazil.
„ *moritzia'na* (Moritzian). Colombia to Peru.
„ *nodo'sa* (jointed). Cuba and Mexico to Brazil.
„ *serrula'ta* (finely saw-edged). Colombia. 1881.

DA'PHNE. (So called after the fabled nymph of that name. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Extreme causticity is the general property of the Daphnads—the Spurge Laurel and Mezereum particularly so. Seed for most of the species, especially of the *D. Laure'ola*, or Spurge Laurel; used as a grafting stock for most of the rarer and tender kinds. As the seed is two years in vegetating, it is usual to keep it some time in sand, in a heap. *D. Cneo'rum* and other dwarf kinds, especially if at all trailing, are generally propagated by layers in summer. A close pit for grafting the finer kinds, in March or April, is an advantage. Most of them like a good proportion of sandy peat; but the deciduous *Meze'reum* prefers pure loam. The *odo'ra* and *odo'ra ru'bra* are nearly hardy in the climate of London; but farther north they require the cold pit or greenhouse.

HARDY DECIDUOUS.

D. Fortu'nei (Fortune's). See D. GENKWA.
„ *Ge'nkwa* (Genkwa). 3. Lilac to blue. February. China. 1844.
„ *Meze'reum* (Mezereum). 4. Pink. March. England.
„ „ *a'lbum* (white-*flowered*). 4. March.
„ „ *autumna'le* (autumnal). See D. MEZEREUM GRANDIFLORA.
„ „ *flo're-a'lbo-ple'no* (double white).
„ „ *grandiflo'ra* (large-flowered). 4. Red. August. Europe.
„ „ *ru'brum* (red-*flowered*). 4. Pink. March. England.

HARDY EVERGREENS.

D. alpi'na (alpine). 2. White. June. Italy. 1759.
„ *alta'ica* (Altaic). 3. White. April. Siberia. 1796.
„ *austra'lis* (southern). See D. SERICEA.
„ *blagaya'na* (Blagayan). White. March to May. Carniolia. 1872.
„ *cauca'sica* (Caucasian). Caucasus. 1871.
„ *Cneo'rum* (*garland-flower*). 1. Pink. July. Australia. 1752.
„ „ *colli'na* (hill). See D. SERICEA.
„ „ *fo'liis variega'tis* (variegated-leaved). 1. Pink. April.
„ „ *grandiflo'rum* (large-flowered). 1. Pink. April.
„ „ *Verlo'ti* (Verlot's). Dauphiny.
„ *Dauphi'ni* (Dauphin's). Garden hybrid (*sericea* × *odora*).
„ *glomera'ta* (clustered). Lilac-purple. Asia Minor, Caucasus. 1891.
„ *Gni'dium* (Gnidium). 2. White. July. Spain. 1597.
„ *houttea'na* (Houttean). See D. LAUREOLA PURPUREA.
„ *jezoe'nsis* (Jezoan). Yellow. Japan. 1866. Fragrant.
„ *Laure'ola* (*Spurge*-laurel). 6. Green. February. Britain.
„ „ *Philippi* (Philipp's).
„ „ *purpu'rea* (purple). Leaves purple.
„ *Maze'lii* (Mazel's). White. Japan. 1872.
„ *neapolita'na* (Neapolitan). See D. SERICEA.
„ *oleoi'des* (olive-like). 2. White. Crete. 1815.
„ „ *elegantí'ssima* (most elegant). Leaves edged white. 1870.
„ *petræ'a* (rock). Purple or rose. March. Tyrol.
„ *po'ntica* (Pontic). 4. Green, yellow. April. Pontus. 1759.
„ „ *fo'liis variega'tis* (variegated-leaved). 1. Pink. August. Pontus.
„ *pube'scens* (downy). 3. Yellow. April. Austria. 1810.
„ *rupe'stris* (rock). See D. PETRÆA.
„ *salicifo'lia* (willow-leaved). See D. CAUCASICA.
„ *seri'cea* (silky). 2. White. April. South Europe. 1752.
„ *stria'ta* (streaked). 2 Purple. May. Switzerland. 1819.
„ *Ta'rton-rai'ra* (Tarton-raira). See THYMELÆA TARTONRAIRA.
„ *Thymela'a* (*Wild Olive*). See THYMELÆA SANAMUNDA.
„ *tomento'sa* (shaggy). See THYMELÆA TARTONRAIRA.
„ *viridiflo'ra* (green-flowered). See WIKSTRŒMIA INDICA.

GREENHOUSE EVERGREENS, &C.

D. Auckla'ndii (Lady Auckland's). 2. Himalayas. 1841. Stove.
„ *cannabi'na* (Hemp-like). India. "Paper Daphne."
„ *chine'nsis* (Chinese). See D. ODORA.
„ *i'ndica* (Indian). See D. ODORA.
„ *japo'nica* (Japan). See D. ODORA.

D. odo'ra (sweet-scented). 3. Pink, white. July. China and Japan. 1771.
,, ,, *ru'bra* (red). 4. Pink. April. China. 1831.
,, ,, *variega'ta* (variegated). 4. White. October. Japan. 1800.
,, *papyra'cea* (paper). See D. CANNABINA.
,, *tinifo'lia* (Tinus-leaved). See DAPHNOPSIS TINIFOLIA.

DAPHNIPHY'LLUM. (From *Daphne*, and *phullon*, a leaf; the leaves resembling those of a Daphne. Nat. ord. Euphorbiaceæ.)
Hardy, evergreen shrubs, with the aspect of Rhododendrons. Seeds; layers. Ordinary garden soil.
D. macro'podum (large stalked). Green. China and Japan. "Sioumi." Syn. *D. glaucescens*.
,, ,, *co'ncolor* (uniformly coloured).
,, ,, *jezoe'nsis* (Jezoan).
,, ,, *variega'ta* (variegated).

DAPHNO'PSIS. (From *Daphne*, and *opsis*, resemblance; the leaves resembling those of some species of Daphne. Nat. ord. Thymeleaceæ.)
Greenhouse, evergreen shrub. For culture, see DAPHNE.
D. tinifo'lia (Tinus-leaved). 6. Jamaica. 1773. Stove.

DA'REA. (Named after *Dar*, a botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. These are properly species of Asplenium.)
Stove Ferns, requiring the same treatment as Cænopteris.
D. ala'ta (winged). Brown. July. W. Ind.
,, *bulbi'fera* (bulb-bearing). 1. Brown. June. New Zealand. 1820.
,, *cicuta'ria* (Cicuta-like). 1. Brown. June. W. Ind. 1820.
,, *diversifo'lia* (various-leaved). 2. Brown. March. New Zealand. 1831.
,, *myriophy'lla* (thousand-leaved). See D. RHIZOPHYLLA MYRIOPHYLLA.
,, *rhizo'phora* (root-bearing). 1. Brown. July Jamaica. 1793.
,, *rhizophy'lla* (rooting-leaved). ½. Brown. June. N. Amer. 1680.
,, ,, *myriophy'lla* (thousand-leaved). Frond broader, more divided.
,, *rutæfo'lia* (rue-leaved). Brown. July. W. Ind.
,, *sca'ndens* (climbing). Brown. July. Isle of Leyte.
,, *vivi'para* (viviparous). 1. Brown. June. Mauritius. 1820.

DARLINGTO'NIA. (Named in compliment to *Dr. Darlington*, an American botanist. Nat. ord. Sarraceniaceæ.)
A nearly hardy Pitcher Plant allied to Sarracenia and requiring similar cultural treatment. In the milder parts of the south and west it will live out on a damp spot in the rockery, especially if covered with a bell-glass or hand-light. Division. Peaty soil.
D. califo'rnica (Californian). 1. Green, yellow, red-brown, April. California. 1861.

DARNEL. LO'LIUM TEMULE'NTUM.

DARWI'NIA. (Named after *Dr. Darwin*, author of *The Botanic Garden*. Nat. ord. *Fringe-myrtles* [Myrtaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Includes Genetyllis.)
Greenhouse evergreens, from Australia. Cuttings of young shoots in sand, under a bell-glass; peat and loam, both fibrous, and with sand. Summer temp., 55° to 75°; winter, 38° to 45°.
D. citriodo'ra (citron-scented). Purple. May. Australia.
,, *fascicula'ris* (fascicled). 29. Red. June. 1820.
,, *fimbria'ta* (fringed). Bracts rosy, large. June. Australia. 1864.
,, *hookeria'na* (Hookerian). Bracts crimson. June. Australia. 1864.
,, *macroste'gia* (large-bracted). Red and white bracts very large. June. Australia. 1867.
,, *pinifo'lia* (pine-leaved). Purple. May. Australia.
,, *taxifo'lia* (yew-leaved). 29. White. June. 1824.
,, *thymoi'des* (thyme-like). Purple. May. Australia.

DASYLI'RION. (From *dasus*, thick, and *lirion*, a lily. Nat. ord. Liliaceæ.)
Warm and dry greenhouse evergreen plants. Seeds and offsets. Sandy loam, with a little peat and good drainage. Keep rather dry in winter.
D. acro'trichum (point-haired). 6 to 10. Mexico. 1851.
,, *glaucophy'llum* (glaucous-leaved). 12. White. Mexico. 1846.
,, *glau'cum* (glaucous). See D. GLAUCOPHYLLUM.
,, *gra'cile* (slender). See D. ACROTRICHUM.
,, *graminifo'lium* (grass-leaved). 6 to 8. White. Mexico. 1835.
,, *hartwegia'num* (Hartwegian). See D. HOOKERI.
,, *Hooke'ri* (Hooker's). Pale purple. Mexico. 1846.
,, *longifo'lium* (long-leaved). See NOLINA LONGIFOLIA.
,, *Palme'ri* (Palmer's). See NOLINA PALMERI.
,, *quadrangula'tum* (four-angled). 5. Flowers small. Mexico. 1887.
,, *serratifo'lium* (saw-leaved). Mexico.
,, *Wheele'ri* (Wheeler's). Mexico.

DASYSTE'MON CALYCI'NUM. See CRASSULA CALYCINA.

DASYSTO'MA. See GERARDIA.

DATE PALM. *Phœ'nix dactyli'fera.*

DATE PLUM. *Diospy'ros Ka'ki.*

DATI'SCA. (Derivation obscure. Nat. ord. Datiscaceæ.)
Hardy, herbaceous perennial of no great beauty. Ordinary soil.
D. cannabi'na (Hemp-like). 4. Green. July. Orient, Himalayas. 1739.

DATU'RA. Thorn Apple. (From its Arabic name, *Tatorali*. Nat. ord. *Nightshades* [Solanaceæ]. Linn. *Pentandria*, 1-*Monogynia*. Allied to Solandra.)
Violent narcotic principles pervade this order, the seeds being the most powerful. Annuals by seeds in hotbed, in March, and either potted and bloomed in the greenhouse, or transferred to a rich, sheltered border in the garden. Evergreen shrubs, by cuttings any time in spring or summer, in light soil, in a little heat, with a hand-light over them; rich, fibrous loam; do well in a sheltered border in summer, and may either be protected there, or removed to a shed or house where the temperature will not fall below 35° to 40° in winter.

HARDY ANNUALS.

D. a'lba (white-*flowered*). See D. FASTUO'SA ALBA.
,, *ceratocau'la* (horn-stalked). 2. White. August. S. Amer. 1805.
,, *fastuo'sa* (proud). 3. Purple. August. Egypt. 1629.
,, ,, *a'lba* (white).
,, ,, *flo're-ple'no* (double-flowered).
,, *fe'rox* (fierce). 3. White. August. China. 1731.
,, *frutico'sa* (shrubby). See D. METEL.
,, *guayaquile'nsis* (Guayaquil). See D. METEL.
,, *hu'milis* (dwarf). See D. FASTUOSA.
,, *ine'rmis* (unarmed). 2. White. July. Abyssinia. 1710.
,, *læ'vis* (smooth-*fruited*). See D. INERMIS.
,, *Me'tel* (Metel). 2. White. July. Asia and S. Amer. 1596.
,, *murica'ta* (muricated). See D. FASTUOSA.
,, *quercifo'lia* (oak-leaved). Lilac. July. Mexico. 1824.
,, *Stramo'nium* (Stramonium). 3. White. August. England.
,, ,, *fla'va* (yellow). Sulphur. August.
,, *Ta'tula* (Tatula). 3. Blue. August. N. Amer. 1629.
,, ,, *gigante'a* (giant).

GREENHOUSE EVERGREENS.

D. arbo'rea (tree-like). 8 to 12. White. S. Amer.
,, ,, *au'rea* (golden). Golden yellow. Chili. 1893.
,, *bi'color* (two-coloured-*corolla*). See D. SANGUINEA.
,, *ca'ndida* (white-*stalked*). See D. ARBOREA.
,, *chlora'ntha* (green-flowered). 10. Greenish-yellow. May.
,, ,, *flo're-ple'no* (double-flowered). Yellow. 1845.
,, *cocci'nea* (scarlet). Scarlet, large and bright. Colombia. 1876.
,, *corni'gera* (horn-bearing). 10. White. July. Mexico. 1844.
,, ,, *flo're-ple'no* (double-flowered). 10. White. July. 1846.

D. Cornuco'piæ (horn of plenty). See D. FASTUOSA.
„ *floribu'nda* (many-flowered). Orange. June. S. Amer. 1838.
„ *Gardne'ri* (Gardner's). See D. SUAVEOLENS.
„ *Kni'ghtii* (Knight's). See D. SUAVEOLENS KNIGHTII.
„ *lu'tea* (yellow-*flowered*). 20. Yellow. September.
„ *metelo'des* (Metel-like). 4. White. July. N.W. Amer. 1856.
„ *sangui'nea* (blood-red). 20. Scarlet. August. S. Amer. 1833.
„ „ *fla'va* (yellow). Yellow. Quito.
„ *suave'olens* (sweet-scented). 15. White. August. Peru. 1733.
„ „ *Kni'ghtii* (Knight's). Double white.
„ *Wagma'nni* (Wagmann's). See D. FASTUOSA.
„ *Wri'ghtii* (Wright's). See D. METELOIDES.

DAUBENTO'NIA. (Named after *M. Daubenton*, a naturalist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Sesbania.)

Stove evergreen shrubs. Cuttings of ripened young shoots in sand, in a close case, with bottom-heat; loam and peat, open and fibrous, with a little sand. Summer temp., 60° to 85°; winter, 50° to 55°.

D. longifo'lia (long-leaved). See SESBANIA CAVANILLESII.
„ *puni'cea* (red). See SESBANIA PUNICEA.
„ *tripetia'na* (Mr. Tripet's). See D. TRIPETII.
„ *Tripe'tii* (Tripet's). Scarlet, orange. September. Argentina. 1840.

DAUBE'NYA. (In honour of *Dr. Daubeny*, professor of botany in the University of Oxford. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Massonia.)

Pretty yellow-flowering-bulbs, from the Cape of Good Hope, which will succeed in a warm border in front of a greenhouse, if protected from frost in winter; and also in pots, in rich, sandy loam, either in a greenhouse or frame, and to be kept quite dry while at rest; offsets.

D. au'rea (golden-*flowered*). ½. June. 1832.
„ *fu'lva* (tawny). ½. 1836.

DAU'CUS. Carrot. (From *daucus*, a carrot. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

The cultivated species is a white-flowered hardy biennial; but there are others, biennials and annuals, mere weeds. Seeds in March or April; deep, light, well-pulverised soil. See CARROT.

D. Caro'ta (*common* carrot). 3. June. Britain.
„ „ *aura'ntia* (*long*-orange). 3. June.
„ „ *horte'nsis* (*yellow*-garden). 3. May.
„ „ *præ'cox* (early-*horn*). 3. June.
„ *Gingi'dium* (Gingidium). Europe, N. Africa.
„ *grandiflo'rus* (large-flowered). Europe, &c.
„ *gu'mmifer* (gum-bearing). Europe.
„ *hi'spidus* (hispid). S. Europe.
„ *mari'timus* (maritime). See D. GUMMIFER.
„ *monta'nus* (mountain). 1. White. Venezuela. 1870.
„ *murica'tus* (warted). Mediterranean Region.
„ *pusi'llus* (dwarf). N. Amer.
„ *setulo'sus* (finely bristly). Italy, Greece.

DAVA'LLIA. Hare's-foot Fern. (Named after *E. Davall*, a Swiss botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

The rhizomes or creeping stems of this Fern, clothed with a light-brown down, when without leaves look much like a hare's foot. Greenhouse and stove Ferns. Divisions and severing the roots, and by spores; peat and loam. Summer temp., 60° to 90°; winter, 45° to 55°.

D. acule'ata (prickly). Stem and rachis flexuous, spiny, climbing. W. Ind.
„ *affi'nis* (related). India, Polynesia, &c.
„ *alpi'na* (alpine). Malaya, &c.
„ *angusta'ta* (narrow). Trop. Asia.
„ *assa'mica* (Assamese). Bhotan.
„ *brachyca'rpa* (short-fruited). New Hebrides. 1883. Evergreen.
„ *bulla'ta* (blistered). 1. Trop. Asia.
„ „ *Marie'sii* (Maries'). Japan. 1880.
„ *calve'scens* (becoming bald). See D. MARGINALIS.
„ *canarie'nsis* (Canary). 1½. June. Canaries. 1699.
„ *chærophy'lla* (chervil-leaved). E. Ind.
D. cilia'ta (ciliated). Philippines.
„ *concavade'nsis* (Concavado). 1. Brazil. 1823.
„ *conci'nna* (neat). Trop. Africa and Amer.
„ *disse'cta* (dissected). Java. 1855.
„ *divarica'ta* (divaricate). Malaya.
„ *e'legans* (elegant). 1. June. Australia, Trop. Asia. 1824.
„ „ *ela'ta* (tall). Strong growing variety.
„ „ *fla'ccida* (feeble). Slender, finely-cut.
„ „ *polyda'ctyla* (many-fingered). Fronds crested. 1882.
„ *ferrugi'nea* (rusty). Madagascar. 1887.
„ *fijie'nsis* (Fijian). 1 to 2. Fiji. 1879.
„ „ *ma'jor* (larger). Fronds finely cut. Fiji. 1879.
„ „ *plumo'sa* (plumy). 2 to 3. Fronds cut into very narrow segments. Fiji. 1882.
„ *fla'ccida* (feeble). See D. ELEGANS FLACCIDA.
„ *fœnicula'cea* (Fennel-leaved). 2. Fronds finely cut. Fiji. 1889.
„ *fumarioi'des* (fumaria-like). August. W. Ind. 1828.
„ *gibbero'sa* (swollen-*rooted*). 2. June. Polynesia. 1825.
„ *griffithia'na* (Griffithian). Fronds bluish-green. Himalaya. 1882.
„ *hemi'ptera* (half-winged). See D. REPENS.
„ *heterophy'lla* (various-leaved). Trop. Asia.
„ *hirsu'ta* (coarsely hairy). Japan.
„ *hi'rta* (hairy). Tropical and subtropical Asia.
„ „ *crista'ta* (crested). Pinnæ crested.
„ *imme'rsa* (immersed). Tropical and subtropical Asia.
„ *khasya'na* (Khasyian). See D. STRIGOSA.
„ *kunzea'na* (Kunzean). See NEPHROLEPIS DAVALLIOIDES.
„ *Lindle'yi* (Lindley's). See D. SOLIDA LINDLEYI.
„ *lonchiti'dea* (Lonchitis-like). See D. PLATYPHYLLA.
„ *Lorrai'nei* (Lorraine). Malaya.
„ *lu'cida* (shining). See D. SOLIDA.
„ *margina'lis* (marginal). Trop. Asia.
„ *Marie'sii* (Maries'). See D. BULLATA MARIESII.
„ *membranulo'sa* (membranous). E. Ind.
„ *moorea'na* (Moorean). See D. PALLIDA.
„ *multidenta'ta* (many-toothed). Himalaya.
„ *No'væ-zeala'ndiæ* (New Zealand). New Zealand.
„ *orna'ta* (adorned). See D. SOLIDA ORNATA.
„ *pa'llida* (pale). 2. Malaya and Polynesia. 1869.
„ *pa'rvula* (very small). ½. Malaya. 1868.
„ *pectina'ta* (comb-like). Trop. Polynesia.
„ *peda'ta* (pedate). Tropical and subtropical Asia.
„ *pentaphy'lla* (five-leaved). April. Singapore.
„ *pinn'ata* (pinnate). E. Ind.
„ *platyphy'lla* (broad-leaved). Malaya.
„ *polya'ntha* (many-spored). See D. DIVARICATA.
„ *polypodioi'des* (Polypody-like). See D. SPELUNCÆ.
„ *pulche'lla* (pretty). May. Philippines.
„ *pu'lchra* (beautiful). Himalaya.
„ *pycnoca'rpa* (dense-fruited). See D. PENTAPHYLLA.
„ *pyxida'ta* (box-like). ½. June. N. S. Wales. 1808.
„ *re'pens* (creeping). E. Ind. 1869.
„ *retu'sa* (abrupt-ended). See LINDSAYA RETUSA.
„ *rhomboi'dea* (diamond-shaped). Tropical and subtropical Asia.
„ *rubigino'sa* (rusty). Trop. Amer.
„ *sca'bra* (rough). See D. MARGINALIS.
„ *so'lida* (solid). July. Isle of Luzon. 1844.
„ „ *Lindle'yi* (Lindley's). Segments narrow.
„ „ *orna'ta* (adorned). Fronds broader.
„ „ *Vei'tchii* (Veitch's). China. 1882.
„ *Spelu'ncæ* (Mrs. Spelunca's). Tropics everywhere.
„ *strig'osa* (stiffly-hairy). 1 to 3. Tropical and subtropical Asia.
„ „ *rhomboi'dea* (diamond-shaped). Larger, more deeply cut.
„ *tenuifo'lia* (slender-leaved). July. Isle of Luzon.
„ *tricho'sticha* (orderly-haired). See D. SPELUNCÆ.
„ *truffautia'na* (Truffautian). Under surface of fronds like the upper. 1895.
„ *Tyerma'nni* (Tyermann's). China. 1871.
„ *vesti'ta* (clothed). Java and Ceylon.
„ *villo'sa* (woolly-haired). See D. MARGINALIS.

DAVI'DIA. (Named after *Abbé David*, the discoverer. Nat. ord. Cornaceæ.)

Deciduous trees, notable for the large white bracts (sometimes 7 in. long, and 4 in. wide) under the flowers. They require shelter, except in the more favoured parts of Britain and Ireland. Ordinary soil, well drained.

Cuttings of half-ripe wood, in a greenhouse, under a bell-glass.

D. involucra'ta (involucrated). 30. White. Central China. 1902.
„ *læ'ta* (smooth). Leaves yellowish-green beneath, almost smooth. Central China. 1902.
„ *vilmorinia'na* (Vilmorinian). Leaves glaucous beneath, smooth. Central China. 1902.

DAVIDSO'NIA. (Named in honour of *Mr. Davidson*, who discovered the plant. Nat. ord. Saxifragaceæ.)

A fine foliage, stove shrub of great beauty, especially when the leaves are young. Cuttings of the stem in sand, in a close case, with bottom-heat. Fibrous loam, peat, or leaf-mould and sand.

D. pru'riens (stinging). Leaves covered with bright red hairs when young. Australia. 1877. Syn. *D. pungens.*

DAVIE'SIA. (Named after the *Rev. H. Davies*, a Welsh botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Viminaria.)

Greenhouse evergreens, from Australia. Cuttings of young shoots, rather firm (stumpy side-shoots are best), in sand, under a bell-glass; seeds sown in a slight hotbed in March; peat and loam. Summer temp., 55° to 80°; winter, 38° to 45°.

D. acicula'ris (needle-leaved). 2. Yellow. June. 1804.
„ *ala'ta* (winged). 3. Yellow. June. 1818.
„ *angula'ta* (sharp-cornered). Yellow. April.
„ *corda'ta* (heart-*leaved*). 3. Yellow. June. 1824.
„ *corymbo'sa* (corymbose). 2. White, red. July. 1804.
„ *genistoi'des* (Genista-like). See D. ULICINA.
„ *glau'ca* (sea-green). See D. CORYMBOSA.
„ *incrassa'ta* (thick-*leaved*). 2½. Yellow. June. 1820.
„ *ju'ncea* (rush-like). 2½. Yellow. July. 1823.
„ *juniperi'na* (juniper-like). 2. Yellow. May. 1825.
„ *latifo'lia* (broad-leaved). 3. Yellow. June. 1805.
„ *leptophy'lla* (slender-leaved). See D. CORYMBOSA.
„ *linea'ris* (narrow-*leaved*). See D. CORYMBOSA.
„ *longifo'lia* (long-leaved). Yellow. May. 1840.
„ *mimosoi'des* (mimosa-like). See D. CORYMBOSA.
„ *peduncula'ta* (*long*-flowered-stalked). Yellow. May.
„ *physo'des* (bladdery). See D. INCRASSATA.
„ *polyphy'lla* (many-leaved). Yellow. May. 1842.
„ *pu'ngens* (pungent). See D. ACICULARIS.
„ *quadrila'tera* (four-sided-*leaved*). Yellow. May. 1840.
„ *racemulo'sa* (slightly-racemed). See UMBELLULATA.
„ *ramulo'sa* (branching). Yellow. May. 1842.
„ *reticula'ta* (netted). See PULTENÆA RETICULATA.
„ *squarro'sa* (spreading). 2½. Yellow. June. 1824.
„ *ulici'na* (furze-*leaved*). 3. Yellow. June. 1792.
„ *umbellula'ta* (small-umbelled). 2½. Yellow. May. 1816.
„ *virga'ta* (twiggy). See D. CORYMBOSA.

DA'VYA. See MERIANIA.

DAY LILY. See HEMEROCALLIS.

DEAD NETTLE. See LAMIUM.

DEADLY NIGHTSHADE. *A'tropa Bellado'nna.*

DEATH'S HEAD HAWK MOTH. *Achero'ntia A'tropos.*

DECABE'LONE. (Derived from *deka*, ten, and *belone*, a needle; in allusion to the slender appendages of the corona. Nat. ord. Asclepiadaceæ.)

Greenhouse perennials of a fleshy character, with bell-shaped yellow flowers, spotted with red. Cuttings in sand after the cuts get dry. Loam, sand, peat, finely broken bricks or potsherds.

D. Ba'rklyi (Barkly's). Yellow, red. S. Africa. 1875.
„ *e'legans* (elegant). Yellow, red. S. Africa. 1873.

DECAI'SNEA. (Named after *Joseph Decaisne*, a French botanist. Nat. ord. Berberidaceæ.)

Greenhouse shrubs with leaves 2 to 3 ft. long, and pinnate. Imported seeds. Cuttings in a greenhouse or frame, covered with a bell-glass. Good loam, leaf-mould, and sand.

D. Farge'sii (Farges's). Greenish-yellow. Western China. 1900.
„ *insi'gnis* (remarkable). 5 to 10. Green. Eastern Himalaya. 1884.

DECASCHI'STIA. (From *deka*, ten, and *schizo*, to cut; in allusion to the ten valves of the seed vessel. Nat. ord. Malvaceæ.)

A stove shrub requiring a compost of good fibrous loam, a little peat and sand. Seeds; cuttings.

D. ficifo'lia (fig-leaved). Coppery red, yellow. Burma. 1888.

DECASPE'RMUM. (From *deka*, ten, and *sperma*, a seed; seeds usually 8 to 10. Nat. ord. Myrtaceæ.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass in heat. Loam, peat, and sand.

D. panicula'tum (panicled). White. May. Burma. 1820.

DECIDUOUS. Trees and shrubs that shed their leaves on the approach of winter, and herbaceous plants that die down annually are said to be deciduous. The oak, ash, and beech are examples. Herbaceous Pæonies, Michaelmas Daisies, and perennial Sunflowers are deciduous herbs. In tropical countries, with a dry and a wet season, many trees and shrubs lose their leaves soon after the commencement of the dry period, and recommence growth with the return of the rainy season. These also are described as deciduous.

DECKE'RIA. See IRIARTEA.

DE'CODON. See NESÆA.

DECUMA'RIA. (From *decuma*, a tenth; referring to the ten valvate divisions of the calyx, and the ten cells of the capsule, or seed-pod. Nat. ord. *Syringas* [Saxifragaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Philadelphus.)

Hardy deciduous twiner, with small white flowers, requiring supports, or to be trained against a south wall in a dry, warm border of light, rich soil. Cuttings under a hand-light, in a shady place, and in sandy soil, in summer.

D. ba'rbara (bearded). 4. July. Carolina. 1785.
„ *prostra'ta* (prostrate). See D. BARBARA.
„ *sarmento'sa* (twiggy). See D. BARBARA.

DEHERAI'NIA. (Named in compliment to *Pierre Paul Deherain* of the botanic gardens of Paris. Nat. ord. Myrsinaceæ.)

A stove plant, chiefly remarkable for its smaragd green flowers about the size of a shilling. Seeds in the stove; cuttings of half-ripe wood, taken off with a heel, inserted in sand and placed in a close case with bottom-heat. Fibrous loam and peat, with sharp sand to make it porous.

D. smaragdi'na (smaragd-green). 2 to 3. Green. Mexico.

DEINA'NTHE. (From *deinos*, wonderful, and *anthos*, a flower; in allusion to the large blue flowers. Nat. ord. Saxifragaceæ.)

A tall growing herbaceous plant, allied and similar to a Hydrangea. Seed in warmth in spring; and divisions in spring. Ordinary soil.

D. bi'fida (bifid). 3 to 4. Blue. Japan; Central China. 1903.

DELABE'CHIA RUPE'STRIS. See STERCULIA RUPESTRIS.

DELA'RBREA. (Named in honour of *M. Delarbre*, a naturalist. Nat. ord. Araliaceæ.)

An ornamental, evergreen shrub for the stove, and best known under the names of *Aralia spectabilis* and *A. concinna*. Treatment as for Aralia.

D. specta'bilis (showy). Leaves pinnate or bipinnate New Caledonia. 1879.

DELI'MA. (From *delimo*, to shave or polish; referring to the hard asperities which cover the leaves, and render them fit for polishing. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Tetracera.)

Handsome stove evergreen twiners, with fine large leaves and yellow flowers, having much the aspect of small Magnolia flowers. Cuttings of fine young shoots in April, in sand, under a bell-glass, and in bottom-heat; peat and loam, both turfy and fibrous, with a little silver sand, pieces of charcoal, and good drainage. Summer temp., 60° to 85°; winter, 50° to 55°.

D. ni'tida (shining-*leaved*). 10. Trinidad. 1830.
„ *sarmento'sa* (twiggy). See TETRACERA SARMENTOSA.

DELPHI'NIUM. Larkspur. (From *delphin*, a dolphin; supposed resemblance of the spur to a dolphin's head. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 3-*Trigynia*.)

Annuals and biennials, by seeds in common soil, in the open border, in March and April; perennials, by division of the roots in spring and summer, and by seeds in March or April.

HARDY ANNUALS AND BIENNIALS.

D. Aconi'ti (Aconite-like). 1. Purple. June. Levant. 1801.
„ *Aja'cis* (Ajax). 1½. Pink. June. Europe (England). 1573.
„ „ *flo're-ple'no* (double-flowered). 1. Variegated. June. Europe. 1573.
„ *ambi'guum* (doubtful). Blue. June. Barbary. 1759.
„ *armeni'acum* (Armenian). See D. AJACIS.
„ *cardina'le* (scarlet). 3. Scarlet. August. California. Biennial.
„ *cardiope'talum* (heart-petaled). See D. HALTERATUM.
„ *cocci'neum* (scarlet). See D. CARDINALE.
„ *conso'lida* (uniting. *Branched*). 2. Blue. April. Europe.
„ „ *flo're-ple'no* (double-flowered). 1. Variegated. June. Gardens.
„ *divarica'tum* (straggling). Purple. July. Persia. 1836.
„ *Emi'liæ* (Emily's). 1½ to 2. Dark blue. California. 1894.
„ *halterа'tum* (one or other). 1. Blue. June. Mediterranean regions. 1818.
„ *Nutta'llii* (Nuttall's). 2 to 2½. White, with sky-blue spots. N. Amer. 1894.
„ *oliveri'anum* (Oliver's). 1½. Blue. June. Assyria. 1826.
„ *peregri'num* (diffuse). 1. Blue. July. Italy. 1629.
„ *pi'ctum* (painted). See D. REQUIENI.
„ *pube'scens* (downy). 2. Blue. August. Mediterranean. 1816.
„ *Requie'nii* (Requien's). 4. Blue. July. Majorca. 1824. Biennial.
„ *Staphisa'gria* (Stavesacre). 2. Light blue. July. South Europe. 1596. Biennial.
„ *tenuissimum* (slenderest-*branched*). 1. Purple. August. Greece. 1835.
„ *virga'tum* (twiggy). 1½. Blue. June. Syria. 1823.
„ *vi'ride* (green). Yellow-green, purple. Mexico. 1888. Annual or biennial.

HARDY HERBACEOUS PERENNIALS.

D. albiflo'rum (white-flowered). See D. HYBRIDUM OCHROLEUCUM.
„ *alpi'num* (alpine. *Bee*). See D. ELATUM ALPINUM.
„ *alta'icum* (Altaian). 4. Blue. July. Altaia. 1829.
„ *alti'ssimum* (tallest). 6 to 8. Blue. Himalaya.
„ *amœ'num* (pleasing). 2. Pale blue. July. Siberia. 1818.
„ *azu'reum* (azure). 16. Light blue. July. Carolina. 1805.
„ „ *a'lbum* (white). White. N. Amer. 1882.
„ *Barlo'wii* (Barlow's). Deep blue. Garden hybrid. B.R., t. 1944.
„ *brunonia'num* (Brownian). Blue, purple. June. Himalaya. 1864.
„ *califo'rnicum* (Californian). Blue. California.
„ *carolinia'num* (Carolinian). See D. EXALTATUM.
„ *cashmiria'num* (Cashmir). Deep blue. July. Cashmir. 1875.
„ „ *a'lbum* (white). White.
„ „ *Walke'ri* (Walker's). Purple, yellow, blue. Cashmir.
„ *cauca'sicum* (Caucasian). 1½. Violet. Caucasus. 1880.
„ „ *dasya'nthum* (thick-flowered). 1½ to 2. Dark blue. Manchuria. 1880.
„ *cheila'nthum* (lip-flowered). 2. Dark blue. Siberia. 1819.
„ „ *Henderso'ni* (Henderson's). Ultramarine blue. July. 1850.
„ *chine'nse* (Chinese). See D. GRANDIFLORUM.
„ *corymbo'sum* (flat-topped). 1½. Light and dark violet. Turkestan.
„ *crassicau'le* (thick-stemmed). Blue. June. Siberia. 1822.
D. crassifo'lium (thick-leaved). See D. SPECIOSUM.
„ *cunea'tum* (wedge-*leaved*). See D. ELATUM.
„ *dasyca'rpum* (thick-fruited). See D. ELATUM.
„ *deco'rum* (comely). 1½. Blue. June. California. 1838.
„ *denuda'tum* (denuded). 1½. Rosy blue. Himalaya. 1870.
„ *dictyoca'rpum* (netted-fruited). 4. Blue. July. Siberia. 1817.
„ *di'scolor* (two-coloured). 6. Blue, white. August. Siberia. 1834.
„ *ela'tum* (tall, *Common Bee*). 6. Blue. July. Europe, Himalaya. 1597.
„ „ *alpi'num* (alpine). Blue. July. Hungary. 1816.
„ *e'legans* (elegant). 1½. Blue. July. N. Amer.
„ „ *flo're-ple'no* (*common*-double-flowered). 1½. Blue. July. N. Amer. 1741.
„ *exalta'tum* (lofty). 3. Blue. July. N. Amer. 1758.
„ *fi'ssum* (cleft). See D. HYBRIDUM.
„ *flexuo'sum* (zigzag). See D. ELATUM.
„ *formo'sum* (beautiful). 3. Brilliant blue, with black petals. June, July. Armenia.
„ *glabe'llum* (smoothish). 3. Blue. June. Siberia. 1817.
„ *gra'cile* (graceful). Red. July. Spain. 1826.
„ *grandiflo'rum* (large-flowered). 2. Dark blue. July. Siberia. 1816.
„ „ *a'lbum* (white-*flowered*). 2. White. July.
„ „ *a'lbum-ple'num* (double-white). 2. White. June.
„ „ *flo're-ple'no* (double-*blue*-flowered). 2. Dark blue. June.
„ „ *pa'llidum* (pale *blue*). 2. Blue. June.
„ „ *ru'brum* (red-*flowered*). 3. Red, pink. August.
„ *hy'bridum* (hybrid). 3. Blue. July. Europe, Orient. 1794.
„ „ *ochroleu'cum* (yellow-white). White. July. Armenia. 1823.
„ *interme'dium* (intermediate). Blue. August. Silesia. 1710. These are forms of *D. elatum*.
„ „ *cærule'scens* (*downy-leaved*, sky-blue). 7. Light blue. July. 1836.
„ „ *la'xum* (loose-*spiked*). 6. Blue. May.
„ „ *leptosta'chyum* (slender-spiked). 6. Blue. May. Pyrenees.
„ „ *pa'llidum* (pale *blue*). 2. Blue. July.
„ „ *pilosi'ssimum* (hairiest). 6. Blue. July. Siberia.
„ „ *ranunculifo'lium* (ranunculus-leaved). 6. Blue. July. Pyrenees.
„ „ *sapphi'rinum* (sapphire-*blue-flowered*). 7. Blue.
„ *laxiflo'rum* (loose-flowered). 4. Blue. July. Siberia.
„ *maackia'num* (Maackian). 5. Deep blue. Amurland.
„ *Menzie'sii* (Menzies'). 2. Blue. July. N. Amer. 1826. Tuberous-rooted.
„ *mesoleu'cum* (white-middled). 3. Blue. July. 1822.
„ *monta'num* (mountain). 4. Blue. July. Switzerland. 1819.
„ „ *bracteo'sum* (bracteose). 8. Blue. June. South Europe. 1816.
„ *moscha'tum* (musk-scented). See D. BRUNONIANUM.
„ *nudicau'le* (naked-stemmed). 1 to 1½. Orange-scarlet. July. California. 1869.
„ „ *auranti'acum* (orange). Orange. 1888.
„ *occidenta'le* (western). N.W. Amer.
„ *ochroleu'cum* (yellowish-white). See D. HYBRIDUM OCHROLEUCUM.
„ *oliveria'num* (Oliverian). 1½. Blue. June. Assyria. 1826.
„ *olope'talum* (jar-petaled). Persia.
„ *orienta'le* (oriental). Europe and Orient.
„ *pa'llidum* (pale). Pale blue. June. Siberia. 1822.
„ *palmati'fidum* (hand-like-cleft). 3. Blue. July. Siberia. 1824.
„ *penta'gynum* (five-styled). 2. Blue. July. South Europe. 1819.
„ *peregri'num* (foreign). 1. Blue. July. S. Europe. 1629.
„ *pseu'do-peregri'num* (rather-diffuse). 3. Red. June. Siberia. 1823.
„ *pubiflo'rum* (downy-flowered). Siberia.
„ *pu'lchrum* (beautiful). Blue. Hybrid. 1867.
„ *puni'ceum* (scarlet-*flowered*). See D. HYBRIDUM.
„ *Pylzo'wi* (Pylzow's). 1. Violet, black. China. 1877.
„ *revolu'tum* (rolled-back). 6. Pale blue. April.
„ *sarcophy'llum* (fleshy-leaved). See D. NUDICAULE.

D. sine'nse flo're-ple'no (Chinese double-flowered). See D. GRANDIFLORUM FLO'RE-PLE'NO.
„ *specio'sum* (showy). 4. Blue. July. Caucasus. 1816.
„ *spu'rium* (spurious). See D. SPECIOSUM.
„ *sulphu'reum* (sulphur). Pale yellow. Syria. 1887.
„ *sutchuene'nse* (Sutchuen). China.
„ *sowitsia'num* (Sowitsian). 3. Yellow. Armenia. 1872.
„ *tatsiene'nse* (Tatsien). 2. Cobalt blue. China. 1896.
„ *tenui'ssimum* (most slender). 1. Purple. August. Greece. 1835.
„ *trico'rne* (three-horned). ½. Blue. July. N. Amer. 1806.
„ *trida'ctylum* (three-fingered). See D. EXALTATUM.
„ *tri'ste* (sad). 2. Blue. July. Dahuria. 1819.
„ *trolliifo'lium* (Trollius-leaved). 3 to 4. Bright blue. N.W. Amer. 1889.
„ *ucra'nicum* (Ukraine). Blue. June. Siberia. 1818.
„ *urceola'tum* (pitcher-like). See D. EXALTATUM.
„ *veluti'num* (velvety). 4. Blue. July. Italy. 1819.
„ *vesti'tum* (clothed). Blue. Himalaya.
„ *villo'sum* (long-haired). See D. ELATUM.
„ *vimi'neum* (wand-like). See D. AZUREUM.
„ *vire'scens* (greenish). See D. AZUREUM.
„ *virga'tum* (twiggy). 1½. Blue. June. Syria. 1823.
„ *Zalil* (Zalil). See D. SULPHUREUM.

DENDRO'BIUM. (From *dendron*, a tree, and *bios*, life; referring to the way these air-plants fasten on trees for support. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Dividing the plant when in a dormant state but just commencing to push out roots; turfy peat, a few broken potsherds, and fastening the plant above the surface of the pot; cutting pieces of peeled oak as long as the diameter of the pot inside at the rim; fixing the plant to this wood; and, after placing it in the pot, banking up around it with the suitable compost —prevents all danger from damp, owing to the plant sinking. Temp., 60° to 90° when growing, with moisture in the air; and when at rest, 55° to 60°, and drier.

D. acero'sum (pointed-*leaved*). Yellow, pink. Singapore. 1840.
„ *acicula're* (needle-*leaved*). Yellow, pink. Singapore. 1840.
„ *acroba'ticum* (acrobatic). Yellowish. Burma. 1871.
„ *acuminati'ssimum* (most pointed). Greenish. Manilla. 1840.
„ *acumina'tum* (long-pointed). White, tinted rose-pink. Philippines. 1909.
„ *adu'ncum* (hooked). 2. Pink. Himalaya. 1842.
„ *æ'mulum* (rival). ½. White, brown. N. Holland. 1823.
„ *aggrega'tum* (clustered). 1. Yellow. April. India.
„ „ *ma'jus* (larger). White. April. India. 1835.
„ *albi'dulum* (whitish). See D. DIODON.
„ *a'lbo-sangui'neum* (white-blood-red). 1. White, crimson. April. Moulmein.
„ *a'lbum* (white). See D. AQUEUM.
„ *alpe'stre* (rock). White. Himalayas. 1840.
„ *ama'bile* (lovely). See D. VEXANS.
„ *Amblyo'rnidis* (bower-bird's). New Guinea. 1878. The Amblyornis bird makes its nest among the stems.
„ *amboine'nse* (Amboynan). White, yellow. June. Amboyna.
„ *Ame'siæ* (Mrs. Ames's). White, tinted rose. New Guinea. 1901.
„ *amethystoglo'ssum* (amethyst-lipped). White, purple. Philippines. 1872.
„ *amæ'num* (lovely). White, yellow. June. Nepaul. 1843.
„ *a'mplum* (ample). Straw-coloured. Himalaya. 1837.
„ *a'nceps* (two-edged). Greenish-yellow. Himalaya.
„ *anname'nse* (Annamese). 1 to 1½. Buff-yellow. Annam. 1906.
„ *ano'smum* (scentless). See D. SUPERBUM ANOSMUM.
„ *Antelo'pe* (Antelope). Yellow, brown, freckled mauve. Moluccas. 1883.
„ *Aphrodi'te* (Aphrodite). Lemon, crimson. Burma. 1862.
„ *a'queum* (watery). 1. Greenish. November. Bombay. 1842.
D. Arachni'tes (Arachnites). ½. Orange-scarlet. Burma. 1874.
„ *arachnosta'chyum* (spider-spiked). Light green, violet. New Guinea. 1877.
„ *arcua'tum* (arched). White. Java. 1910.
„ *Ashwo'rthiæ* (Mrs. Ashworth's). Greenish-white. 1901.
„ *aspha'lte* (secure). Whitish. 1874.
„ *atropurpu'reum* (dark purple). Trop. Asia.
„ *atroviola'ceum* (dark violet). Greenish-white, spotted violet. New Guinea. 1890.
„ *Augu'stæ-Victo'riæ* (Augusta Victoria's). See D. VERATRIFOLIUM.
„ *auranti'acum* (orange). See BULBOPHYLLUM AURANTIACUM.
„ *au'reum* (golden-*flowered*). 1. Yellow. Ceylon. 1837.
„ „ *auranti'acum* (orange). Orange-yellow.
„ „ *Hensha'lli* (Henshall's).
„ „ *pa'llidum* (pale-golden-*flowered*). 1. Pale yellow. March. Ceylon. 1836.
„ „ *philippine'nse* (Philippines). Large, pale. 1880.
„ *auri'ferum* (gold-bearing). Yellow. China. 1843.
„ *barba'tulum* (bearded). Buff. Bombay. 1838.
„ *barba'tum* (bearded). White. Burma. 1897.
„ *Barringto'niæ* (Mrs. Barrington's). See LYCASTE BARRINGTONIÆ.
„ *bella'tulum* (small-pretty). ¼ to ½. White; lip vermilion. S.W. China, Annam. 1904.
„ *Benso'niæ* (Mrs. Benson's). Orange, white, crimson. Burma. 1867.
„ „ *xanthi'num* (yellow). White, with yellow disc on the lip. 1878.
„ *bicamera'tum* (two-chambered). Yellow, purple. August. Khasia. 1837.
„ *bicauda'tum* (two-tailed). Whitish to greenish-yellow, streaked purple. Java. 1908.
„ *bifio'rum* (two-flowered). White. Society Islands. 1844.
„ *bigi'bbum* (two-sacked). 1½. Rosy-purple. November. N.E. Australia. 1852.
„ „ *ca'ndidum* (white). White. Australia. 1878.
„ „ *supe'rbum* (superb). Deep purple. 1879.
„ *binocula're* (two-eyed). Copper, yellow, purple. E. Ind. 1869.
„ *bostrycho'des* (curled). White, with red warts. Borneo. 1880.
„ *Boxa'llii* (Boxall's). White, purple, orange. Moulmein.
„ *bracteo'sum* (bracted). Purple; lip yellow and red. New Guinea. 1886.
„ *Bra'ndtiæ* (Mrs. Brandt's). Mauve-purple. New Guinea (?). 1906.
„ *breviflo'rum* (short-flowered). See D. BICAMERATUM.
„ *brisbane'nse* (Brisbane). See D. GRACILICAULE.
„ *Broncka'rtii* (Bronckart's). Rosy-tinted, with orange disc. Indo-China. 1906.
„ *brymeria'num* (Brymerian). Yellow, orange; lip fringed. Burma. 1875.
„ „ *histrio'nicum* (actor-like). Lip not always fringed. Self-fertilising. 1888.
„ *bulleria'num* (Bullerian). Orange-yellow, with purple lines. Philippines. 1862.
„ *bulleria'num* (Bullerian). See D. GRATIOSISSIMUM.
„ *Burbi'dgei* (Burbidge's). Pale yellow. Sunda Islands. 1878.
„ *bursi'gerum* (purse-bearing). Lip with a yellow disc. Philippine Islands. 1882.
„ *cærule'scens* (bluish). See D. NOBILE.
„ *Calceola'ria* (calceolaria). 2. Orange, pink. June. India. 1820.
„ *calce'olum* (slipper-like). See D. ROXBURGHII.
„ *cambridgea'num* (Duke of Cambridge's). See D. OCHREATUM.
„ *canalicula'tum* (channelled). Pale yellow; lip spotted. N.E. Australia. 1881.
„ *ca'ndidum* (white-*flowered*). White. April. Himalaya. 1837.
„ *capi'llipes* (hair-stalked). Yellow. Moulmein. 1867.
„ „ *e'legans* (elegant). Yellow, orange. Burma. 1880.
„ *capituliflo'rum* (cluster-flowered). Greenish-white; lip bright green. New Guinea. 1901.
„ *carini'ferum* (keel-bearing). White, orange, red. Burma. 1869.
„ „ *lateri'tium* (brick-red). Lip brick-red. 1883.
„ „ *Wa'ttii* (Watt's). See D. WATTII.
„ *carno'sum* (fleshy). Java.

D. cassythoi'des (cassytha-like). See GALEOLA CASSYTHOIDES.
„ *ca'stum* (chaste). See D. MONILIFORME.
„ *ceri'num* (waxy). Light yellow, ochre, brown lines. Malaya. 1879.
„ *chlo'rops* (green-eyed). Buff. Bombay. 1842.
„ *chloro'pterum* (green-winged). Light green; lip pale red. New Guinea. 1884.
„ *christya'num* (Christyan). White, cinnabar. Siam. 1882.
„ *chrysa'nthum* (golden-flowered). 1. Yellow. February. Nepaul. 1828.
„ *chry'seum* (golden). Golden-yellow. Assam. 1888.
„ *chrysoce'phalum* (golden-headed). Golden-yellow. 1892.
„ *chrysocre'pis* (golden-slipper). Orange, yellow. Burma. 1871.
„ *chrysola'brum* (golden-lipped). See D. BRACTEOSUM.
„ *chryso'tis* (golden-eared). See D. HOOKERIANUM.
„ *chrysoto'xum* (golden-arched). 1. Yellow. March. Burma. 1845.
„ *cilia'tum* (ciliated). Green, yellow; lip fringed. Burma. 1864.
„ „ *anname'nse* (Annamese). White, purple disc. Annam. 1905.
„ *cinnabari'num* (cinnabar). Vermilion; lip ochre, purple. Borneo. 1880.
„ *clava'tum* (clubbed). Yellow. May. N. India. 1851.
„ *cobbia'num* (Cobbian). White, yellow, cinnabar-orange. 1881.
„ *cæle'ste* (celestial). Dark blue; ovary and spur purple. Philippines (?). 1897.
„ *Cælo'gyne* (Cœlogyne). Straw, purple, orange. Moulmein. 1871.
„ „ *ma'ximum* (largest). Yellow, streaked purple. 1908.
„ „ *stria'tum* (striated). Lip chocolate purple. 1908.
„ *compa'ctum* (compact). White; lip light green. Yunnan. 1904.
„ *compre'ssum* (flat-*stemmed*). See D. LAMELLATUM.
„ *convolu'tum* (folded). Light green; lip green, dark, brown. New Guinea. 1906.
„ *crassino'de* (thick-jointed). White, purple, yellow. January. Burma. 1868.
„ „ *albiflo'rum* (white-flowered). White, yellow. Burma. 1875.
„ „ *barberia'num* (Barberian). White, dark purple. 1875.
„ *crassino'di-wardia'num*. See D. MELANOPHTHALMUM.
„ *crepida'tum* (slippered). White, pink, orange. India.
„ „ *a'lbum* (white). White, with yellow blotch on lip. 1903.
„ *creta'ceum* (chalked). 1. Dark, white-coloured veins. Java. 1846.
„ „ *ro'seum* (rosy). Rose.
„ *crini'ferum* (long-haired). Yellowish. New Guinea. 1843.
„ *crispa'tum* (curled). White. E. Ind. 1838.
„ *crue'ntum* (blood-coloured). Cinnabar side lobes of lip. Malaya. 1884.
„ *crumena'tum* (pouch-*stemmed*). 1. White. April. Sumatra. 1823.
„ „ *violæodo'rum* (violet-scented). White. April. Java. 1838.
„ *crystalli'num* (crystalline). White, purple, orange. N. India. 1868.
„ *cuculla'tum* (hooded). See D. PIERARDII CUCULLATUM.
„ *cucume'rinum* (cucumber-like). ¾. White, pink. N. Holland. 1841.
„ *cumula'tum* (heaped). Lilac. September. N. India. 1855.
„ *Cunningha'mii* (Cunningham's). White. New Zealand. 1843.
„ *cu'preum* (copper-*coloured*). See D. CALCEOLARIA.
„ *Curti'sii* (Curtis's). Amethyst, white, orange. Borneo. 1881.
„ *curviflo'rum* (curved-flowered). White, suffused pink. Himalaya. 1895.
„ *cuspida'tum* (spine-pointed). See D. NATHANIELIS.
„ *cymbidioi'des* (cymbidium-like). Yellow. Java.
„ *cymbifo'rme* (boat-shaped). Straw-yellow, striped purple. Sumatra. 1898.
„ *dactyli'ferum* (date-bearing). Light ochre, brown. 1884.

D. D'Alberti'sii (D'Albertis'). White, green, red. New Guinea. 1878.
„ *dalhousiea'num* (Lady Dalhousie's). See D. PULCHELLUM.
„ *dartoisia'num* (Dartoisian). 2½. Ivory-yellow; lip violet at base. Indo-China. 1906.
„ *daya'num* (Dayan). See D. MACROPHYLLUM.
„ *Dea'rei* (Deare's). White, green. Philippines. 1882.
„ *densiflo'rum* (thickly-flowered). 1½. Orange. June. Nepaul. 1829.
„ „ *a'lbo-lu'teum* (white, yellow). White, orange. Moulmein. 1867.
„ „ *Lo'wii* (Low's). Creamy-white; lip streaked yellow. 1896.
„ „ *pa'llidum* (pale). Pale yellow. India. 1837.
„ „ *Schrœde'ri* (Schroder's).
„ *devonia'num* (Duke of Devonshire's). 1. White. yellow, pink. May. N. India. 1837.
„ *dicu'phum* (twice curved). N.E. Australia.
„ *Dio'don* (Diodon). Whitish. Ceylon. 1877.
„ *di'scolor* (two-coloured). See D. UNDULATUM.
„ *dixa'nthum* (two-parted). Yellow. Moulmein. 1866.
„ „ *stenope'talum* (narrow-petaled). 2. Burma.
„ *doreya'num* (Doreyan). New Guinea. 1888.
„ *Draco'nis* (dragon's). White. Burma and Siam. 1883.
„ *ebu'rneum* (ivory). See D. DRACONIS.
„ *Egerto'niæ* (Lady Egerton's). See D. AMŒNUM.
„ *elonga'tum* (lengthened). See D. GRACILICAULE.
„ *epidendro'psis* (Epidendrum-like). Greenish, yellow. Philippines. 1908.
„ *erythropo'gon* (red-beard). Ochre, white, crimson. Sunda Islands. 1885.
„ *erythroxa'nthum* (red-orange). Orange, purple. Philippines. 1874.
„ *eulopho'tum* (well-crested). Burma and Malaya.
„ *Fairfa'xii* (Fairfax's). White, green, purple. New Hebrides. 1889.
„ *Falcone'ri* (Falconer's). White, orange, purple. N. India. 1856.
„ „ *albi'dulum* (whitish). White, purple, yellow. India. 1876.
„ „ *gigante'um* (giant). Large blush-white, orange-yellow. N. India.
„ *Farme'rii* (Mr. Farmer's). 1½. Pale straw-yellow. March. E. Ind. 1847.
„ „ *a'lbum* (white). White, orange. Burma. 1868.
„ „ *au'reum* (golden). Golden-yellow. Moulmein. 1864.
„ *fimbria'tum* (fringed). 2. Yellow. May. Nepaul. 1823.
„ „ *ocula'tum* (eyed). Orange, brown. Nepaul.
„ *findleya'num* (Findleyan). White, tipped purple. Burma. 1877.
„ *Fitza'lani* (Fitzalan's). E. Australia.
„ *flave'scens* (yellowish). Yellow. Java. 1844.
„ *flexuo'sum* (flexuous). See D. LONGICORNU.
„ *Fœ'lschii* (Fœlsch's). N.E. Australia.
„ *formo'sum* (beautiful). White. May. Himalayas. 1837.
„ „ *gigante'um* (giant). Moulmein.
„ *Freema'ni* (Freeman's). See D. LITUIFLORUM FREEMANI.
„ *friedricksia'num* (Friedricksian). Light yellow; lip with purple blotch. Siam. 1887.
„ *fu'gax* (flying away). Yellow, purple. India. 1878. Flowers last only a few minutes.
„ *fusca'tum* (brown). See D. GIBSONII.
„ *fu'scum* (brown). 2 to 6. Reddish-brown. Australia. 1879.
„ *fusifo'rme* (spindle-shaped). White or yellow; lip purple lined. Queensland. 1885.
„ *fytchia'num* (Fytchian). White or pale rose. Burma. 1864.
„ „ *ro'seum* (rosy). Rose, crimson-purple. Burma. 1887.
„ *gallicea'num* (Gallicean). White; lip clear yellow.
„ *Gibso'nii* (Mr. Gibson's). Orange. June. N. India. 1837.
„ *glomera'tum* (clustered). Bright rose; lip orange. Moluccas. 1894.
„ *glomeriflo'rum* (clustered-flowered). Pale rose. 1895.
„ *gluma'ceum* (chaffy). See PLATYCLINIS GLUMACEA.
„ *Golds'ei* (Goldie's). Purple, purplish-violet. N. Australia. 1878.

D. Goldi'ei karthausia'num (Karthausian). Rose-purple; sepals edged white. 1910.
„ *Goldschmi'dtii* (Goldschmidt's). 1. Rose-purple. Formosa. 1909.
„ *Gou'ldii* (Gould's). White, with yellow and purple veins. Polynesia. 1867.
„ *gracilicau'le* (slender-stemmed). Yellow, with red spots. Australia.
„ *grandiflo'rum* (large-flowered). Java.
„ *gratiosi'ssimum* (most pleasing). White and rose. Moulmein. 1867.
„ *greatrixia'num* (Greatrixian). White; lip with two purple blotches. New Guinea. 1897.
„ *griffithia'num* (Griffith's). Yellow. March. Burma. 1838.
„ „ *Guibe'rtii* (Guibert's). Flowers larger, brighter. 1876.
„ *Guibe'rtii* (Guibert's). See D. GRIFFITHIANUM GUIBERTII.
„ *hainane'nse* (Hainan). S. China.
„ *hama'tum* (hooked). Pale yellow, dotted purple. Cochin China. 1894.
„ *harveya'num* (Harveyan). Deep yellow; lip fringed. Burma. 1883.
„ *Hasse'ltii* (Hasselt's). Purple. Java. 1844.
„ *hedyo'smum* (agreeable smelling). See D. SCABRILINGUE.
„ *herba'ceum* (herbaceous). S. India. 1840.
„ *hercoglo'ssum* (ward-off-lipped). Mauve; lip white, mauve purple. Malacca. 1886.
„ *heteroca'rpum* (various-seeded). See D. AUREUM.
„ *Hexade'smia* (six-bonded). Pale green and yellow. 1869.
„ *heynea'num* (Heyne's). White, green. March. Bombay. 1838.
„ *Hildebra'ndii* (Hildebrand's). Pale dull yellow; lip orange. Burma. 1894.
„ *Hi'llii* (Hill's). See D. SPECIOSUM HILLII.
„ *hi'rtulum* (slightly hairy). Bright yellow, streaked red. Burma. 1898.
„ *Hodgkinso'ni* (Hodgkinson's). Greenish-yellow, without spots. New Guinea. 1900.
„ *Hollru'ngii* (Hollrung's).
„ „ *australie'nse* (Australian). Dead white, tipped green. Queensland. 1899.
„ *hookeria'num* (Hookerian). Deep yellow, purple. Himalaya. 1870.
„ *Hu'ghii* (Hugh's). White, with orange wart on the lip. Singapore. 1882.
„ *Hutto'nii* (Hutton's). Crimson, purple, yellow. Malaya. 1869.
„ *hymenophy'llum* (membrane-leaved). Greenish. May. Java. 1844.
„ *Impe'ratrix* (Empress). New Guinea.
„ *inau'ditum* (unpublished). Pale yellow, ochre, spotted. New Guinea. 1886.
„ *inequa'le* (unequal). White, pale yellow, streaked purple. New Guinea. 1900.
„ *infla'tum* (inflated). White; lip with yellow blotch. Java. 1895.
„ *infundi'bulum* (funnel-shaped). White; lip with orange disc. Burma. 1863.
„ „ *jamesia'num* (Jamesian). See D. JAMESIANUM.
„ „ *ornati'ssimum* (most ornate). White, with brown stripes and spots. 1883.
„ *insi'gne* (remarkable). Yellowish-green. Khasia. 1837.
„ *io'nopus* (violet-stalked). Deep yellow, purple, mauve. Burma (?). 1882.
„ *jamesia'num* (Jamesian). White, red. Burma. 1869.
„ *japo'nicum* (Japanese). See D. MONILIFORME.
„ *Jenki'nsii* (Capt. Jenkin's). 1. Yellow. May. Assam. 1838.
„ *jennya'num* (Jennyan). Yellow outside, brown within. Australia (?). 1896.
„ *jerdonia'num* (Jerdonian). Red, purple. S. India. 1868.
„ *Joha'nnis* (John's). Dark brown. N.E. Australia. 1865.
„ „ *semifu'scum* (half-brown). Petals brown, the rest yellow and brown. 1883.
„ *Johnso'næ* (Mrs. Johnson's). New Guinea. 1882.
„ *ju'nceum* (rush-*leaved*). Green. Singapore. 1841.
„ *karoe'nse* (Karoan). White. New Guinea. 1910.

D. kingia'num (Capt. King's). ½. Pink spot. February. N. Holland. 1843.
„ „ *a'lbum* (white). White. Australia. 1888.
„ *Ku'hlii* (Kuhl's). 2. Pale purple. Java. 1844.
„ *Kunstle'ri* (Kunstler's). Perak.
„ *lamella'tum* (plated). Yellow. Burma. 1844.
„ *lansbergea'num* (Lansbergean). New Guinea. 1888.
„ *lasioglo'ssum* (woolly-tongued). White, purple. Burma. 1868.
„ *latifo'lium* (broad-leaved). Green. Manilla.
„ *leea'num* (Leean). White, mottled rose. New Guinea. 1891.
„ *leucochlo'rum* (white, green). White, veined red, green. Burma. 1879.
„ *leucolopho'tum* (white-crested). White. Malaya. 1882.
„ *Lichena'strum* (Lichenastrum). See BULBOPHYLLUM LICHENASTRUM.
„ *lilaci'num* (lilac). Lilac. Java. 1865.
„ *linawia'num* (Linawian). Rosy-lilac, red. China and Japan. 1824.
„ *linea'le* (lineal). 2. White, spotted purple. New Guinea. 1889.
„ *linearifo'lium* (linear-leaved). White, purple-mauve lines. Sumatra. 1884.
„ *linguæfo'rme* (tongue-*leaved*). ½. Purple. E. Australia. 1810.
„ *Lingue'lla* (little-tongue). Rose, yellow. Malaya. 1882.
„ *lituiflo'rum* (curved-flowered). Purple, white. Assam and Burma. 1856.
„ „ *ca'ndidum* (white). Assam. 1870.
„ „ *Freema'nii* (Freeman's). Assam. 1877.
„ *Loddige'sii* (Loddige's). Yellow. China. 1887.
„ *lonchophy'llum* (spear-leaved). Perak.
„ *longico'lle* (long-necked). Straw, purple. Singapore. 1840.
„ *longico'rnu* (long-spurred). 1. White. May. Nepaul. 1828.
„ *Lo'wii* (Low's). Yellow, red. Borneo. 1862.
„ „ *pleio'trichum* (many-haired). Lip without red lines. 1885.
„ *lubbersia'num* (Lubbersian). Yellowish-white, cinnabar. Burma. 1882.
„ *lu'teolum* (pale yellow). Pale yellow. Burma. 1864.
„ „ *chloroce'ntrum* (green-spurred). Primrose and green disc on lip. 1883.
„ *Macca'rthiæ* (Mrs. Maccarthy's). Rose. Ceylon. 1884.
„ *Macfa'rlanei* (Macfarlane's). Pure white, with purple lines at the base. New Guinea. 1882.
„ *Macræ'i* (Macrae's). Pink. India. 1839.
„ *macra'nthum* (large-flowered). See D. SUPERBUM.
„ *macrochi'lum* (large-lipped). Rose. Manilla. 1838.
„ *macrophy'llum* (large-leaved) of Lindley. See D. SUPERBUM.
„ *macrophy'llum* (large-leaved) of A. Rich. Lilac, purple, blood-red. New Guinea.
„ *macrosta'chyum* (large-spiked). Yellow. Ceylon and S. India.
„ *Mado'nnæ* (The Madonna's). White. New Guinea. 1903.
„ *male'olens* (evil-smelling). Green, with orange-red beak. Philippines. 1908.
„ *margina'tum* (margined). White, orange. Java. 1864.
„ „ *xanthophle'bium* (yellow-veined). See D. XANTHOPHLEBIUM.
„ *marmora'tum* (marbled). White, purple. Burma. 1875.
„ *melanophtha'lmum* (black-eyed). White, with two black spots. 1886.
„ *mesochlo'rum* (light green). See D. AMŒNUM.
„ *metikea'num* (Mettkean). Flowers like those of *D. treacherianum*. 1894.
„ *microgla'phys* (small-holed). Purple, white. Borneo. 1868.
„ *minu'tum* (small). White. March. N. Holland. 1826.
„ *mirbelia'num* (Mirbel's). Lilac. New Guinea.
„ *mi'serum* (poor). White. March. Assam. 1837.
„ *mohlia'num* (Mohlian). Cinnabar. Fiji. 1877.
„ *monilifo'rme* (bracelet-formed) of Lindley. See D. LINAWIANUM.
„ *monilifo'rme* (necklace-formed) of Swartz. White or pale purple. Japan and China.

D. monophy'llum (one-leaved). N.E. Australia.
,, *moorea'num* (Moorean). White. Australia. 1878.
,, *Mo'rtii* (Mort's). 4. Light yellow, whitish, lilac, purple. N. S. Wales. 1905.
,, *moscha'tum* (musk-scented). See D. CALCEOLARIA.
,, *murica'tum* (warted). New Caledonia.
,, ,, *muni'ficum* (bountiful). ½. Cream, white, purple. New Caledonia. 1909.
,, *muta'bile* (changeable). Rose. April. Java. 1844.
,, *Natha'nielis* (Nathaniel's). White. Burma. 1844.
,, *no'bile* (noble). 2. Green, yellow, pink. China.
,, ,, *Armstro'ngiæ* (Mrs. Armstrong's). Pure white; lip maroon-purple. 1910.
,, ,, *cooksonia'num* (Cooksonian). Petals dark purple and velvety on the middle. 1885.
,, ,, *nobi'lius* (nobler). Flowers large dark purple. 1882.
,, ,, *sanderia'num* (Sanderian). Sepals and petals bright purple, white at base. 1888.
,, ,, *virgina'le* (virginal). Pure white, with pale primrose tint on lip. 1897.
,, ,, *Walli'chii* (Wallich's noble). Purple, cream, white. March. E. Ind. 1840.
,, *noda'tum* (thick noded). See D. APHRODITE.
,, *nu'dum* (naked). Pale purple. June. Java. 1844.
,, *nycteridoglo'ssum* (bat-tongued). Green, striped dark red. New Guinea. 1886.
,, *obrienia'num* (O'Brienian). Small, yellow-green. Philippines. 1892.
,, *ochrea'tum* (yellowish). Yellow, purple. June. Khasia and Chittagong. 1836.
,, ,, *lu'teum* (yellow). Lemon yellow; blotch on lip light purple. 1910.
,, *ocula'tum* (*dark*-eyed). See D. FIMBRIATUM OCULATUM.
,, *palpe'bræ* (eyelid). White, yellow. Moulmein.
,, *pandura'tum* (fiddle-shaped). Ceylon.
,, *Papi'lio* (Papilio). Pale rose, purple-veined, fragrant. Philippines (?). 1897.
,, *pa'rcum* (spare). Pale yellow. Burma. 1866.
,, *pardali'num* (panther-spotted). See D. MACRÆI.
,, *Pari'shii* (Parish's). Mauve and purple. Burma. 1863.
,, *Parthe'nium* (Parthenium). White; lip with purple blotch. Borneo. 1886.
,, *Paxto'ni* (Paxton's) of Lindley. See D. CHRYSANTHUM.
,, *Paxto'ni* (Paxton's) of *Paxton's Magazine*. See D. FIMBRIATUM OCULATUM.
,, *pe'ndulum* (pendulous). A form of *D. nobile*.
,, *perena'nthum* (long-lasting-flowered). Pale yellow; lip white. Moluccas. 1886.
,, *Pe'tri* (Peter's). White. Polynesia. 1877.
,, *Phalæno'psis* (Phalænopsis). Lilac. New Guinea. 1880.
,, ,, *hololeu'cum* (wholly-white). Pure white. 1895.
,, ,, *statteria'num* (Statterian). Flowers smaller, dark purple. Timor Laut.
,, *pi'ctum* (painted). White, crimson. Borneo. 1862.
,, *Piera'rdi* (Pierard's). 2. Whitish. April. Himalaya. 1815.
,, ,, *cuculla'tum* (hooded). Straw. India. 1835.
,, ,, *latifo'lium* (broad-leaved). Purple, rose, yellow. June. Singapore. 1830.
,, ,, *lute'scens* (yellowish). Yellowish. May. India. 1835.
,, ,, *ma'jus* (larger). Whitish. April. India. 1830.
,, *pitcheria'num* (Pitcherian). Rose, tipped purple, yellow. 1888.
,, *pleiosta'chyum* (full-spiked). White. New Guinea. 1882.
,, *plica'tile* (slightly-plaited). Philippines.
,, *Pogonia'tes* (Pogoniates). Yellowish, orange. N. Borneo. 1886.
,, *polyca'rpum* (many-fruited). Yellowish, purple-red. Sunda Isles. 1884.
,, *polyphle'bium* (many-veined). See D. RHODOPTERYGIUM.
,, ,, *Eme'rici* (Emeric's). Lip white, with amethyst bar. 1887.
,, *Polysta'chyon* (Polystachyon). See POLYSTACHYA LUTEOLA.
,, *præci'nctum* (girt in front). Ochre, purplish, orange. India. 1877.
,, *primuli'num* (Primrose-coloured). Primrose-yellow lip. Himalaya. 1864.
,, *profu'sum* (profuse). Yellow-green. Philippines. 1884.
D. pulche'llum (fair) of Loddiges. See D. LODDIGESII.
,, ,, *candi'dulum* (whitish). White, tipped green.
,, ,, *Mosle'yi* (Mosley's). Purple.
,, *pulche'llum* (pretty) of Roxburgh. Rose and dark purple. Burma and Malaya.
,, ,, *rossia'num* (Rossian). Nankeen. Burma. 1882.
,, ,, *salmo'neum* (salmon). Blotches salmon-pink instead of maroon. 1898.
,, *pu'milum* (dwarf). Burma and Malaya.
,, *puni'ceum* (purple). Rose-pink, tipped yellow. New Guinea. 1901.
,, *purpu'reum* (purple). Purple. March. Moluccas. 1834.
,, *pycnosta'chyum* (dense-spiked). White, purple. Burma. 1866.
,, *quadri'lobum* (four-lobed). Pale green. New Guinea (?). 1896.
,, *quina'rium* (quinary). Light yellow, with brown veins on lip. New Guinea. 1901.
,, *ra'dians* (radiating). White, lip with orange blotch. Borneo. 1863.
,, *ramosi'ssimum* (most branched). See D. HERBACEUM.
,, *re'gium* (royal). Like *D. nobile*, with clear yellow throat. Bengal. 1904.
,, *revolu'tum* (rolled-back). Straw. April. Singapore. 1842.
,, *rhodoce'ntrum* (red-spurred). Purple, white. India. 1872.
,, *rhodoptery'gium* (red-winged). Pale rose and purple. Burma. 1875.
,, ,, *Eme'rici* (Emeric's). Lip white, with amethyst bar. 1887.
,, *rho'mbeum* (diamond-*lipped*). See D. AUREUM.
,, *Rima'nni* (Rimann's). Yellow, striped purple; lip white, netted purple. Moluccas. 1882.
,, *robu'stum* (robust). Yellow-green, with purple lines. New Guinea. 1895.
,, *ro'seo-nerva'tum* (rosy-nerved). ¾. Pale rose. Sumatra. 1905.
,, *Roxbu'rghii* (Roxburgh's). Yellow. India. 1838.
,, *Rucke'ri* (Rucker's). 1½. Yellow. February. Himalayas. 1843.
,, *rugo'sum* (rough). 1. Pale yellow. April. Java. 1844.
,, *rutri'ferum* (spade-bearing). Rose. New Guinea. 1887.
,, *salacce'nse* (Salaccan). Red, orange. Java. 1862.
,, *Sande'ræ* (Mrs. Sander's). 1½ to 3. Pure white, with blackish-purple lines on lip. Philippines. 1909.
,, *sanderia'num* (Sanderian). White, purple. Borneo. 1894.
,, *sangui'neum* (blood-red). Crimson. Borneo. 1895.
,, *sanguinole'ntum* (blood-stained). ½. Buff, violet. March. Ceylon. 1842.
,, ,, *a'lbum* (white). White. 1909.
,, *sarmento'sum* (trailing). White, yellow blotch, crimson lines. Burma. 1897.
,, *scabrili'ngue* (rough-tongued). White, yellow, red. Burma. 1862
,, *Schi'nzii* (Schinz's). Pale green, fugacious. Sumatra. 1906.
,, *schæni'num* (fluted). See D. STRIOLATUM.
,, *Schrœde'ri* (Schroder's). See D. DENSIFLORUM SCHRŒDERI.
,, *scu'lptum* (sculptured). White, orange. Borneo. 1863.
,, *secu'ndum* (side-*flowering*). Rose, purple. July. Malacca. 1838.
,, ,, *ni'veum* (snowy). White; lip tipped orange. 1882.
,, ,, *pa'llidum* (pale). Pale purple. July. Sumatra. 1840.
,, ,, *se'nile* (old). Golden-yellow, red. Moulmein. 1865.
,, *shillonge'nse* (Shillong). See D. LASIOGLOSSUM.
,, *signa'tum* (marked). Whitish, sulphur yellow. Siam. 1884.
,, *Smi'lliæ* (Mrs. Smillie's). Whitish, rosy-purple. N. Australia. 1879.
,, *spatha'ceum* (large-spathed). White. Sikkim. 1903.
,, *speciosi'ssimum* (most showy). 5 to 6. White; lip with orange-red blotch. Borneo. 1895.
,, *specio'sum* (showy). 1. Yellow, white. January. N. Holland. 1824.
,, ,, *Hi'llii* (Hill's). Flowers white, larger.

D. specio'sum ni'tidum (shining). Cream-white. Taller than *D. s. Hillii*. 1910.
,, *specta'bile* (showy). Yellow and white, veined purple. New Guinea. 1899.
,, *sphegidoglo'ssum* (wasp-lipped). See D. STUPOSUM.
,, *squa'lens* (squalid). See XYLOBIUM SQUALENS.
,, *Stratio'tes* (Stratiotes). Ivory-white, green, cream. Sunda Isles. 1886.
,, *Streblo'ceras* (Strebloceras). White, green, cream. Sunda Isles. 1886.
,, ,, *rossia'num* (Rossian). White, pale green, yellowish. New Guinea. 1888.
,, *stria'tum* (striated). Whitish tinged rose. Philippines. 1905.
,, *stricklandia'num* (Stricklandian). Pale yellow, purple, red. Japan. 1877.
,, *striola'tum* (finely-lined). White. June. Australia. 1845.
,, *strongyla'nthum* (round-flowered). Yellow-green, violet-brown. Burma. 1878.
,, *stupo'sum* (astonishing). Yellow-white, orange-red. Burma, Siam. 1838.
,, *suavi'ssimum* (sweetest). See D. CHRYSOTOXUM.
,, *subclau'sum* (nearly closed). Brilliant orange. Moluccas.
,, *sulca'tum* (furrowed). 1. Orange. April. Khasia. 1837.
,, *Sumne'ri* (Sumner's). N.E. Australia.
,, *supe'rbiens* (superb). Purple; lip five-ridged. N.E. Australia. 1876.
,, ,, *ano'smum* (scentless). Philippines. 1840.
,, ,, *Bu'rkei* (Burke's). White; lip yellow, rose.
,, ,, *gigante'um* (giant). Large-flowered.
,, ,, *Richa'rdi* (Richard's). Greenish-buff. 1900.
,, ,, *supe'rbum* (superb). Pink, flushed rose. Philippines.
,, *tattonia'num* (Tattonian). See D. CANALICULATUM.
,, *tauri'num* (bull-headed). 5. White, purple. October. Philippines. 1837.
,, ,, *amboine'nse* (Amboynan). Yellow, spotted brown. Amboyna. 1899.
,, ,, *Colma'nii* (Colman's). White, rose-pink. Philippines. 1909.
,, *teretifo'lium* (round-leaved). 1. Purple. July. N.E. Australia. 1823.
,, *termina'le* (terminal). Burma.
,, *tetrachro'mum* (four-coloured). White, ochre-yellow, purple. Borneo. 1880.
,, *tetrago'num* (four-angled). 2. Yellow, green. May. Moreton Bay. 1838.
,, *thyrsiflo'rum* (thyrse-flowered). Burma. Fl. Mag., 1881, t. 449.
,, *tipuli'ferum* (Crane-fly-bearing). Pale purple. Fiji. 1877.
,, *tonkine'nse* (Tonquin). Straw yellow. Tonquin. 1906.
,, *to'rtile* (twisted). Rose and white. N. India. 1847.
,, ,, *ro'seum* (rosy). Rose.
,, *transpa'rens* (transparent). Rose. Nepaul.
,, ,, *a'lbum* (white). White. 1889.
,, *treacheria'num* (Treacherian). Rose-purple. Borneo.
,, *triade'nium* (three-gland-*lipped*). See D. MUTABILE.
,, *trigo'nopus* (three-angle-stalked). Golden-yellow; lip with red lines. Burma. 1887.
,, *undula'tum* (waved). Yellow, brown. March. Manilla. 1838.
,, ,, *fimbrila'bium* (fringed-lipped). N. Australia. 1878.
,, *vagina'tum* (sheathed). Straw, purple. Singapore.
,, *vandiflo'rum* (Vanda-flowered). White, lip rose. New Guinea. 1882.
,, *veitchia'num* (Mr. Veitch's). See D. MACROPHYLLUM.
,, *veluti'num* (velvety). Yellow; lip velvety. Burma. 1895.
,, *veratrifo'lium* (Veratrum-leaved). Lilac. October. New Guinea. 1843.
,, *versi'color* (changing-coloured). Greenish-yellow, changing to pure yellow. Assam. 1895.
,, *vexa'bile* (vexing). Light yellow, with orange blotch. India. 1878.
,, *ve'xans* (vexing). White, changing to pale lilac. Annam. 1909.
,, *Victo'ria Regi'næ* (Queen Victoria's). Dark blue and white. Philippines. 1897.
,, *villo'sulum* (slightly hairy). Orange. Penang.
D. virgi'neum (virginal). Ivory-white, green, red. Burma. 1884.
,, *wardia'num* (Wardian). White, tipped rose. Assam and Burma. 1863.
,, ,, *a'lbum* (white). White, with orange-yellow throat. India.
,, ,, *au'reum* (golden). Sepals and petals light yellow 1901.
,, ,, *ca'ndidum* (white). Entirely white.
,, ,, *fowleria'num* (Fowlerian). Lateral sepals, with yellow blotch and purple spots at base. 1902.
,, ,, *Lo'wii* (Low's). White, tipped purple-rose; lip with two purple-brown eyes. 1876.
,, ,, *xantholeu'cum* (yellow-white). Pure white, orange-yellow disc. 1904.
,, *Wa'ttii* (Watt's). White, with yellow lines on the lip. B. M., t. 6715.
,, *williamsia'num* (Williamsian). White, rosy, purple. New Guinea. 1878.
,, *Williamso'ni* (Williamson's). White, blood-red. Himalaya. 1869.
,, *Wilso'ni* (Wilson's). 1½ to 2. Delicate pink, or white. Western China. 1906.
,, *xanthophle'bium* (yellow-veined). White, yellow. Burma. 1857.

DENDROCA'LAMUS. (From *dendron*, a tree, and *calamos*, a reed; in allusion to the tall, tree-like habit of these Bamboos. Nat. ord. Gramineæ.)
Stove, evergreen Bamboos of easy culture. Most of them may be grown in pots, but all may be planted out, especially *D. giganteus*, to enable them to attain something like their natural dimensions. Seeds; and suckers when commencing growth. Good fibrous loam, with sand for pot culture.

D. gigante'us (giant). India and Malaya.
,, *membrana'ceus* (membranous). Burma.
,, *sikkime'nsis* (Sikkim). Himalaya.
,, *stri'ctus* (upright). India and Java.

DENDROCHI'LUM. (From *dendron*, a tree, and *cheilos*, a lip. Nat. ord. Orchidaceæ. See also PLATYCLINIS.)
Stove epiphytal Orchids. Divisions. Sphagnum, fibre of peat, and crocks.

D. grandiflo'rum (large-flowered). Pale yellow. Philippines (?). 1910.
,, *krausea'num* (Krausean). Pale brownish-yellow. Sumatra. 1910.
,, *pandura'tum* (fiddle-shaped). Pale yellowish, small. Sumatra. 1910.

DENDROME'CON. (From *dendron*, a tree, and *mecon*, a poppy; the plant being shrubby. Nat. ord. Papaveraceæ.)
A shrub requiring a warm wall or a greenhouse. Seed; cuttings of ripe wood in sand in gentle warmth. Light loam and leaf-mould.

D. ri'gidum (rigid). Yellow. June. California.

DENDROPA'NAX. (From *dendron*, a tree, and *panax*, all-heal; some of the plants being used in medicine by the Chinese. Nat. ord. Araliaceæ.)
Stove shrubs or trees requiring treatment similar to Aralia.

D. arbo'reum (tree-like). 12. Pale yellow. Colombia. 1820.
,, *arge'nteum* (silvery). Leaves silvery above. Brazil. 1878.
,, *japo'nicum* (Japanese). Greenish-yellow. Japan.
,, *pe'ndulum* (drooping). Green. Colombia. 1824.

DENDROPHY'LAX. (From *dendron*, a tree, and *phulax*, a guard or defender. Nat. ord. Orchidaceæ.)
Stove Orchids. For treatment, see ORCHIDS.

D. Fawce'ttii (Fawcett's). Greenish, white. W. Ind. 1888.
,, *funa'lis* (corded). Greenish, white. W. Ind.

DENDROSE'RIS. (Derived from *dendron*, a tree, and *seris*, an endive-like plant; in allusion to the persistent character of the stem. Nat. ord. Compositæ.)
Greenhouse evergreen shrubs of tree-like aspect, having simple or branched trunks surmounted by a

tuft of leaves, bearing large yellow heads of bloom in panicles. Seeds. Loam and sand.

D. macrophy'lla (large-leaved). 10 to 13. Bright yellow. Juan Fernandez. 1877.
„ *micra'ntha* (small-flowered). 10. Yellow. Juan Fernandez.

DENHA'MIA SCA'NDENS. See CULCASIA SCANDENS.

DENNSTÆ'DTIA. See DICKSONIA.

DENTA'RIA. (From *dens*, a tooth; in allusion to the tooth-like scales on the roots. Nat. ord. Cruciferæ.) Most of the species are now referred to Cardamine, which see.

D. glandulo'sa (glandular). 1. Light purple. May. Hungary. 1815.
„ *petersia'na* (Petersian). Near *Cardamine pratensis*, but has sessile leaves at the top. 1899.
„ *polyphy'lla* (many-leaved). 1. Pure white. May. Hungary. 1818.
„ *quinquefo'lia* (five-leaved). 1. Purple. May. Tauria. 1820.
„ *trifo'lia* (three-leaved). 1. White. May. Croatia. 1824.

DEPA'RIA. (Derived from *depas*, a cup; in allusion to the shape of the scale covering the spore cases. Nat. ord. Filices.)
Stove fern. For cultivation, see FERNS.

D. Moo'rei (Moore's). 1 to 1½. New Caledonia.
„ *proli'fera* (proliferous). Sandwich Islands.

DEPRESSA'RIA. A genus of small moths, the caterpillars of which feed on the leaves, flowers, or fruits of the Carrot and Parsnip. They belong to the family Tineina, and are commonly known as flat-body moths, owing to the flattened form of the abdomen.

D. depresse'lla, the Carrot-seed Moth, devours the flowers and seeds of Carrots, but preferably Parsnips, grown for the production of seed, during the months of July and August. When alarmed, the caterpillars let themselves drop down by means of a thread, and advantage may be taken of this to catch and destroy them. Freshly tarred boards or trays may be held under the plants and the latter well shaken, which will cause the caterpillars to drop and be held fast by the tar.

D. Pastinace'lla, the Carrot-blossom Moth, lays its eggs on Carrots or Parsnips, and the caterpillars feed on the flowers during July and August. They draw the umbel together with threads and then feed on the flowers and young seeds. The same remedy adopted for the Carrot-seed Moth will answer equally well in this case.

DERMATO'BOTRYS. (From *derma*, *dermatos*, leather, and *botrus*, a bunch of grapes; apparently in allusion to the leathery leaves, and the bunches of flowers. Nat. ord. Scrophulariaceæ.)
A deciduous, warm greenhouse perennial, flowering in winter. Seeds; cuttings of half-ripe wood in sand, in a close case with bottom-heat. Fibrous loam, leaf-mould, and sand.

D. Saunde'rsii (Saunders's). 1½. Bright red and yellow. Zululand. 1893.

DE'RRIS. (From *derris*, skin or leather; in allusion to the leathery character of the seed-pod, which does not open. Nat. ord. Leguminosæ.)
Evergreen stove trees. Cuttings of ripe wood in sand, in a close case with bottom-heat. Loam and peat, both turfy, with sand.

D. a'lbo-ru'bra (white-red). White, with brown-red pedicels and calyx. S.E. China. 1904.
„ *cuneifo'lia* (wedge-leaved). 3. Yellow. May. Himalaya; Malaya. 1824. Twiner.
„ *dalbergioi'des* (Dalbergia-like). Burma and Malaya.
„ *ellí'ptica* (elliptic). Burma and Malaya.
„ *Fo'rdii* (Ford's). See D. ALBORUBRA.
„ *margina'ta* (margined). 20. White. Himalaya. 1823.
„ *sca'ndens* (climbing). White. Australia.
„ *uliginо'sa* (marsh). White. Tropics of Old World. 1824. Twiner.

DESCHA'MPSIA. (A commemorative name. Nat. ord. Gramineæ.)
Hardy grasses of an ornamental character for mixing with cut flowers, like the Hair Grasses. Seeds; division. Ordinary soil.

D. flexuo'sa (flexuous). 1 to 1½. Brown. Britain.

DESFONTAI'NIA. (In honour of *M. Desfontain*, the French botanist. Nat. ord. Loganiaceæ. Linn. 5-*Pentandria*, 1-*Monogynia*.)
A lovely greenhouse or nearly hardy evergreen shrub. Its culture is the same as for the more tender kinds of Fuchsia. The soil should be one-third peat; it should be shaded from midday sun, and have plenty of moisture.

D. spino'sa (spiny-*holly-leaved*). 3. Scarlet, yellow. August. Peru. 1853.

DESIGN. "Consult the genius of the place" before you determine upon your design, is sound advice; for in gardening, as in all the fine arts, nothing is pleasing that is inappropriate. Mr. Whateley, our best authority on such subjects, truly says: A plain simple field, unadorned but with the common rural appendages, is an agreeable opening; but if it is extremely small, neither a haystack, nor a cottage, nor a stile, nor a path, nor much less all of them together, will give it an air of reality. A harbour on an artificial lake is but a conceit; it raises no idea of refuge or security, for the lake does not suggest an idea of danger: it is detached from the large body of water, and yet is in itself but a poor, inconsiderable basin, vainly affecting to mimic the majesty of the sea.

When imitative characters in gardening are egregiously defective in any material circumstance, the truth of the others exposes and aggravates the failure. But the art of gardening aspires to more than imitation; it can create original characters, and give expressions to the several scenes superior to any they can receive from illusions. Certain properties, and certain dispositions of the objects of nature, are adapted to excite particular ideas and sensations; they require no discernment, examination, or discussion, but are obvious at a glance, and instantaneously distinguished by our feelings. Beauty alone is not so engaging as this species of character; the impressions it makes are more transient and less interesting; for it aims only at delighting the eye, but the other affects our sensibility. An assemblage of the most elegant forms in the happiest situations is to a degree indiscriminate, if they have not been selected and arranged with a design to produce certain expressions; an air of magnificence or of simplicity, of cheerfulness, tranquillity, or some other general character, ought to pervade the whole; and objects pleasing in themselves, if they contradict that character, should therefore be excluded. Those which are only indifferent must sometimes make room for such as are more significant—may occasionally be recommended by it. Barrenness itself may be an acceptable circumstance in a spot dedicated to solitude and melancholy.

DESMA'NTHUS. (From *desme*, a bundle, and *anthos*, a flower; in allusion to the clusters of flowers. Nat. ord. Leguminosæ.)
Stove herbs or shrubs. Cuttings of mature wood in sand, in a close case. Fibrous loam peat, and sand.

D. na'tans (floating). See NEPTUNIA OLERACEA.
„ *ple'nus* (double). See NEPTUNIA PLENA.
„ *virga'tus* (twiggy). White. N. Amer.; W. Ind.

DESMO'DIUM. (Derived from *desmos*, a bond; in allusion to the united stamens. Nat. ord. Leguminosæ.)
Mostly stove shrubs, with blue, purple, or white flowers. Cuttings of young shoots, with a heel of old wood, in sand, in a propagating case. Fibrous loam, leaf-mould, or peat and sand.

D. adsce'ndens (ascending). Purple. W. Ind.
„ „ *cæru'leum* (blue). Blue. Brazil.
„ *ala'tum* (winged). See D. TRIQUETRUM.
„ *barba'tum* (bearded). 2. Yellow. July. Trop. Amer. 1824.
„ *biarticula'tum* (two-jointed). 2. Yellow. July. Trop. Asia. 1808.
„ *bracteo'sum* (bracted). Purple. N. Amer. "Tick-trefoil." "Tick-seed." Hardy.

D. canade'nse (Canadian). 6. Purple. July. N. Amer. 1640. Hardy.
„ *cane'scens* (grey). Purple. N. Amer. Hardy.
„ *cilia're* (eye-lashed). N. Amer. Hardy.
„ *cinera'scens* (grey). 3. Rosy-lilac to violet. China. 1904.
„ *du'bium* (doubtful). See D. FLORIBUNDUM.
„ *e'legans* (elegant). 1. July. China. 1819.
„ *floribu'ndum* (free-flowering). Light rose. July. Himalaya.
„ *gy'rans* (gyrating). 2 to 3. Violet. India. 1775. "Telegraph Plant."
„ *japo'nicum* (Japanese). See D. PODOCARPUM JAPONICUM.
„ *laburnifo'lium* (Laburnum-leaved). Trop. Asia.
„ *latifo'lium* (broad-leaved). Purple. Asia and Trop. Africa.
„ *maryla'ndicum* (Maryland). N. Amer.
„ *nu'tans* (nodding). See D. TILIÆFOLIUM.
„ *panicula'tum* (panicled). N. Amer.
„ *penduliflo'rum* (pendulous-flowered). See LESPEDEZA SIEBOLDII.
„ *podoca'rpum* (stalked-fruited). 2 to 3. Purple. July. Himalaya.
„ „ *japo'nicum* (Japanese). White. Japan. 1875. Hardy.
„ *pulche'llum* (pretty). 3. Purple. July. Trop. Asia; Australia. 1798.
„ *scuta'tum* (shield-shaped). Mexico.
„ *Skinne'ri a'lbo-ni'tens* (white-shining). Purple. Leaves hoary. Guatemala.
„ *tiliaefo'lium* (lime-leaved). Lilac. July, August. Himalaya. 1823. Hardy.
„ *triqué'trum* (three-grooved). 10. Purple. July. Trop. Asia. 1817.
„ *umbella'tum* (umbelled). Trop. Asia.
„ *uncina'tum* (hooked). N. and S. Amer.
„ *viridiflo'rum* (green-flowered). Greenish. United States. Hardy.

DESMO'NCUS. (From *desmos*, a bond and *ogkos*, a hook; the ribs of the leaves ending in bands at the point, like tendrils. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*. Allied to Cocos.)
Stove Palms. Seeds in a hotbed; sandy loam. Summer temp., 60° to 84°; winter, 55° to 60°.
D. aculea'tus (prickly). Guatemala. 1852.
„ *america'nus* (American). 6. St. Vincent. 1824.
„ *du'bius* (doubtful). 6. Trinidad. 1824.
„ *granate'nsis* (New Grenadan). Colombia. 1875.
„ *la'tifrons* (broad-leaved). S. Amer. 1840.
„ *ma'jor* (greater). Trinidad.
„ *mi'nor* (lesser). W. Ind.
„ *mi'tis* (mild). Brazil.
„ *orthaca'nthos* (straight-spined). 6. Brazil. 1822.
„ *polyaca'nthos* (many-spined). 6. Brazil. 1822.

DESMO'TRICHUM. See DENDROBIUM.

DEU'TZIA. (Named after *J. Deutz*, a sheriff of Amsterdam. Nat. ord. *Syringas* [Saxifragaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)
D. sca'bra, grown as a dwarf standard, and pruned like the black currant, or cutting out the shoots after flowering, would form a great ornament for a border of select shrubs. It is also a good subject for spring flowering for the conservatory. Hardy deciduous shrubs. Cuttings under a hand-glass, or strong shoots may be planted in a sheltered place in autumn. They are fine ornaments to a wall in the early summer months; common soil.
D. candidi'ssima (whitest). See D. CRENATA FLO'RE PLE'NO.
„ *corymbo'sa* (corymb-*flowering*). 5. White. Himalayas.
„ *crena'ta* (crenate). 4 to 6. White. Japan.
„ „ *flo're-ple'no* (double-flowered). White. Japan. 1863.
„ „ *flo're ple'no e'xtus purpu'rea* (double). Petals pink on the back.
„ *di'scolor* (two-coloured). China.
„ „ *purpura'scens* (purplish). Rose-purple. Yunnan, China. 1894.
„ *globo'sa* (globose). Creamy white. Central China. 1906
D. gra'cilis campanula'ta. Hybrid (*gracilis* × *discolor purpurascens*).
„ *gra cilis* (slender). White. April. Japan.
„ „ *fo'liis aur'eis* (golden-leaved). Leaves yellow. 1889.
„ „ *variega'ta* (variegated).
„ *kalmiæflo'ra* (Kalmia-flowered). Hybrid (*gracilis purpurascens* × *parviflora*).
„ *Lemoi'nei* (Lemoine's). Hybrid (*gracilis* × *parviflora*). 1894.
„ *mo'llis* (soft). 3 to 8. White, or tinted pink. Central China. 1906.
„ *parviflo'ra* (small-flowered). White. China. 1888.
„ „ *amure'nsis* (Amurland). 3. White. N. China.
„ *reflé'xa* (reflexed). Pure white. Central China. 1906.
„ *sangui'nea* (red-*flowered*). Red. April.
„ *sca'bra* (rough-*leaved*). 6. May. Japan. 1833.
„ *sieboldia'na* (Sieboldian). White. Japan.
„ *stami'nea* (*broad*-stamened). 3. White. April. Himalayas. 1841.
„ *sutchuene'nsis* (Sutchuen). White. China. 1897.
„ *Vilmo'rinæ* (Madame Vilmorin's). Snow-white. China. 1904.
„ *Wilso'ni* (Wilson's). White. Western China. 1906.

DEVIL-IN-THE-BUSH. See NIGE'LLA.

DEVIL'S APPLES. See MANDRA'GORA OFFICINA'RUM.

DEVIL'S-BIT SCABIOUS. See SCABIO'SA SUCCI'SA.

DEVIL'S COACH HORSE. *O'cypus o'lens* or Rove Beetle.

DEVIL'S FIG. See ARGEMO'NE MEXICA'NA.

DEVIL'S LEAF. *U'rtica urenti'ssima.*

DEVONSHIRING. See PARING and BURNING.

DEWBERRY. *Ru'bus cæ'sius.*

DEYEU'XIA. (A commemorative name. Nat. ord. Gramineæ.)
An ornamental greenhouse grass of easy culture.
D. é'legans variega'ta (variegated). Leaves deep green, edged yellow. Bolivia. 1884.

DIACA'LPE. (From *dis*, two, or double, and *calpis*, an urn; referring to the disposition of the spore-cases. or seed-vessels. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Allied to Woodsia.)
Stove Fern. Division; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.
D. aspidioi'des (Aspidium-like). Yellow. July. Java.

DIA'CRIUM. (Derived from *di*, two, and *akris*, a point. Nat. ord. Orchidaceæ.)
A handsome Orchid, closely allied to Epidendrum, and requiring similar culture.
D. bicornu'tum (two-horned). 1. White. W. Ind.

DIADE'NIUM. (From *dis*, two, and *aden*, a gland; referring to the glands at the base of the column. Nat. ord. Orchidaceæ.)
A warm house Orchid. Offsets in small baskets, with sphagnum and potsherds. Requires a high temperature with a moist atmosphere when making its growth, both greatly reduced in winter.
D. Barke'ri (Barker's). Brazil. 1837.

DIANE'LLA. (A classical diminutive from *Diana*, the goddess of hunting; the first discovered species being found in a grove. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Greenhouse or frame bulbs. They would answer in a mixed border of half-hardy bulbs in front of a stove or greenhouse, with Anthericums, Albucas, Blandfordias, Cummingias, and the like; but they succeed best in a greenhouse. All from Australia, and with blue flowers, except where otherwise specified. Seeds sown in a slight hotbed in spring, and division; loam and peat. Summer temp., 55° to 75°; winter, 40° to 48°.
D. a'spera (rough). Tasmania.
„ *cæru'lea* (sky-blue). 2. June 1783.
„ *congé'sta* (crowded). See D. CÆRULEA.

D. divarica'ta (straggling). See D. REVOLUTA.
„ *e'legans* (elegant). See D. LÆVIS.
„ *ensifo'lia* (sword-leaved). 1½. White. August. E. Ind. 1731.
„ *læ'vis* (smooth). 2. August. 1822.
„ *longifo'lia* (long-leaved). See D. LÆVIS.
„ *nemoro'sa* (grove). 2. August. E. Ind. 1731.
„ *revolu'ta* (rolled-back). 2. August. 1823.
„ *strumo'sa* (swollen). See D. LÆVIS.
„ *tasma'nica* (Tasmanian). Blue. Tasmania. 1866.
„ „ *variega'ta* (variegated). Blue. Leaves striped with yellow. Tasmania. 1894.

DIANDROLY'RA. (Nat. ord. Gramineæ.)
A perennial densely tufted greenhouse grass. Loam, leaf-mould, and sand.

D. bi'color (two-coloured). Leaves dark green above, violet-purple beneath. 1906.

DIANTHE'RA. (From *dia*, to divide, and *anthera*, an anther; in allusion to the separation of the anthers. Nat. ord. Acanthaceæ.)
Stove or greenhouse, evergreen herbs. Cuttings of young shoots in spring with a heel, inserted in light sandy soil and placed in a propagating case. Fibrous loam, leaf-mould, and sand.

D. america'na (American). Pale violet. N. Amer.
„ *bulla'ta* (blistered). White. Borneo. 1886.
„ *caracasa'na* (Caracasan). Violet. Venezuela. 1822.
„ *cilia'ta* (ciliated). Purple, white. Winter. Costa Rica. 1870.
„ *coma'ta* (tufted). 2. Purple. July. Jamaica. 1795.
„ *genicula'ta* (kneed). Purple. June. W. Ind.
„ *illu'stris* (lustrous). See PORPHYROCOMA LANCEOLATA.
„ *lanceola'ta* (lance-shaped). See PORPHYROCOMA LANCEOLATA.
„ *lu'cida* (shining). Scarlet. W. Ind. 1795.
„ *nodo'sa* (thickened at the joints). Red. August. E. Ind. 1820.
„ *pectora'lis* (pectoral). 3. Purple. May. W. Ind. 1787.
„ *pohlia'na* (Pohlian). Purple. Brazil. 1880.
„ *secu'nda* (one-sided). 2. Purple. June. W. Ind.

DIANTHOI'DES DIANTHIFLO'RA. See GILIA DIANTHOIDES.

DIA'NTHUS. Pink. (From *dios*, divine, and *anthos*, a flower. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 2-*Digynia*.)
Seeds, divisions, and cuttings, under a hand-light, in light soil, any time about midsummer. The tender kinds should be kept in pots, and protected in a cold pit during the winter. See CARNATION, PINK, and SWEET WILLIAM.

HARDY ANNUALS AND BIENNIALS.

D. aggrega'tus (crowded). See D. BARBATUS.
„ *Arme'ria* (armeria). 1. Red. June. England.
„ *armerioi'des* (armeria-like). 1. Red. June. New Jersey. 1826.
„ *chine'nsis* (China). 1. Red. July. China. 1713. Biennial.
„ „ *a'lbus* (white). White. August. 1830.
„ *margina'tus* (bordered). 1. White. July. South Europe. 1820. Biennial.
„ *pro'lifer* (proliferous). See TUNICA PROLIFERA.
„ *pube'scens* (downy). 1. Red. July. Greece. 1820.
„ *veluti'nus* (velvety). See TUNICA VELUTINA.

HALF-HARDY PERENNIALS.

D. a'lbens (whitish). ½. White. August. Cape of Good Hope. 1787.
„ *arbo'reus* (tree). 1½. Pink. July. Greece. 1820. Evergreen.
„ *arbu'scu a* (little tree). 1½. Red. July. China. 1824. Evergreen.
„ *crena'tus* (scolloped). 1. Flesh. August. Cape of Good Hope. 1817.
„ *glutino'sus* (clammy). Pink. July. Grecian Archipelago.
„ *japo'nicus* (Japanese). See D. BARBATUS.
„ *juniperi'nus* (juniper-like). Red. July. Greece. 1825.

HARDY PERENNIALS.

D. alpe'stris (rock). See D. MONSPESSULANUS.
„ *alpi'nus* (alpine). ½. Red. June. Austria. 1759.
„ *arena'rius* (sand). 2. Purple. August. Europe.
„ *a'sper* (rough-*stalked*). See D. CHINENSIS.
„ *a'tro-ru'bens* (dark red). 1. Crimson. August. Italy. 1802.
„ *attenua'tus* (tapering). ½. Red. July. Spain. 1822.
„ *Balbi'sii* (Balbis's). See D. LIBURNICUS.
„ *barba'tus* (bearded. *Sweet William*). 1½. Pink. July. Germany. 1573.
„ „ *latifo'lius* (broad-leaved). 1½. Scarlet. July. 1826.
„ *bi'color* (two-coloured). See D. PALLENS.
„ *bifio'rus* (two-flowered). See D. CINNABARINUS.
„ *Bisigna'ni* (Bisignani's). See D. RUPICOLUS.
„ *brachya'nthus* (short-flowered). Pink. June. Spain. 1851.
„ *brevicau'lis* (short-stemmed). Purple. Cilicia.
„ *bre'vis* (short). Red. June. Jurassa.
„ *burchtorme'nsis* (Burchtormian). 1. Red. July. Russia. 1826.
„ *cæ'sius* (grey). ½. Flesh. July. Britain.
„ *callizo'nus* (beautiful-zoned). Rosy-pink, with dark zone. Transylvania. 1890.
„ *campe'stris* (field). 1. White, red. August. Tauria. 1815.
„ *capita'tus* (headed). 1½. Purple. August. Caucasus. 1822.
„ *carolinia'nus* (Carolina). See D. ARMERIA.
„ *carthusiano'rum* (Carthusians'). 1½. Red. July. Germany. 1573.
„ *caryophylloi'des* (clove-like). See D. SYLVESTRIS.
„ *Caryophy'llus* (clove). 2. Flesh. June. England.
„ „ *flo're-ple'no* (double. *Carnation*). 2. Crimson. August. England.
„ „ *frutico'sus* (shrubby. *Carnation*). 3. Crimson. July. England.
„ „ *imbrica'tus* (imbricated. *Wheatear*). 1½. Flesh. August. England.
„ *cauca'sicus* (Caucasian). See D. CHINENSIS.
„ *Cephalo'tes* (headed). See D. CAPITATUS.
„ *cilia'tus* (hair-fringed). 1½. Pink. July. Naples. 1829.
„ *cincinna'tus* (curled). Crimson. Japan. 1864.
„ *cinnabari'nus* (cinnabar). Cinnabar. June. Greece.
„ *cinnamo'meus* (cinnamon). See D. PALLENS.
„ *clava'tus* (club-shaped). 1. Flesh. July.
„ *colli'nus* (hill). See D. CHINENSIS.
„ *co'rsicus* (Corsican). See D. CARYOPHYLLUS.
„ *corymbo'sus* (corymbose). 1. Purple. August. Grecian Archipelago. 1816.
„ *crini'tus* (coarsely hairy). ½. Purple. July. Asia Minor. 1817.
„ *crue'ntus* (blood-red). Dark scarlet or red. Greece.
„ *Cy'ri* (Cyri's). Red. June. Natolia. 1843.
„ *delloi'des* (triangle). ½. Flesh. June. Britain.
„ „ *a'lbus* (white).
„ „ *glau'cus* (sea-green). White. June. Britain.
„ *denta'tus* (toothed). 1. Red. July. Siberia. 1826.
„ *diffu'sus* (wide-spreading). See D. PUBESCENS.
„ *diminu'tus* (small-*flowered*). See TUNICA PROLIFERA.
„ *di'scolor* (two-coloured). See D. CHINENSIS.
„ *diuti'nus* (long-lasting). See D. POLYMORPHUS.
„ *divarica'tus* (straggling). 1. Purple. August. Greece. 1822.
„ *du'bius* (doubtful). White, rose. May. Sicily.
„ *e'legans* (elegant). Red. June. Levant. 1825.
„ *erube'scens* (blushing). Blush. July. Pyrenees. 1825.
„ *ferrugi'neus* (rusty). Brown. July. Italy. 1756.
„ „ *sulphu'reus* (sulphur-coloured). 1½. Sulphur. August. Italy. 1836.
„ *fimbria'tus* (fringed). See D. ORIENTALIS.
„ *Fische'ri* (Fischer's). See D. CHINENSIS.
„ „ *a'lbus* (white). See D. CHINENSIS ALBUS.
„ *fra'grans* (fragrant). 1. White. August. Caucasus. 1804.
„ *Fre'ynii* (Freyn's). Purple. Bosnia. 1892.
„ *frutico'sus* (shrubby). 2. Pink. July. Grecian Archipelago. 1815.
„ *furca'tus* (forked). 1. Pale red. July. Piedmont. 1819.
„ *ga'llicus* (French). ½. Purple. August. S. France.
„ *ge'lidus* (cold). See D. GLACIALIS GELIDUS.

D. giganteʹus (gigantic). 3. Purple. August. Greece. 1824.
„ *glaciaʹlis* (icy). ½. Red. June. S. Europe. 1820.
„ „ *geʹlidus* (cold). ½. Purple. June. Transylvania.
„ *glaucophyʹllus* (milky-green-leaved). 1½. Red. July. 1827.
„ *glauʹcus* (milky-green). See D. DELTOIDES GLAUCUS.
„ *graniʹticus* (granitic). Pink. France.
„ *guttaʹtus* (spotted). See D. CHINENSIS.
„ *hendersoniʹnus* (Henderson's). 1. Crimson. July.
„ *hiʹrtus* (hairy). See D. ARMERIA.
„ *Hœltzeʹri* (Hœltzer's). Pink, yellow. Turkestan.
„ *Hornemaʹnni* (Hornemann's). 1. Red. August. Italy.
„ *horteʹnsis* (garden). See D. PLUMARIUS.
„ *hyssopifoʹlius* (hyssop-leaved). See D. SUPERBUS.
„ *ibeʹricus* (Iberian). See D. CRINITUS.
„ *iʹnteger* (entire). See D. STRICTUS.
„ *interméʹdius ambiʹguus* (ambiguous). Servia.
„ *Knaʹppii* (Knapp's). 1. Pale yellow. Hungary, Montenegro. 1899.
„ *latifoʹlius* (broad-leaved). See D. BARBATUS LATIFOLIUS.
„ *leptopeʹtalus* (fine-petaled). 1½. White. June. Caucasus. 1814.
„ *Libanoʹtis* (rosemary-like). 4. White. July. Lebanon. 1830.
„ *liboschitziaʹnus* (Liboschitz's). ½. White. July. Tauria. 1817.
„ *libuʹrnicus* (Liburnian). Red. August. S. Europe. 1817.
„ „ *Knaʹppii* (Knapp's). See D. KNAPPII.
„ *longicauʹlis* (long-stemmed). 1. White. August. Italy. 1820.
„ *microʹlepis* (small-scaled). Transsylvania.
„ *monadelʹphus* (monadelphous). See D. PALLENS.
„ *monspessulaʹnus* (Montpelier). 1. Red. July. Montpelier. 1764.
„ *montaʹnus* (mountain). See D. CHINENSIS.
„ *multineʹrvis* (many-nerved). Dalmatia.
„ *multipunctaʹtus* (many-dotted). Spotted. June. Levant. 1825.
„ *Mussiʹni* (Mussini's). See D. SQUARROSUS.
„ *naʹnus* (dwarf). See D. CARTHUSIANORUM.
„ *negleʹctus* (neglected). ½. Deep rose. July. Europe. 1869.
„ *niʹtidus* (shining). 1. Red. July. Carpathia. 1822.
„ *noëaʹnus* (Noëan). Rumelia.
„ *ochroleuʹcus* (yellowish-white). See D. PALLENS.
„ *orientaʹlis* (oriental). 1½. Brown. July. Orient. 1815.
„ *paʹllens* (pale). Pink or white or yellow-white. Greece; Asia Minor. 1816.
„ *pallidifloʹrus* (pale-flowered). 1. Purple. July. Siberia. 1817.
„ *Panciʹcii* (Pancic's). 2½ to 3. Light crimson. Bulgaria. 1909.
„ „ *grandifloʹrus* (large-flowered). Purple-carmine, larger. 1909.
„ *papilloʹsus* (nippled). Pink. Bosnia.
„ *paʹtens* (spreading). See D. CHINENSIS.
„ *pelviforʹmis* (pelvis-formed). Servia.
„ *petræʹus* (rock). White. July. Hungary. 1804.
„ „ *floʹribus-majoʹribus* (larger-flowered). ½. Pink. June. 1804.
„ *pimifoʹlius* (pine-leaved). Greece.
„ *plumaʹrius* (feathered). ½. White, purple. July. S. Europe. 1629.
„ „ *seroʹtinus* (late). 1. Purple. August. Hungary. 1804.
„ *plumoʹsus* (feathery-*petaled*). See D. MONSPESSULANUS.
„ *poiretiaʹnus* (Poiret's). See D. CORYMBOSUS.
„ „ *floʹre-pleʹno* (double-flowered). 1. Purple. April. Greece. 1820.
„ *polymoʹrphus* (many-form). 1. Red. March. Crimea. 1822.
„ *pomeridiaʹnus* (afternoon). 1. Yellow. July. Levant. 1804.
„ *prateʹnsis* (meadow). See D. CHINENSIS.
„ *prostraʹtus* (prostrate). ½. Red. September. Cape of Good Hope. 1824. Evergreen.
„ *Pseuʹd-Armeʹria* (false-armeria). 1. Purple. August. Caucasus. 1820.
„ *pulcheʹllus* (pretty). See D. CHINENSIS.
D. punctaʹtus (dotted). 1. Pale lilac. August.
„ *puʹngens* (pungent). 1. Pink. August. Spain. 1781.
„ *racemoʹsus* (racemed). See D. CILIATUS.
„ *reʹpens* (creeping). Red. Siberia. 1825.
„ *Requieʹnii* (Requien s). Pyrenees.
„ *riʹgidus* (stiff). ½. Red. July. Caspian Sea. 1802.
„ *rupiʹcolus* (rock-inhabiting). 1. Red. June. Italy. 1820.
„ *ruthéʹnicus* (Russian). See D. CHINENSIS.
„ *saxaʹtilis* (rock). See D. MONSPESSULANUS.
„ *Seguieʹrii* (Seguier's). Switzerland. 1832. Evergreen.
„ *seroʹtinus* (late-*flowering*). See D. PLUMARIUS SEROTINUS.
„ *serratifoʹlius* (serrate-leaved). Greece.
„ *serraʹtus* (saw-edged). See D. CHINENSIS.
„ *siʹculus* (Sicilian). 1. Red. August. Sicily. 1829.
„ *spinoʹsus* (spiny). See ACANTHOPHYLLUM SPINOSUM.
„ *squarroʹsus* (spreading). ½. White. June. Tauria. 1817.
„ *Sternbéʹrgii* (Sternberg's). 1½. Red. June. Crimea.
„ *siriʹctus* (upright). Eastern Europe.
„ *suaveʹolens* (sweet-smelling). 1. White. August. 1820.
„ *suaʹvis* (sweet). See D. CÆSIUS.
„ *subacauʹlis* (nearly stemless). Dauphiny.
„ *suffrutiʹcosus* (subshrubby). See D. RUPICOLUS.
„ *supéʹrbus* (superb). 2. White. August. Europe. 1596.
„ *sylvaʹticus* (wood). 1½. Red. June. Ratisbon. 1815.
„ *sylveʹstris* (wild). 1. Red. July. S. Europe. 1732.
„ *tauʹricus* (Taurian). 1. Pink. July. Tauria. 1831.
„ *teʹner* (tender). ½. Red. August. Europe. 1817.
„ *tenuifloʹrus* (slender-flowered). Thrace and Macedonia
„ *umbellaʹtus* (umbel-*flowered*). See D. CHINENSIS.
„ *versiʹcolor* (changeable-coloured). See D. CHINENSIS.
„ *virgiʹneus* (virgin). 1. Red. June. Montpelier. 1816.
„ *viʹscidus* (viscid). Red. July. Greece.
„ *Waldsteiʹnii* (Waldstein's). Pink. July. Eastern Alps.

DIAPEʹNSIA. (An ancient Greek name of the Sanicle. Nat. ord. *Diapensiads* [Diapensiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

An extremely rare alpine prostrate little undershrub, from Lapland; yet it requires the protection of a frame in winter, to compensate for the winter covering of snow in its native climate. Seeds or division of the plant; peat and loam; a dry situation on a bank in summer, and a dry corner in a cold pit in winter.

D. barbulaʹta (small-bearded). See PIXIDANTHERA BARBATULA.
„ *lappoʹnica* (Lapland). ½. White. July. 1801.

DIAʹSCIA. (From *diaskeo*, to adorn; in reference to handsome appearance of the flowers. Nat. ord. Scrophulariaceæ.)

A half-hardy annual, which may be reared like Stocks and Asters, and planted out in May. It may also be cultivated in pots during summer for the decoration of the greenhouse or conservatory. Seeds; light rich soil.

D. Barbeʹræ (Mrs. Barber's). 1. Rose-pink. July, August. S. Africa. 1871.

DIASTEʹLLA VACCINIIFOʹLIA. See MIMETES VACCINIIFOLIA.

DIASTEʹMA. (From *di*, two, and *stemon*, a stamen. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Conradia.)

Stove herbaceous perennials. Divisions; cuttings of its young shoots, when two or three inches in length, after commencing to grow; peat and loam. Summer temp., 60° to 85°; winter, 48° to 55°.

D. Lehmaʹnni (Lehmann's). White, spotted and lined with violet. Colombia. 1888.
„ *ochroleuʹcum* (yellow-white-*flowered*). 1. August. New Grenada. 1844.
„ *piʹctum* (painted). White, dotted and marked with purple. Colombia. 1888.
„ *quinquevuʹlnerum* (five-spotted). White, pink. August. Colombia.

DIBBER, or DIBBLE. This instrument for making holes in which to insert seeds or plants is usually very simple in its construction, being at the best the head of an old spade-handle. To secure uniformity of depth in

planting beans, &c., by this instrument, it is useful to have it perforated with holes to receive an iron peg, at two and three inches from the point, as the case may require. It should be shod with iron; for if this be kept bright it will make holes into which the soil will not crumble from the sides. The crumbling is induced by the soil's adhesion to the dibble. For planting potatoes, a dibble with a head three inches in diameter at the point, eight inches long up to the foot-rest, and with a handle four feet long, is to be preferred. For the insertion of seed, a dibble that delivers the seed has been invented by a Mr. Smith, and another by Dr. Newington; the last is the best.

DIBLE'MMA SAMARE'NSE. See POLYPODIUM SAMARENSE.

DIBRA'CHION. See HOMALANTHUS.

DICENTRANTHE'RA. See ASYSTASIA.

DICE'NTRA. (From *di*, duplication, and *kentron*, a spur; in reference to the two spurs of the petals. Nat. ord. Papaveraceæ, sub-order Fumarieæ.)

D. specta'bilis is the most brilliant hardy plant added to our collections for many years, but furnishes the most obvious example of the remarkable economy of the sexual organs of its race. The flowers of Fumitories never open, and their peculiar construction seems to offer no means for the pollen to escape; but, by a peculiar contrivance connected with the parts, fecundation is effectually and simply brought about. We have failed, however, to effect the process artificially with *D. specta'bilis*. This most beautiful plant was described by Linnæus from dried specimens, but was not seen alive by any European until Mr. Fortune found it in gardens in the north of China, and sent it, in 1846, to the London Horticultural Society. It is a spring-flowering, deciduous, herbaceous plant, with large fleshy roots; the stalks and leaves rise to eighteen inches or two feet, and look like a small-leafed tree-peony; the flowers are produced on spikes from four to six inches long, and hang down gracefully on one side. It requires rich, light soil, and is readily increased by dividing the crown of the roots early in spring, or by cuttings after the plant is in growth. It will find its way, like the China Rose, into every cottage-garden. All hardy herbaceous, and flowering in June; the same culture is applicable to all the species.

D. bracteo'sa (bracted). 1. White. N. Amer. 1823.
,, *canade'nsis* (Canadian). ½. White. N. Amer. 1819. "Bleeding Heart."
,, *chrysa'ntha* (golden-flowered). 3. Bright yellow. California. 1852.
,, *Cuculla'ria* (monk's-hood). ½. White. N. Amer. 1731. "Dutchman's Breeches."
,, *exi'mia* (choice). 1½. Flesh. N. Amer. 1812.
,, *formo'sa* (handsome). 1. Flesh. N. Amer. 1796.
,, *lachenaliæflo'ra* (Lachenalia-flowered). 1. Purple. Siberia. 1826.
,, *pauciflo'ra* (few-flowered). California.
,, *sacca'ta* (saccate). See D. FORMOSA.
,, *sca'ndens* (climbing). Pink, white. Himalaya.
,, *specio'sa* (showy). 1. Flesh. 1810.
,, *specta'bilis* (remarkable). 1½. Purple. Siberia, 1810; Japan. 1846.
,, *tenuifo'lia* (fine-leaved). See D. LACHENALIÆFLORA.
,, *thalictrifo'lia* (Thalictrum-leaved). 3. Yellow, brown August. Himalaya. 1831.

DICE'RMA. See DESMODIUM.

DICHÆ'A. (From *dicha*, bifarious; in reference to the two-ranked leaves. Nat. ord. Orchidaceæ.)

Stove, epiphytical Orchids. See ORCHIDS FOR CULTIVATION.

D. glauca (sea-green). Trop. Amer.
,, *picta* (painted). Green, dotted purple. Trinidad. 1870.
,, *vagina'ta* (sheathed). Mexico. 1885.

DICHI'LUS. (From *dis*, two, and *cheilos*, a lip; in reference to two divisions of the calyx being longer than the rest. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Hypocalyptus.)

Greenhouse evergreen. Cuttings of young shoots getting firm at the base, in sand, under a bell-glass; sandy peat. Summer temp., 55° to 80°; winter, 40° to 48°.

D. lebeckioi'des (Lebeckia-like). 2½. White, yellow. April. Cape of Good Hope. 1826.

DICHOPO'GON. (From *dicha*, without, and *pogon*, a beard; literally, beardless, in reference to the glabrous stamens. Nat. ord. Liliaceæ.)

Greenhouse bulbs. Offsets. Fibrous loam and sand.

D. sieberia'nus (Sieberian). 2. White. July. Australia. 1822.
,, *stri'ctus* (upright). 1½. Purple. Heliotrope scented. June. Australia.
,, *undula'tus* (waved). See D. STRICTUS.

DICHO'PSIS. (Derivation uncertain. Nat. ord. Sapotaceæ.)

Stove evergreen tree. Seeds; cuttings in sand in a close case with bottom-heat. Fibrous loam and peat, with a good dash of sand.

D. Gu'tta (Gutta). Malaya. 1847.
,, *oblongifo'lia* (oblong-leaved). Malacca.

DICHORISA'NDRA. (From *dis*, twice, *chorizo*, to part, and *aner*, an anther; referring to the anthers being two-celled. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Campelia.)

D. thyrsiflo'ra is the handsomest plant of this order, and one of the best stove plants in cultivation, for winter or late autumnal flowering. We have seen it, under liberal treatment, rise to ten feet, branched all round, and every branch ending in a long spike or thyrse of densely-set, sky-blue flowers. When the flowers begin to expand, it may be removed to a warm conservatory, where it will last in bloom from six weeks to two months. Stove herbaceous perennials, from Brazil. Division of the plant, when growth is commencing; seeds sown in a hotbed in spring; peat and loam, with sand and leaf-mould. Summer temp., 60° to 80°; winter, 45° to 55°.

D. acaulis (stemless). Violet-blue. Leaves intense green with silvery white lines. Brazil. 1894.
,, *a'lbo-margina'ta* (white-edged). Brazil. 1868.
,, *angustifo'lia* (narrow-leaved). Leaves with transverse white streaks. Ecuador. 1892.
,, *aublietia'na* (Aublietian). 1. June. S. Amer. 1818.
,, *di'scolor* (two-coloured). September. 1848.
,, *gra'cilis* (slender). 1½. Blue. August.
,, *leucophtha'lmos* (white-eyed). Blue and white. June. Brazil.
,, *mosa'ica* (mosaic). Leaves banded with purple. Peru. 1867.
,, ,, *gigante'a* (giant). Leaves 9 in. long, 5 in. wide. 1892.
,, *ovalifo'lia* (oval-leaved). Purple. May. 1846.
,, *oxype'tala* (sharp-petaled). 2. Red. August. 1810.
,, *pi'cta* (painted-*leaved*). ½. Blue. September. 1830.
,, *pube'rula* (downy). 3. Blue. August. 1823.
,, *pube'scens* (downy). Blue and white. Brazil.
,, ,, *tænie'nsis* (Tænian). Leaves striped with white.
,, *Saunde'rsii* (Saunders'). 2. White, violet. July. Brazil. 1873.
,, *Siebe'ri* (Sieber's). Gardens.
,, *thyrsiflo'ra* (thyrse-flowered). 4. Blue. August. 1822.
,, *unda'ta* (waved). Leaves waved, striped with silvery-grey. Peru. 1879.
,, *vitta'ta* (striped). Leaves striped.

DICHO'SMA. See AGATHOSMA.

DI'CHROA. (From *di*, two, and *chroos*, colour; the flowers are blue and purple. Nat. ord. Saxifragaceæ.)

Greenhouse evergreen shrubs. Cuttings in sand under a bell-glass. Loam, peat, and sand.

D. febri'fuga (febrifugal). 4. Pale purple and blue. Berries blue. Himalaya; Malaya; China. 1829.

DICHRO'STACHYS. (Derived from *dichra*, two-form, and *stachys*, a spike. Nat. ord. Leguminosæ.)

Stove shrub. Seeds. Fibrous loam, peat, and sand.

D. platyca'rpa (broad-fruited). Spikes partly rose and partly yellow. Angola. 1866.

DICHROTRI'CHIUM. (Derived from *dichroos*, two-coloured, and *thrix*, a hair; the hairs on the seeds of some species are of two colours. Nat. ord. Gesneraceæ.)

Stove shrub. Cuttings in sand in a close case, with bottom-heat. Fibrous loam and peat, with some nodules of charcoal and sand.

D. terna'teum (Ternatean). Crimson. Island of Ternate. 1872.

DICKSO'NIA. (Named after *James Dickson*, a British botanist, who studied this. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove and greenhouse ferns, many of them being tree ferns, confined to a single stem, and very stately when of large size. Division of the roots in the case of those species having a branching rootstock; best done when growth is commencing; peat and loam, both fibrous, with sand to insure porosity. Summer temp., 60° to 80°; winter, 48° to 55°.

D. adiantoi'des (Adiantum-like). 2. November. W. Ind. 1828.
,, *anta'rctica* (antarctic). September. N. Holland. 1824.
,, *arbore'scens* (tree-like). 15. September. St. Helena. 1786.
,, *Ba'rometz* (Barometz). 6. Brown, yellow. May. China. 1824. Stove.
,, *berteroa'na* (Berteroan). 15. Juan Fernandez. 1880.
,, *Billardie'ri* (Billardière's). See D. ANTARCTICA.
,, *chryso'tricha* (golden-haired). Frond bipinnate. Java. 1875.
,, *cicuta'ria* (hemlock-leaved). Frond bipinnate. Trop. Amer.
,, *cinnamo'mea* (cinnamon). Australia. 1865.
,, *Cu'lcita* (Culcita). Frond tripinnate. Madeira and Azores.
,, *davallioi'des* (Davallia-like). 3. September. N. Holland. 1833.
,, ,, *cunea'ta* (wedge-shaped). Lobes broader. Philippines.
,, *Depla'nchei* (Deplanche's). Fronds large, tripinnate. New Caledonia. 1876.
,, *diss'ecta* (cut-*leaved*). See D. ADIANTOIDES.
,, *fla'ccida* (drooping). Frond tripinnate. Aneitum and New Hebrides.
,, *fra'gilis* (fragile). ½. September. Caucasus.
,, *glutino'sa* (clammy). E. Ind.
,, *lana'ta* (woolly). See D. ANTARCTICA.
,, *Latha'mi* (Latham's). Supposed hybrid (*antarctica* × *arborescens*). 1885.
,, *pilosiu'scula* (rather-hairy). 2. August. N. Amer. 1811.
,, *pube'scens* (pubescent). 6. Colombia.
,, *puncti'loba* (dotted-lobed). N Amer. 1822
,, *rubigino'sa* (rusty). May. Brazil. 1841.
,, *sca'ndens* (climbing). Java.
,, *Schie'dei* (Schiede's). 15. Frond bipinnate. Mexico and Guatemala. 1846. Stove.
,, *sellowia'na* (Sellowian). Frond bipinnate. Trop. Amer. 1871.
,, *squamo'sa* (scaly). New Zealand.
,, *squarro'sa* (spreading). Frond bipinnate. New Zealand, N. S. Wales.
,, *You'ngii* (Young's). Frond tripinnate. Australia. 1865.

DICLI'PTERA. (From *dis*, twice, and *kleio*, to shut; referring to the two-celled capsule, or seed-vessel. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Justicia.)

Annuals, by seed in a hotbed, in spring; perennials by cuttings of side-shoots, or the points of shoots, in sandy soil, in bottom-heat, with a hand-light, not so close as a bell-glass. Loam and peat, open and fibrous, with a little rotten leaf-mould. Summer temp., 60° to 85°; winter, 48° to 55°.

Stove Annuals.

D. resupina'ta (lying-back). 1½. White, purple. March. Mexico. 1805.
,, *sexangula'ris* (six-angled). 2. Red. July. Jamaica. 1733.

Greenhouse Perennials.

D. chine'nsis (Chinese). Pale blue. September. E. Ind. 1816. Herbaceous.
,, *niederleinia'na* (Niederleinian). Argentina. 1906. Shrubby.
,, *tweedia'na* (Tweedian). Orange-red. Autumn. Uruguay. 1874.
,, *verticilla'ris* (whorl-*flowered*). See HYPOËSTES VERTICILLARIS.

Stove Evergreens, &c.

D. assu'rgens (rising). 2. Red. July. W. Ind. 1818.
,, *biva'lvis* (two-valved). ½. Purple. June. E. Ind. 1818.
,, *martinice'nsis* (Martinique). 2. Purple. July. W. Ind. 1818.
,, *pectina'ta* (comb-like). See RUNGIA PARVIFLORA.
,, *peruvia'na* (Peruvian). 2. Purple. June. Peru. 1818.
,, *retu'sa* (abrupt-ended). 2. Purple. July. W. Ind. 1821. Herbaceous.
,, *scorpioi'des* (scorpion-like). See TETRAMERIUM SCORPIOIDES.
,, *spino'sa* (spiny). See BARLERIA LUPULINA.

DICRY'PTA BAUE'RI. See MAXILLARIA CRASSIFOLIA.

DICTA'MNUS. Fraxinella, or Dittany. (*Dictamnus*, a name adopted from Virgil; *Fraxinella*, a diminutive of *fraxinus*, the ash, from the similarity of their leaves. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

This is one of the oldest and best border-plants of our cottage-gardens. Instances are known where the Fraxinella has outlived father, son, and grandson in the same spot, without increase, all attempts at multiplying it, to give away a rooted slip to a newly-married member of the family, having failed; yet the Fraxinella is easily increased from seeds. Sow, as soon as they are ripe, in the common soil of the border, and cover one inch deep; they will not sprout till the following April. If they are kept over the winter, and sown in the following spring, they will remain twelve months before they sprout; and not one seed out of a hundred sprouts at all. When the seedlings are two years old, transplant them where they are to remain, and they will flower the third season. They prefer a deep, rich border, on a dry bottom, and all flower in June.

D. a'lbus (white). 3. White. Germany. 1596.
,, ,, *himala'icus* (Himalayan). 2. Purple. Himalayas.
,, ,, *purpu'reus* (purple). 3. Purple. Europe. 1596. "Burning Bush."
,, ,, *tau'ricus* (Taurian). 2. Purple.
,, *angustifo'lius* (narrow-leaved). See D. ALBUS.
,, *cauca'sicus* (Caucasian). 3. Purple. Caucasus. 1906.
,, *Fraxine'lla* (Fraxinella). See D. ALBUS PURPUREUS.

DICTYA'NTHUS. (From *dictyon*, network, and *anthos*, a flower; alluding to the markings on the corolla. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove climber. For culture, see PASSIFLO'RA.

D. Pavo'nii (Pavon's). 10. Green, brown. September. Mexico. 1854.

DICTY'MIA ATTENUA'TA. See POLYPODIUM BROWNII.

DICTYOCA'RYUM. (From *dictuon*, a net, and *karuon*, a nut. Nat. ord. Palmaceæ.)

Stove Palm. For cultivation, see PALMS.

D. Walli'sii (Wallis's). Colombia. 1880.

DICTYOGLO'SSUM. See ACROSTICHUM CRINITUM.

DICTYOGRA'MMA JAPONICA. See GYMNOGRAMME JAPONICA.

DICTYO'PSIS THUNBE'RGII. See BEHNIA RETICULATA.

DICTYO'PTERIS. See POLYPODIUM.

DICTYOSPE'RMA. (From *dictuon*, a net, and *sperma*, a seed; in reference to the netted seeds. Nat. ord. Palmaceæ.)

Stove Palms. For culture, see PALMS.

D. a'lbum (white). 30. Leaf-stalks white. Mauritius and Bourbon. 1842.

„ „ *furfura'ceum* (scurfy). Leaf-stalks brown.

„ „ *ru'brum* (red). Leaf-stalks red.

„ *au'reum* (golden). Leaf-stalks yellow. Seychelles. 1868.

„ *fibro'sum* (fibrous). 5. Madagascar. 1894. "Vonitra."

DICY'RTA. (From *di*, twice, and *kurtos*, curved; referring to the curved tube of the corolla. Nat. ord. Gesneraceæ.)

Stove perennial. Seeds; divisions of the roots. Fibrous loam, leaf-mould, and plenty of sand.

D. ca'ndida (white). White. Guatemala.

„ *warszewiczia'na* (Warszewiczian). ½. White, lilac. July. Guatemala. 1848.

DIDIE'RA. (In compliment to *M. A. Grandidier*. Nat. ord. Sapindaceæ (?).)

A stove shrub, like a succulent Euphorbia. Cuttings of mature wood in a close case with bottom-heat, and not kept too wet. Loam, leaf-mould, and sand, with some broken bricks.

D. mira'bilis (wonderful). Rose. Madagascar. 1898.

DIDI'SCUS CÆRU'LEUS. See TRACHYMENE CÆRULEA.

DIDYMOCA'RPUS. (From *didymos*, twin, and *carpos*, fruit; referring to a double division along the centre of the seed-vessel. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Chirita.)

This must not be confounded with its ally, Streptocarpus. Stove herbaceous. Division; cuttings of young shoots, when commencing growing, in sandy soil, in bottom-heat; peat and loam, with sand, a little turf-mould, and rotten cow-dung. Summer temp., 60° to 80°; winter, 45° to 55°.

D. crini'ta (*long*-haired). 1. White, yellow. July. Pulo Penang. 1845.

„ *cya'nea* (blue). ½. Deep blue. Malay Peninsula. 1902.

„ *humboldtia'na* (Humboldt's). Lilac. October. Ceylon.

„ *lacuno'sa* (pitted). Violet. Penang.

„ *malaya'na* (Malayan). Primrose yellow. Penang. 1896.

„ *Morto'ni* (Morton's). Himalaya.

„ *polya'ntha* (many-flowered). See STREPTOCARPUS POLYANTHA.

„ *primulæfo'lia* (Primula-leaved). Lilac. November. Ceylon. 1858.

„ *Re'xii* (King's). See STREPTOCARPUS REXII.

DIDYMOCHLÆ'NA. (From *didymos*, twin, and *chlaina*, a cloak; referring to the coverings of the spore-cases, called seed-vessels. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Handsome stove Ferns, allied to Oxygonium. Divisions; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

D. lunula'ta (moon-shaped). 4 to 6. Fronds bipinnate. Trop. Amer. 1838. Syn. *Aspidium truncatulum*.

„ *polyca'rpa* (many-fruited). 2 to 3. Fronds pinnate. Malaya.

DIDYMOPA'NAX. (From *didumos*, double, and *Panax*; in reference to the form of the fruit. Nat. ord. Araliaceæ.)

Stove or greenhouse tree. Cultivation as for Aralia.

D. Houlle'tii (Houllet's). Mexico. 1869.

DIDYMOPLE'XIS. (From *didumos*, double, and *plexis*, a plait or fold. Nat. ord. Orchidaceæ.)

A saprophytic Orchid for the East Indian house. For culture, see ORCHIDS.

D. pa'llens (pale). ½. Brownish. India and Perak. 1903.

DIDYMOSPE'RMA. From *didumos*, double, and *sperma*, a seed. Nat. ord. Palmaceæ.)

Stove Palms. For cultivation, see PALMS.

D. hookeria'na (Hookerian). 3. Leaves silvery. Malay Peninsula. 1908.

„ *na'num* (dwarf). 1 to 3. Pinkish. Assam and Khasia. 1874.

„ *porphyroca'rpon* (purple-fruited). 4 to 8. White. Rootstock creeping. Java.

„ *tre'mulum* (quivering). 3 to 4. White. Siam.

DIEFFENBA'CHIA. (Named in compliment to *Dr. Dieffenbach*, a German botanist. Nat. ord. Araceæ.)

Handsome, evergreen, stove perennials, grown solely for their handsomely blotched and variegated leaves. Cuttings of the stem placed in a close case with bottom-heat; also by suckers. Loam and peat, with some well-decayed cow manure and sand. When cutting the stems for propagation or other purposes, cultivators should be careful not to place any part in the mouth, as the juice is extremely acrid and poisonous, causing the tongue to swell, and the sufferer to lose his power of speaking for some time. On this account *D. Seguine* has been called the Dumb-cane.

D. alliodo'ra (garlic-scented). 2. Spathe green; spadix white. Trop. Amer. 1871.

„ *ama'bilis* (lovely). Leaves bright green, mottled yellow-green. Colombia. 1876.

„ *amazo'nica* (Amazonian). Leaves with feathery white band and yellow-white spots. Brazil. 1872.

„ *ame'na* (pleasing). Blotched white and pale yellow. S. Amer. 1880.

„ *antioquie'nsis* (Antioquian). Leaves blotched yellow. Colombia. 1875.

„ *baraquinia'na* (Baraquinian). Rib and leaf-stalk white. Brazil. 1863.

„ *Bau'sei* (Bause's). See D. PICTA.

„ *Bowma'ni* (Bowman's). Pale green, blotched dark green. Brazil. 1871.

„ *brasilie'nsis* (Brazilian). Leaves mottled greenish-yellow and white. Brazil. 1872.

„ *Carde'ri* (Carder's). Leaves variegated. Colombia. 1880.

„ *Chelso'ni* (Chelsea). Leaves with yellow-green rib and grey, feathered band. Colombia. 1877.

„ *costa'ta* (ribbed). Leaves velvety-green, rib ivory-white. Venezuela. 1860.

„ *deco'ra* (becoming). Para. 1868.

„ *dele'cta* (select). Leaves spotted with white. Colombia. 1880.

„ *ebu'rnea* (ivory). Leaves spotted with white. Brazil. 1868.

„ *Fournie'ri* (Fournier's). Leaves spotted and splashed black and white. 1903.

„ *gigante'a* (giant). Mottled light green and white. Colombia. 1864.

„ *gra'ndis* (grand). Leaves mottled with green. Brazil. 1864.

„ *illu'stris* (lustrous). Leaves with yellow-green blotches. Colombia. 1876.

„ *Impe'rator* (commander). Leaves blotched pale yellow and white. Colombia. 1881.

„ *imperia'lis* (imperial). Leaves with yellow spots and grey rib. Peru. 1871.

„ *insi'gnis* (remarkable). Leaves with pale yellow-green blotches. Colombia. 1881.

„ *Jenma'ni* (Jenman's). Leaves with whitish blotches on the veins. British Guiana. 1884.

„ *kerchovea'na* (Kerchovean). Leaves with confluent white blotches. 1898.

„ *Lance'ola* (Lanceola). Leaves with a narrow central white band. Colombia. 1876.

„ *lancifo'lia* (lance-leaved). Leaves blotched with yellow. Brazil. 1875.

„ *latimacula'ta* (broad-blotched). Leaves clouded with yellow green. Brazil. 1871.

„ „ *illu'stris* (lustrous). Leaves blotched with pale green. Brazil. 1876.

„ *Leopo'ldii* (Leopold's). S. Amer.

„ *linea'ta* (lined). Colombia. 1853.

„ *litura'ta* (smeared). Trop. Amer. 1852.

„ *maculo'sa* (blotched). Leaves with irregular blotches. Colombia. 1876.

„ *magnifica* (magnificent). Leaves variegated with white. Venezuela. 1883.

D. maje'stica (majestic). Leaves with bright yellow blotches. 1882.
,, *marmora'ta* (marbled). Leaves spotted creamy-white. Colombia. 1877.
,, *me'dio-pi'cta* (middle-painted). Brazil. 1869.
,, *Melea'gris* (Guinea-hen). Leaves with a few white spots. Ecuador. 1892.
,, *Memo'ria-Co'rtii*. (In memory of *Cort.*)
,, *mira'bilis* (wonderful). Brazil. 1868.
,, *ni'tida* (shining). Blotched bright yellow-green. Colombia. 1881.
,, *no'bilis* (noble). Leaves with yellow-green patches. Brazil. 1869.
,, *O'lbia* (Olbia). Rib feathered white and spotted yellow-green. Peru. 1892.
,, *Parlato'rei* (Parlatore's). Spathe green. Colombia.
,, ,, *marmo'rea* (marbled). Leaves with greenish-white blotch. Colombia. 1877.
,, *Pea'rcei* (Pearcei). Leaves spotted creamy-white. Ecuador.
,, *pi'cta* (painted). Leaves spotted with white. Brazil. 1820.
,, *pictura'ta* (painted). Leaves spotted with white. Venezuela. 1892.
,, *pri'nceps* (chief). Leaves with few yellow spots and grey rib. Brazil. 1868.
,, *Regi'na* (queen). Leaves greenish-white, blotched dark green. S. Amer. 1883.
,, *Re'x* (king). Leaves blotched with white. S. Amer. 1883.
,, *robu'sta* (robust). Trop. Amer. 1854.
,, *Segui'ne* (Seguine). Spathe white. Trop. Amer. "Dumb-cane."
,, ,, *macula'ta* (blotched). Leaves blotched.
,, ,, *variega'ta* (variegated). Leaves variegated.
,, *Shutilewo'rthii* (Shuttleworth's). See D. PICTA.
,, *specio'sa* (showy). Leaves striped silvery grey, purple beneath. 1882.
,, *specta'bilis* (showy). Brazil. 1864.
,, *sple'ndens* (splendid). Leaves with white streaked blotches. Colombia. 1880.
,, *triu'mphans* (triumphant). Thickly blotched with yellow-green. Colombia. 1881.
,, *veluti'na* (velvety). Leaves bright green. Colombia. 1877.
,, *Verschaffe'ltii* (Verschaffelt). See D. BARAQUINIANA.
,, *vitta'ta* (striped). Leaves with two feathery bands of white. Colombia. 1876.
,, *Walli'sii* (Wallis). Leaves with feathered whitish central band. Colombia. 1870.
,, *Wei'rii* (Weir's). Marbled with yellow. Brazil. 1866.

DIELY'TRA. See DICENTRA.

DIERA'MA. (From *dierama*, a funnel; in allusion to the funnel-shaped flowers. Nat. ord. Iridaceæ.)

Beautiful bulbous plants allied to Sparaxis, and may be grown in light soil in front of a south wall, or kept in cold frames for the winter. Seeds, and offsets. Light, sandy soil.

D. pe'ndula (pendulous-flowered). 2 to 4. White to mauve purple. S. Africa. 1825.
,, *pulche'rrima* (fairest). 5 to 6. Blood-purple. S. Africa. B. M., t. 5555.
,, ,, *a'lba* (white).

DIERVI'LLA. (Named after *M. Dierville*, a French surgeon. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Leycesteria.)

Creeping-rooted, hardy shrubs. Suckers from the roots; cuttings in the open ground, in autumn; common, moist, shaded garden-soil.

D. ama'bilis (lovely). See D. GRANDIFLORA.
,, *canade'nsis* (Canadian). See D. LONICERA.
,, *floribu'nda* (free-flowering). 3 to 4. Red-purple. June. Japan. 1863.
,, ,, *versi'color* (changing-coloured).
,, *flo'rida* (flowery). 3 to 5. Rose. China. 1844.
,, ,, *ca'ndida* (white). White. 1879.
,, ,, *monstro'sa* (monstrous). Leaves crisped, often clustered.
,, ,, *variega'ta* (variegated). Leaves variegated.
,, *grandiflo'ra* (large-flowered). 3 to 6. Rose. June. Japan.
D. grandiflo'ra variega'ta (variegated). Leaves variegated pale yellow.
,, *horte'nsis* (garden). See D. JAPONICA HORTENSIS.
,, *hy'brida* (hybrid). A collective name for the garden hybrids.
,, *japo'nica* (Japanese). 3 to 6. Rose. May. Japan. 1884.
,, ,, *horte'nsis* (garden). 5. Pink. Japan.
,, ,, *Looyma'nsii au'rea* (golden). Leaves light yellow.
,, *Lonice'ra* (honeysuckle-like). 3. Yellow. June. N. Amer. 1739.
,, *lu'tea* (yellow-*flowered*). See D. LONICERA.
,, *middendorfia'na* (Middendorfian). Yellow-white. Siberia. 1854.
,, *multiflo'ra* (many-flowered). See D. FLORIBUNDA.
,, *præ'cox* (early). Rose. May. Japan. 1897.
,, *rivula'ris* (brook). 3. Yellow, tinted pink. Eastern United States. 1901.
,, *ro'sea* (rosy). See D. FLORIDA.
,, *sessilifo'lia* (sessile-leaved). 3 to 4. Yellow. E. United States. 1888.
,, *tri'fida* (three-cut). See D. LONICERA.
,, *versi'color* (changing-coloured). See D. FLORIBUNDA VERSICOLOR.

DIETE'RIA. See ASTER.

DIE'TES COMPRE'SSA. See MORÆA IRIDIOIDES.

DIE'TES HUTTO'NI. See MORÆA SPATHACEA.

DIGGING with the spade or fork has for its object a loosening of the soil so as to render it more fit for the reception of seeds or plants. Begin at one end of the piece of ground, and with your spade open a trench quite across, one good spade wide and one deep, carrying the earth to the end where you finish; then, keeping your face to the opening, proceed to dig one spade deep regularly from one side of the piece to the other, turning the spits neatly into the trench, and the next course against these; and so keep digging straight back, spit and spit, still preserving an open trench, a good spade width and depth, between the dug and undug ground, that you may have full room to give every spit a clean turn, taking all the spits perpendicularly, and not taking too much before the spade, especially in stiff land, or where the surface is full of weeds, or is much dunged; so giving every spit a clean turn, the top to the bottom and the bottom to the top, that the weeds or dung on the surface may be buried a due depth, and that the fresh earth may be turned up. As you proceed, break all large clods, and preserve an even surface carrying both sides and middle on equally, unless one side shall be hollow; then carry on the hollow side first in a gradual sweep, inclining the spits of earth rather that way, which will raise that side and reduce the high one, observing the same if both sides are high and the middle hollow, or both sides hollow and the middle high, always keeping the lower ground advancing gradually before the higher, by which you will always maintain a uniform level.

The same should also be observed in beginning to dig any piece of ground, that if one corner is much lower than another, carry on the lower part somewhat first, in a slanting direction, as far as necessary. Likewise, in finishing any pieces of digging, gradually round upon the lower side, so as to finish at the highest corner; and having dug to where you intend to finish, then use the earth taken out of the first trench to make the last opening equal with the other ground. In plain digging dunged ground, if the dung is quite rotten you may dig clean through, giving each spit a clean turn to bury the dung in the bottom of the trench; but if you cannot readily do this, trim the dung a spade's width at a time into the furrow or open trench, and so dig the ground upon it, which is rather the most effectual method, whether rotten or long fresh dung.

All weeds that are perennial should be carefully picked out, particularly couch-grass and bear-bind. But annual weeds, groundsel, and the like, should be turned down to the bottom of the trench, where they will rot.

A man will dig, by plain digging of light, free-working, clean ground, eight, ten, or twelve rods a day, from six to six, though in some of the light, clean ground about London, a man will turn up fifteen or twenty rods a day, from five to seven; but in stiff, stubborn soils, a

man may work hard for six or eight rods in a day of twelve hours. *Trenching*, if only one spade deep, without the crumbs or shovelling at bottom, a man will dig almost as much as by plain digging; or two spades' depth, from four to six rods a day may be good work, though in harsh-working ground digging three or four rods per day may be hard work.—(*Mawe.*) Most garden soils dig best the day after a fall of rain; and if the soil has in its composition a larger proportion than usual of clay, the operation will be facilitated by dipping occasionally the spade into water. Most gardeners object to digging while snow is upon the ground, and the objection is not mere prejudice, for experience proves the bad result of the practice. The evil is owing to the great quantity of heat required to reduce ice or snow from the solid to the fluid state; and when buried so that the atmospheric heat cannot act directly upon it, the thawing must be very slowly effected, by the abstraction of heat from the soil by which the frozen mass is surrounded. Instances have occurred of frozen soil not being completely thawed at midsummer.

DIGITA'LIS. Foxglove. (From the Latin *digitale*, a finger-stall; referring to the shape of the flowers. Nat. ord *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia.*)

The seeds should be sown in the autumn; when sown in the spring they often remain twelve months before they sprout. Division; and most of them plentifully by seeds; common soil.

BIENNIALS.

D. eriosta'chya (woolly-spiked). 3. Brown, yellow. July. Russia. 1827.
„ *ferrugi'nea* (rusty). 4. Brown. July. Italy. 1597.
„ *purpu'rea* (purple. *Common Foxglove*). 4. July. Britain.
„ „ *a'lba* (white). 4. July. Britain.
„ „ *nevade'nsis* (Nevadan).

PERENNIALS.

D. ambi'gua (ambiguous). 3. Light yellow. July. Switzerland. 1596.
„ *au'rea* (golden). See D. LÆVIGATA.
„ *canarie'nsis* (Canary). See ISOPLEXIS CANARIENSIS.
„ *cilia'ta* (ciliated). Yellow. Caucasus. 1892.
„ *erube'scens* (reddish). Reddish. Hybrid.
„ *fu'lva* (tawny). 3. Brown. June. S. Europe.
„ *fusce'scens* (dark brown). 2. Red. July. Hungary. 1823.
„ *glutino'sa* (clammy). See REHMANNIA CHINENSIS.
„ *grandiflo'ra* (large-flowered). See D. AMBIGUA.
„ *lacinia'ta* (cut-*leaved*). 1½. Yellow. June. Spain. 1827.
„ *læviga'ta* (smooth-*leaved*). 2. Yellow. July. Hungary. 1816.
„ *lana'ta* (woolly). 2. Yellow. June. Hungary. 1789.
„ *leucophæ'a* (grey). 2. White, brown. June. Greece. 1788.
„ *lindleya'na* (Lindleyan). Hybrid. 1836.
„ *lu'tea* (yellow). 2. July. France. 1629.
„ „ *fuca'ta* (dyed). 2. Yellow, red. June. S. Europe.
„ *maria'na* (Marian). Rose. Summer. Spain.
„ *me'dia* (intermediate). 2. Yellow. June. S. Europe. 1817.
„ *micra'ntha* (small-flowered). See D. LUTEA.
„ *mi'nor* (smaller). ¾. Purple. July. Spain. 1789.
„ *nervo'sa* (*large*-nerved-*leaved*). Yellow. July. Caucasus. 1836.
„ *nevade'nsis* (Nevadan). See D. PURPUREA NEVADENSIS.
„ *obscu'ra* (obscure). 1. Orange. June. Spain. 1778. Half-hardy evergreen.
„ *ochroleu'ca* (yellowish-white). See D. AMBIGUA.
„ *orienta'lis* (eastern). 1½. White. June. Levant. 1820.
„ *parviflo'ra* (small-flowered). 1½. Brown. July. S. Europe. 1798.
„ *purpura'scens* (purplish). 2. Pink. June. Europe. 1776.
„ *ri'gida* (stiff). 1½. Yellow, red. June.
„ *Sce'ptrum* (sceptre). See ISOPLEXIS SCEPTRUM.
D. sibi'rica (Siberian). Yellow, red. July. Siberia. 1826.
„ *Tha'psi* (Thapsi). 1½. Purple. June. Spain. 1752.
„ *tomento'sa* (woolly). 3. Red. July. Portugal. 1818.
„ *tubiflo'ra* (tube-flowered). 2. Yellow. June. S. Europe.
„ *viridiflo'ra* (green-flowered). July. Levant. 1827.

DIGLOSSOPHY'LLUM SERRULA'TUM. See CHAMÆROPS SERRULATA.

DILA'TRIS. (From *dilato*, to open wide; referring to the opening of the flower. Nat. ord. *Bloodroots* [Hæmodoraceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Anigozanthos.)

Greenhouse herbaceous plants, with sword-shaped leaves, from the Cape of Good Hope. Divisions, when fresh growth is commencing; seeds in a slight hotbed, in March or April; sandy loam and peat. Summer temp., 55° to 75°; winter, 40° to 45°.

D. corymbo'sa (corymb-*flowered*). 1. Purple. May. 1790.
„ *Heritie'ra.* See LACHNANTHES TINCTORIA.
„ *panicula'ta* (panicled-*flowered*). 1. Blue. June. 1825.
„ *visco'sa* (clammy). ¾. Blue. 1795.

DILL. (*Ane'thum grave'olens.*) Its leaves and umbels are used in pickling, and the former in soups and sauces.

Soil.—It may be cultivated in any open situation; but if for seed, a sheltered place, and rather dry soil is better.

Sowing.—Sow immediately the seed is ripe, for if kept out of the ground until the spring it often is incapable of germinating. If neglected until the spring, sow from the close of February until the commencement of May. Sow in drills a foot apart, the plants to remain where sown. When of three or four weeks' growth thin them to about ten inches apart. The leaves are fit for gathering as wanted, and the umbels about July and August. In September their seed ripens, when it must be immediately cut, and spread on a cloth to dry, being very apt to be shed.

DILLE'NIA. (After *Dillenius*, once professor of botany at Oxford. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia.*)

D. indica is a valuable timber-tree, with leaves after the manner of Magnoliads. Stove trees. Cuttings of ripe wood in sand under a glass, in bottom-heat, in April; sandy loam. Summer temp., 60° to 85°; winter, 48° to 55°.

D. denta'ta (toothed). See WORMIA TRIQUETRA.
„ *i'ndica* (Indian). 30. White, yellow. Tropical Asia. 1800.
„ *penta'gyna* (5-styled). 15. Yellow. E. Indies. 1803.
„ *retu'sa* (retuse). White. Ceylon.
„ *scabre'lla* (slightly rough). 10. Yellow. Himalayas. 1820.
„ *sca'ndens* (climbing). See HIBBERTIA VOLUBILIS.
„ *specio'sa* (showy). See D. INDICA.

DILLWY'NIA. (In honour of *L. W. Dillwyn*, a British patron of botany. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Eutaxia.)

Greenhouse evergreens, with yellow or orange-coloured flowers, from Australia. Cuttings of firm side-shoots in March or April, in sand, under a bell-glass; seeds in peaty soil, in a slight hotbed, in March; sandy peat two parts, fibrous loam one part, with a little silver sand, and pieces of charcoal. Summer temp., 55° to 75°; winter, 40° to 88°.

D. acicula'ris (needle-*leaved*). See D. CINERASCENS.
„ *cinera'scens* (greyish-*leaved*). 2. May. 1819.
„ *clava'ta* (club-shaped). See D. FLORIBUNDA.
„ *Drummo'ndii* (Drummond's). Yellow. 1863.
„ *ericifo'lia* (heath-leaved). 2. May. 1794.
„ *floribu'nda* (bundle-flowered). 2. May. 1794.
„ „ *brevifo'lia* (short-leaved). 2. April. 1824.
„ „ *hispi'dula* (slight-bristled). 2. May. 1824.
„ „ *teretifo'lia* (round-leaved). 2. May.
„ *glabe'rrima* (smoothest). See D. ERICIFOLIA.

D. glycinifo'lia (glycine-leaved). See CHORIZEMA ANGUSTIFOLIUM.
„ *hi'spida* (rough-haired). 2. May.
„ *juniperi'na* (juniper-*leaved*). 2. May. 1818.
„ *obova'ta* (obovate). See EUTAXIA MYRTIFOLIA.
„ *parvifo'lia* (small-leaved). See D. ERCICFOLIA.
„ *phylicoi'des* (Phylica-like). See D. ERICIFOLIA.
„ *pu'ngens* (pungent). June. 1825.
„ *ru'dis* (rustic). See D. FLORIBUNDA.
„ *sca'bra* (rough). See D. HISPIDA.
„ *seri'cea* (silky). See D. FLORIBUNDA.
„ *specio'sa* (showy). See D. ERICIFOLIA.
„ *tenuifo'lia* (fine-leaved). See D. ERICIFOLIA.

DILO'BA CÆRU'LEO-CE'PHALA. Figure-of-Eight Moth or Blue-head Caterpillar. The eggs of this moth are laid on the stems and branches of Apple and Plum trees in September, and the caterpillars hatch out when the trees are coming into leaf. They are green or smoky green, with a small blue head. They feed on the leaves, and are full grown about the middle of June. Being of large size they may be shaken from the trees and destroyed. The moths may also be caught by means of a lamp at night during November, the lamp having a temporary roof of tarred boards placed over it.

DIMA'CRIA. (One of seventeen sections into which the genus Pelargonium has been split. From *dis*, twice, and *makros*, long; referring to the two lower stamens being twice the length of the other three. Nat. ord. Geraniaceæ.) (Hoarea is now the accepted name of the section.)

There are about twenty species included under this head, all little botanical things, with fleshy or tuberous roots. Generally they are grown in sandy peat; they live much longer, however, confined in small pots in equal quantities of peat, loam, and pounded brick, well drained.

DIMOCA'RPUS. See NEPHELIUM.

DIMO'RPHA. See EPERUA.

DIMORPHA'NTHUS MANDSCHU'RICUS FOLIIS ARGENTEIS MARGINATIS is *Aralia chinensis foliis variegatis*, with creamy-white margin to the leaves. Manchuria. 1886.

DIMORPHOTHE'CA. (From *di*, duplication, *morphe*, form, and *theke*, a capsule; in allusion to the two forms of achenes or seeds.

Annual or shrubby perennials, requiring the protection of a greenhouse in winter. The annuals may be sown in heat and planted out in May, or sown in the open border in April. The perennials by cuttings in heat, when sufficiently strong young shoots are obtainable in spring. Fibrous loam, a little leaf-mould and sand.

D. a'nnua (annual). See D. PLUVIALIS.
„ *auranti'aca* (orange). Orange, with a black centre. S. Africa. 1774.
„ *Barbe'riæ* (Mrs. Barber's). Purple. S. Africa. 1862.
„ „ *ro'sea* (rosy). Rose, bronze. Transvaal. 1908.
„ *chrysanthemifo'lia* (Chrysanthemum-leaved). Yellow. April. S. Africa. 1790.
„ *cunea'ta* (wedge-shaped). Deep yellow. S. Africa. 1790.
„ *denta'ta* (toothed). Yellow. May. S. Africa. 1790. Annual.
„ *Ecklo'nis* (Ecklon's). White, purplish beneath. S. Africa. 1897.
„ *frutico'sa* (shrubby). White, purplish. S. Africa. 1887.
„ *graminifo'lia* (grass-leaved). See D. NUDICAULIS GRAMINIFOLIA.
„ *hy'brida* (hybrid). White. June. S. Africa. 1752.
„ *lilaci'na* (lilac). Lilac. S. Africa. 1864.
„ *nudicau'lis* (naked-stemmed). White, purple. S. Africa. 1731.
„ „ *graminifo'lia* (grass-leaved). Leaves narrowly linear.
„ *oppositifo'lia* (opposite-leaved). 2. Yellow. August. S. Africa. 1774.
„ *pluvia'lis* (rainy). White, purple. S. Africa. 1693. Annual.
„ *Tra'gus* (Tragus). 2. White, purple. May. S. Africa. 1774.

DINE'TUS. See PORANA.

DIŒCIOUS. Two-housed; applied to any species having the female and male flowers in separate flowers on separate plants.

DIOME'DEA. (After *Diomeda*, a classical name. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

This genus of greenhouse evergreens is now united to Borrichia. They have all yellow flowers.

D. arge'ntea (silvery-*leaved*). 2. June. S. Amer. 1824. This is *Borrichia argentea*.
„ *bidenta'ta* (two-toothed). 2. July. W. Ind. 1696. This is *Borrichia frutescens*.
„ *glabra'ta* (smooth). 3. June. S. Amer. 1699. This is *Borrichia arborescens*.

DIONÆ'A. Venus's Fly-trap. (After *Dione*, one of the names of Venus. Nat. ord. *Sundews* [Droseraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Notwithstanding all the fables about this plant, it is one of extreme interest to cultivators, owing as much to the care and skill necessary for its management, as to the irritability displayed by the three bristles on the blade of the leaves. They are so situated that an insect cannot pass along, or alight on the part, without touching one of them, when they suddenly fold, like the fingers of the two hands clasped together, and enclose the insect with a firmness beyond its strength to escape. Greenhouse evergreen. Division of the plant; seeds at times; leaves laid in damp moss, under a glass, will sometimes emit a young plant at its margin; peat earth, with a little sphagnum, moss, and bits of potsherds broken small. The pot is set in a pan, stuffed round, not very tight, with clear moss, and the pan filled with water; a bell-glass is placed over the plant, but kept from going close down all round. Summer temp., 60° to 85°; winter, 50° to 60°.

D. musci'pula (fly-catcher). ½. White. July. Carolina. 1788.

DIO'ON. (From *dis*, two, and *oon*, an egg; referring to the two-lobed scales which compose the large cones of the Cycad, bearing a large nut-like seed at the bottom of each scale; otherwise from seeds being borne in twos. Nat. ord. *Cycads* [Cycadaceæ]. Linn. 22-*Diœcia*, 11-*Dodecandria*. Allied to *Cycas revoluta*.)

A fine Palm-like plant. The fruit of this Dioon, which is as large as a chestnut, is powdered by the natives, and formed into a kind of arrowroot. Supposed to be propagated by suckers, and seeds when obtainable; rough, sandy loam, with some broken bricks and charcoal. Summer temp., 60° to 90°; winter, 55° to 60°.

D. edu'le (eatable-*seeded*). 2. April. Mexico. 1844.
„ „ *imbrica'tum* (imbricate). See D. EDULE.
„ „ *lanugino'sum* (woolly). Cones more woolly. 1899.

DIOSCO'REA. Yam. (After *P. Dioscorides*, a Greek physician. Nat. ord. *Yamworts* [Dioscoreaceæ]. Linn. 22-*Diœcia*, 6-*Hexandria*.)

Stove, green-flowered, tuberous-rooted plants, used as potatoes, or ornamental stove climbers. Dividing the tubers; light, rich soil. Summer temp., 60° to 80°; winter, 50° to 55°.

D. aculea'ta (prickly-*stemmed*). 10. E. Ind. 1803.
„ *ala'ta* (wing-*stalked*). 15. India. 1739.
„ *Anœctochi'lus* (Anœctochilus). Leaves banded with copper and bronze. S. Amer. 1865.
„ *argyræ'a* (silvery). Colombia.
„ *Bata'tas* (Batatas). See D. DIVARICATA.
„ „ *decaisnea'na* (Decaisnean). See D. DECAISNEANA.
„ *brasilie'nsis* (Brazilian). 8. Brazil. 1823.
„ *bulbi'fera* (bulb-bearing). 12. July. E. Ind. 1693.
„ *cauca'sica* (Caucasian). Leaves in whorls of 3 to 5. Caucasus. 1894. Hardy.
„ *cinnamomifo'lia* (cinnamon-leaved). See RAJANIA BRASILIENSIS.
„ *crini'ta* (roughly-hairy). White. Leaves digitate. Natal.
„ *decaisnea'na* (Decaisnean). China. 1862. Hardy.
„ *di'scolor* (two-coloured). S. Amer.
„ *divarica'ta* (spreading). 6 to 8. Chinese Yam. Hardy.

D. egre'gia (uncommon). Leaves variously blotched with green. Brazil. 1868.
„ *Eldora'do* (Eldorado). Olive-green, with silvery veins. Brazil. 1869.
„ *Farge'sii* (Farges'). Tubers edible. Western China. 1896. Hardy.
„ *hy'brida* (hybrid). Greenish-yellow. Supposed hybrid. 1882.
„ *illustra'ta* (pictured). Leaves satiny and silvery. Brazil. 1873.
„ *japo'nica* (Japanese). 9. Japan. 1852.
„ *marmora'ta* (marbled). Leaves marbled. Trop. Amer.
„ *multi'color* (many-coloured). Leaves variously blotched. Brazil. 1868.
„ „ *chrysophy'lla* (golden-leaved). Leaves olive-green and golden. Brazil. 1871.
„ *no'bilis* (noble). Leaves velvety bronze and yellow. Brazil. 1868.
„ *pentaphy'lla* (five-leaved). 10. E. Ind. 1768.
„ *prehe'nsilis* (prehensile). Trop. Africa.
„ *prisma'tica* (prismatic). Leaves purplish-green and silvery. Peru. 1871.
„ *qui'nqueloba* (five-lobed). Leaves 5-lobed. Japan.
„ *retu'sa* (blunt). Creamy-white. Leaves banded with silver. S. Africa. 1879.
„ *rhipogonoi'des* (Rhipogon-like). Hong-Kong.
„ *sati'va* (*common*-cultivated-*yam*). 20. August. W. Ind. 1733.
„ *sinua'ta* (scolloped). Brazil.
„ *specio'sa* (showy). Leaves with silvery-grey bands. 1882.
„ *transve'rsa* (transverse). Australia.
„ *vitta'ta* (striped). Greenish. Trop. Amer. 1872.

DIO'SMA. (From *dios*, divine, and *osme*, odour; referring to the powerful perfume which characterises these and other *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

These are among the Bucku-plants of the Cape colonists, and old inhabitants of our greenhouses; but some of the more showy species now form the new genera Adenandra, Agathosma, Barosma, &c. Greenhouse evergreens, from the Cape of Good Hope. All are white-flowered, except where otherwise mentioned. Cuttings of short-jointed young shoots in April, in sand, under a bell-glass; sandy peat three parts, fibrous loam one part, with silver sand and a few pieces of charcoal, to keep the soil open; some of the most robust species should have more loam, but in a fibrous, rough state. Summer temp., 55° to 75°; winter, 40° to 45°.

D. acumina'ta (long-pointed). See ADENANDRA UNIFLORA.
„ *a'lba* (white). See COLEONEMA ALBUM.
„ *ambi'gua* (doubtful). See AGATHOSMA AMBIGUA.
„ *capita'ta* (headed). See AUDOUINIA CAPITATA.
„ *cilia'ta* (eye-lashed). See AGATHOSOMA CILIATA.
„ *corda'ta* (heart-shaped). See AGATHOSMA IMBRICATA.
„ *corymbo'sa* (corymb-*flowered*). See AGATHOSMA VILLOSA.
„ *crena'ta* (round-notched). See BAROSMA BETULINA.
„ *cupre'ssina* (cypress-*leaved*). 1½. Pink. May. 1790.
„ *dioi'ca* (dicœcious). This is *Barosma lanceolata*.
„ *ericifo'lia* (heath-leaved). See D. OPPOSITIFOLIA.
„ *ericoi'des* (heath-like). 2. June. 1756.
„ *fœtidi'ssima* (most fœtid). 2. June. 1824. This is *Barosma fœtidissima*.
„ *fra'grans* (fragrant). See ADENANDRA FRAGRANS.
„ *hirsu'ta* (hairy-*leaved*). See D. OPPSITIFOLIA.
„ *hir'ta* (hairy). See AGATHOSMA HIRTA.
„ *hy'brida* (hybrid). 2. May. 1823.
„ *lanceola'ta* (lance-leaved). This is *Barosma lanceolata*.
„ *latifo'lia* (broad-leaved). See BAROSMA LATIFOLIA.
„ *linea'ris* (linear). See ADENANDRA UNIFLORA.
„ *linifo'lia* (flax-leaved). This is *Barosma lanceolata*.
„ *longifo'lia* (long-leaved). See D. OPPOSITIFOLIA.
„ *margina'ta* (margined). See ADENANDRA MARGINATA.
„ *odora'ta* (scented). See BAROSMA CRENULATA.
„ *oppositifo'lia* (opposite-leaved). 3. June. 1731.
„ *orbicula'ris* (orbicular). See AGATHOSMA ORBICULARIS.
„ *ova'ta* (egg-shaped). See BAROSMA OVATA.
„ *pectina'ta* (comb-*leaved*). See D. OPPOSITIFOLIA.
„ *pulche'lla* (pretty). See BAROSMA PULCHELLA.
„ *puncta'ta* (dotted). See BAROSMA OVATA.
„ *refle'xa* (reflexed). See AGATHOSMA REFLEXA.
D. ru'bra (red). See D. OPPOSITIFOLIA.
„ *scopa'ria* (broom-*like*). See BAROSMA SCOPARIA.
„ *serratifo'lia* (serrate-leaved). See BAROSMA SERRATIFOLIA.
„ *specio'sa* (showy). See ADENANDRA UMBELLATA.
„ *sphæroce'phala* (round-headed). May.
„ *squamo'sa* (scaly). 1. June. 1818. This is *Agathosma squamosa*.
„ *subula'ta* (awl-shaped-*leaved*). See D. OPPOSITIFOLIA.
„ *succule'nta* (succulent-*leaved*). 2. June.
„ *tene'lla* (delicate). 1. May. 1823.
„ *tenuifo'lia* (slender-*leaved*). See D. OPPOSITIFOLIA.
„ *tenui'ssima* (slenderest). See AGATHOSMA ERECTA.
„ *tetrago'na* (four-angled). See ACMADENIA TETRAGONA.
„ *uli'cina* (furze-like). 1. May. 1823. This is *Acmadenia juniperina*.
„ *uniflo'ra* (one-flowered). See ADENANDRA UNIFLORA.
„ *virga'ta* (twiggy). 1. June. 1820.
„ *vulga'ris* (common). See D. OPPOSITIFOLIA.
„ *Wendla'ndi* (Wendland's). See AGATHOSMA VILLOSA.

DIOSPY'ROS. The Date Plum. (From *dios*, divine, and *puros*, wheat; literally, celestial food. Nat. ord. *Ebenads* [Ebenaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*.)

The European Lotus, or Date Plum, is rather tender in Britain, but ripens its fruit in the south of France. The Virginian Diospyros, of which Loudon says all the other American sorts are only varieties, is not unlike the European Lotus; it thrives best in damp peat, and is often much injured by frost. In India many species of Diospyros are found, where they are remarkable for the hardness of the wood. The Ebony on which the order is founded is *D. E'benum*. The Iron-wood is also one of the species. The Kau Apple of the Cape, and the Kaki preserve from China, are the fruit of Diospyros Kaki. Greenhouse species by cuttings of half-ripened shoots in sand, under a bell-glass. Stove species strike best from ripened shoots in sand, under a glass, and in a brisk bottom-heat, any time from March to May. The hardy species are best propagated by seeds, and sown out of doors in a sheltered, moist place.

HARDY.

D. Ka'ki (Kaki). 12. White, green. Japan. 1739. Garden varieties of this are *D. aurantia*, *D. Bertii*, *D. elliptica*, and *D. Sahuti gallica*.
„ „ *costa'ta* (ribbed). Pale yellow. Fruit ribbed. China. 1869.
„ *loba'ta* (lobed). See D. KAKI.
„ *Lo'tus* (lotus). 20. Yellow. green. June. Italy. 1596. Evergreen.
„ *lu'cida* (shining). See D. VIRGINIANA.
„ *pube'scens* (downy). See D. VIRGINIANA.
„ *virginia'na* (Virginian). 20. Yellow, green. June. N. Amer. 1629.
„ „ *du'lcis* (sweet). Yellow. July. America. 1629.
„ *Wisene'ri* (Wisener's). Japan. 1887. Probably a variety of *D. Kaki*.

GREENHOUSE EVERGREENS.

D. corona'ria (garland). Fruit orange-red. Japan. 1885.
„ *Mazel'i* (Mazel's). Fruit orange-red. Japan. 1874.
„ *monta'na* (mountain). 6. White, green. E. Ind. 1822.
„ *reticula'ta* (netted). See D. TESSELLARIA.
„ *rugulo'sa* (small-wrinkled). See D. MONTANA.
„ *tessella'ria* (chequered). 20. Mauritius. 1824.
„ *vaccinioi'des* (Vaccinium-like). 2. White. May. China. 1823.

STOVE EVERGREENS.

D. amplexicau'lis (stem-clasping). See D. LEUCOMELAS.
„ *Chloro'xylon* (green-wooded). 20. White. E. Ind 1822.
„ *cordifo'lia* (heart-leaved). See D. MONTANA.
„ *di'gyna* (two-styled). See D. EBENUM.
„ *di'scolor* (two-coloured). 20. Philippines. 1821.
„ *Ebena'ster* (Ebenaster). See D. EBENUM.
„ *E'benum* (ebony). 30. White. E. Ind. 1792.
„ *edu'lis* (eatable). See D. EBENUM.
„ *Embryo'pteris* (Embryopteris). 25. White, green. July. E. Ind. 1818.

D. hirsu'ta (hairy). 20. Ceylon. 1820.
„ *leuco'melas* (white-black). Mascarene Islands. 1851.
„ *lycioi'des* (Lycium-like). See ROYENA PALLENS.
„ *maba'cca* (No-berry). Australia.
„ *Mabo'la* (Mabola). See D. DISCOLOR.
„ *melano'xylon* (black-wooded). See D. EBENUM.
„ *obova'ta* (reversed-egg-*leaved*). See D. TETRASPERMA.
„ *Sapo'ta* (Sapota). See D. EBENUM.
„ *sylva'tica* (wood). 20. White. E. Ind. 1812.
„ *tetraspe'rma* (four-seeded). 15. White, green. Jamaica. 1796.
„ *tomento'sa* (felted). India.

DIO'STEA JU'NCEA is, properly, *Baillonia juncea*, with small lilac flowers. It is a small bush or tree from Chili. Nat. ord. Verbenaceæ.

DIPCA'DI. (Etymology doubtful. Nat. ord. Liliaceæ.) Hardy and half-hardy bulbs. Offsets and seeds. Light loam, leaf-mould, and sand.

D. Balfou'ri (Balfour's). 2 to 3. Green-yellow. September. Socotra. 1880.
„ *filamento'sum* (thready). Greenish. S. Africa. Hardy.
„ *glau'cum* (sea-green). 2. Greenish. August. S. Africa. 1814.
„ *longifo'lium* (long-leaved). 2. Purple-blue. August. Trop. Africa. 1825.
„ *sero'tinum* (late). Dusky green. July. Spain; N. Africa. 1629. Hardy.
„ „ *fu'lvum* (tawny). Greenish-red. July. N. Africa. 1808.
„ *umbona'tum* (bossed). Pale yellow. S. Africa. 1865.
„ *Welwi'tschii* (Welwitsch's). Green. Trop. Africa. 1867.

DIPE'LTA. (From *di*, duplication, and *pelta*, a shield; literally, twin shield, in allusion to the opposite bracts. Nat. ord. Caprifoliaceæ.)
Handsome, hardy, deciduous shrubs, closely allied to Diervilla. Cuttings of young shoots inserted in the open border or in a cold frame in autumn. Ordinary garden soil.

D. floribu'nda (free-flowering). 4 to 5. Rose-pink, white, yellow. Central China. 1907.
„ *ventrico'sa* (inflated). 7 to 15. Purple-red, white, orange. W. China. 1908.

DIPHA'CA COCHINCHINE'NSIS. See ORMOCARPUM SENNOIDES.

DIPHYLLE'IA. (From *di*, two, and *phullon*, a leaf; the leaves produced in twos. Nat. ord. *Berberids* [Berberidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Jeffersonia.)
A pretty, hardy, herbaceous plant, best treated as an alpine plant, or on the shady side of a rock-work; divisions; rich, light soil.

D. cymo'sa (cyme-*flowered*). ½. White. May. N. Amer. 1812.

DIPHY'SA. (From *di*, two, and *phusa*, a bladder; referring to the seed-pods being produced in twos, and bladder-like, as in Sutherlandia, to which it is nearly allied. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)
Stove evergreen. Cuttings of young shoots, a little firm at the base, in sand, under a glass, and in a mild bottom-heat; sandy loam and fibrous peat. Summer temp., 60° to 85°; winter, 50° to 55°.

D. carthagine'nsis (Carthagena). 10. Yellow. Carthagena. 1827.

DI'PIDAX. (From *di*, two, and *pidax*, a spring. Nat. ord. Liliaceæ.)
Half-hardy or greenhouse bulbs. Offsets. Ordinary soil in summer, but the protection of a heated pit in winter.

D. cilia'ta (eye-lashed). ½ to 1. Pale yellow. June. S. Africa. 1810.
„ *trique'tra* (triquetrous). ½. White, pink. April. S. Africa. 1780.

DI'PLACUS. See MIMULUS.

DIPLADE'NIA. (From *diploos*, a double, and *aden*, a gland; referring to the presence of two gland-like processes on the ovary. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Mandevilla.)
Stove evergreen twiners. Cuttings of ripe shoots in sand, in a close case, and in a sweet bottom-heat; turfy peat, with silver sand, and plenty of drainage; abundance of water in summer, but very little in winter. Summer temp., 60° to 80°; winter, 55° to 60°.

D. acumina'ta (pointed-*petaled*). 10. Pink. July. Brazil. 1854.
„ *ama'bilis* (lovely). 10. Rosy-crimson. Summer. Garden hybrid.
„ *amœ'na* (pleasing). See D. MARTIANA.
„ *a'tro-purpu'rea* (dark purple). 10. Dark purple. July. Brazil. 1842.
„ „ *Cla'rkei* (Clarke's). The typical *D. atro-purpurea*.
„ *boliviе'nsis* (Bolivian). White, with yellow throat. June, July. Bolivia. 1866.
„ *brearleya'na* (Brearleyan). 10. Rosy-red. Summer. Garden hybrid. 1881.
„ *cari'ssima* (dearest). See D. MARTIANA.
„ *crassino'da* (thick-jointed). See D. MARTIANA.
„ *dele'cta* (select). Pink, rose and violet. Garden origin. 1881.
„ *Diade'ma* (diadem). Rosy-pink and rose. 1881.
„ *Ellio'ttii* (Elliott's). Rose, pink, and yellow. 1884.
„ *exi'mia* (choice). Brazil (?).
„ *fla'va* (yellow-*flowered*). Yellow. May. New Granada. 1845.
„ *Harri'sii* (Lord Harris's). See ODONTADENIA SPECIOSA.
„ *hy'brida* (hybrid). See D. MARTIANA.
„ *illu'stris* (lustrous). Rose. Brazil. 1847.
„ „ *gla'bra* (smooth). Rosy-red. Brazil. 1891.
„ *insi'gnis* (remarkable). Rose-purple. Garden origin.
„ *martia'na* (Martian). 10 Rose. October. Brazil. 1844.
„ „ *Regi'na* (queen). Rose, fading to flesh.
„ *no'bilis* (noble). Dark purple. Brazil. 1847.
„ *orna'ta* (adorned). Crimson, suffused violet. Garden origin.
„ *profu'sa* (profuse). See D. SPLENDENS PROFUSA.
„ *Regi'na* (queen). See D. MARTIANA REGINA.
„ *ro'sa-campe'stris* (field Rose). See D. ILLUSTRIS.
„ *rosa'cea* (rosy). Rosy-pink and yellow. Garden origin. 1879.
„ *Sande'ri* (Sander's). Rose. Brazil. 1896.
„ *specio'sa* (showy). Garden hybrid.
„ *splе'ndens* (shining). 10. Rose. July. Organ Mountains. 1841.
„ „ *profu'sa* (profuse). Carmine-rose. Brazil. 1883.
„ „ *Willia'msii* (Williams'). Throat rich pink.
„ *tenuifo'lia* (slender-leaved). Brazil.
„ *urophy'lla* (tail-leaved). 3. Deep salmon. Brazil. 1847.
„ *vincæflo'ra* (Vinca-leaved). Brazil. 1863.

DIPLARRHE'NA. (From *diploos*, double, and *arren*, a male; there are only two perfect stamens. Nat. ord. Iridaceæ.)
Greenhouse evergreen herb. Seeds and division. Loam, leaf-mould, or peat and sand.

D. Morœ'a (Moræa). White and blue. Australia. 1889.

DIPLA'ZIUM. (From *diplazo*, to double; referring to the double covering of the spore-cases, or seed-vessels. Nat. ord. Filices. Now referred to Asplenium.)
A genus of handsome stove evergreen Ferns. The root-stocks of *D. escule'ntum* are eaten in India by natives. The spores of all are brown, or brownish-yellow; divisions; loam and peat. Summer temp., 60° to 85°; winter, 50° to 55°.

D. acumina'tum (*long*-pointed-*leaved*). ½. Brazil.
„ *affi'ne* (allied). Isle of Luzon.
„ *alismæfo'lium* (water-plantain-leaved). Isle of Luzon.
„ *ambi'guum* (ambiguous). Trop. Amer. 1822.
„ *arbore'scens* (tree-like). 12. Mauritius. 1826.
„ *Arno'ttii* (Arnott's). Sandwich Islands. 1877.
„ *auricula'tum* (eared). 10. August. Caracas. 1820.
„ *barbade'nse* (Barbadoes). August. W. Ind. 1822.
„ *breviflo'rum* (short-flowered). Isle of Luzon.
„ *breviso'rum* (short-sorused). Jamaica.

D. castaneæfo'lium (chestnut-leaved). 1. July. Guiana. 1824.
„ *cauda'tum* (tailed). Isle of Luzon.
„ *coarcta'tum* (close-pressed). Brazil. 1841.
„ *decussa'tum* (cross-*fronded*). 2. June. E. Ind.
„ *defle'xum* (turned-down). Malacca.
„ *e'benum* (black). Isle of Luzon.
„ *e'legans* (elegant). July.
„ *escule'ntum* (eatable). 3. E. Ind. 1822.
„ *exte'nsum* (lengthened). Malacca.
„ *frondo'sum* (frondose). August. E. Ind.
„ *glabe'rrimum* (smoothest). Java. 1862.
„ *grandifo'lium* (large-leaved). 4. August. Jamaica. 1793.
„ *integrifo'lium* (entire-leaved). June. Java.
„ *juglandifo'lium* (walnut-leaved). 3. August. Jamaica. 1822.
„ *Katze'ri* (Katzer's).
„ *malaba'ricum* (Malabar). 8. E. Ind. 1818.
„ *ova'ta* (egg-shaped). April. Isle of Leyte.
„ *plantagi'neum* (plantain-*leaved*). 2. August. W. Ind. 1819.
„ *porre'ctum* (stretched-out). Malacca.
„ *profu'sum* (profuse). 1880.
„ *Pullinge'rii* (Pullinger's). Hong-Kong. 1875.
„ *Schkuh'rii* (Schkuhr's). Malacca.
„ *serampure'nse* (Serampore). 3. August. Serampore. 1820.
„ *Shephe'rdii* (Shepherd's). Brazil. 1822.
„ *spinulo'sum* (small-spined). July. Java.
„ *stria'tum* (streaked). 1. August. W. Ind. 1793.
„ *sylva'ticum* (wood). E. Ind.
„ *thelypteroi'des* (Thelypteris-like). 1. July. N. Amer. 1823.
„ *Thwaile'sii* (Thwaites'). Ceylon.
„ *undulo'sum* (wavy). August.
„ *vittæfo'rmis* (Vittaria-like). July. Isle of Java.
„ *Walli'chi* (Wallich's). April. E. Ind.

DIPLOCHI'TA. See MICONIA.

DIPLOCHI'TA SWARTZIA'NA. See MICONIA FOTHERGILLA.

DIPLOCO'MA VILLO'SA. See HETEROTHECA INULOIDES.

DIPLOCY'ATHA. (From *diploos*, double, and *kuathos*, a bowl; in allusion to the form of the flowers. Nat. ord. Asclepiadaceæ.)
A greenhouse evergreen. Cuttings well dried before insertion in sand. Loam, finely broken bricks and sand. Keep dry in winter.
D. ciliа'ta (eye-lashed). ½. Green-striped. November. S. Africa. 1795.

DIPLOGLO'TTIS. (From *diploos*, double, and *glotta*, a tongue; in allusion to the two tongue-like scales on the petals. Nat. ord. Sapindaceæ.)
A greenhouse tree, with its foliage covered beneath with a rusty felt. Seeds, when obtainable; cuttings in sand, in a close case. Fibrous loam, a little peat and sand.
D. austra'lis (southern). See D. CUNNINGHAMII.
„ *Cunningha'mii* (Cunningham's). 20. Green. May. N.E. Australia. 1825.

DIPLOLÆ'NA. (From *diploos*, double, and *læna*, a cloak; referring to the coating of the ripe fruit splitting into two divisions, as is general in this section of *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Correa.)
Greenhouse evergreens, from Swan River, with cream-coloured flowers. Cuttings of young shoots getting firm; peat, and a very little fibrous loam. Summer temp., 55° to 75°; winter, 40° to 45°.
D. angustifo'lia (narrow-leaved). May.
„ *Dampie'ri* (Dampier's). 4. April. 1837.
„ *grandiflo'ra* (large-flowered). 4. May.

DIPLOPA'PPUS. (From *diploos*, double, and *pappos*, a plume; referring to the feathery ornaments called pappus, which crown the seeds, as in the Dandelion. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*. 2-*Superflua*. Now referred to Aster.)
All by cuttings under a hand or bell-glass; sandy loam; they require the protection of a cold pit in winter. *A'ster filifo'lius*, *linarifo'lius*, *obtusa'tus*, *pluriflo'rus*, and *ri'gidus* have recently been added to this genus. See A'STER.
D. cane'scens (hoary). See ASTER CANESCENS.
„ *chrysophy'llus* (golden-leaved). See CASSINIA FULVIDA.
„ *inca'nus* (hoary-*herbaged*). See ASTER CANESCENS.
„ *linariæfo'lius* (Linaria-leaved). See ASTER LINARIIFOLIUS.

DIPLOPE'LTIS. (From *diploos*, double, and *pelte*, a shield; referring to a double appendage attached to the inside of the petals. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)
Greenhouse evergreen. Cuttings of young shoots in sandy soil, under a glass, in April; peat and loam. Summer temp., 50° to 75°; winter, 40° to 45°.
D. Huege'lii (Baron Huegel's). 1. Rose, white. July. Swan River. 1837.

DIPLO'SIS PYRI'VORA. The Pear Gnat Midge sometimes does a deal of harm by laying its eggs in numbers in very young pears, which become unequally swollen and drop off the trees while still quite small. The grubs are yellowish-white, and may be looked for at the end of May and in June. The maggots are very lively, and jump about if a fruit containing them is cut open. When they are discovered to be present all infested fruits should be gathered and burned to destroy the maggots. The trees should also be shaken to cause the infested fruit to fall, and all such should be gathered. The application of half a ton of kainit per acre, in late summer, has also been found beneficial in destroying the pupæ in the soil.

DIPLOSPO'RA. (From *diploos*, double, and *spora*, a spore; in allusion to the two-celled fruit. Nat. ord. Rubiaceæ.)
Greenhouse evergreen shrub. Cuttings of half-ripe wood in sand in a gentle heat. Fibrous loam, some peat, and leaf-mould with sand.
D. viridiflo'ra (green-flowered). 3. White. July. China. 1824.

DIPLOTA'XIS. (From *diploos*, double, and *taxis*, arrangement; the seeds are in two rows. Nat. ord. Cruciferæ.)
Hardy annual. Seeds in the garden in April.
D. Siebe'ri (Sieber's). 1. Purple. June. Egypt; Arabia. 1837.

DIPLOTHE'MIUM. (From *diploos*, double, and *thema*, a sheath; referring to the spathe, or sheath, out of which issues the flower-stem of Palms, Arums, &c. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 9-*Enneandria*. Allied to Cocos.)
Those who cannot afford head-room for the giants of this noble race have here four dwarf species to represent the order. Stove Palms. Seeds; rich, fibrous loam. Summer temp., 60° to 90°; winter, 50° to 60°.
D. campe'stre (field). 10. Brazil. 1823.
„ *caude'scens* (stem-forming). 25. Brazil. 1847.
„ *littora'le* (sea-shore). 4. Yellow. May. Brazil.
„ *mari'timum* (sea-side). 10. Brazil. 1823.

DIPLYCO'SIA. (From *diploos*, double, and *kos*, a sheep's skin; in allusion to the double calyx. Nat. ord. Ericaceæ.)
Greenhouse evergreen shrub. Cuttings in sandy peat, under a bell-glass. Sandy peat.
D. di'scolor (two-coloured). White, pink. Himalaya.

DIPO'DIUM. (From *di*, duplication, and *pous*, a foot; in allusion to two appendages at the base of the lip. Nat. ord. Orchidaceæ.)
Showy stove Orchids. See ORCHIDS FOR CULTIVATION.
D. paludo'sum (marshy). White, with purple spots and lines. Malaya. 1888.
„ *pi'ctum* (painted). 1. Yellow, crimson. Malaya. 1849.
„ *puncta'tum* (dotted). 1 to 2. Red, purple. Australia. 1822.

DIPO'SIS. (From *di*, duplication, and *posis*, a husband; in allusion to the two male flowers on each branch of the umbel. Nat. ord. Umbelliferæ.)

Half-hardy, tuberous-rooted perennial. The tubers should be lifted and protected in winter.

D. Bulboca'stanum (Bulbocastanum). ½. White. Chili. 1872.

DIPSACOZA'MIA MEXICA'NA. See CERATOZAMIA MEXICANA.

DI'PSACUS. Teasel. (From *dipsao*, to thirst; referring to the cavity formed by the leaves clasping the stem holding water. Nat. ord. *Teaselworts* [Dipsacaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Scabious.)

The only plant in this genus worthy of any remark is *D. Fullo'num*, used by fullers in dressing cloth. For the cultivation of this plant, and the use of the heads by the fuller, see *Cottage Gardener*, v. 83. Hardy biennials. Seeds; common soil.

D. a'sper (rough). Himalaya.
„ *atra'tus* (dark). Himalaya.
„ *fe'rox* (fierce). 3. Purple. July. S. Europe. 1818.
„ *Fullo'num* (fuller's). 6. Purple. July. Britain.
„ *Gmeli'ni* (Gmelin's). See D. STRIGOSUS.
„ *ine'rmis* (unarmed). 4. White. Nepaul. 1823.
„ *japo'nicus* (Japanese). China and Japan.
„ *lacinia'tus* (cut-*leaved*). 6. Purple. July. Germany. 1683.
„ *pilo'sus* (shaggy). 4. White. August. Britain.
„ *stri'ctus* (upright). Himalaya.
„ *strigo'sus* (rough-haired). 3. Blue. July. Asia Minor. 1820.
„ *sylve'stris* (wild). 4 to 6. Pale purple. July, August. Britain. Wild Teasel.

DIPTERACA'NTHUS. See RUELLIA.

D. affi'nis (allied). See RUELLIA SPECIOSA.
„ *calve'scens* (becoming bald). See RUELLIA SOLITARIA.
„ *cilia'tus* (eye-lashed). See RUELLIA CILIATA.
„ *He'rbstii* (Herbst's). See RUELLIA HERBSTII.
„ *pa'tula* (spreading). See RUELLIA PATULA.
„ *sca'ndens* (climbing). See HENFREYA SCANDENS.
„ *specta'bilis* (showy). Peru.

DIPTERO'NIA. (From *di*, double or two; and *pteron*, a wing; the fruit has two wings. Nat. ord. Sapindaceæ.)

Hardy tree, allied to the Maple. Seeds and layers. Ordinary soil.

D. sine'nsis (Chinese). Leaves pinnate. Central China. 1903.

DI'PTERYX. Tonquin Bean. (From *dis*, double, and *pterix*, a wing; referring to the two upper segments of the calyx. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Dalbergia.)

The Tonga, or Tonquin Bean, used by perfumers and snuff-makers, is the seed of this tree: hence the specific name. Stove evergreen tree. Cuttings in sand, under a glass, in moist heat, in April; rich, rough loam. Summer temp., 60° to 85°; winter, 50° to 55°.

D. odora'ta (sweet-scented). 60. Purple. Guiana. 1793.
„ „ *Sera'pia* (Serapia).

DI'RCA. Leather-wood. (From *dirke*, a fountain; the plant growing in moist places. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Daphne.)

Hardy deciduous shrub. Layers in autumn; seeds in spring; sandy, peaty soil, and moist situation.

D. palu'stris (marsh). 6. Yellow. March. Virginia. 1750.

DIRCÆ'A. See GESNERA.

DI'SA. (Probably the native name. A genus of curious ground-orchids, natives of the Cape of Good Hope. Perhaps the most splendid is *D. grandiflo'ra*, a native of the top of Table Mountain, behind Cape Town, growing in a spongy kind of peat earth, on the margin of pools, in the wet season.

Greenhouse terrestrial orchids. Division; peat and loam, with a portion of sand. Summer temp., 60° to 80°; winter, 45° to 55°.

D. atropurpu'rea (dark-purple). Purple-lake. S. Africa. 1886.
„ *bractea'ta* (bracted). ¾. Green. June. 1818.
„ *ce'rnua* (drooping). ¾. Green, red. June. 1815.
„ *chrysosta'chya* (yellowish-spiked). 1. Yellow. June.
„ *Coope'ri* (Cooper's). Rosy-carmine; lip yellow. S. Africa. 1892.
„ *cornu'ta* (horned). 1½. Pale blue. June. 1805.
„ *draco'nis* (dragon). 1. White, purple. June. 1823.
„ *eque'stris* (equestrian). 1. Pale violet, white, red. Rhodesia. 1907.
„ *erube'scens* (reddish). 1. Scarlet. E. Trop. Africa. 1906.
„ *ferrugi'nea* (rusty). ¾. Brown. June. 1820.
„ *flexuo'sa* (zigzag). ¾. 1823.
„ *graminifo'lia* (grass-leaved). 1½. Blue. 1825.
„ *grandiflo'ra* (large-flowered). 1. Scarlet. July. 1825.
„ „ *psittaci'na* (parrot-like). Yellow, purple, green, crimson. S. Africa. 1879.
„ *incarna'ta* (flesh-coloured). 1. Orange-red. Madagascar. 1892.
„ *la'cera* (jagged). ¾. White. June. 1826.
„ *longico'rnu* (long-horned). ½ to 1. Light blue. S. Africa. 1908.
„ *lu'gens* (mourning). Cream, veined purple. S. Africa. 1910.
„ *macra'ntha* (large-flowered). Rose, spotted yellow. S. Africa. 1880.
„ *macula'ta* (spotted). 1. Blue. June. 1816.
„ *mega'ceras* (large-horned). Whitish, spotted purple. S. Africa. 1880.
„ *multi'fida* (much cut). Lip fringed.
„ *nervo'sa* (nerved). 2. Bright rose. Natal. 1894.
„ *polygonoi'des* (Polygonum-like). 1 to 2. Brick-red. S. Africa. 1879.
„ *prasina'ta* (leek-*green-flowered*). See D. CERNUA.
„ *pu'lchra* (beautiful). 2. Pale lilac and purple. S. Africa. 1896.
„ *racemo'sa* (racemed). 2. Rose-purple. S. Africa. 1887.
„ *ro'sea* (rosy). Rose. S. Africa.
„ *rufe'scens* (reddish). Reddish-purple. S. Africa.
„ *sagitta'lis* (arrow-like). ¾. White and blue. S. Africa.
„ *secu'nda* (one-sided). See D. RACEMOSA.
„ *spathula'ta* (spathula-*lipped*). 1. Pale blue. June. 1805.
„ *tripetaloi'des* (three-petaled). 2. White and pink, spotted crimson. S. Africa. 1889.
„ *uniflo'ra* (one-flowered). Scarlet. S. Africa.

DISA'NDRA PROSTRA'TA. See SIBTHORPIA PEREGRINA.

DISBUDDING is the removal, soon after they have burst into leaves, of such buds as, if allowed to grow into shoots, would be misplaced or superfluous. Thus, buds protruded directly in the front of branches trained against walls, or fore-right shoots, as they are correctly termed, and buds that would produce shoots in places already sufficiently filled with branches, may be removed, or disbudded. The object is to strengthen the desirably placed buds by thus confining to them the expenditure of sap. There is no better mode of aiding a weakly plant to a more vigorous and robust growth than judicious disbudding; but an ever-robust and super-luxuriant tree had better be allowed to exhaust itself by a more profuse development of leaf-buds. By judicious disbudding, which should always be performed gradually, any winter pruning is almost rendered unnecessary, and in all instances is diminished.

DISCA'RIA. (From *diskos*, a disk; having a large fleshy disk. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Colletia.)

Greenhouse evergreen or half-hardy shrubs, that succeed on walls in mild districts. Cuttings of half-ripe shoots in sand, under a glass, in April, kept rather close

and hot; sandy loam and peat. Summer temp., 55° to 75°; winter, 40° to 45°.

D. austra'lis (southern). Yellow. May. Australia. 1824.
„ *linifo'lia* (flax-leaved). Monte Video. 1882.
„ *longispi'na* (long-spined). White. Argentina.
„ *serratifo'lia* (serrate-leaved). 6. Greenish-white. Chili; Patagonia. 1882.
„ *Tou'matou* (Toumatou). White. New Zealand. 1875. "Toumatou or Wild Irishman."

DISCHI'DIA. (From *dis*, twice, and *schizo*, to split; referring to an obscure process in the construction of the flower. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Nearly related to Stephanotis and Hoya.)

Stove evergreen trailers, with white flowers. Cuttings in sandy soil, in heat, any time in the spring and summer months; sandy loam. Summer temp., 60° to 80°; winter, 48° to 55°.

D. bengale'nsis (Bengal). 1½. September. India. 1819.
„ *hirsu'ta* (hairy). Red. Burma; Malaya. 1896.
„ *Nummula'ria* (moneywort-*leaved*). ½. August. Amboyna.
„ *ova'ta* (egg-shaped). New Guinea.
„ *rafflesia'na* (Rafflesian). Yellowish. Trop. Asia; Australia.

DISCHI'SMA. (From *di*, two, and *schizo*, to cut; the calyx is two parted. Nat. ord. Selaginaceæ.)

Greenhouse evergreen shrubs. Short young shoots in sandy peat under a bell-glass. Fibrous loam, peat, and sand.

D. cilia'tum (eye-lashed). 1. White. July. S. Africa. 1815.
„ *clandesti'num* (secret). 1. White. June. S. Africa. 1823.
„ *erinoi'des* (Erinus-like). 1 to 2. White. May. S. Africa. 1816.

DISEASES. The morbid affections to which the vegetable part of the creation is liable are almost as numerous as those which render decrepid and destroy the animal tribes. The smut which ravages our corn crops; the mildew which destroys our peas; the curl infecting our potatoes; the ambury, or club root, to which our turnips and other species of cabbageworts are liable; the shanking, or ulceration, which attacks the stalks of our grapes, are only a few of the most commonly observed diseases to which the plants we cultivate are liable.

Disease is the negation of health; and as the health of a plant is the correct performance of its functions, disease may be defined to be an incorrect performance of the functions, due to the injurious effect of the parasitic fungus.

Such incorrectness arises from the vital energy declining in consequence of old age; from parasites; from wounds; from food improper either in quality or quantity; and from unfavourable temperature. If all these could be avoided, a plant might enjoy a vigorous immortality. Such, however, is not the lot of any organised being, and we note them chiefly to remind the gardener, that in proportion as he can save any plant from such unfavourable circumstances, will it enjoy health, and length of vigorous life.

DISE'MMA. (From *di*, double, and *stemma*, a crown; referring to the double coronet, or rays. Nat. ord. *Passionworts* [Passifloraceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*. Now referred to Passiflora.)

D. adiantifo'lia (Adiantum-leaved). See PASSIFLORA GLABRA.
„ *aura'ntia* (orange). See PASSIFLORA AURANTIA.
„ *herbertia'na* (Herbert's). See PASSIFLORA HERBERTIANA.

DISOCA'CTUS BIFO'RMIS. See PHYLLOCACTUS BIFORMIS.

DISPE'RIS. (From *di*, double, and *pera*, a pouch; from the form of the perianth's outer segments. Nat. ord. Orchidaceæ.)

A genus of ground, or terrestrial orchids, natives of the Cape of Good Hope. Division; peat and loam, with a little sand and charcoal. Summer temp., 60° to 80°; winter, 45° to 50°.

D. cape'nsis (Cape). ¾. Scarlet. July. 1816.
„ *cuculla'ta* (hooded). ¾. Purple. June. 1822.
„ *secu'nda* (side-*flowering*). ¾. Purple. June. 1799.

DI'SPORUM. (From *di*, double, and *sporos*, a seed; most species have only two ovules or young seeds in each cell of the seed-vessel. Nat. ord. *Melanths* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Uvularia.)

Half-hardy herbaceous plants. Division of the roots in spring; also by seeds, sown under glass, in April; peat and loam, most of the first; require a cold pit in winter.

D. fu'lvum (tawny-*flowered*). See D. PULLUM.
„ *Hooke'rii* (Hooker's). 1 to 2. Greenish. California.
„ *lanugino'sum* (woolly). 1. Yellow, green. N.W. Amer. 1758.
„ *leschenaultia'num* (Leschenaultian). White. N. Ind.; Ceylon.
„ *Menzie'sii* (Menzies'). 1 to 3. Greenish. California.
„ *parviflo'rum* (small-flowered). See D. PULLUM PARVIFLORUM.
„ *pu'llum* (russet). 1½. Brown. October. China. 1801.
„ „ *parviflo'rum* (small-flowered). 3. Yellow, July. Nepal. 1820.
„ *se'ssile* (stalkless). Japan.
„ „ *variega'tum* (variegated). Leaves edged with white.

DISSO'TIS. (From *dissos*, double; in allusion to the two forms of anthers. Nat. ord. Melastomaceæ.)

Evergreen stove shrubs. Cuttings of half-ripe wood in sand, in a close case, with bottom-heat. Loam, peat, and sand.

D. inca'na (hoary). Purple. S. Africa. 1838.
„ *irvingia'na* (Irvingian). 3. Purple. Trop. Africa. 1859.
„ *johnstonia'na* (Johnstonian). Trop. Africa.
„ *Maho'ni* (Mahon's). Rose-purple. Uganda. 1903.
„ *mode'sta* (modest). Blue-purple, reddish and yellow. Uganda. 1906.
„ *plumo'sa* (plumy). W. Africa.
„ *prostra'ta* (prostrate). Trop. Africa.

DISTEGA'NTHUS. (From *distegos*, two-storied, and *anthos*, a flower. Nat. ord. Bromeliaceæ. Allied to Cryptanthus.)

Moist stove perennial, requiring treatment similar to Æchmea and Cryptanthus.

D. basilatera'lis (base-sided). Guiana.

DISTIACA'NTHUS. (Apparently a corruption of the previous name. Nat. ord. Bromeliaceæ.)

Stove perennial requiring treatment similar to Cryptanthus.

D. scarlati'nus (scarlet). Red. Brazil. 1869.

DISTI'CTIS. (From *di*, meaning two, and *stiktos*, spotted; in allusion to the spots on the corolla. Nat. ord. Bignoniaceæ.)

Stove climber of a woody character. Cuttings of young side-shoots getting firm at the base, in sand, and placed in a close case with bottom-heat during summer. Fibrous loam, a little peat or leaf-mould and sand. It succeeds best planted out.

D. lactiflo'ra (milk-white). 20. White. May. St. Domingo. 1823.

DISTY'LIUM. (From *di*, two or double, and *stulis*, a style; the flower has two styles. Nat. ord. Hamamelidaceæ.)

A hardy shrub related to Hamamelis, but having no petals. Layers, cuttings of the roots and seeds. Ordinary garden soil.

D. racemo'sum (racemed). Stamens 5, with purple anthers. Japan. 1906.

DITTANY. *Dicta'mnus.*

DITTANY OF AMORGOS. *Ori'ganum Tournefo'rtii.*

DITTANY OF CRETE. *Ori'ganum Dicta'mnus.*

DI'TULA ANGUSTIORA'NA. Apricot Moth. As soon in May as one of the leaves of a Peach, Nectarine, or Apricot is seen rolled up, destroy the little caterpillar within the roll, and watch for others, because the eggs of the moth from which that caterpillar came continue to hatch for several weeks. The moth is the Narrow-winged Red Bar, *Di'tula angustiora'na*. The caterpillars appear during May and June: they are about half an inch long, are pale yellowish-green, and with the head brownish-yellow. A few bristles are scattered over the body. It is a very active caterpillar, wriggling about in most varied contortions when disturbed, crawling with equal facility backwards and forwards, and letting itself down by a single thread from its mouth. It passes into the state of a brown, shining chrysalis, rolled up in the same leaves, and from this the moth comes forth in July. The moth is very small, not longer than a fourth of an inch. The fore-wings are reddish-brown, in bands of various degrees of darkness. The hind-wings are dusky. It deposits its eggs, probably, upon the branches, where they remain all the winter, and the caterpillars are most frequently found upon the Apricot, but attack most trees, and sometimes damage grapes in vineries.

DIU'RUS. (From *di*, two or double, and *oura*, a tail; referring to the two long-tailed sepals. Nat. ord. Orchidaceæ.)

Terrestrial Orchids of an ornamental character, recalling some of the Iridaceæ. Offsets or imported roots. Fibrous loam and peat, in equal proportions, with sand. Some of them like a little shade when making their growth and flowering.

D. a'lba (white). White, rose, and purple. August. Australia. 1875.
,, *curvifo'lia* (curved-leaved). See D. MACULATA.
,, *elonga'ta* (elongated). See D. PUNCTATA.
,, *lilaci'na* (lilac). See D. PUNCTATA.
,, *longifo'lia* (long-leaved). 1. Yellow and purple. W. Australia. 1907.
,, *macula'ta* (spotted). Yellow, spotted with purple or brown. Australia. 1825.
,, *pardi'na* (leopard-spotted). See D. MACULATA.
,, *puncta'ta* (dotted). Bluish-purple, finely spotted. Australia.

DIZYGOTHE'CA. (From *dizugos*, double, or yoked two abreast, and *theke*, a seed vessel. Nat. ord. Araliaceæ.)

Ornamental stove plants; grown for many years under the name of *Aralia leptophylla*. See ARALIA FOR CULTURAL TREATMENT.

D. leptophy'lla (slender-leaved). Leaves slender and graceful. Polynesia (?). 1862.
,, *Nilsso'ni* (Nilsson's). Pacific Islands.
,, *Regi'næ* (Queen's). New Caledonia. 1879.

DODDER. *Cuscu'ta.*

DODECA'THEON. American Cowslip. (An ancient name applied by Pliny to a plant having a leaf like a lettuce. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cyclamen.)

Hardy herbaceous perennials, from North America. Dividing the roots; sandy loam.

D. Clevela'ndi (Cleveland's). 1 to 1½. Violet-blue, yellow black. California. 1890.
,, *elli'pticum* (elliptic). ½. Light purple. April. 1829.
,, *Henderso'ni* (Henderson's). ½. Bright crimson and yellow. Oregon. 1898.
,, *integrifo'lium* (entire-leaved) of Bentham. See D. ELLIPTICUM.
,, *integrifo'lium* (entire-leaved) of Hooker. See D. MEADIA.
,, *Jeffre'yi* (Jeffrey's). Purple, yellow, brown. California. 1865.
,, ,, *alpi'num* (alpine).
,, *Lemoi'nei* (Lemoine's). Hybrid between *D. ellipticum* and *Jeffreyi*. 1889.
,, *Mea'dia* (Meadia). 1. Light purple. May. N. Amer. 1744.
,, ,, *a'lba* (white). 1. White. May. 1824.
,, ,, *e'legans* (elegant). 1½. Rosy. May. 1827.
,, ,, *gigante'um* (giant). 2. Lilac. May. 1819.
,, ,, *lancifo'lium* (lance-leaved). See D. JEFFREYI.
,, ,, *lilaci'num* (lilac). 1. Lilac.
,, ,, *sple'ndidum* (splendid). Pink, orange. 1883.

DOG-BERRY-TREE. *Co'rnus sangui'nea.*

DOG BRAMBLE. *Ri'bes Cyno'sbati.*

DOG'S BANE. *Apo'cynum.*

DOG'S-TOOTH VIOLET. *Erythro'nium.*

DOGWOOD. *Co'rnus.*

DO'LIA. (From *dolios*, deceiving; the plants resemble Salsola, belonging to a different family. Nat. ord. Convolvulaceæ.)

Greenhouse herbs or subshrubby plants. Cuttings in sand under a bell-glass. Sandy loam and a little leaf-mould, or peat.

D. revolu'ta (rolled-back). Blue. Peru.
,, *tomento'sa* (felted). White. Chili.

DOLICHA'NDRA. (From *dolikos*, long, and *aner*, a stamen; referring to the long stamens. Nat. ord. Bignoniaceæ.)

Greenhouse plant climbing by means of tendrils like Bignonia, which see for treatment.

D. cynanchoi'des (Cynanchum-like). 30. Red. Argentina. 1891.

DOLICHANDRO'NE. (From *dolikos*, long, and *andron*, a house for men; in allusion to the long tube of the corolla enclosing the stamens. Nat. ord. Bignoniaceæ.)

Stove trees. Seeds; cuttings of young wood getting firm at the base, in sand, placed in a close case, with bottom-heat. Fibrous loam, peat, and a little sand.

D. Cau'da-fe'li'na (cat's-tail). China.
,, *Rhee'di* (Rheed's). 16. Red. India and Malaya. 1794.

DOLICHODEI'RA TUBIFLO'RA. See ACHIMENES TUBIFLORA.

DO'LICHOS. (From *dolikos*, long; referring to the twining shoots. Nat. ord., *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Includes Lablab.)

Generally weedy-looking things; *D. Lablab* is the one most favoured by gardeners. Seeds for all; cuttings of perennial species in sand, under glass, the stove ones requiring a little extra heat. The treatment common to the greenhouse and plant stove will suit them. All the flowering species are twiners.

D. acinacifo'rmis (scimitar-shaped). See CANAVALLIA ENSIFORMIS.
,, *bengale'nsis* (Bengalese). See D. LABLAB.
,, *biconto'rtus* (twice-twisted). Violet and yellow. Japan. 1869.
,, *cape'nsis* (Cape). See VIGNA CAPENSIS.
,, *emargina'tus* (notched). See CANAVALIA OBTUSIFO'LIA.
,, *gladia'tus* (sword-like). See CANAVALIA ENSIFORMIS.
,, *hirsu'tus* (hairy). See PUERARIA THUNBERGIANA.
,, *Jacqui'nii* (Jacquin's). 8. White. July. W. Ind. 1800. Stove evergreen.
,, *La'blab* (Lablab). 12. Purple. July. Tropical Regions. 1714.
,, *ligno'sus* (woody). See D. LABLAB.
,, *Lu'bia* (Lubia). 1½. White, blue. July. Egypt. 1818. Hardy annual.
,, *lute'olus* (yellow). See VIGNA GLABRA.
,, *obtusifo'lius* (blunt-leaved). See CANAVALIA OBTUSIFOLIA.
,, *polysta'chyos* (many-spiked). See PHASEOLUS PERENNIS.
,, *pseudopachyrrhi'zus* (false-thick-rooted). Violet-blue. Trop. Africa. 1906.
,, *pube'scens* (downy). S. Amer.
,, *purpu'reus* (purple). See D. LABLAB.
,, *ro'seus* (rosy). See CANAVALIA OBTUSIFOLIA.
,, *sesquipeda'lis* (foot-and-half). See VIGNA CATJANG.
,, *simplicifo'lius* (simple-leaved). 1. Pink. Trop. Africa.
,, *sine'nsis* (Chinese). See VIGNA SINENSIS.
,, *So'ja* (Soja). See GLYCINE SOJA.
,, *sudane'nsis* (Soudanese). Appears a form of *D. Lablab*.
,, *tranqueba'ricus* (Tranquebar). See VIGNA CATJANG.
,, *unguicula'tus* (clawed). See VIGNA CATJANG.

DOLIOCA'RPUS. (From *dolios*, deceitful, and *karpos*, a fruit; in reference to the juice being used as rouge. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Delima.)

Stove evergreen climber. Cuttings of young firm shoots in sand, under a glass, and in bottom-heat; peat and loam, most of the former, and a little silver sand. Summer temp., 60° to 85°; winter, 50° to 55°.

D. Cali'nea (Calinea). 10. Yellow. Guiana. 1822.

DOMBE'YA. (Named after *J. Dombey*, a French botanist. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Includes Astrapæa.)

Stove evergreen trees. Cuttings of young shoots, getting firm, in sand, under a glass, and in bottom-heat, in April; sandy loam and turfy peat. Summer temp., 60° to 85°; winter, 60° to 55°.

D. acuta'ngula (acute-angled). 16. Red. Mascarene Islands. 1820.
" " *tiliæfo'lia* (lime-leaved). 15. White. Bourbon. 1820.
" *Amé'liæ* (Æmilia's). 25. Pink. Madagascar. 1823.
" *angula'ta* (angled) of Cavanilles. See D. ACUTANGULA.
" *angula'ta* (angled) of Masters. See D. MASTERSII.
" *Burgé'ssiæ* (Mrs. Burgess'). White, rose. S. Africa. 1865.
" *cannabi'na* (hemp). 10. White. March. Mauritius. 1823.
" *Cayeu'xii* (Cayeux's). Garden hybrid (*D. Mastersii* × *D. Wallichii*). 1897.
" *cordifo'lia* (heart-leaved). See D. ACUTANGULA.
" *dregea'na* (Dregean). S. Africa.
" *Erythro'xylon* (red-wooded). See MELHANIA ERYTHROXYLON.
" *ferrugi'nea* (rusty-*leaved*). 15. White. Mauritius. 1815.
" *Maste'rsii* (Masters's). White. Trop. Africa. 1867.
" *mo'llis* (soft-*leaved*). 30. Pink. March.
" *natale'nsis* (Natal). S. Africa.
" *ova'ta* (egg-shaped). 16. White. Bourbon. 1822.
" *popu'lnea* (Poplar-like). 10. White. Bourbon. 1820.
" *puncta'ta* (dotted-*leaved*). 16. White. Bourbon. 1820.
" *rotundifo'lia* (round-leaved). S. Africa.
" *schimperia'na* (Schimperian). Trop. Africa.
" *specta'bilis* (showy). Trop. Africa.
" *tiliæfo'lia* (lime-leaved). See D. ACUTANGULA TILIÆFOLIA.
" *viburnifo'ra* (Guelder-rose-flowered). 13. White. February. Comorin Islands. 1850.
" *Walli'chii* (Wallich's). 10. Rosy-carmine. Madagascar. 1820.

DO'NDIA. HACQUE'TIA.

DO'NIA. See GRINDELIA.

DOO'DIA. (Named after *S. Doody*, a London apothecary and botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Greenhouse herbaceous Ferns. Spores brown, or yellowish-brown. Divisions, just before fresh growth commences, in spring; peat and loam. Summer temp., 55° to 75°; winter, 45° to 50°.

D. a'spera (rough-*stalked*). ¾. June. N. S. Wales. 1808.
" " *multi'fida* (much-cut). A dwarf, crested variety. 1880.
" *blechnoi'des* (Blechnum-like). August. N. Holland. 1835.
" *cauda'ta* (tailed). 1. June. N. Holland. 1820.
" " *harrya'na* (Harryan). A strong growing variety. 1884.
" *kunthia'na* (Kunth's). Sandwich Islands.
" *lunula'ta* (crescent-*leaved*). New Zealand. 1834.
" *me'dia* (intermediate). ¾. June. N. Holland. 1823.
" *virgi'nica* (Virginian). August. Virginia. 1774.

DORCO'CERAS HYGROME'TRICA. See BÆA HYGROMETRICA.

DORE'MA. (From *dorema*, a gift; referring to its product—gum ammoniac, but not Dioscorides's plant, which was some species of Ferula, supposed *F. orienta'lis*. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Ferula.)

The plant from which gum ammoniac is obtained. Hardy herbaceous plant. Seeds sown in a sheltered place at the end of April; common garden-soil.

D. Ammoni'acum (ammoniac). 7. White, yellow. June. Persia. 1831.

DO'RITIS. (From *doris*, a knife; in reference to the rigid leaves of some species. Nat. ord. Orchidaceæ.)

Stove ephiphytical Orchids. See ORCHIDS.

D. tæni'lis (ribboned). N. India.
" *Wi'ghtii* (Wight's). White, purple. India. 1865.

DORO'NICUM. Leopard's Bane. (From *doronigi*, the Arabic name. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Arnica.)

A genus of early-flowering, low, hardy, herbaceous plants for borders. *D. Colu'mnæ* makes an excellent bed or large patch; will bear removing with a ball as soon as it has done flowering; transplant about the end of September to the flower-garden. Yellow flowers, except *D. alta'icum*. Dividing at the roots; common garden-soil; if dry and light all the better.

D. alta'icum (Altaic). 1. White. July. Siberia. 1783.
" *austri'acum* (Austrian). 1. May. Austria. 1816.
" *Bourgæ'i* (Bourgæ's). 3. Purple. Canary Islands. 1853.
" *cauca'sicum* (Caucasian). 1. July. Caucasus. 1815.
" *Clu'sii* (Clusius'). See D. GLACIALE.
" *Colu'mnæ* (Columna's). 2. May. Italy. 1824.
" *cordifo'lium* (heart-leaved). See D. COLUMNÆ.
" *co'rsicum* (Corsican). 1. Yellow. July. Corsica. 1824.
" *denta'tum* (toothed-*leaved*). May. 1825.
" *glacia'le* (glacial). 1. Yellow. July. Europe. 1819.
" *grandiflo'rum* (large-flowered). Yellow. Europe.
" *macrophy'llum* (large-leaved). 2. July. Caucasus. 1828.
" *orienta'le* (oriental). See D. CAUCASICUM.
" *Orpha'nidis* (Orphano's). Yellow. Macedonia.
" *Pardalia'nches* (panther-strangler). 2. May. Britain.
" *peruvia'num* (Peruvian). See WERNERIA RIGIDA.
" *plantagi'neum* (plantain-*leaved*). 2. May. S. Europe. 1570.
" " *exce'lsum* (tall). 3 to 4. Yellow. Spring and summer.
" *scorpioi'des* (scorpion-like). 1. Yellow. May. Europe.

DORSTE'NIA. (Named after *T. Dorsten*, a German botanist. Nat. ord. *Nettleworts* [Urticaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to the Fig and Mulberry.)

Little tufted stove herbaceous plants, cultivated for the curious way they produce their inconspicuous green flowers, on a flattened leaf-like receptacle. They are worth growing for covering rock-work, or side-edgings in a damp stove. Division, before active growth; also seeds in a hotbed, in March or April; rich, sandy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

D. ara'bica (Arabian). ½. Green. Floral receptacle rayed. Arabia. 1898.
" *argenta'ta* (silvery). Leaves with a central silvery broad stripe. Brazil. 1869.
" *arifo'lia* (Arum-leaved). Brazil. B. M., t. 2476.
" *Barte'rii* (Barter's). Trop. Africa.
" *bowmania'na* (Bowmanian). Green. Brazil. 1872.
" *caule'scens* (stem-forming). See D. URCEOLATA.
" *Ceratosa'nthes* (Ceratosanthes). S. Amer. B. M., t. 2760.
" *Contraje'rva* (Contrajerva). ½. Green. June. Trop. Amer. 1747.
" *cordifo'lia* (heart-leaved). ½. June. W. Ind. 1822.
" *Drake'na* (Drakena). Mexico.
" *ela'ta* (tall). Brazil.
" *ere'cta* (erect). Brazil.
" *ficifo'lia* (fig-leaved). See D. ARIFOLIA.
" *Gi'gas* (giant). Green. Socotra. 1880.
" *hi'spida* (roughly hairy). See D. ERECTA.
" *Housto'ni* (Houston's). See D. CONTRAJERVA.
" *macula'ta* (spotted). See D. CONTRAJERVA.
" *Ma'nnii* (Mann's). 1. Green. Trop. Africa. 1863.
" *martia'na* (Martian). Brazil.
" *multifo'rmis* (many-formed). See D. ARIFOLIA.
" *Phili'psiæ* (Mrs. Phillips's). ½. Green. Floral receptacle with twisted tails. Somaliland. 1899.

D. Psilu'rus (bald-tailed). Green. Congo. 1905.
,, *riedelia'na* (Riedelian). See D. ARIFOLIA.
,, *tubici'na* (trumpet). June. Peru. 1817.
,, *urceola'ta* (urn-shaped). Green. Brazil.
,, *Walle'ri* (Waller's). 1. Green. Floral receptacle 5-tailed. Nyasaland. 1893.

DORYA'NTHES. (From *doru*, a spear, and *anthos*, a flower; the flower-stem shoots up from twelve to twenty feet high, like the handle of a spear, bearing flowers on the top. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to the American Aloe, but not with succulent leaves.)

These gigantic half-lily and half-palm looking plants, with their bundled fleshy roots, seem rather out of place among Amaryllids. They, with their fellows, Littæa and Fourcroya, can only find head-room in the loftiest conservatories. Greenhouse evergreens. Suckers and seeds at times; peat and rich loam. Summer temp., 60° to 80°; winter, 45° to 50°.

D. exce'lsa (lofty). 20. Cream. July. N. S. Wales. 1800.
,, *Guilfoy'lei* (Guilfoyle's). 16. Crimson. Queensland. 1893.
,, *Larki'ni* (Larkin's). Queensland.
,, *Palme'ri* (Palmer's). 8. Dark crimson. Queensland. 1874.

DORY'CNIUM. (From *doru*, a spear; adopted from Pliny, who applied the name to "a poisonous herb wherewith they poisoned arrow-heads, darts, &c." Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Lotus and Trifolium.)

Seeds in March; herbaceous ones also by division; common garden-soil.

HARDY HERBACEOUS.

D. herba'ceum (herbaceous). 1½. White. July. S. Europe. 1802.
,, *ibe'ricum* (Iberian). See D. LATIFOLIUM.
,, *interme'dium* (intermediate). See D. HERBACEUM.
,, *latifo'lium* (broad-leaved). 1½. White. July. Iberia. 1818.

HARDY EVERGREEN.

D. hirsu'tum (hairy). 3. Red, white. July. S. Europe. 1683.
,, ,, *inca'num* (hoary). 3. Red, white. July. S. Europe. 1817.
,, *re'ctum* (upright). 2. Red. July. S. Europe. 1640.
,, *specta'bile* (showy). 2. Teneriffe. Greenhouse.
,, *suffrutico'sum* (subshrubby). 1½. White. July. S. Europe. 1640. Half-hardy.
,, *tomento'sum* (woolly). See D. HIRSUTUM INCANUM.

DORYO'PHORA DECEMLINEA'TA. The Colorado Beetle, a native of the Western United States, has, on several occasions, effected a landing in this country, but owing to the stringent measures adopted by the authorities in this country it has, as often, been exterminated. In 1877 it committed a considerable amount of damage to the Potato crops. About that time an Order in Council made it a penalty for any one to keep or distribute live specimens. The beetle lays its eggs upon the stems and leaves of the plant. The perfect beetle is small, orange-yellow, with ten black lines on the wing-cases, and easily recognised. The beetle and also the larvæ when hatched out easily get destroyed by eating the leaves which have been sprayed with the Bordeaux mixture or Paris green.

DORYO'PTERIS. (From *doru*, a spear, and *pteris*, a fern; spear-leaved *Fern* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now united to Pteris.)

D. colli'na (hill). See PTERIS PALMATA.
,, *cordifo'lia* (heart-leaved). See PELLÆA CORDATA.
,, *hasta'ta* (halbert-*leaved*). See PTERIS SAGITTIFOLIA HASTATA.
,, *palma'ta* (hand-shaped). See PTERIS PALMATA.
,, *sagittifo'lia* (arrow-head-leaved). See PTERIS SAGITTIFOLIA.
,, *Walli'chii* (Wallich's). See PTERIS WALLICHIANA.

DOSSI'NIA. (Named in compliment to *E. P. Dossin*, a Belgian botanist. Nat. ord. Orchidaceæ.)

Terrestrial Orchids requiring moist stove treatment and to be covered with bell-glasses to preserve the beauty of the foliage.

D. marmora'ta (marbled). ½. Leaves velvety olive-green netted with gold. Borneo. 1862.
,, ,, *vire'scens* (greenish). Leaves greener.
,, *Meine'rti* (Meinert's). Sumatra. 1881

DOUBLE FLOWERS. Hybridising, aided by cultivation, gives birth to these objects of the gardener's care. To the uninitiated it seems incredible that the double moss rose should be a legitimate descendant from the briar; neither do the flowers of the Fair Maid of France appear less impossible derivatives from those of the *Ranu'nculus aconitifo'lius;* nor bachelor's buttons from the common buttercup; yet so they are. Double flowers, as they are properly called, are more correctly discriminated as the full flower, the multiplicate flower, and the proliferous flower.

The *full flower* is a flower with its petals augmented in number by the total transformation into them of its stamens and its pistils. One-petaled flowers rarely undergo this metamorphosis, but it occurs in *Campanula Medium, C. persicifolia*, and the Chinese Primula. It is very common in those having many petals, as in the carnation, ranunculus, rose, and poppy. But this is not the only mode in which a flower becomes full, for in the columbine (*Aquile'gia*) it is effected in three different ways, viz. by the multiplication of petals to the exclusion of the nectaries; by the multiplication of the nectaries to the exclusion of the petals; and by the multiplication of the nectaries whilst the usual petals remain. Radiated flowers, such as the sunflower, dahlia, anthemis, and others, become full by the conversion of the bell-shaped florets of the disk into strap-shaped and flat ones like those of the ray. On the contrary, various varieties of the daisy become full by the elongation of the florets of the disk, and as such flowers are tubular they are described as quilled. Examples are met with in the quilled China Aster, Chrysanthemum Parthenium or feverfew, show Dahlias, double Scabious, the variety of Gaillardia named lorenziana, &c.

The *multiplicate flower* has its petals increased by the conversion of a portion of its stamens, or of its calyx. It occurs most frequently in polypetalous flowers. Linnæus gives an instance of the conversion of the calyx into petals, and these are to be observed in the Carnation (*Dia'nthus Caryophy'llus*). The hose-in-hose polyanthus is another instance.

A *proliferous flower* has another flower or a shoot produced from it, as in the variety of the daisy popularly known as the Hen-and-chickens. It occurs also more rarely in the ranunculus, pink, rose, marigold, and hawkweed. A leafy shoot often appears in the bosom of the double-blossomed cherry, anemone, and rose.

A due supply of moisture, but rather less than the plant most delights in, when the production of seed is the desired object, a superabundant supply of decomposing organic matter to its roots, and an exposure to the greatest possible degree of sunlight, are the means successfully employed to promote excessive development of the petals which characterise double flowers.

By these means a greater quantity of sap is supplied to the flower than the natural extent of the petals can elaborate; and those parts required for the extra elaboration are developed at the expense of those not demanded for the purpose.

The most certain and practical method of producing or obtaining double flowers is to save seed from those showing an extra number of petals, or to use pollen from such flowers to fertilise others, or to self-fertilise the pistil of the same flower. The progeny giving the greatest number of petals should be selected for further experiment in the same way. When once a double or partly double flower reproduces itself from seed, it is susceptible of further improvement.

In double flowers, as was observed by the late Sir J. E. Smith, the corolla is much more durable than in single ones of the same species, as anemones and poppies, because, as he conceived, in such double flowers the natural function not being performed, the vital principle of their corolla is not so soon exhausted. Advantage may be taken of this to prolong the duration of flowers by cutting away the pistils or stamens, whichever are least conspicuous, with a sharp pair of pointed scissors.

DOUCIN STOCK. See STOCK.

DOUGLA'SIA. (In memory of the unfortunate *D. Douglas*, botanical traveller in North-West America. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Androsace.)

D. nivalis is an extremely rare, hardy, evergreen, alpine plant. Seeds; peat and loam; should be used as an alpine plant, and protected in winter; it will not bear sudden changes.

D. lævigā'ta (smooth). ½. Pink. Oregon. 1888.
,, *nivā'lis* (snowy). ½. Purple. June. Rocky Mountains. 1827.
,, *vitalia'na* (Vitalian). ½. Yellow. Pyrenees. 1787.

DOVE FLOWER. *Periste'ria ela'ta.*

DOVYA'LIS. (A commemorative name. Nat. ord. Bixaceæ.)

Stove evergreen shrub. Cuttings in sand in a close frame, with bottom-heat. Loam, peat, and sand.

D. zizyphoi'des (Zizyphus-like). 4. White. S. Africa. 1816.

DOWNI'NGIA. (Commemorative of *A. J. Downing*, a patron of horticulture. Nat. ord. Campanulaceæ.)

Hardy ornamental annuals, similar and allied to Lobelia. Seeds under glass in March, and planted out in May, or in the open border in April.

D. e'legans (elegant). ½. Blue, white. July to September. N.W. Amer. 1827.
,, *pulche'lla* (pretty). ½. Blue, white. July to September. Western Amer. 1827.

DRA'BA. (From *drabe*, acrid; referring to one of the universal characters of its Nat. ord., *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Connected, but not in close alliance, with Aubretia, Alyssum, and Cochlearia.)

Hardy rock or alpine plants. Yellow-flowered, except where otherwise mentioned. Perennials, by dividing the roots; also with the annuals and biennials, by seeds in spring, and under a hand-light, in summer; peat and loam for the tenderest; sandy loam and dry situation for the hardiest. They make interesting pot-plants, treated as alpines; and that is the safest way to treat many of them.

ANNUALS.

D. grā'cilis (slender). See D. NEMOROSA.
,, *lu'tea* (yellow). See D. NEMOROSA.
,, *murā'lis* (wall). ½. White. June. England.
,, *nemoro'sa* (grove). ½. June. Europe. 1759.

BIENNIALS.

D. au'rea (golden). ½. June. Denmark. 1820.
,, *cine'rea* (grey). ½. White. July. Siberia. 1818.
,, *confu'sa* (confused). See D. INCANA CONFUSA.
,, *dau'rica* (Daurian). ½. White. July. Dauria. 1824.
,, *ela'ta* (tall). 1. Bright yellow. Himalayas. 1806.
,, *inca'na* (hoary). ½. White. May. Britain.
,, ,, *confu'sa* (confused). White. July. N. Europe.
,, ,, *styla'ris* (long-styled).

HERBACEOUS PERENNIALS.

D. acau'lis (stemless). Cilicia.
,, *Ada'msii* (Adams'). See D. ALPINA.
,, *aizoi'des* (Aizoon-like). ½. March. Wales.
,, *Aizo'on* (Aizoon). ½. May. Carinthia. 1823.
,, *alpi'na* (alpine). ½. April. Lapland. 1820.
,, ,, *sili'culis-pilo'sis* (hairy-podded). ½. August. Greenland. 1820.
,, *alta'ica* (Altaian). See D. FLADNIZENSIS.
,, *ara'bisans* (Arabis-like). N. Amer.
,, *arma'ta* (armed). See D. LONGIROSTRATA.
,, *a'spera* (rough). June. Siberia.
,, *Atho'a* (Athoa). Greece.
,, *austri'aca* (Austrian). See D. STELLATA.
,, *borea'lis* (northern). See D. HIRTA.
,, *brachyste'mon* (short-stamened). ½. March. Switzerland. 1819.
,, *bruniæfo'lia* (Brunia-leaved). ½. June. Caucasus. 1820.
,, *bryoi'des* (bryum-like). ½. March. Tauria. 1820.
,, *cæspito'sa* (tufted). See D. RIGIDA.
D. cappado'cica (Cappadocian). Asia Minor.
,, *carinthi'aca* (Carinthian). Europe.
,, *cilia'ris* (hair-fringed-*leaved*). See D. AIZOIDES.
,, *cilia'ta* (ciliated). ½. White. Austria. 1873.
,, *corymbo'sa* (corymbed). See D. HIRTA.
,, *crassifo'lia* (thick-leaved). ½. June. N. Amer. 1826.
,, *cuspida'ta* (spine-point-*leaved*). ½. March. Iberia. 1820.
,, *dasyca'rpa* (thick-fruited). White. May. Altai. 1837.
,, *diversifo'lia* (diverse-leaved). Armenia.
,, *dovre'nsis* (Dovrean). See D. HIRTA.
,, *e'legans* (elegant). ½. Yellow. Cilician Taurus. 1899.
,, *ericæfo'lia* (heath-leaved). See D. OLYMPICA.
,, *fladnize'nsis* (Fladniso). ½. White. June. Switzerland. 1819.
,, *fri'gida* (frigid). See D. TOMENTOSA FRIGIDA.
,, *Gillie'sii* (Gallies'). ½ to ½. White. Chili. 1903.
,, *glacia'lis* (icy). See D. ALPINA.
,, *Gmeli'ni* (Gmelin's). See D. REPENS.
,, *grandiflo'ra* (large-flowered). See PARRYA MICROCARPA.
,, *grandiflo'ra* (large-flowered) of Hooker and Arnold. ½. W. Andes of Ecuador and Peru. 1903.
,, *helve'tica* (Swiss). See D. FLADNIZENSIS.
,, *hi'rta* (hairy). ½. White. June. N. Europe. 1823.
,, *hispa'nica* (Spanish). Spain.
,, *hi'spida* (roughly-hairy). 1. August. Caucasus. 1838.
,, *inco'mpta* (rough). See D. ALPINA.
,, *Kotschy'i* (Kotschy's). Eastern Europe.
,, *la'ctea* (milky). See D. FLADNIZENSIS.
,, *lappo'nica* (Lapland). ½. White. April. Lapland. 1810.
,, *lasioca'rpa* (woolly-fruited). See D. AIZOON.
,, *Loiseleu'rii* (Loiseleur's). Yellow. Corsica.
,, *longirostra'ta* (long-beaked). Transylvania.
,, *magella'nica* (Magellan). Strait of Magellan.
,, *Ma'wii* (Maw's). ½. White. April. Spain. 1823.
,, *murice'lla* (small-prickly). See D. NIVALIS.
,, *niva'lis* (snowy). ½. White. June. Switzerland. 1824.
,, *oblonga'ta* (oblongate). See D. HIRTA.
,, *oly'mpica* (Olympian) of Grenier and Godron. See D. LOISELEURII.
,, *oly'mpica* (Olympian) of Sibthorp. Yellow. Greece; Asia Minor.
,, ,, *hetero'coma* (variable-haired). Golden yellow. Levant. 1899.
,, *oxyca'rpa* (acute-fruited). Syria.
,, *pilo'sa* (soft-haired). See D. ALPINA.
,, *pyrena'ica* (Pyrenean). ½. White to purple. Pyrenees. 1759.
,, *re'pens* (creeping). ½. June. Siberia. 1818.
,, *ri'gida* (rigid). Asia Minor.
,, *rupe'stris* (rock). White. ½. June. Scotland.
,, *Saute'ri* (Sauter's). ½. April. Tyrol.
,, *sca'bra* (rough). Yellow. Caucasus. 1897.
,, *scandina'vica* (Scandinavian). See D. RUPESTRIS.
,, *siliquo'sa* (*large*-podded). ½. White. June. Caucasus. 1822.
,, *stella'ta* (starry). ½. White. June. Pyrenees. 1820.
,, *styla'ris* (*long*-styled). See D. INCANA STYLARIS.
,, *tomento'sa* (woolly). ½. White. June. Switzerland. 1819.
,, ,, *fri'gida* (frigid).
,, *tridenta'ta* (three-toothed). See D. HISPIDA.
,, *ve'rna* (spring). See EROPHILA VULGARIS.
,, *viola'cea* (violet). Purple. Ecuador. 1867. Hardy.
,, *Wahlenbe'rgii* (Wahlenberg's). See D. FLADNIZENSIS.
,, *Zapate'rii* (Zapater's). Spain.

DRACÆ'NA. (From *drakaina*, a female dragon; because, if this Dragon-tree is wounded, the milky juice on drying becomes a hard gum, having the same properties as the resinous substance called Dragon's-blood. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Stove evergreens, with white flowers, except *D. nu'tans*. Large pieces of the branches strike when put in strong bottom-heat, the leafy tops may be so struck, or ringed below the leaves, two half pots placed round them, filled with light soil and watered till roots are formed. Old stems may be laid on moist cocoanut fibre in a propagating case till shoots are formed, when they may be

taken off as cuttings and struck. Rich, fibrous loam, well drained. Summer temp., 60° to 80°; winter, 48° to 55°.

GREENHOUSE.

D. nodo'sa (knotted). 4. 1820.
„ *nu'tans* (nodding). 4. Brown. July. N. Holland. 1820.
„ *undula'ta* (waved). 6. Cape of Good Hope. 1816. This is *Asparagus undulatus*.

STOVE.

D. amboyne'nsis (Amboynian). Leaves bronze, edged carmine. Moluccas. 1876.
„ *america'na* (American). 20 to 40. White. Leaves 8 to 15 in. long. Central Amer. 1905.
„ *amœ'na* (pleasing). Leaves bordered cream and rose. 1876.
angustifo'lia (narrow-leaved). India.
„ *arbo'rea* (tree). 30. May. Sierra Leone. 1800.
„ *arge'nteo-stria'ta* (silver-striped). Leaves striped creamy-white. South Sea Islands. 1888.
„ *aubrya'na* (Aubryan). See D. THALIOIDES.
„ *au'reo-stria'ta* (golden-striped). Leaves striped yellow. Gardens. 1898.
„ *Auro'ra* (Aurora). Midrib and petiole violet. South Sea Islands. 1878.
„ *austra'lis* (southern). See CORDYLINE AUSTRALIS.
„ *Barte'lii* (Bartel's). Leaves reddish-bronze. Garden form. 1886.
„ *Barte'ii* (Bartet's). Garden form. 1888.
„ *be'llula* (pretty). See CORDYLINE TERMINALIS.
„ *bi'color* (two-coloured). White, with purple bracts. Fernando Po. 1861.
„ *borea'lis* (northern). See CLINTONIA BOREALIS.
„ *Bo'scii* (Bosc's). See AGAVE GEMINIFLORA.
„ *brasilie'nsis* (Brazilian). See CORDYLINE TERMINALIS.
„ *Broomfie'ldii* (Broomfield's). Leaves margined and striped white. South Sea Islands. 1896.
„ „ *supe'rba* (superb). Leaves with broad white margins. Trop. Australia. 1903.
„ *cannæfo'lia* (Canna-leaved). See CORDYLINE TERMINALIS.
„ *Cantle'yi* (Cantley's). Leaves broad, blotched creamy-yellow. Singapore.
„ *ce'rnua* (drooping). See D. REFLEXA.
„ *ci'ncta* (engirdled). Country unknown.
„ *Cinnaba'ri* (Cinnabari). Socotra. 1880.
„ *conci'nna* (neat). 6. Leaves narrow. Mauritius. 1870.
„ *conge'sta* (crowded). See CORDYLINE STRICTA.
„ *cri'stula* (finely-crested). Leaves with 6 to 9 white nerves. Liberia. 1879.
„ *crue'nta* (blood-coloured). Leaves bronze, striped crimson. 1877.
„ *cu'prea* (coppery). Appears a variety of *Cordyline australis*. 1893.
„ *cyli'ndrica* (cylindrical). White. Trop. Africa.
„ *deco'ra* (ornamented). Leaves olive-green, banded crimson. 1876.
„ *Douce'tii* (Doucett's). See CORDYLINE AUSTRALIS DOUCETTII.
„ *Dra'co* (dragon. *Common*). 10. Canary Islands.
„ *ebu'rnea* (ivory). Leaves edged pure white. 1876.
„ *elli'ptica* (elliptic-*leaved*). 2½. Yellow. March. Amboyna.
„ „ *macula'ta* (spotted). Leaves spotted. India.
„ *ensifo'lia* (sword-leaved). See DIANELLA ENSIFOLIA.
„ *ere'cta a'lba* (white). Leaves with broad white margin. 1880.
„ „ *purpu'rea* (purple). Bronzy green, with orange ribs. 1880.
„ *fe'rrea* (iron). See CORDYLINE TERMINALIS.
„ *floribu'nda* (free-flowering). Leaves 3 to 4 ft. long, green. 1879.
„ *fontanesia'na* (Fontanesian). White. Mascarene Islands. 1859.
„ *fra'grans* (fragrant). 6. White. Trop. Africa. 1768.
„ „ *Linde'ni* (Linden's). Leaves edged creamy-yellow. 1881.
„ „ *massangea'na* (Massangean). Leaves striped pale creamy-yellow. 1881.
„ „ *Victo'ria* (Victoria). Leaves with broad golden-yellow edges. 1903.
D. frutico'sa (shrubby). 8. White. 1862.
„ *godseffia'na* (Godseffian). Leaves densely blotched creamy-yellow. W. Trop. Africa. 1893.
„ *goldiea'na* (Goldiean). Leaves broad, banded grey. W. Trop. Africa. 1872.
„ *gra'cilis* (graceful). Leaves elegant, shining, green. Madagascar. 1902.
„ *Hibbe'rdii* (Hibberd's). Leaves blackish-metallic.
„ *hookeria'na* (Hookerian). Leaves green. S. Africa.
„ „ *latifo'lia* (broad-leaved). Leaves green. 1862.
„ „ *schmidtia'na* (Schmidtian). Leaves striped with white. 1880.
„ „ *variega'ta* (variegated). Leaves with creamy-white margins. 1903.
„ *indivi'sa* (undivided). See CORDYLINE INDIVISA.
„ *interru'pta* (interrupted). 2. June. Sierra Leone. 1798.
„ *Jansse'nsi* (Janssen's). Leaves with creamy-white margin. 1903.
„ *java'nica* (Javanese). See D. ELLIPTICA.
„ *kewe'nsis* (Kew). Leaves with red leaf-stalks. New Caledonia (?). 1903.
„ *Lacou'rtii* (Lacourt's). Leaves small, crowded. Congo Free State. 1900.
„ *latifo'lia* (broad-leaved). See D. HOOKERIANA.
„ *leone'nsis* (Sierra Leone). 3. June. Sierra Leone. 1824.
„ *Linde'ni* (Linden's). See D. FRAGRANS LINDENI.
„ *Maca'rthuri* (Macarthur's). Leaves rosy-carmine and olive-green. Australia. 1877.
„ *macrophy'lla* (large-leaved). Leaves large, margined white. 1880.
„ *macula'ta* (blotched). See D. ELLIPTICA.
„ *madagascarie'nsis* (Madagascar). Leaves narrow, green. Madagascar. 1884.
„ *margina'ta* (bordered). August. Madagascar.
„ *marmora'ta* (marbled). Leaves marbled with grey. Singapore.
„ *massangea'na* (Massangean). See D. FRAGRANS MASSANGEANA.
„ *mauritia'na* (Mauritian). See CORDYLINE FLORIBUNDA.
„ *mira'bilis* (wonderful). Leaves bronzy, margined crimson. Polynesia. 1877.
„ *ova'ta* (egg-shape-*leaved*). 2. August. Sierra Leone.
„ *phrynioi'des* (Phrynium-like). White, purple. W. Trop. Africa. 1863.
„ *purpu'rea* (purple-*leaved*). 15. June. East Indies. 1820.
„ *refle'xa* (bent-back-*leaved*). 4. June. Madagascar. 1819.
„ *robinsonia'na* (Robinsonian). Leaves striped bronze and crimson. South Sea Islands. 1877.
„ *rothia'na* (Rothian). Leaves with transparent netting. Comoro Isles. 1877.
„ *salicifo'lia* (willow-leaved). See D. REFLEXA.
„ *sanderia'na* (Sanderian). Leaves curved, banded with white. W. Trop. Africa. 1892.
„ *Saposchnikо'wi* (Saposchnikow's). 8 to 10. Nearly white. 1870.
„ *sepia'ria* (hedge). Pure white. Leaves small. Berries yellow. Fiji. 1887.
„ *Smi'thii* (Smith's). 10 to 15. Yellow. Trop. Africa. 1875.
„ *spica'ta* (spicate). India.
„ *stenophy'lla* (narrow-leaved). Trop. Africa. 1861.
„ *stria'ta* (streaked). 4. April. Cape of Good Hope. 1820. This is *Asparagus striata*.
„ *stri'cta* (upright). See CORDYLINE STRICTA.
„ *surculo'sa* (suckered). 4. White. July. W. Trop. Africa. 1821.
„ „ *macula'ta* (blotched). Leaves blotched yellow. Old Calabar. 1867.
„ *termina'lis* (terminal). See CORDYLINE TERMINALIS.
„ *terniflo'ra* (flowers in threes). See D. SPICATA.
„ *tessella'ta* (chequered). See D. MARGINATA.
„ *thalioi'des* (Thalia-like). White. W. Trop. Africa. 1860.
„ *thomsonia'na* (Thomsonian). Leaves bright green. W. Trop. Africa. 1882.
„ *umbraculi'fera* (shade-bearing). 10. Mauritius. 1788.
„ *veno'sa* (veiny). Leaves yellow-green, netted dark green. Borneo. 1883.
„ *Walli'chii* (Wallich's). See D. SPICATA.
„ *Willia'msii* (Williams'). Leaves striped with chocolate, white, rose. Polynesia. 1883.

DRACOCE'PHALUM. Dragon's Head. (From *drakon*, a dragon, and *kephale*, a head; referring to the gaping flower. Nat. ord. *Lipworts*, or *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Nepeta.)

Annual and perennial herbs of a showy character. Annuals, by seed in the open ground at the end of March; perennials, by seeds and divisions; the tender evergreens, by cuttings of young shoots under a hand-glass, in April or May; light, rich soil.

HARDY ANNUALS.

D. cane'scens (hoary). See LALLEMANTIA CANESCENS.
„ *Molda'vica* (Moldavian). 2. Blue. July. Moldavia. 1596.
„ „ *albiflo'rum* (white-flowered). 2. White. July. Moldavia. 1596.
„ *peregri'num* (diffuse). ½. Purple. July. Siberia. 1759.
„ *thymiflo'rum* (thyme-flowered). ½. Purple. July. Siberia. 1752.

GREENHOUSE EVERGREENS.

D. canarie'nse (Canary. *Balm of Gilead*). See CEDRONELLA TRIPHYLLA.
„ *chamædryoi'des* (germander-like). See SPHACELE CAMPANULATA.
„ *origanoi'des* (majoram-like). ½. July. Siberia. 1829. Trailer.

HARDY PERENNIALS.

D. altaice'nse (Altaic). See D. GRANDIFLORUM.
„ *argune'nse* (Argun). See D. RUYSCHIANA.
„ *austri'acum* (Austrian). 1. Blue. June. Austria. 1597.
„ *botryoi'des* (botrys-like). ½. Purple. July. Siberia. 1822.
„ *corda'tum* (heart-shaped). See CEDRONELLA CORDATA.
„ *denticula'tum* (toothleted). See PHYSOSTEGIA VIRGINIANA.
„ *grandiflo'rum* (large-flowered). ½. Purple. July. Siberia. 1759.
„ *heterophy'llum* (various-leaved). Himalaya; Turkestan.
„ *ibe'ricum* (Iberian). See LALLEMANTIA IBERICA.
„ *imbe'rbe* (beardless). Siberia.
„ *integriflo'lium* (whole-leaved). Blue. July. Siberia. 1827.
„ *mexica'num* (Mexican). See CEDRONELLA MEXICANA.
„ *nu'tans* (nodding). 1. Blue. July. Siberia. 1731.
„ *palma'tum* (hand-*leaved*). 1½. Purple. July. Siberia. 1815.
„ *parviflo'rum* (small-flowered). ½. Blue. July. N. Amer. 1825.
„ *pelta'tum* (shield-*leaved*). See LALLEMANTIA PELTATA.
„ *pinna'tum* (leafleted). Blue. June. Siberia. 1822.
„ *Rupre'chti* (Ruprecht's). 1 to 1½. Blue. Turkestan. 1880.
„ *ruyschia'na* (Ruyschian). 2. Blue. July. N. Europe. 1699.
„ „ *jato'nicum* (Japanese). White, spotted blue. Japan. 1879.
„ *sibi'ricum* (Siberian). See NEPETA MACRANTHA.
„ *specio'sum* (showy). Purple, spotted white and deeper purple. Himalaya. 1877.
„ *specio'sum* (showy) of Sweet. See PHYSOSTEGIA VIRGINIANA SPECIOSA.
„ *virginia'num* (Virginian). See PHYSOSTEGIA VIRGINIANA.

DRACO'NTIUM. Dragon. (From *drakon*, a dragon; referring to its spots and streaks being like those on serpents. Nat. ord. *Orontiads* [Araceæ]. Linn. 7-*Heptandria*, 1-*Monogynia*. Allied to Pothos and Orontium.)

Stove perennials with a tuberous root-stock. Dividing the roots; fibrous loam, and a little decayed dung and leaf-mould. Summer temp., 60° to 85°; winter, 48° to 55°.

D. albosti'pes (white-stalked). Leaf-stalks grey-white banded brown. Colombia. 1877.
„ *annula'tum* (ringed). Leaf-stalks umber-brown, spotted with white. Colombia. 1877.
„ *a'sperum* (rough). 5. Spathe and spadix purple-brown. Brazil.
D. Carde'ri (Carder's). 3. Spathe green, purple. Colombia. 1877.
„ *fœcu'ndum* (fertile). 3. Spathe purple-brown. British Guiana. 1882.
„ *fœ'tidum* (fœtid). See SYMPLOCARPUS FŒTIDUS.
„ *Gi'gas* (giant). 10. Spathe dark red-brown. Nicaragua. 1869.
„ *lanceæfo'lium* (lance-leaved). See SPATHIPHYLLUM LANCEÆFOLIUM.
„ *pertu'sum* (top-pierced). See MONSTERA PERTUSA.
„ *polyphy'llum* (many-leaved). 2. May. India. 1759.
„ *sculptura'tum* (sculptured). Petiole dark brown, with pale markings. Colombia. 1879.
„ *spino'sum* (prickly). See LASIA SPINOSA.

DRACONTOME'LON. (From *drakon*, *drakontos*, a dragon, and *melon*, an apple; in allusion to the strange form of the fruit. Nat. ord. Anacardiaceæ.)

Stove evergreen tree. Cuttings of ripe shoots in sand in a close case, with bottom-heat. Loam, peat, and sand.

D. mangi'ferum (mango-bearing). 30. White. Java. 1820.

DRACOPHY'LLUM. (From *drakon*, a dragon, and *phullon*, a leaf; referring to the long bracts, which resemble the young leaves of the Dragon-plant, *Dracæ'na Dra'co*. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Sphenotoma and Richea.)

Greenhouse evergreens, from Australia. Cuttings of young wood, getting firm at the base, in April; peat and loam, both fibrous, with a little silver sand. Temp., winter, 40° to 45°.

D. capita'tum (headed). 1. White. April. 1830.
„ *gra'cile* (graceful). 2 to 3. White. June. Australia. 1823.
„ *longifo'lium* (long-leaved) 2. White. June. 1824.
„ *secu'ndum* (side-*flowering*). 2. White. June. 1823.

DRACO'PIS and **DRACO'PIS AMPLEXICAU'LIS.** See RUDBECKIA AMPLEXICAULIS.

DRACUN'CULUS. (The diminutive of *drakon*, a dragon. Nat. ord. Araceæ.)

Tuberous perennials with the habit of *Arum maculatum*. *D. vulgaris* is hardy in sheltered places round London, and may be quite exposed to the south and west of England. A greenhouse for the rest. Division or offsets. Rich sandy soil.

D. canarie'nsis (Canary). Spathe green and brown. Canaries.
„ *cre'ticus* (Cretan). See D. VULGARIS.
„ *vulga'ris* (common). Spathe green and purple-brown. S. Europe. 1548.

DRAGON. See DRACONTIUM and ARISÆMA DRACONTIUM.

DRAGON'S-BLOOD. *Dæmo'norops Dra'co*, *Dracæ'na Dra'co*, and *Pteroca'rpus Dra'co*.

DRAGON'S-HEAD. *Dracoce'phalum.*

DRAGON-TREE. *Dracæ'na Dra'co.*

DRAINING is drawing away the surface water, instead of allowing it to chill the land by evaporation, and further injuring the crops by an excessive supply of moisture. There is scarcely a garden existing that would not be benefited by under-draining. Every gardener knows the absolute necessity for a good drainage under his wall-trees and vines, but few gardeners ever think for a moment whether there is any escape and outfall for the water he has drained from immediate contact with the roots of the above-named favoured trees. Every garden should have drains cut, varying in depth from two to three feet, according to the depth of the soil, with an interval of twenty-four feet between the drains; twelve feet will not be too near in clayey soils. At the bottom of the drains should be placed one-inch pipes; these should be well puddled over six inches deep with clay, and then the earth returned. They should have an outfall into a ditch, at the least elevated side of the garden. By having the pipes with a bore no larger than an inch moles cannot creep in; and that bore is large enough to carry off all the water, after even the heaviest rains.

DRAKÆ'A. (Named in honour of *Miss Drake*, botanical painter for the Botanical Register. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Caleya.)

The only species introduced is an extremely curious ground-orchid, having one flower on the top of a slender stalk, eighteen inches long, "resembling an insect suspended in the air, and moving with every breeze." Greenhouse. Divisions; peat, loam, and rough sand.

D. ela'stica (elastic). Variegated. September. Swan River.

DRAPE'RIA. (A commemorative name. Nat. ord. Hydrophyllaceæ.)

A half-hardy shrub of dwarf habit. Layers, and seeds when obtainable. Light, well-drained soil in the more favoured south and west, otherwise protection from frost in winter.

D. sy'styla (united-styled). Bright violet. California. 1896.

DRAWN. A plant is said to be *drawn* when it is unnaturally increased in length. This is usually by an excess of heat and moisture, and a deficiency of air and light.

DREJE'RA WILLDENOWIA'NA. See JACOBINIA MOHINTLI.

DREPANOCA'RPUS. The Sickle-pod. (From *drepanon*, sickle, and *carpos*, a fruit; referring to the shape of the seed-vessel. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Stove evergreen. Cuttings of young shoots nearly ripe, with their leaves entire, in sand, under a glass, and in bottom-heat; peat and loam, both fibrous. Summer temp., 60° to 80°; winter, 50° to 55°.

D. luna'tus (*half*-moon-*capsuled*). 12. White. S. Amer. 1792.

DRESSING. Putting the borders in order; also manuring strawberries, asparagus, and other permanent beds.

DRIFT SAND is the sand washed by floods into drifts or banks, whether by the sides of roads or streams.

DRILLING. Scarcely a crop in the garden should be sown broadcast, for drilling saves seed and labour; and although in some cases it takes more time to insert the seed in drills, yet this is more than compensated by the time saved during the after-culture, for the thinning and hoeing are greatly facilitated. (See BROADCAST.)

The distance apart appropriate for the drills for particular crops will be found under their respective titles; they are usually made with a hoe and line, but the *drill-rake* is often used. The teeth are set six inches apart, and are broad and coulter-formed. When the drills are required to be less than six inches apart the implement can be worked diagonally; but it may be made with teeth movable to any desired space apart.

DRI'MIA. (From *drimus*, acrid; referring to the juice of the bulbs. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Massonia.)

Little greenhouse bulbous plants, from the Cape of Good Hope; elegant, though less showy than the Ixias. Offsets; peat, or leaf-mould, and sandy loam. Summer temp., 50° to 75°; winter, 35° to 45°; potted when beginning to grow, and until then kept dry after the withering of the leaf.

D. acumina'ta (pointed). See SCILLA LANCEÆFOLIA.
,, *alti'ssima* (tallest). See URGINEA ALTISSIMA.
,, *ano'mala* (anomalous). S. Africa.
,, *apertiflo'ra* (open-flowered). See SCILLA LORATA.
,, *ciliа'ris* (hair-fringed). 1½. Purple, white. August. 1800.
,, *Co'leæ* (Mrs. Cole's). Green, with purple anthers. Somaliland. 1897.
,, *Coope'ri* (Cooper's). See SCILLA CONCOLOR.
,, *ela'ta* (tall). 2. Red, green. October. 1799.
,, *haworthioi'des* (Haworthia-like). White and green. S. Africa. 1875.
,, *lanceæfo'lia* (spear-leaved). See SCILLA LANCEÆFOLIA.
,, *lanceola'ta* (spear-head-*leaved*). See SCILLA LANCEOLATA.
D. longipeduncula'ta (long-flower-stalked). See SCILLA LANCEÆFOLIA.
,, *me'dia* (intermediate). White. August. 1820.
,, *purpura'scens* (purplish). ¼. Purple. August. 1818.
,, *pusi'lla* (little). ½. Green. May. S. Africa. 1793.
,, *robu'sta* (robust). 2. Green. S. Africa. 1862.
,, *undula'ta* (waved). See SCILLA UNDULATA.
,, *villo'sa* (long-haired). Green. August. 1826.

DRIMIO'PSIS. (Derived from *Drimia*, and *opsis*, resemblance; the plants resemble the species of Drimia. Nat. ord. Liliaceæ.)

Stove or greenhouse bulbs. Offsets. Light, sandy loam and leaf-mould. Repot when the bulbs are about to commence fresh growth, and keep them rather dry when at rest.

D. botryoi'des (bunch-like). ½. Greenish-white. Trop. Africa. 1875.
,, *Ki'rkii* (Kirk's). 1. White. June to August. Zanzibar. 1871.
,, *macula'ta* (blotched). 1. Green and white. Natal. 1851.
,, *mi'nor* (lesser). ½. Pink. Trop. Africa. 1862.
,, *perfolia'ta* (pierced-leaved). ½. Green-white. Trop. Africa. 1878.

DRI'MYS. (From *drimus*, acrid; referring to the "bitter tonic taste" of the bark, one of the characteristics of the nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 13-*Polyandria*, 4-*Tetragynia*.)

The Winter Bark of commerce is that of *D. Winte'ri*, a good substitute for cinnamon. Greenhouse evergreen trees, with white flowers. Cuttings of half-ripe shoots in sand, under a glass, and, after standing a fortnight shaded from sun, transferred to a sweet bottom-heat; fibrous peat and sandy, lumpy loam. Winter temp., 40° to 45°.

D. aroma'tica (aromatic). 3 to 9. White. Tasmania and Victoria. 1845.
,, *chile'nsis* (Chilian). See D. WINTERI.
,, *dipe'tala* (two-petaled). 8. May. Australia. 1824.
,, *granate'nsis* (New Grenadian). See D. WINTERI.
,, *Winte'ri* (Winter's). 3 to 10. White. S. Amer. 1827.

DROPWORT. *Spiræ'a Filipe'ndula*. Dropwort, Water. *Œna'nthe croca'ta*.

DRO'SERA. Sundew. (From *droseros*, dewy. Nat. ord. *Sundews* [Droseraceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*.)

The Sundews are delicate herbaceous plants, chiefly inhabitants of marshes; the whole plant is thickly clothed with glandular hairs, giving them the appearance of being studded with dewdrops. We have often viewed *D. rotundifo'lia* with amazement, on the opposite side of a little pool, arrayed in hundreds of little stars, and sparkling beneath a midday's sun. Seeds, generally, and divisions; peat earth, above it fresh sphagnum moss, in which the tiny plant is to be fixed, and then the pot is to be set in a pan of water. Most of them succeed in a cool greenhouse, but the British ones may be cultivated in the bog garden.

D. acau'lis (stemless). ½. White. July. S. Africa. 1823.
,, *america'na* (American). See D. LONGIFOLIA AMERICANA.
,, *a'nglica* (English). ½. White, red. July. England.
,, *bina'ta* (twin-*leaved*). ½. White. July. Australia. 1821.
,, ,, *ru'bra* (red). Red. Leaves more repeatedly forked. 1880.
,, *burkea'na* (Burkean). S. Africa.
,, *cape'nsis* (Cape). ½. Purple. S. Africa. 1875.
,, *cistiflo'ra* (Cistus-flowered). Scarlet, 2 in. across. S. Africa. 1889.
,, *dicho'toma* (forked). See D. BINATA.
,, *erythrorhi'za* (scarlet-rooted). White. July. Swan River. 1843.
,, *filicau'lis* (thready-stemmed). Rose. May. Swan River. 1841.
,, *filifo'rmis* (thread-form). ½. Purple. July. New Jersey. 1811.
,, *gigante'a* (gigantic). White. July. Swan River.
,, *interme'dia* (intermediate). ½. White. July. England.
,, *linea'ris* (narrow-*leaved*). ½. Purple. July. N. Amer. 1818.

D. longifo'lia (long-leaved). ½. White, red. July. Britain.
,, ,, *america'na* (American). ½. White. July. N. Amer. 1820.
,, *macra'ntha* (large-flowered). Rose. July. Swan River.
,, *macrophy'lla* (large-leaved). White. July. Swan River. 1842.
,, *madagascarie'nsis* (Madagascar). See D. RAMENTACEA.
,, *pa'llida* (pale). White. July. Swan River. 1843.
,, *pauciflo'ra* (few-flowered). ½. White. July. S. Africa. 1823.
,, *pelta'ta* (shield-shaped). White. Australia. 1883.
,, *ramenta'cea* (trailing). S. Africa.
,, *rotundifo'lia* (round-leaved). ½. White. July. Britain.
,, *spathula'ta* (spathulate). Purple. Australia. 1861.
,, *stoloni'fera* (creeping-rooted). White. July. Swan River.
,, *viola'cea* (violet). Violet. S. Africa.
,, *Wittake'rii* (Wittaker's). White. Australia. 1862.

DROSOPHY'LLUM. (From *drosos*, dew, and *phullon*, a leaf; in allusion to the dew-like drops on the glands covering the leaves. Nat. ord. Droseraceæ,)
A cool greenhouse, insectivorous plant, with bright yellow flowers and the habit of Drosera. Like the plants of that genus the sticky glands hold insects, which light upon them and digest them. Seeds. Sandy loam, kept on the dry side, and the plants fully exposed to sunlight.

D. lusita'nicum (Portuguese). 1. Yellow. Portugal, Spain, N. Africa. 1869.

DRUMMO'NDIA MITTELOI'DES. See MITELLA PENTANDRA.

DRUPE. The fruit of a Plum, Cherry, or Peach, known as stone-fruits. The outer part of the ovary becomes fleshy or juicy and the inner bony, forming the so-called stone.

DRYA'NDRA. (Named after *Dryander*, a Swedish botanist. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Banksia.)
Greenhouse evergreen shrubs, from Australia, with yellow flowers. Cuttings of firm side-shoots taken off in August, inserted in sand, under a bell-glass, shaded to keep the foliage from flagging, and in a fortnight or three weeks transferred to a mild bottom-heat; fibrous peat and fibrous loam, with a portion of sand, broken potsherds, and a few pieces of charcoal; pots particularly well drained. Winter temp., 38° to 45°.

D. Arcto'tidis (Arctotis-like). 1830.
,, *arma'ta* (armed). 3. 1803.
,, *Baxte'ri* (Baxter's). 3. 1824.
,, *bipinnati'fida* (doubly-leafleted). 1840.
,, *blechnifo'lia* (Blechnum-leaved). See D. PTERIDIFOLIA.
,, *calophy'lla* (beautiful-leaved). Golden yellow. 1830.
,, *cardua'cea* (thistle-like). 3. April.
,, ,, *angustifo'lia* (narrow-leaved). 3. April.
,, *cunea'ta* (wedge-*leaved*). 3. June. 1803.
,, ,, *brevifo'lia* (short-wedge-leaved). 3. June. 1803.
,, ,, *longifo'lia* (long-wedge-leaved). 3. June. 1803.
,, *falca'ta* (sickle-shaped). 3. June. 1824.
,, *favo'sa* (honey-combed). See D. ARMATA.
,, *floribu'nda* (many-flowered). 3. 1803.
,, *foliola'ta* (leafleted). 1830.
,, *formo'sa* (handsome). 4. 1803.
,, *Frase'ri* (Fraser's). 1840.
,, *longifo'lia* (long-leaved). 2. 1803.
,, *mucronula'ta* (small-sharp-pointed). 3. 1824.
,, *nervo'sa* (*large*-nerved). See D. PTERIDIFOLIA.
,, *ni'vea* (snowy-*leaved*). 2. 1805.
,, *no'bilis* (noble). 1840.
,, *obtu'sa* (blunt-*leaved*). 2. 1803.
,, *plumo'sa* (feathered). 3. 1803.
,, *proteoi'des* (Protea-like). 1840.
,, *pteridifo'lia* (Pteris-leaved). 1½. 1824.
,, *runcina'ta* (runcinate). 1852.
,, *senecifo'lia* (Senecio-leaved). 3.
,, *Se'rra* (saw-like).
,, *stupo'sa* (heavy). 1840.
,, *tenuifo'lia* (fine-leaved). 2. April. 1803.

DRY'AS. (From *druas*, a dryad, or goddess of the woods, to whom the oak (*drus*) was sacred. The leaves of *D. octope'tala*, a Scotch plant on which the genus was founded by Linnæus, resemble small oak-leaves; and he, in a playful mood, made Dryas the badge of Virgil's Dryades, after the manner of the Scottish clans. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*. Allied to Coluria and Cowania.)
All the species but *D. Drummo'ndi* have white flowers, blooming in July. Divisions and seeds in spring; cuttings under a hand-light in summer; a peat-border, or, still better, in pots, and protected during winter in a cold pit.

HARDY EVERGREENS.

D. interme'dia (intermediate). ½. N. Amer. 1832.
,, *octope'tala* (eight-petaled). ½. Britain.
,, ,, *america'na* (American). ½. N. Amer. 1800.
,, ,, *depre'ssa* (depressed). ½. White. Ireland.
,, ,, *lana'ta* (woolly). Leaves woolly. Tyrol. 1891.

HARDY HERBACEOUS.

D. decape'tala (ten-petaled). N. Amer. 1839.
,, *depre'ssa* (depressed). See D. OCTOPETALA DEPRESSA.
,, *geoi'des* (Geum-like). See WALDSTEINIA GEOIDES.
,, *mi'nor* (smaller). ½. N. Amer.

HALF-HARDY EVERGREENS.

D. chamædryfo'lia (Chamædrys-leaved). See D. DRUMMONDII.
,, *Drummo'ndii* (Drummond's). ½. Yellow. N. Amer. 1828.
,, *integrifo'lia* (whole-leaved). ½. Greenland. 1824.
,, *tene'lla* (delicate). See D. INTEGRIFOLIA.

DRYMO'DA. (From *drumodes*, woody; in allusion to the habitat of the plants on trees. Nat. ord. Orchidaceæ.)
A tiny Orchid growing on the branches of trees, and under cultivation thriving best on small blocks of wood suspended from the roof. Division. Sphagnum or Osmunda fibre tied on the blocks.

D. pi'cta (painted). Pale green and purple. March. Burma. 1870.

DRYMOGLO'SSUM. The Wood-tongue. (From *drumos*, a wood, and *glossa*, a tongue; alluding to the place of growth and form of the fronds. Nat. ord. Filices. Allied to Polypodium.) See FERNS.
Spores yellow. Division; peat and loam. Summer temp., 60° to 80°; winter, 48° to 55°.

D. carno'sum (fleshy). Japan, China, &c.
,, ,, *subcorda'tum* (somewhat heart-shaped). Frond smaller.
,, *lanceola'tum* (spear-head). June. India. 1843.
,, *piloselloi'des* (pilosella-like). June. E. Ind. 1828.
,, *ri'gidum* (rigid). Borneo.
,, *spatula'tum* (spatulate). E. Ind.

DRYMO'NIA. (From *drymonia*, woodland; their habitation. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Besleria.)
Stove evergreen climbers. Cuttings in sandy soil, in bottom-heat; rich, sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

D. bi'color (two-coloured). See D. SERRULATA.
,, *crista'ta* (crested). Green. October. Guiana. 1848.
,, *marmora'ta* (marbled). Yellow, tinted pink. Trop. Amer. 1882.
,, *puncta'ta* (spotted-*flowered*). See EPISCIA PUNCTATA.
,, *serrula'ta* (finely saw-edged). 6. Purple. W. Ind. 1806.
,, *specta'bilis* (showy). Panama.
,, *Turria'lvæ* (Mrs. Turrialva's). White. Costa Rica. 1870.
,, *villo'sa* (shaggy). See EPISCIA VILLOSA.

DRYMOPHLŒ'US. (Derived from *drumos*, wood, and *phloios*, bark. Nat. ord. Palmaceæ.)
Stove palms. Seeds. Good fibrous loam, with a little peat.

D. appendicula'tus (appendaged). A dwarf Palm, with large, cuneate leaf-segments. Malaya.
,, *cerame'nsis* (Ceraman). Ceram.

D. lepro'sus (scaly). New Guinea.
„ *moorea'nus* (Moorean). Leaves greyish-green. 1903.
„ *olivæfo'rmis* (olive-shaped). 30. Amboyna.
„ *Ru'mphii* (Rumph's). See D. LEPROSUS.
„ *singapore'nsis* (Singapore). See PTYCHORAPHIS SINGAPORENSIS.

DRYNA'RIA. (From *drus*, a tree; dwelling among trees. Nat. ord. Filices. All are now referred to Polypodium.)

A large genus of stove Ferns, with brownish-yellow spores. Allied to Dryostachyum. Division; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

D. a'lbido-squama'ta (white-scaled). June. Isle of Luzon.
„ *Billardie'ri* (La Billardière's). 1. June. N. Holland. 1824.
„ *cæspito'sa* (tufted). April. India. 1841.
„ *capitella'ta* (small-headed). July. S. Amer. 1822.
„ *coria'cea* (leathery). June. India. 1840.
„ *coro'nans* (crowned). June. W. Ind.
„ *crassifo'lia* (thick-leaved). August. W. Ind. 1823.
„ *cuspidiflo'ra* (pointed-flowered). June. Isle of Luzon.
„ *diversifo'lia* (various-leaved). July. Australia.
„ *du'bia* (doubtful). June. Isle of Luzon.
„ *glau'ca* (milky-green). Isle of Luzon.
„ *hemionitidea* (spleenwort-like). 2. Yellow. March. E. Ind. 1843.
„ *Horsfie'ldii* (Horsfield's). Yellow. Java.
„ *irioi'des* (Iris-like). 3. June. E. Ind. 1824.
„ *juglandifo'lium* (Juglans-leaved). 1½. May. S. Amer. 1822.
„ *leiorhi'za* (smooth-rooted). March. E. Ind.
„ *lomarioi'des* (Lomaria-like). Isle of Luzon.
„ *lo'ngifrons* (long-fronded). Isle of Luzon.
„ *lo'ngipes* (long-stalked). E. Ind. 1823.
„ *longi'ssima* (longest-*leaved*). Isle of Luzon.
„ *lorifo'rmis* (strap-like). March. E. Ind.
„ *negle'cta* (neglected). Isle of Luzon.
„ *norma'lis* (normal). March. Nepaul.
„ *palma'ta* (hand-shaped). Isle of Luzon.
„ *plantagi'nea* (plantain-like). June. E. Ind. 1842.
„ *propi'nqua* (allied). May. E. Ind.
„ *pustula'ta* (pimpled). 1. March. Manilla. 1840.
„ *quercifo'lia* (oak-leaved). 1½. March. Isle of Luzon. 1824.
„ *ru'bida* (red). Isle of Luzon.
„ *rupe'stris* (rock). Isle of Luzon.
„ *sesquipeda'lis* (foot-and-a-half). May. Nepaul.
„ *stenophy'lla* (narrow-leaved). March. Java.
„ *subfalca'ta* (rather-sickle-shape). Isle of Luzon.
„ *tenuilo'ris* (slender-thonged). Mindanao.
„ *undula'ta* (waved-*leaved*). Isle of Luzon.
„ *vulga'ris* (common). March. W. Ind. 1816.
„ *Wallichii* (Wallich's). March. E. Ind.

DRYOBA'LANOPS. Camphor-tree. (From *drus*, a tree, and *ballo*, to flow; from the tree yielding much sap. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

A stove tree, which produces the chief of the natural camphor imported. We say natural camphor, because camphor is now manufactured from turpentine.

D. aroma'tica (aromatic). 100. Yellow. Indian Archipelago.
„ *Ca'mphora* (camphor). See D. AROMATICA.

DRYO'PTERIS SAGITTIFO'LIA. See NEPHRODIUM SAGITTÆFOLIUM.

DRYOSTA'CHYUM. (From *drus*, a tree, and *stachus*, a spike. A genus of stove Ferns, with yellow spores. Allied to Drynaria and, like that, referred to Polypodium.)

Divisions; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

D. cauda'tum (tailed). May. Celebes. 1842.
„ *pilo'sum* (hairy). May. Isle of Luzon. 1841.
„ *sple'ndens* (shining). May. Isle of Luzon. 1842.

DRYPETES CRO'CEA. See XYLOSMA NITIDUM.

DRY'PIS. (From *drupto*, to lacerate; leaves armed with spines. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*. Allied to Acanthophyllum.)

Hardy evergreen. Seeds; cuttings under a hand-light in the early summer months; requires a dry situation, and equal portions of loam, peat, and rough sand.

D. spino'sa (prickly). ½. Pale blue. June. Italy. 1775.

DRY-STOVE is a hothouse devoted to the culture of such plants as require a high degree of heat, but a drier atmosphere than the tenants of the *Bark-stove*. Consequently, fermenting materials and open tanks of hot water are inadmissible; but the sources of heat are either steam or hot-water pipes or flues. See STOVE.

DUABA'NGA. (Probably a native name. Nat. ord. Lythraceæ.)

Stove evergreen shrub. Cuttings of firm side-shoots in spring or autumn, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

D. sonneratioi'des (Sonneratia-like). 12. Red. July. India. 1818.

DUBBING is a gardener's term for clipping. The *dubbings* of a hedge are the parts clipped off with the shears.

DUCK'S-FOOT. *Podophy'llum.*

DUGUE'TIA. (A commemorative name. Nat. ord. Anonaceæ.)

A stove evergreen tree. Cuttings of ripe wood in sand in a close case, with strong bottom-heat. Good fibrous loam and sand.

D. longifo'lia (long-leaved). 20. Yellow, green. Guiana and Peru. 1820.

DUMA'SIA. (Named after *M. Dumas*, one of the editors of *Annales des Sciences Naturelles*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Clitoria.)

Greenhouse evergreen twiners, from Nepaul, both introduced in 1824. Seeds sown in a hotbed, in spring; cuttings of young shoots getting firm, under a glass, and in sand, in a little bottom-heat, in April; sandy peat and fibrous loam. Summer temp., 55° to 75°; winter, 45° to 50°.

D. pube'scens (downy). See D. VILLOSA.
„ *villo'sa* (long-haired). 6. Pale yellow. October.

DUMB-CANE. *Dieffenba'chia Segui'ne.*

DUMERI'LIA PANICULA'TA. See JUNGIA FERRUGINEA.

DUNG. Under this title our attention must be confined to the fæces and urines of animals, and that one most common compound, *stable-dung*.

Night-soil is the richest of these manures. It is composed of human fæces and urine, of which the constituents are as follows: *Fæces.*—Water, 73.3; vegetable and animal remains, 7; bile, 0.9; albumen, 0.9; peculiar and extractive matter, 1.2; salts (carbonate of soda, common salt, sulphate of soda, ammonia-phosphate of magnesia, and phosphate of lime), 2.7; insoluble residue, 14.0. *Urine.*—Urate of ammonia, 0.298; sal-ammoniac, 0.459; sulphate of potash, 2.112; chloride of potassium, 3.674; chloride of sodium (common salt), 15.060; phosphate of soda, 4.267; phosphate of lime, 0.209; acetate of soda, 2.770; urea and colouring matter, 23.640; water and lactic acid, 47.511.

After stating the above analyses in his excellent work *On Fertilizers*, Mr. Cuthbert Johnson proceeds to observe, that the very chemical composition, therefore, of this compost would indicate the powerful fertilising effects which it is proved to produce. The mass of easily soluble and decomposable animal matters and salts of ammonia with which it abounds, its phosphate of lime, its carbonate of soda, are all by themselves excellent fertilisers, and must afford a copious supply of food to plants.

The disagreeable smell may be destroyed by mixing it with quick-lime, or still better with either chloride or sulphate of lime; and if exposed to the atmosphere in thin layers in fine weather, it speedily dries, is easily pulverised, and in this state may be used in the same manner as rape-cake, and delivered into the furrow with the seed.

From the experiments of M. Schubler and others, the relative value of night-soil is as follows:—

"If a given quantity of the land sown without manure yields three times the seed employed, then the same quantity of land will produce five times the quantity sown when manured with old herbage, putrid grass or leaves, garden stuff, &c.; seven times with cow-dung, nine times with pigeon's-dung, ten times with horse-dung, twelve times with human urine, twelve times with goat's-dung, twelve times with sheep's-dung, and fourteen times with human manure or bullock's blood. But if the land be of such quality as to produce without manure five times the sown quantity, then the horse-dung manure will yield fourteen, and human manure nineteen and two-thirds the sown quantity."

Fowl-dung, if composed partly of that of the duck, which is a gross feeder, is nearly equal to guano. This and that of the pigeon contain much ammonia, and all abound in phosphate of lime, mixed with decomposing organic matters and uric acid, all highly valuable as fertilisers.

Stable or *Farm-yard Dung* is usually composed of the following matters: *Horse-urine.*—Water and mucus, 94; carbonate of lime, 1.1; carbonate of soda, 0.9; hippurate of soda, 2.4; chloride of potassium, 0.9; urea, 0.7. But besides the above, it contains common salt, phosphate of lime, and sulphate of soda. *Cow-urine.*—Water, 66; phosphate of lime, 3; chloride of potassium, and sal-ammoniac, 15; sulphate of potash, 6; carbonate of potash and carbonate of ammonia, 4; urea, 4.

One thousand parts of dry wheat-straw being burnt, yielded M. Saussure forty-eight parts of ashes; the same quantity of the dry straw of barley yielded forty-two parts of ashes. The portion dissipated by the fire would be principally carbon (charcoal), carburetted hydrogen gas, and water; one hundred parts of these ashes are composed of—Various soluble salts, principally carbonate and sulphate of potash, 22½; phosphate of lime (earthy salt of bones), 6½; chalk (carbonate of lime), 1; silica (flint), 61½; metallic oxide (principally iron), 1; loss, 7½ths. The straw of barley contains the same ingredients, only in rather different proportions.

The solid excrements of a horse fed on hay, oats, and straw, contain, according to the analysis of M. Zierl, in 1000 parts. Water, 698; picromel and salts, 20; bilious and extractive matter, 17; green matter, albumen, mucus, &c., 63; vegetable fibre and remains of food, 202.

These, when burnt, yielded to the same chemist sixty parts by weight of ashes, which were composed of—Carbonate, sulphate, and muriate of soda, 5; carbonate and phosphate of lime, 9; silica, 46.—*Jour. Roy. Agr. Soc.*, vol. i. p. 489.

There have been many arguments and much difference of opinion among cultivators with regard to the advantage of employing dung in a fresh or in a putrid state, and, as is too often the case, both parties have run into extremes—the one side contending for the propriety of employing it quite fresh from the farmyard, the other contending that it cannot well be too decayed.

The mode employed by Lord Leicester is the medium between these equally erroneous extremes. He found that the employment of the fresh dung certainly made the dung go much farther, but then a multitude of the seeds of various weeds were carried on to the land along with the manure. He has therefore since used his compost when only in a half-putrefied state (called short dung by farmers), and hence the seeds are destroyed by the effects of the putrefaction, and the dung still extends much farther than if suffered to remain until quite putrefied. Putrefaction cannot go on without the presence of moisture. Where water is entirely absent, there can be no putrefaction; and hence many farmers have adopted the practice of pumping the drainage of their farmyards over their dung-heaps; others invariably place them in a low, damp situation. This liquid portion cannot be too highly valued by the cultivator. The soil where a dunghill has lain in a field is always distinguished by a rank luxuriance in the succeeding crop, even if the earth beneath to the depth of six inches is removed and spread with the dunghill.

Guano.—This now celebrated manure has been known as the chief fertiliser employed by the Peruvians, almost as long as that part of the New World has been recognised by geographers. Its name, in the language of that country, signifies *the* manure; and it merits such distinction as being one of the most powerful assistants to vegetation which can be applied to the soil. Guano is not peculiar to Peru, but is found in immense beds upon many rocks and islands of the Atlantic, being the excrements of the marine birds frequenting those ocean solitudes. It has been lately analysed by Dr. Ure, who reports it as composed of the following proportional constituents: Azotised organic matter, including urate of ammonia, and capable of affording from 8 to 17 per cent. of ammonia by slow decomposition in the soil, 50.0; water, 11.0; phosphate of lime, 25.0; ammonia, phosphate of magnesia, phosphate of ammonia, and oxalate of ammonia, containing from 4 to 9 per cent. of ammonia, 13.0; siliceous matter, 1.0.

This analysis explains the source from whence failure has been derived to many who have tried it. It is the most violently stimulating of all the known natural manures, and they have applied it too abundantly. This is shown by the experiments of Mr. Maund. When applied to *Strawberries* once a week in a liquid state (four ounces to a gallon), it made them very vigorous and productive; but sprinkled upon some young seedlings of the same fruit, it killed them. Two ounces per yard (five cwt. per acre) were sprinkled over *Onions*, and they doubled the untreated in size. *Potatoes*, manured with one ounce and a half per yard, were rendered much more luxuriant than others having no guano. *Brussels Sprouts* were half destroyed by being planted in immediate contact with nine parts earth and one part guano. *Geraniums* were greatly injured by liquid-manure of guano (four ounces per gallon), but "plants of various sorts, in pots, watered only with guano-water, half an ounce to a gallon, have flourished astonishingly; none have failed. These are lessons which cannot be mistaken."—*Auctorium*, 223. Mr. Rendle and other persons record, as the result of dearly-purchased experience, that where guano has failed to be beneficial, or has been injurious, it has been applied in quantities too powerful for the plants to bear. In a liquid state, *half an ounce per gallon*, and given to growing plants once a week, it never fails to be productive of vigour. When sown as a top-dressing, it should be mixed with five times its weight of dry earth, ashes, &c., and then scattered as thinly as possible. When used as a top-dressing for a flower-pot, a small pinch between the thumb and two fingers will be sufficient.

Cow-dung, for potting purposes, should be collected whilst fresh, kept under a dry shed, be frequently turned over, and used when in a dry, loose condition. Two years' old dung is best.

DURANTA. (Named after *C. Durantes*, a physician and botanist. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. *14-Didynamia, 2-Angiospermia.*)

Stove evergreen shrubs, with blue flowers. Cuttings in sand, under a bell-glass, in bottom-heat; loam and peat. Summer temp., 60° to 80°; winter, 45° to 55°.

D. argentea (silvery). 6. E. Ind. 1824.
" *brachypoda* (short-stalked). Country unknown.
" *dentata* (toothed). See D. PLUMIERI.
" *Ellisia* (Ellis's). See D. PLUMIERI.
" *inermis* (unarmed). See D. PLUMIERI.
" *macrocarpa* (large-fruited). 6. Mexico. 1818.
" *microphylla* (small-leaved). See D. PLUMIERI.
" *Mutisii* (Mutis's). 6. W. Ind. 1820.
" *Plumieri* (Plumier's). 15. October. S. Amer. 1733.
" " *alba* (white). White. Fruit amber. 1888.
" *stenostachya* (narrow-spiked). Country unknown.
" *triacanthа* (three-spined). Peru.
" *turbinata* (top-shaped). Country unknown.
" *xalapensis* (Xalapa). See D. PLUMIERI.

DURIO. (From *Duryon*, the Malay name of the fruit, "one of the most delicious productions of nature." Nat. ord. *Malvads* [Malvaceæ]. Linn. *18-Polyadelphia, 1-Decandria.* Allied to Cheirostemon.)

In a putrid state the fruit is used as a bait to trap the civet-cat: hence the specific name. Stove evergreen tree. Cuttings of firm young shoots in spring, in sand, in a close case with bottom-heat; peat, loam, and leaf-mould. Summer temp., 60° to 80°; winter, 50° to 55°.

D. Zibethinus (civet). 60. White. E. Ind. 1825.

DUVA'LIA. (Named by Haworth in compliment to *H. A. Duval*, a French author of a work on succulent plants. Nat. ord. Asclepiadaceæ. A genus separated from Stapelia.)

Dwarf, succulent-stemmed greenhouse plants, mostly with purple-brown flowers. Cuttings of the succulent stems, well dried before insertion in sand or very sandy soil. Loam, finely broken bricks and brick dust. Keep the plants rather dry at the roots, and quite dry overhead in winter.

D. angusti'loba (narrow-lobed). Purple-brown, white. S. Africa. 1875.
„ *cæspito'sa* (tufted). S. Africa. 1790.
„ *compa'cta* (compact). ¼ Brown. August. S. Africa. 1800.
„ *Cordero'yi* (Corderoy's). Purple-brown, with lilac hairs. 1874.
„ *e'legans* (elegant). Purple. S. Africa. 1795.
„ *glomera'ta* (clustered). Brown. S. Africa. 1804.
„ *hirte'lla* (slightly-hairy). Brown. S. Africa. 1800.
„ *jacquinia'na* (Jacquinian). Purple. S. Africa. 1802.
„ *læviga'ta* (smooth). Brown. S. Africa. 1800.
„ *masto'des* (teat-like). S. Africa. 1800.
„ *poli'ta* (polished). Purplish-chocolate. S. Africa. 1876.
„ *propi'nqua* (related). Red-brown, yellow. S. Africa. 1904. Related to *D. cæspitosa*.
„ *radia'ta* (rayed). S. Africa. 1774.
„ *reclina'ta* (bent-down). S. Africa. 1795.
„ *replica'ta* (folded-back). S. Africa. 1806.
„ *sulca'ta* (furrowed). ½. Brown-red. Arabia. 1910.
„ *tubercula'ta* (tuberculed). See D. RADIATA.

DUVAU'A. See SCHINUS.

D. denta'ta (toothed). See SCHINUS DEPENDENS.
„ *depe'ndens* (hanging). See SCHINUS DEPENDENS.
„ *latifo'lia* (broad-leaved). See SCHINUS LATIFOLIUS.
„ *longifo'lia* (long-leaved). See SCHINUS DEPENDENS.
„ *ova'ta* (egg-*leaved*). See SCHINUS DEPENDENS.

DUVERNO'YA. (A commemorative name. Nat. ord. Acanthaceæ.)

Stove perennial herb. Cuttings in sand in a close case, with bottom-heat. Loam, leaf-mould, and sand.

D. Dewe'vrei (Dewevre's). 2. White, with red stripes. Congo. 1909.

DWARF FAN-PALM. *Chamæ'rops hu'milis.*

DWARF STANDARD is a fruit-tree on a very short stem, with its branches untrained.

DY'CKIA. (Named in honour of *Prince Salm-Dyck*, a German author of a splendid work on Succulents. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied *in appearance* to a small Pitcairnia.)

Like a pine-apple plant in miniature; usually grown with small greenhouse succulents. Suckers; loam and peat, with lime-rubbish, and well drained. Summer temp., 55° to 75°; winter, 38° to 45°.

D. alti'ssima (tallest). Orange. September. Buenos Ayres.
„ *argе'ntea* (silvery). Leaves covered with grey scales.
„ *brachifo'lia* (short-leaved). Yellow. Brazil. 1869.
„ *desmetia'na* (Desmetian). Red. Brazil.
„ *floribu'nda* (free-flowering). Argentina.
„ *fri'gida* (stiff). Orange. February. Brazil. 1877.
„ *gigante'a* (giant). See D. ALTISSIMA.
„ *lemairea'na* (Lemairean). Orange-red. Brazil. 1874.
„ *leptosta'chya* (slender-spiked). Bright scarlet. Paraguay. 1884.
„ *pri'nceps* (chief). See D. ALTISSIMA.
„ *rariflo'ra* (scattered-flowered). 2. Orange. June. Brazil. 1832.
„ „ *remotiflo'ra* (remote-flowered).
„ *rega'lis* (regal). See D. FRIGIDA.
„ *remotiflo'ra* (remote-flowered). See D. RARIFLORA.
„ *sulphu'rea* (sulphur). Montevideo.

DYER'S GREEN-WEED. *Geni'sta tincto'ria.*

DYER'S YELLOW-WEED. *Rese'da Lute'ola.*

DY'PSIS. (From *dupto*, *dupso*, to dive. Nat. ord. Palmaceæ.)

Stove Palms of small size, with a reed-like stem. See PALMS FOR CULTURE.

D. Hildebra'ndtii (Hildebrandt's). Madagascar.
„ *madagascarie'nsis* (Madagascar). Madagascar.
„ *pinna'tifrons* (pinnate-leaved). Madagascar.

DYSCHORI'STE. (From *duschoristos*, not easily separated. Nat. ord. Acanthaceæ.)

A free-flowering stove shrub. Cuttings of young wood with a heel in light sandy soil, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

D. Hildebra'ndtii (Hildebrandt's). Purple-blue. British Central Africa. 1903.

DRYSO'DIA. (From *dusodes*, evil-smelling; flower-head and leaves give off a strong odour. Nat. ord. Compositæ.)

Greenhouse or stove herbs with deeply-cut leaves and oily glands on the floral bracts. Cuttings in sand in a close case. Fibrous loam, leaf-mould, and sand.

D. chrysanthemoi'des (Chrysanthemum-like). Yellow. Mexico.
„ *grandiflo'ra* (large-flowered). 1. Dark orange. Mexico.
„ *pube'scens* (downy). 1½. Golden-yellow. Mexico. 1828.

DYSOPHY'LLA. (From *dusodes*, fetid, and *phullon*, a leaf; referring to the strong peppermint-like smell of the leaves. Nat. ord. *Lipworts* or *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Mint.)

Division of the roots, just as fresh growth is commencing, in spring; common, sandy soil.

D. crassicau'lis (thick-stemmed). ½. Purple. August. Himalaya. 1826. Hardy herbaceous.
„ *pu'mila* (dwarf). See D. CRASSICAULIS.
„ *quadrifo'lia* (four-leaved). 2. Purple. July. Nepaul. 1820. Greenhouse evergreen.
„ *stella'ta* (starry-*flowered*). 1. Purple. India. 1816. Greenhouse herbaceous.
„ *verticilla'ta* (whorled). Lilac. Nepaul. 1828. Greenhouse herbaceous.

DYSSOCHRO'MA. (From *dussoos*, pale, and *chroma*, colour; in allusion to the pale green flowers. Nat. ord. Solanaceæ.)

Greenhouse shrubs. Cuttings in sandy soil in heat. Good fibrous loam, leaf-mould, and sand.

D. exi'mia (choice). Green. June. Country unknown.
„ *viridiflo'ra* (green-flowered). 3. Green. Brazil. 1815.

E

EARI'NA. (From *earinos*, the spring, the time of their blooming. Nat. ord. *Orchids* [Orchidaceæ.] Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Pholidota.)

Stove orchids, from New Zealand. Division of the plants when fresh growth is commencing; sphagnum-moss and fibrous peat, in which the roots are fixed above the surface of a pot, or in a shallow basket, and suspended from the roof. Summer temp., 60° to 85°, with moisture; winter, 50° to 60°, and rather dry.

E. mucrona'ta (sharp-pointed). White. May. 1845.
„ *suave'olens* (sweet-scented). White. May. 1843.

EAR-SHELLED SLUG. See *Testace'lla.*

EARTH. Every cultivated soil is mainly composed of four earths in various proportions:—Silica, or pure flint; alumina, or pure clay; lime, combined with carbonic acid in the state of chalk; and humus. See SOIL.

EARTHING-UP, or drawing the soil in a ridge to the stems of plants, is beneficial to those fibrous-rooted, by reducing the distance from the surface of the extremities of the plant's roots; by inducing the production of rootlets from the stem; and sheltering the winter standing crops, for the closer the leaves of these are to the earth the less is the reduction of heat from the latter, either by radiation or contact with the colder air; but to tuberous-rooted plants, as the potato, it is detrimental. In our experiments, it has, on an average, reduced the produce one-fourth.

EARTH-NUT. *A'rachis hypogæ'a* and *Conopo'dium ma'jus.*

EARWIG. (*Forficula auricularis.*) This destroyer of the peach, apricot, plum, dahlia, pink, and carnation, commits its ravages only at night, retiring during the day to any convenient shelter in the vicinity of its prey. Advantage must be taken of this habit, and if small garden-pots with a little moss within be inverted upon a stick, and pieces of the dry hollow stem of the sunflower, or Jerusalem artichoke, be placed in the neighbourhood of the fruits and flowers enumerated, many of the insects will resort thither, and may be shaken out and destroyed. As earwigs are winged insects, it is useless to guard the stems of plants in any mode.

E'BENUS. The following species have been separated from Anthyllis by some botanists, to make this genus; but they should be reunited to it. See ANTHY'LLIS.

E. cre'tica (Cretan). 1½. Pink. June. Crete. 1737.
„ *Monthre'tii* (Montbret's). Cappadocia.
„ *pinna'ta* (leafleted). ½. Pink. June. Barbary. 1786.
„ *Sibtho'rpii* (Sibthorp's). Pink. July. Greece. 1826.

EBERMAI'ERA. (Named in commemoration of *K. H. Ebermaier*, who wrote a book on medicinal plants. Nat. ord. Acanthaceæ.)

Dwarf stove herb with ornamental foliage. Cuttings in light, sandy soil in heat, and covered with a glass. Loam, peat, and sand.

E. ni'tida (shining). Leaves with intense green venation. Brazil. 1879.

E'BONY. *Diospy'ros E'benum.*

ECASTAPHY'LLUM. (From *hekastos*, each one separately, and *phullon*, a leaf. Nat. ord. Leguminosæ.)

Loosely branched or sub-climbing stove shrubs. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, a little peat, and sand.

E. Brow'nei (Brown's). White, red. S. Amer. 1733.
„ *Moneta'ria* (Monetaria). 10. White. Trop. Amer. 1820.

ECBA'LLIUM. Squirting Cucumber. From *ekballo*, to throw out; in allusion to the ripe fruits bursting and squirting out the seeds with great force. Nat. ord. Cucurbitaceæ.)

The plant is known as the Squirting Cucumber, because, when the fruit is ripe it separates from its stalk, leaving an opening. The rind of the small oblong fruit suddenly contracts and expels the seeds and semi-liquid contents with great force, thus scattering the seeds many feet away from the mother plant. It is a trailing herbaceous perennial, but is usually treated as a hardy annual in this country, or reared in heat and planted out. A little protection would enable it to live through the winter and grow again. Seeds, indoors in March or in the open border in April. Rich, light, well-drained soil.

E. Elate'rium (Elaterium). Pale yellow. Mediterranean region. Trailer.

ECBO'LIUM. (From *ekbolion*, a medicine to facilitate delivery. Nat. ord. Acanthaceæ.)

Stove evergreen shrub. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

E. linnea'num (Linnean). 3. Blue. June. E. Ind. 1759.

ECCREMOCA'RPUS. (From *ekkremes*, pendent, and *karpos*, fruit; position of the seed-pods. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Syn. *Cala'mpelis.*)

Half-hardy evergreen climbers, with orange flowers. Seeds sown in heat, in February, will bloom out of doors during the summer; cuttings taken off in August, and kept in a cold frame during the winter, will bloom better. In sheltered places the fleshy roots will remain safe in the ground during the winter; but in most places it is safest to protect them from frost and wet, or take them up and keep them from frost, and plant again in May; any light, fertile soil.

E. longiflo'rus (long-flowered). 6. July. Peru. 1825.
„ *sca'ber* (rough). 6. July. Chili. 1824.
„ „ *carmi'neus* (carmine). Carmine-red. 1904.
„ „ *ro'sea* (rosy). Orange-red. 1891.

ECHA'RDIA. See PERISTERIA.

ECHEA'NDIA. (Derivation unknown. A rare *Lily-wort* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anthericum.)

Division, and, it is believed, by seeds; peat and loam; greenhouse and cold pit culture.

E. terniflo'ra (three-flowered). Golden. July. Mexico. 1837.

ECHEVE'RIA. (After *M. Echeveri*, a botanical draughtsman. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*. All now referred to Cotyledon, which see.)

Cuttings, chiefly in spring, that the plants may be established during summer; the base of the cutting should be dried for several days, though the leaves are kept green by shading and moisture, before inserting them in sandy soil; many will produce a plant from the base of a leaf pegged on to the surface of a pan of silver sand. A bell-glass, if not kept close, will do them good, and also a little bottom-heat; sandy loam, peat, and lime-rubbish. Winter temp., 40° to 45°, and kept almost dry.

E. abyssi'nica (Abyssinian). See COTYLEDON CHRYSANTHA.
„ *acutifo'lia* (pointed-leaved). See COTYLEDON ACUTIFOLIA.
„ *agavoi'des* (Agave-like). See COTYLEDON AGAVOIDES.
„ *atropurpu'rea* (dark purple). See COTYLEDON ATROPURPUREA.
„ *bracteola'ta* (small-bracted). See COTYLEDON BRACTEOLATA.
„ *cæspito'sa* (tufty). See COTYLEDON CÆSPITOSA.
„ *califo'rnica* (Californian). See COTYLEDON CALIFORNICA.
„ *campanula'ta* (bell-shaped). See COTYLEDON CÆSPITOSA.
„ *carni'color* (flesh-coloured). See COTYLEDON CARNICOLOR.
„ *cocci'nea* (scarlet-*flowered*). See COTYLEDON COCCINEA.
„ *Cordero'yi* (Corderoy's). See COTYLEDON CORDEROYI.
„ *cuspida'ta* (short-pointed). Purple inside. Mexico. 1907.
„ *desmetia'na* (Desmetian). See COTYLEDON DESMETIANA.
„ *farino'sa* (mealy). See COTYLEDON FARINOSA.
„ *fu'lgens* (shining). See C. FULGENS.
„ *Fuli'ni* (Fulin's). See COTYLEDON GIBBIFLORA FULINI.
„ *gibbiflo'ra* (swollen-flowered). See COTYLEDON GIBBIFLORA.
„ *gigante'a* (gigantic). See COTYLEDON GIGANTEA.
„ *glau'ca* (glaucous). See COTYLEDON GLAUCA.
„ *glau'co-meta'llica* (glaucous-metallic). Hybrid between *Cotyledon glauca* and *C. gibbiflora metallica.*
„ *grandiflo'ra* (large-flowered). See COTYLEDON GIBBIFLORA.
„ *grandifo'lia* (large-leaved). See COTYLEDON GIBBIFLORA.
„ *la'xa* (loose). See COTYLEDON CÆSPITOSA.
„ *lu'rida* (lurid). See COTYLEDON LURIDA.
„ *meta'llica* (metallic). See COTYLEDON GIBBIFLORA METALLICA.
„ „ *deco'ra* (becoming). A variety of *Cotyledon gibbiflora metallica*, with variegated leaves.
„ *Peaco'ckii* (Peacock's). See COTYLEDON PEACOCKII.
„ *peruvia'na* (Peruvian). See COTYLEDON PERUVIANA.
„ *pulche'lla* (pretty). Bright red. Country unknown. 1904.
„ *pulveule'nta* (powdery). See COTYLEDON PULVERULENTA.
„ *pu'mila* (dwarf). See COTYLEDON PUMILA.
„ *pusi'lla* (dwarf). Yellow-red. Country unknown. The smallest species. 1904.
„ *Purpu'sii* (Purpus's). See COTYLEDON PURPUSII.
„ *racemo'sa* (racemed). See COTYLEDON LURIDA.
„ *retu'sa* (blunt-*leaved*). See COTYLEDON RETUSA.
„ *rosa'cea* (rosaceus). See COTYLEDON SECUNDA.
„ *ro'sea* (rosy). See COTYLEDON ROSEATA.
„ *Schee'rii* (Scheer's). See COTYLEDON SCHEERII.
„ *secu'nda* (one-sided). See COTYLEDON SECUNDA.
„ *seto'sa* (bristly). See COTYLEDON SETOSA.
„ *sobri'na* (cousin-german). ½. Red. Country unknown. 1904.
„ *solda'lis* (compact). Red-striped. Origin unknown. 1904.

E. stoloni'fera (runner-bearing). See COTYLEDON STOLONIFERA.
,, *subalpi'na* (subalpine). See COTYLEDON SUBALPINA.
,, *tu'rgida* (turgid). Rose, or yellow-red inside. Mexico. 1907.

ECHI'DNIUM. (Derived from *echidnion*, the diminutive of *echidna*, a viper. Nat. ord. Araceæ.)
A tuberous-rooted perennial requiring stove treatment. Offsets. Fibrous loam, leaf-mould, and sand with a little well-decayed cow manure.
E. regelia'num (Regelian). 2. Purple-brown. Trop. Amer. 1866.

ECHIDNO'PSIS. (From *echidna*, a viper, and *opsis*, resemblance; the markings of the stem recall those of a viper. Nat. ord. Asclepiadaceæ.)
Warm and dry greenhouse succulents. Cuttings in sand in a warm house, and dried for some days before insertion. Fibrous loam, finely broken bricks and sand. Keep rather dry in winter.
E. Be'ntii (Bent's). Vinous-purple. S. Arabia. 1901.
,, *cereifo'rmis* (Cereus-formed). ½. Yellow. S. Africa. 1871.
,, *dammania'na* (Dammanian). ½. Brown. Abyssinia. 1892.
,, *somalie'nsis* (Somaliland). Dark purple, spotted yellow. Somaliland. 1903.

ECHINA'CEA. (From *echinos*, a hedgehog; referring to the bristly bracts amongst the florets. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Rudbeckia.)
Hardy herbaceous perennials. Division and seeds in spring; common or sandy soil.
F. angustifo'lia (narrow-leaved). 3. Pink. N. Amer. 1861.
,, *columma'ris* (columnar). Yellow. August. N. Amer.
,, *Dickso'ni* (Dickson's). 1. Lilac. August. Mexico.
,, *du'bia* (doubtful). 4. Lilac. September. Mexico. 1837.
,, *heterophy'lla* (various-leaved). See IOSTEPHANE HETEROPHYLLA.
,, *interme'dia* (intermediate). 3. Purple.
,, *napifo'lia* (rape-leaved). See RUDBECKIA NAPIFOLIA.
,, *purpu'rea* (purple-*flowered*). 4. Red. September. N. Amer. 1699.
,, *sero'tina* (late-*flowering*). See E. PURPUREA.
,, *specio'sa* (showy). See RUDBECKIA SPECIOSA.

ECHINOCA'CTUS. (From *echinos*, a hedgehog, and *cactus*; in allusion to the numerous large spines covering the plants. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)
Warm and dry greenhouse succulents. Offsets and seeds. The offsets or cuttings should be taken off with a sharp knife and laid upon a sunny bench or shelf until the cut is healed and roots commence to push out. They may then be potted in light sandy soil. A good compost would consist of one half of fibrous, mellow loam, and the rest, finely broken bricks, lime-rubble, also in small pieces, and sand.
E. acuti'ssimus (very acute). Chili.
,, *alte'olens* (strong-smelling). Matto Grosso, Brazil. 1845.
,, *Anisi'tsii* (Anisits's). Spines white. Paraguay. 1901.
,, *Arechavale'tai* (Arechavaleta's). Yellow. Uruguay. 1905.
,, *arizo'nicus* (Arizonian). 1. Purple. Arizona. 1909.
,, *au'reus* (golden). See E. GRUSONII.
,, *Baro'ni* (Baron's). Gardens.
,, *bi'color* (two-coloured). Mexico.
,, *bola'nsis* (wounding). Red. Mexico. 1889.
,, *brachya'nthus* (short-flowered). Rose. Argentina. 1907.
,, *brevihama'tus* (short-hooked). New Mexico.
,, *capricо'rnis* (goat-horned). Mexico.
,, *cataphra'ctus* (broken-back). Flowers in the apical depression. Paraguay. 1904.
,, *centele'rius* (very offensive). Yellow. July. Mexico. 1840.
,, *Cerati'stes* (Ceratistes). Yellow. Chili. 1837.
,, *chlorophtha'lmus* (green-eyed). Purple. June. Mexico.
,, *cinnabari'nus* (cinnabar). See ECHINOPSIS CINNABARINA.
E. conci'nnus (neat). Yellow. March. Monte Video. 1828.
,, *coptonogo'nus* (split-angled). Mexico.
,, *corni'gerus* (horn-bearing). Mexico.
,, *coryno'des* (club-like). Yellow. October. Argentina. 1837.
,, *crispa'tus* (crisped). Purple. Mexico.
,, *Cumi'ngii* (Cuming's). ½. Yellow. Peru. 1847.
,, ,, *flavispi'na* (yellow-spined). 1904.
,, *curvispi'nus* (curved-spined). Chili.
,, *cylindra'ceus*. Yellowish. Colorado. 1877.
,, *cyli'ndricus* (cylindrical). Mexico.
,, *Da'msii* (Dams's). White, green outside. Paraguay. 1904.
,, *Decai'snei* (Decaisne's). Origin unknown.
,, *de Læ'tii* (de Læt's). Brownish-green. Country not stated. 1901.
,, *denuda'tus* (denuded). Brazil.
,, *drægea'nus* (Drœgean). Mexico.
,, *durange'nsis* (Durangan). Brownish-red. Mexico. 1890.
,, *Echi'dne* (viper). Yellow. Mexico.
,, *echinoi'des* (hedgehog-like). Yellow. Bolivia.
,, *electraca'nthus* (electrical-spined). Yellow. Mexico.
,, *elli'pticus* (elliptic). See E. RHODOPHTHALMUS.
,, *Emo'ryi* (Emory's). California.
,, *erectoce'ntrus* (erect-spurred). Arizona.
,, *exscu'lptus* (dug-out). White. July. S. Amer. 1830.
,, *Eyrie'sii* (Eyries'). See CEREUS EYRIESII.
,, *Fiebri'gii* (Fiebrig's). Rosy-red, orange-red inside. Bolivia. 1905.
,, *fobea'nus* (Fobean). Pale yellow. Chili (?). 1907.
,, *foveola'tus* (pitted). See E. EXSCULPTUS.
,, *Fri'cii* (Fric's). Argentina. 1907.
,, *Gei'ssei* (Geiss'). Chili or Bolivia. 1901.
,, *gibbo'sus* (bulged-out). White. Mexico. 1808.
,, ,, *fe'rox* (fierce). White.
,, ,, *no'bilis* (noble). White. Mexico. 1796.
,, *gi'lvus* (pale yellow). See E. ECHIDNE.
,, *glau'cus* (sea-green). Rose. Mountains of Colorado. 1894.
,, *Graessne'ri* (Graessner's). Brazil. 1903.
,, *grahlia'nus* (Grahlian). Paraguay. 1899.
,, *grandico'rnis* (large-horned). Mexico.
,, *Gro'ssei* (Grosse's). Pale citron-yellow. Paraguay. 1907.
,, *Gruso'nii* (Gruson's). Spines bright yellow. Mexico, 1895.
,, *hamatoca'nthus* (hooked-spined). Mexico.
,, *Hartma'nnii* (Hartmann's). Outer petals greenish-white, inner pure white. 1901.
,, *Haselbe'rgii* (Haselberg's). Brilliant orange-red.
,, *Ha'ynii* (Hayn's). 1. Purple-red. Peru.
,, *helo'phorus* (nail-bearing). Pink. Mexico.
,, *heterochro'mus* (various-coloured). Mexico.
,, *hexædro'phorus* (six-side-bearing). White. June. Mexico.
,, *horizonthalo'nius* (horizontal-branched). Mexico.
,, *hystrichaca'nthus* (hedgehog-spined). Yellow. Mexico.
,, *i'ngens* (huge). Yellow, pink. Mexico. 1844.
,, *interte'xtus* (interwoven). S. United States.
,, *Joa'dii* (Joad's). Bright yellow; stigmas crimson. Uruguay (?).
,, *Johnso'ni* (Johnson's). Plant globular. S. United States. 1883.
,, *Jussieu'ii* (Jussieu's). Chili.
,, *Karwi'nskii* (Karwinsk's). See E. INGENS.
,, *knippelia'nus* (Knippelian). Canary-yellow. Paraguay. 1902.
,, *kurtzia'nus* (Kurtzian). White, reddish at the base. Argentina. 1906.
,, *la'ncifer* (lance-bringing). Mexico.
,, *Leco'ntei* (Lecont's). Mexico.
,, *leea'nus* (Leean). Pale sulphur. May. Argentina. 1840.
,, *leucaca'nthus* (white-spined). Mexico.
,, *Li'nkii* (Link's). Yellow. Mexico.
,, *longihama'tus* (long-hooked). See E. HAMATOCANTHUS.
,, *lopho'thele* (crested-nipple). Mexico.
,, *Maa'ssii* (Maass'). Bolivia. 1907.
,, *MacDowe'llii* (MacDowell's). Mexico. 1901.
,, *mackiea'nus* (Mackiean). Yellow. Chili. 1836.
,, *macrodi'scus* (large-disked). Mexico.
,, *malletia'nus* (Malletian). Yellow. Chili.
,, *mamillo'sus* (nippled). Brazil.

E. Mathsso'ni (Mathsson's). Mexico.
„ *microspe'rmus* (small-seeded). Orange-yellow to golden-yellow. Argentina. 1901.
„ „ *macranci'stus* (large-hooked). Spines longer. 1902.
„ *Mihanovi'chii* (Mihanovich's). Yellow-green, suffused red. Paraguay. 1905.
„ *Mirbe'lii* (Mirbel's). See E. ORNATUS.
„ *Monvi'llii* (Monvill's). White. Paraguay.
„ *Mo'stii* (Most's). Pale red. Argentina. 1906.
„ *multiflo'rus* (many-flowered). White. June. Mexico.
„ *mu'ltiplex* (many-fold). See CEREUS MULTIPLEX.
„ *myriosti'gma* (myriad-spotted). Mexico. B. M., t. 4177.
„ *napi'nus* (turnip-formed). Yellow. Chili. 1872.
„ *ni'dus* (nest). Spines curved, making the plant like a nest. Chili. 1901.
„ *obvalla'tus* (fenced-round). Purple. Mexico.
„ *Odie'ri* (Odier's). Chili.
„ „ *Mebbe'sii* (Mebbes's). Flesh-coloured. Chili. 1896.
„ *Orcu'ttii* (Orcutt's). California.
„ *orna'tus* (adorned). Yellow. Mexico.
„ „ *glabre'scens* (smoothish).
„ *Otto'nis* (Otto's). Yellow. Mexico.
„ *ourselia'nus* (Ourselian). See E. MULTIFLORUS.
„ *pectina'tus* (combed). See CEREUS PECTINATUS.
„ *pectini'ferus* (comb-bearing). Green, rose. Mexico. 1844.
„ *Peni'nsulæ* (Peninsula). California.
„ *Pentla'ndii* (Pentland's). See CEREUS PENTLANDII.
„ *pepinia'nus* (Pepinian). See CEREUS PEPINIANUS.
„ *peruvia'nus* (Peruvian). Rosy-red, yellow outside. Peruvian Andes. 1905.
„ *Pfeiffe'ri* (Pfeiffer's). Yellow. Mexico.
„ *pilo'sus* (thinly-hairy). Mexico.
„ „ *Steine'sii* (Steines').
„ *plate'nsis* (La Platan). Snow-white, greenish on back, red at base. Argentina. 1907.
„ *platy'ceras* (broad-horned). Yellow. Mexico.
„ *polyaca'nthus* (many-spined). See CEREUS POLYACANTHUS.
„ *polyanci'strus* (many-hooked). California.
„ *polyce'phalus* (many-headed). S. United States.
„ *porre'ctus* (straight-forwards). Mexico.
„ *poselgeria'nus* (Poselgerian). Mexico.
„ *Po'ttsii* (Potts's). See E. BICOLOR.
„ *pruino'sus* (frosted). Mexico.
„ *pu'milus* (dwarf). Country unknown.
„ *Que'hlii* (Quehl's). White. Summer. Andes of Argentina. 1901
„ *recu'rvus* (recurved). White. June. Mexico.
„ *Rei'chei* (Reiche's). Chili. 1901.
„ *rhodaca'nthus* (red-spined). See ECHINOPSIS RHODACANTHA.
„ *rhodophtha'lmus* (red-eyed). Crimson. Mexico. 1850.
„ *robu'stus* (robustus). Yellow. Mexico.
„ *saltille'nsis* (Saltillan). Mexico.
„ *Schee'rii* (Scheer's). Mexico.
„ *schilinzkya'nus* (Schilinzkian). Paraguay. 1897.
„ *Sco'pa* (broom). Yellow. April. Brazil. 1839.
„ *Sello'wii* (Sellow's). Argentina.
„ *se'nilis* (old). See CEREUS (PILOCEREUS) SENILIS.
„ *sessiliflo'rus* (stalkless-flowered). Yellow. Origin unknown.
„ *setispi'nus* (bristle-spined). Yellow, red. Texas.
„ *Simpso'ni* (Simpson's). Yellow-green and purple. N. Amer. 1876.
„ *sinua'tus* (bayed). Texas and Mexico.
„ *Sœhre'nsii* (Sœhrens's). Brownish-yellow. Cordilliera of Valparaiso. 1901.
„ *spira'lis* (spiral). Mexico. 1838.
„ *Steine'sii* (Steines's). See E. PILOSUS STEINESII.
„ *streptocau'lon* (twisted-stemmed). Yellow. August. Bolivia.
„ *tenuispi'nus* (slender-spined). Lemon-yellow. July. Brazil.
„ *tetraxi'phus* (four-sworded). Mexico.
„ *texe'nsis* (Texan). Rosy-pink. Berry scarlet. Texas. 1888.
„ *Trollie'tii* (Trolliet's). See E. UNGUISPINUS.
„ *tubiflo'rus* (tube-flowered). See CEREUS ZUCCARINII.
„ *unguispi'nus* (nail-spined). Mexico.
„ *Vanderæ'yi* (Vanderæy's). See E. ECHIDNE.
„ *viride'scens* (greenish). Greenish. Berry green. California. 1877.
„ *Visna'ga* (Visnaga). See E. INGENS.
E. Willia'msii (Williams's). See ANHALONIUM WILLIAMSII.
„ *Wislize'ni* (Wislizen's). S. United States.
„ *Wri'ghtii* (Wright's). Gardens.
„ *Zuccari'nii* (Zuccarini's). See CEREUS ZUCCARINII.

ECHINOCE'REUS. (From *echinos*, a hedgehog, and *Cereus*; being spiny forms of Cereus. Nat. ord. Cactaceæ. The genus is now included in Cereus, but botanists have not yet sanctioned the transfer of the recent introductions; hence we give them here.)
Culture as Cereus.
E. De Læ'tii (De Læt's). Rose. Ribs of stem 17 to 20. Mexico. 1909.
„ *Hempe'lii* (Hempel's). Stems ten-ribbed. Mexico. 1897.
„ *Ku'nzei* (Kunze's). Scarlet-crimson. Arizona. 1907.
„ *monaca'nthus* (one-spined). ½. Boundary of Mexico and Texas. 1904.
„ *pectina'tus* (combed). See CEREUS PECTINATUS.
„ „ *robu'stus* (robust). See CEREUS PECTINATUS ROBUSTUS.
„ *pe'ndilis* (pendent). Red. Lower California. 1908.
„ *phœni'ceus* (purple). See CEREUS AGGREGATUS.
„ „ *ine'rmis* (unarmed). Spineless. Colorado. 1896.
„ *strausia'na* (Strausian). Spines strong, red. Texas. 1901.

ECHINOCY'STIS. (From *echinos*, a hedgehog, and *kustis*, a purse or seed-vessel; in allusion to the spiny fruits. Nat. ord. Cucurbitaceæ.)
A hardy climber like the Red Bryony. Seeds. Ordinary garden soil.
E. loba'ta (lobed). Fruit with long prickles. N.W. Amer. "Wild Balsam Apple."

ECHINODO'RUS. (From *echinos*, a hedgehog, and *doru*, a spear; in allusion to the pointed fruits and the spear-like leaves. Nat. ord. Alismaceæ.)
A perennial herb for the bog garden. Seeds and divisions.
E. ranunculoi'des (Ranunculus-like). ½. Lilac. Europe (Britain).

ECHINOGLO'SSUM. (From *echinos*, a hedgehog, and *glossa*, a tongue. Nat. ord. Orchidaceæ.)
Stove Orchid. See ORCHIDS FOR CULTIVATION.
E. stria'tum (striped). Yellow, with two red stripes on each segment. Sikkim. 1879.

ECHINO'PHORA. (From *echinos*, a hedgehog, and *phoreo*, to bear. Nat. ord. Umbelliferæ.)
A branching, spiny herb. Seeds and cuttings in a cold frame in summer. Ordinary soil.
E. spino'sa (spiny). White. Mediterranean Regions. "Sea Prickly Samphire."

ECHI'NOPS. Globe Thistle. (From *echinos*, hedgehog, and *opsis*, like; referring to the spiny scales of the involucre, or covering of composite flowers. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 5-*Segregata*.)
Biennials, chiefly by seeds in April. Perennials, by division in March; common soil.
E. banna'ticus (Bannatic). 3. Blue. July. Eastern Europe. 1816.
„ „ *a'lbus* (white). White. Hungary. 1832.
„ *chanta'vicus* (Chantavican). Central Asia.
„ *commuta'tus* (changed). S. Europe.
„ *crista'tus* (crested). See ECHINOPSIS CRISTATA.
„ *dahu'ricus* (Dahurian). 3. Blue. August. Dahuria. 1828.
„ *exalta'tus* (lofty). 6. White. July. Hungary. 1817.
„ *glabe'rrimus* (smoothest). Blue. August. Sinai. 1830.
„ *glo'bifer* (globe-bearing). See E. EXALTATUS.
„ *Gmeli'ni* (Gmelin's). White, blue. Mongolia. 1835.
„ *græ'cus* (Grecian). 2. Blue. July. Greece. 1736.
„ *hu'milis* (low). 1½. Blue. June. Caucasus. 1816.
„ *Kotschy'i* (Kotschy's). Persia.
„ *lanugino'sus* (woolly). See E. GRÆCUS.
„ *microce'phalus* (small-headed). Greece.
„ *ni'veus* (snowy). Western Himalaya.
„ *panicula'tus* (panicled). See E. SPHÆROCEPHALUS GLABRATUS.

E. p'ersicus (Persian). White. August. Persia. 1821.
,, *platy'lepis* (broad-scaled). September. 1835.
,, *pu'ngens* (prickly). See E. PERSICUS.
,, *Ri'tro* (Ritro). 2. Deep blue. July. Mediterranean regions.
,, ,, *tenuifo'lius* (slender-leaved). 2. Blue. August. Russia. 1820.
,, *ruthe'nicus* (Russian). See E. BANNATICUS.
,, *sphæroce'phalus* (globe-headed). 4 to 6. Whitish-blue. July to September. Europe.
,, ,, *a'lbidus* (whitish). Whitish.
,, ,, *glabra'tus* (smooth). 6. Blue. July. Spain. 1815.
,, *spino'sus* (spiny). 4. White. July. Egypt. 1597.
,, *stri'ctus* (upright). See E. EXALTATUS.
,, *strigo'sus* (strigose). Blue. Spain; Morocco. 1729.
,, *tau'ricus* (Taurian). 4. Blue. August. Tauria. 1816.
,, *tenuifo'lius* (slender-leaved). See E. RITRO TENUIFOLIUS.
,, *Tournefo'rtii* (Tournefort's). Caucasus. 1835.
,, *virga'tus* (twiggy). See E. RITRO.
,, *visco'sus* (clammy). Mediterranean Region; Orient.

ECHINO'PSIS. (From *echinos*, hedgehog, and *opsis*, like; referring to the spines which clothe its globular stem. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Now referred to Cereus, but several recent introductions have not yet been transferred.)

Stove Cactuses. Light loam, a little leaf-mould, and a few lumps of lime-rubbish, and well drained. Water sparingly in winter, and air to be kept dry. Winter, night, 50°; day, 80°. Summer, night, 65°; day, 90°.

E. albispino'sa (white-spined). White. Country unknown. 1903.
,, *campylaca'ntha* (curved-spined). See CEREUS LEUCANTHUS.
,, *cinnabari'na* (cinnabar). Bolivia.
,, *crista'ta* (crested). ½. Purple. May. Bolivia. 1846. There is a white-flowered variety.
,, *Fiebri'gii* (Fiebrig's). White. Bolivia. 1906.
,, *hempelia'na* (Hempelian). Cinnabar-red. Country unknown. 1906.
,, *lateri'tia* (brick-red). Brick-red. Bolivia. 1907.
,, *leuca'ntha* (white-flowered). See CEREUS LEUCANTHUS.
,, *mamillo'sa* (nippled). White, rose at apex. Bolivia. 1907.
,, *Meye'ri* (Meyer's). Petals like brownish and dirty white threads. Paraguay. 1907.
,, *mu'ltiplex* (manifold). See CEREUS MULTIPLEX.
,, *Pentla'ndii* (Pentland's). See CEREUS PENTLANDII.
,, ,, *ochroleu'ca* (yellow-white). See CEREUS PENTLANDII OCHROLEUCA.
,, *rhodaca'ntha* (red-spined). Argentina. 1835.
,, *rhodo'tricha* (red-haired). 2½. White, spines brownish. Paraguay. 1901.
,, *Schelha'sii* (Schelhas's). See CEREUS SCHELHASII.

ECHINOSPE'RMUM. (From *echinos*, a hedgehog, and *sperma*, a seed; in allusion to the four prickly nutlets constituting the fruit. Nat. ord. Boraginaceæ.)

Hardy herbaceous perennial. Divisions and seeds Ordinary garden soil.

E. margina'tum (margined). Blue. Caucasus.
,, ,, *macra'nthum* (large-flowered). Flowers larger. (Gfl., t. 1119.)

ECHINO'STACHYS PINELIA'NA. See ÆCHMEA PINELIANA.

ECHI'TES. (From *echis*, a viper; referring to the snake-like coils of the twining shoots. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Nearly all evergreen climbers. Cuttings in sand, in bottom-heat, in spring; lumpy loam and peat. Summer temp., for stove species, 60° to 80°; winter, 48° to 60°. Others, usual greenhouse temperatures.

E. Andre'wsii (Andrews'). 10. Yellow. W. Ind. 1778.
,, *antidysente'rica* (antidysenteric). See HOLARRHENA ANTIDYSENTERICA.
,, *a'tro-purpu'rea* (dark purple). See DIPLADENIA ATROPURPUREA.
,, *bifio'ra* (twin-flowered). 20. White. July. W. Ind. 1783.
,, *bispino'sa* (two-spined). See PACHYPODIUM BISPINOSUM.
E. caryophylla'ta (clove-leaved). See AGANOSMA CARYOPHYLLATA.
,, *cauda'ta* (tailed). See STROPHANTHUS DICHOTOMUS.
,, *crassino'da* (thick-jointed). See DIPLADENIA CRASSINODA.
,, *cymo'sa* (cymosed). See AGANOSMA CYMOSA.
,, *diffo'rmis* (two-formed). See TRACHELOSPERMUM DIFFORME.
,, *dominge'nsis* (St. Domingo). 10. Yellow. June. W. Ind. 1820.
,, *franci'scea* (*River* Francisco). See E. VARIA.
,, *frute'scens* (shrubby). See ICHNOCARPUS FRUTESCENS.
,, *grandiflo'ra* (large-flowered). 8. Pink. E. Ind. 1823.
,, *He'ynii* (Heynes's). See AGANOSMA CARYOPHYLLATA.
,, *hirsu'ta* (hairy). 10. Yellow, rose. September. Brazil. 1843.
,, *longiflo'ra* (long-flowered). 6. White. June. Brazil. 1816.
,, *malaba'rica* (Malabar). 6. Red. June. Malabar. 1822. See ALSTONIA SCHOLARIS.
,, *melaleu'ca* (black-white). Country unknown.
,, *nu'tans* (nodding). See HÆMADICTYON VENOSUM.
,, *panicula'ta* (panicled). 10. Yellow. July. S. Amer. 1823.
,, *pelta'ta* (shield-*leaved*). 10. Trinidad. 1826.
,, *reticula'ta* (netted). 6. Yellow. July. E. Ind. 1818.
,, *Richa'rdii* (Richard's). See E. HIRSUTA.
,, *rubricau'lis* (red-stemmed). 6. Yellow. July. Guiana. 1824.
,, *rubroveno'sa* (red-veined). Midribs yellowish. Brazil. 1867.
,, *sanguineole'nta* (blood-coloured). See HÆMADICTYON VENOSUM.
,, *sple'ndens* (shining). See DIPLADENIA SPLENDENS.
,, *stella'ris* (starry). 10. Rose, yellow. July. Rio Janeiro.
,, *suave'olens* (sweet-smelling). See MANDEVILLA SUAVEOLENS.
,, *subere'cta* (slightly-bent. *Savannah-flower*). See E. ANDREWSII.
,, *succule'nta* (succulent). See PACHYPODIUM TOMENTOSUM.
,, *symphytoca'rpa* (Symphytum-fruited). Guiana.
,, *toro'sa* (twisted). See E. TORULOSA.
,, *torulo'sa* (beaded). 10. Yellow. July. Mexico. 1778.
,, *tubero'sa* (tuberous). See PACHYPODIUM TUBEROSUM.
,, *umbella'ta* (umbelled). 15. Yellow. July. Jamaica. 1733.
,, *va'ria* (variable). Rose, green. September. Brazil. 1845.

E'CHIUM. Viper's Bugloss. (From *echis*, a viper; seeds like the viper's head. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Anchusa.)

Annuals and biennials, by seed in common garden-soil, in March; evergreen shrubs, also, by seeds, sown in spring, in a slight hotbed; by layering the young shoots in summer; and cuttings in sandy soil of firm young shoots, in April or May, under a bell-glass, but not kept very close, and receiving a little bottom-heat; peat and loam. Winter temp., 40° to 48°.

HARDY ANNUALS.

E. angustifo'lium (narrow-leaved). Blush. July. Spain. 1826.
,, *arena'rium* (sand-*inhabiting*). Purple. July. Calabria. 1826.
,, *calyci'num* (*large*-calyxed). Blue, yellow. July. S. Europe. 1829.
,, *cre'ticum* (Cretan). 1. Red-violet. July. Mediterranean region. 1683.
,, *macra'nthum* (large-flowered). See E. VIOLACEUM.
,, *Si'msii* (Sims's). Red, blue. August. S. Europe. 1816.
,, *viola'ceum* (violet). 1. Violet. July. S. Europe. 1818.

HARDY BIENNIALS.

E. amœ'num (agreeable). Blue. July. Caucasus. 1826.
,, *aspe'rrimum* (very rough). See E. ITALICUM.
,, *dahu'ricum* (Dahurian). Blue. July. Dahuria. 1827.
,, *ita'licum* (Italian). Blue. July. S. Europe. 1826.
,, ,, *a'lbum* (white). White. July.

E. plantagi'neum (plantain-like). Blue-purple. Jersey.
„ *rosula'tum* (rosetted). Spain.
„ *seri'ceum* (silky). 1. Red. June. Eastern Mediterranean. 1824.
„ *Sibtho'rpii* (Sibthorp's). See E. SERICEUM.
„ *te'nue* (slender). 1. Blue. July. Sicily. 1824.
„ *tubercula'tum* (pimpled). 1. Violet. August. Spain. 1820.
„ *vulga're* (common). Deep blue. Britain.
„ „ *a'lbum* (white). 1. White. July. Britain.

HERBACEOUS PERENNIALS.

E. a'lbicans (whitish). Rosy, changing to violet. Spain.
„ *arbo'reum* (tree-like). Red, blue, purple.
„ *austra'le* (southern). See E. CRETICUM.
„ *cauda'tum* (tailed). See LOBOSTEMON CAUDATUS.
„ *Laga'scæ* (Mme. Lagasca's). Lilac. July. Spain. 1826. Hardy.
„ *Merte'nsii* (Merten's). 1½. Blue. June. Spain. 1824. Hardy.
„ *prostra'tum* (prostrate). See E. SERICEUM.
„ *ru'brum* (red). 2. Red. May. S. Europe; Caucasus.
„ *spica'tum* (spiked-*dwarf*). See LOBOSTEMON SPICATUS.

GREENHOUSE EVERGREENS.

E. aculea'tum (prickly). 4. White. June. Canaries. 1815.
„ *ambi'guum* (doubtful). 3. White, red. July. Canaries. 1820.
„ *arge'nteum* (silvery). See LOBOSTEMON ARGENTEUS.
„ *bi'frons* (two-faced). 3. White, red. June. Canaries. 1820.
„ *brachya'nthum* (short-flowered). 1½. White. June. Madeira. 1819.
„ *callithy'rsum* (beautiful-thyrsed). Canaries.
„ *ca'ndicans* (whitish). 3. Blue. June. Madeira. 1777.
„ „ *gigante'um* (giant). 6 to 7. Pale rose-madder. Teneriffe. 1904.
„ *capita'tum* (headed). See LOBOSTEMON CAPITATUS.
„ *cynoglossoi'des* (bugloss-like). 3. Blue. July. Canaries. 1816.
„ *densiflo'rum* (thickly-flowered). 2. Blue. June. Canaries. 1820.
„ *e'legans* (elegant). 8½. Teneriffe. 1904.
„ *fastuo'sum* (proud). 4. Purple. April. Canaries. 1779.
„ *feroci'ssimum* (fiercest-*stalked*). See LOBOSTEMON FEROCISSIMUS.
„ *folio'sum* (leafy). 3. White. July. Canaries. 1815.
„ *formo'sum* (beautiful). See LOBOSTEMON FORMOSUS.
„ *frutico'sum* (shrubby). See LOBOSTEMON FRUTICOSUS.
„ *gigante'um* (gigantic). 10. White. June. Canaries. 1779.
„ *gla'brum* (smooth). See LOBOSTEMON GLAUCOPHYLLUS.
„ *glaucophy'llum* (milky-green-leaved). See LOBOSTEMON GLAUCOPHYLLUS.
„ *grandiflo'rum* (large-flowered). See LOBOSTEMON FORMOSUS.
„ *hi'spidum* (bristly). See LOBOSTEMON HISPIDUS.
„ *inca'num* (hoary). Blue. June. Cape of Good Hope. 1816.
„ *læviga'tum* (smooth-*stalked*). See LOBOSTEMON LÆVIGATUS.
„ *lasiophy'llum* (hairy-leaved). See E. MOLLE.
„ *linea'tum* (lined). 2. White. July. Canaries. 1815.
„ *longiflo'rum* (long-flowered). See LOBOSTEMON FORMOSUS.
„ *macrophy'llum* (large-leaved). 3. Blue. July. Canaries. 1823.
„ *mo'lle* (soft). 6. White. June. Teneriffe. 1820.
„ *nervo'sum* (nerved). 4. Purple. July. Madeira. 1777.
„ *panicula'tum* (panicled). 3. White. July. Cape of Good Hope. 1815.
„ *petræ'um* (rock). See MOLTKIA PETRÆA.
„ *pyramida'tum* (pyramidal). 3. Blue. July. Cape of Good Hope. 1820.
„ *sca'brum* (rough). 2. Purple. Blue. July. Cape of Good Hope. 1820.
„ *si'mplex* (simple). 1. White. June. Teneriffe. 1820.
„ *sphæroce'phalon* (round-headed). See LOBOSTEMON SPHÆROCEPHALUS.
„ *stri'ctum* (erect). 3. Blue. June. Canaries. 1779.
E. strigo'sum (stiff-haired). See LOBOSTEMON STRIGOSUS.
„ *Swa'rtzii* (Swartz's). See LOBOSTEMON LÆVIGATUS.
„ *verruco'sum* (warted). See LOBOSTEMON VERRUCOSUS.
„ *vire'scens* (greenish). See E. CANDICANS.
„ *Wildpre'tii* (Wildpret's). 2 to 3. Pale red. Canary Islands. 1902.

EDELWEISS. See LEONTOPO'DIUM ALPI'NUM.

EDGEWO'RTHIA. (Named after *M. Edgeworth*. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Daphne.)

The flower-heads at the end of the shoots are in round balls, covered with hairs; when open they are clear, yellow, and fragrant. Must not be confounded with *Edgewo'rthia* of Falconer, now called *Repto'nia*. A Daphne-like, greenhouse plant. Cuttings in sand, under a bell-glass, in spring; and grafting should be tried on the Spurge-laurel; peat and loam. Winter temp., 40° to 45°.

E. chrysa'ntha (golden-flowered). 3. Yellow. June. Himalaya. 1845.
„ *Gardne'ri* (Gardner's). Yellow. India and China.

EDGING. The material used for dividing beds and borders from the paths. For the kitchen-garden, and all other places where neatness only need be considered, slates set edgeways form the best edging. In peaty, or any light soils, the common heath (*Calluna vulga'ris*) is very advantageously employed; it requires to be clipped twice annually, and may be planted at any season. *Box* is neat, but objectionable as a harbour for vermin, liable to decay, troublesome, and as a great impoverisher of the soil. *Thrift* is almost as objectionable; when employed, it is best inserted by the dibble during September, the plants being placed two inches apart. It requires frequent trimming, and to be renewed every three years. *Gentiane'lla* makes a very beautiful edging, but is expensive. It may be planted in September. Various other substitutes have been recommended, but none seem so deserving of attention as the *Saxi'fraga hypnoi'des*. It is a native plant, and is strongly recommended. Sprigs have to be planted a few inches asunder; they soon spread out and unite, only require paring once in autumn or summer, and no other attention than a second paring in winter or early spring. In winter the leaf of this saxifrage is a refreshing green, and in spring and summer it is in great beauty, from its multitude of white flowers and pink buds. The cuttings strike without difficulty. *Turf* is sometimes employed, and should be of the finest grasses, such as are found on the chalk downs; but in town gardens and where shaded, these fine grasses are liable to die out, and their place is taken by *Poa annua*. In dense shade that also dies out. *Cast-iron* edgings, if kept constantly painted, either very dark green, or dark brown, are very neat, and, if of an open basket-work pattern, very ornamental. Tiles, with the edges thickened and rounded, or of some ornamental pattern, are the most serviceable of recent introductions, where live edgings are undesirable or impossible to maintain.

EDGING-IRON. A tool with a crescent-shaped blade, and a wooden handle, for cutting grass-verges, especially the edges of walks and the edges of beds on grass. Its shape facilitates cutting in straight lines or round curves. The garden line should be laid to enable the operator to cut straight by its side; and when the edge to be cut is curved the line should first be pegged in position.

EDRAIA'NTHUS. See WAHLENBERGIA.

EDWA'RDSIA. (After *Mr. Edwards*, botanical draughtsman. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. All now united with Sophora.)

All have yellow flowers. Cuttings of firm side-shoots, several inches in length, in sand, under a glass, in summer; sandy peat and a little lumpy loam. If in pots in a greenhouse, winter temp., 35° to 45°; if kept dry during winter, all except *E. ni'tida* will stand against a wall.

E. chile'nsis (Chilian). See SOPHORA MACROCARPA.
„ *chrysophy'lla* (golden-leaved). See SOPHORA CHRYSOPHYLLA.
„ *grandiflo'ra* (large-flowered). See SOPHORA TETRAPTERA.
„ *macnabia'na* (Mr. Macnab's). See SOPHORA TETRAPTERA.

E. microphy'lla (small-leaved). See SOPHORA TETRAPTERA MICROPHYLLA.
,, *mi'nima* (least). See SOPHORA TETRAPTERA.
,, *myriophy'lla* (many-leaved). See SOPHORA TETRAPTERA.
,, *ni'tida* (shining). See SOPHORA NITIDA.
,, *pulche'lla* (pretty). See SOPHORA TETRAPTERA.

EGG-PLANT or **BEARER.** *Sola'num ovi'gerum.*

EGG-SHELLS. See ANIMAL MATTERS.

EGLANTINE. *Ro'sa lu'tea, Ro'sa Eglante'ria,* better known as *R. rubigino'sa* or Sweet Briar, and *Ru'bus Eglante'ria.*

EGYPTIAN LOTUS. *Nymphæ'a Lo'tus.*

EGYPTIAN THORN. *Aca'cia ve'ra.*

EHRE'TIA. (After *Ehret,* a German botanical draughtsman. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.* Allied to Tournefortia and Heliotropium.)

All of them unfold their flowers from coiled (gyrate) stalks, like the Heliotrope. All evergreens and white-flowered. Cuttings in sandy soil, in April, under a bell-glass, and in bottom-heat; loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°. The Australian species will do in a temperature, in winter, of 35° to 45°.

E. acumina'ta (*long*-pointed). 15. July. Trop. Asia. 1820.
,, *buxifo'lia* (box-leaved). 8. E. Ind. 1823.
,, *divarica'ta* (straggling). See BOURRERIA DIVARICATA.
,, *elli'ptica* (egg-shaped). Texas and Mexico.
,, *interno'dis* (interknotted). See E. PETIOLARIS.
,, *læ'vis* (smooth). 12. Trop. Asia. 1823.
,, *la'xa* (lax). See E. PETIOLARIS.
,, *microphy'lla* (small-leaved). See E. BUXIFOLIA.
,, *petiola'ris* (long-stalked). 6. Mascarene Islands. 1819.
,, *serra'ta* (saw-edged-*leaved*). See E. ACUMINATA.

EICHO'RNEA. (Commemorative of *F. Eichorn,* of Prussia. Nat. ord. Pontederiaceæ.)

Aquatics requiring a tank in the stove, either floating or planted in loam and leaf soil in pots, plunged just beneath the water. Divisions in spring.

E. azu'rea (azure). 1. Pale blue, yellow. Summer. Brazil. 1824.
,, *cra'ssipes* (thick-stalked). See E. SPECIOSA.
,, *martia'na* (Martian). Purple, blue. Summer. Trop. Amer.
,, *panicula'ta* (panicled). See E. MARTIANA.
,, *specio'sa* (showy). 1 to 2. Violet. Summer. Trop. Amer. 1825.

EKEBE'RGIA. (After *Capt. Ekeberg,* a Swede. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria,* 1-*Monogynia.* Allied to Trichilia.)

A fine greenhouse tree, with the aspect of a large *Me'lia Aze'darach.* Seeds and cuttings in sand in mild bottom-heat. Light loam and fibrous peat.

E. cape'nsis (Cape). White. July. S. Africa. 1789.

ELÆA'GNUS. Oleaster, or Wild Olive. From *elæagnos,* Dioscorides's name for the Wild Olive. Nat. ord. *Oleasters* [Elæagnaceæ]. Linn. 4-*Tetrandria,* 1-*Monogynia.* Allied to Shepperdia.)

The flowers of *E. orienta'lis* are highly fragrant, and the fruit is esteemed in Persia. The deciduous species and their varieties, by seeds sown in spring, and cuttings inserted in the open ground, in autumn; the evergreen species, by layers in autumn, and cuttings under a hand-light, in summer; sandy soil and a little peat, and requiring, during the winter, the assistance of the greenhouse. The hardy kinds are very graceful.

GREENHOUSE EVERGREENS.

E. acumina'ta (*long*-pointed). See E. LATIFOLIA.
,, *confe'rta* (crowded). See E. LATIFOLIA.
,, *ferrugi'nea* (rusty). See E. LATIFOLIA.
,, *latifo'lia* (broad-leaved). 4. July. India and China. 1712.

HARDY DECIDUOUS.

E. angustifo'lia (narrow-leaved). Yellow. July. S. Europe. 1633.
,, ,, *dactylifo'rmis* (date-form-*fruited*). White. July.
,, *argе'ntea* (silvery). 10. N. Amer. 1813. "Silver Berry."
,, *canade'nsis* (Canadian). White. Canada. 1848.
,, *cri'spa* (crisped). See E. MULTIFLORA.
,, *edu'lis* (edible). See E. MULTIFLORA.
,, *gla'bra* (smooth). 3 to 6. Whitish. China; Japan. "Yama Gumi."
,, ,, *variega'ta* (variegated).
,, *horte'nsis* (garden). See E. ANGUSTIFOLIA.
,, *lo'ngipes* (long-stalked). See E. MULTIFLORA.
,, *macrophy'lla* (large-leaved). 6. Greenish-yellow. Autumn. Japan and Formosa.
,, *multiflo'ra* (many-flowered). Creamy-white. Berries orange, edible. China; Japan. 1873.
,, *orienta'lis* (oriental). 10. July. Orient. 1748.
,, *parvifo'lia* (small-leaved). See E. UMBELLATA.
,, *pu'ngens* (pungent). 6 to 8. White, fragrant. Autumn. China and Japan. "Natsu Gumi."
,, ,, *au'rea* (golden). White. Leaves golden.
,, ,, *Simo'nii* (Simon's). White, fragrant. China. 1869.
,, ,, *Simo'nii tri'color* (three-coloured). Leaves golden and greenish yellow in the centre. 1888.
,, *refle'xa* (reflexed). See E. UMBELLATA.
,, *rotundifo'lia* (round-leaved). Yellow. 1871.
,, *salicifo'lia* (willow-leaved).
,, *Simo'nii* (Simon's). See E. PUNGENS SIMONII.
,, *spino'sa* (prickly). See E. ANGUSTIFOLIA.
,, *songo'rica* (Songarian). See E. ANGUSTIFOLIA.
,, *triflo'ra* (three-flowered). See E. LATIFOLIA.
,, *umbella'ta* (umbelled). White. July. Japan. 1829. "Masiro Gumi."

ELÆIS. The Oil Palm. (From *elaia,* the olive; the fruits, like those of the olive, contain oil. Nat. ord. Palmaceæ.)

The fruits of the African Oil Palm are orange-yellow, about the size of a large olive, and are boiled in water for the purpose of extracting the oil by the natives. In its crude state it resembles orange-red butter, and is used for making candles, soap, and for extracting Palm oil. The seeds are also pounded in wooden mortars for the extraction of oil. Stove Palms. Seeds. Good loam and a third of peat, both fibrous, with sand.

E. guinee'nsis (Guinean). 20 to 30. Guinea. 1730.
,, *melanoco'cca* (black-berried). 30. Colombia. 1821.
,, *occidenta'lis* (western). 30. W. Ind. 1820.
,, *pernambuca'na* (Pernambucan). 40 to 50. Brazil. 1825.
,, *specta'bilis* (showy). 30. E. Ind. 1831.

ELÆOCA'RPUS. (From *elaia,* the olive, and *karpos,* fruit; resemblance of fruits. Nat. ord. *Lindenbiooms* [Tiliaceæ]. Linn. 11-*Dodecandria,* 1-*Monogynia.*)

The rough, bony fruit, or stone, divested of the pulp and polished, makes handsome necklaces. Evergreens, with white flowers. Seeds in a hotbed, in spring; cuttings of ripened young shoots, with the leaves attached, in sandy soil, in a close case, with bottom-heat; loam and a little fibrous peat. Summer temp., 60° to 80°; winter, 50° to 55°; *E. cya'neus,* winter, 35° to 45°.

E. cya'neus (blue-*fruited*). 10. July. Australia. 1803.
,, *denta'tus* (toothed). Straw-coloured. New Zealand. 1883.
,, *edu'lis* (edible). White. Amboyna.
,, *grandiflo'rus* (large-flowered). 20. White, crimson. Mauritius. 1829.
,, *gra'ndis* (grand). White, deeply fringed. Queensland. 1884.
,, *oblo'ngus* (oblong). White. India and Malaya.
,, *obova'tus* (obovate). White. Australia.
,, *peduncula'ris* (long-stalked). See ARISTOTELIA PEDUNCULARIS.
,, *reticula'tus* (netted). See E. CYANEUS.
,, *serra'tus* (saw-edge-*leaved*). 20. India and Malaya.

ELÆODE'NDRON. Olive Wood. (From *elaia,* olive, and *dendron,* a tree; alluding to the resemblance. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.* Allied to Hartogia.)

For culture, see ELÆOCA'RPUS.

GREENHOUSE EVERGREENS.

E. A'rgan (Argan).
„ *austra'le* (southern). 3. Green, white. July. N.S. Wales. 1796.
„ *cape'nse* (Cape). 18 Green. June. Cape of Good Hope. 1828.
„ *confertifo'rum* (crowded-flowered). White. S. Africa.
„ *cro'ceum* (saffron). White. June. Cape of Good Hope. 1794.
„ *ilicifo'lium* (Holly-leaved). Country unknown.
„ *integrifo'lium* (entire-leaved). See E. AUSTRALE.
„ *laurifo'lium* (Laurel-leaved). White. S. Africa.
„ *sphæophy'llum pube'scens* (round-leaved downy). S. Africa. 1891. Wrongly named *Guevina Avellana* in Italy.

STOVE EVERGREENS.

E. glau'cum (milky-green). 6. Green. Ceylon. 1824.
„ *orienta'le* (eastern). 12. Green, yellow. Mauritius. 1771.
„ *pedunculo'sum* (stalked-fruited). See E. GLAUCUM.
„ *xyloca'rpum* (wood-fruited). 3. Green, yellow. Island of St. Thomas. 1816.

ELAPHAGLO'SSUM. See ACROSTICHUM.

ELATER. See WIRE-WORM.

ELDER. *Sambu'cus ni'gra.*

Varieties.—There are several kinds in cultivation, but the old *S. ni gra* is in most general esteem, being the best adapted for wine-making. The White-berried (*S. ni'gra a'lbida*) is much esteemed by some, especially as an ornamental shrub. *S. ni'gra vi'ridis*, or the Green-berried, and *S. ni'gra variega'ta*, the Silver-striped, and *S. ni'gra au'rea*, the Golden-edged, are interesting varieties. One with scarlet berries is said to be very handsome. Most of the varieties of *S. ni'gra* are ornamental, and well adapted to assist in forming screens to the exterior of small gardens, or even as hedge-row fruits.

Propagation.—Generally by cuttings, which strike easily, even as large truncheons. They are readily produced, also, by suckers, and in all these cases care should be taken to cut away from the stem those buds which are to be placed below the ground. They are easily produced from seed, and by such means varieties may be obtained.

Soil.—They will thrive in almost any ordinary soil; still they prefer an upland, light loam, containing a fair amount of vegetable matter.

Culture.—The form will depend on the situation it is to occupy. The elder will bear fruit either as a huge bush, or as a small tree, provided the preparatory course of training is properly carried out. Those for fruiting as bushes should be formed almost as a gooseberry-bush in its earlier stages, keeping the centre somewhat thin. Indeed, thinning out superfluous shoots is nearly all that can be practised. Those for standard trees, or with stems, must be trained by clearing away side-shoots, and forming a head at a higher level. About five or six feet are commonly allowed for stem height, and the head must then be formed as recommended for the bushes. They require scarcely any subsequent culture, and will endure for many years.

Fruit.—The making of elder wine is the principal use. Elder flowers are used occasionally to flavour confections.

ELECAMPA'NE. *I'nula Hele'nium.*

ELETTA'RIA. (The native name of *E. Cardamomum*. Nat. ord. Scitaminaceæ.)

Stove herbs with fleshy, creeping rhizomes. Seeds, and divisions of the rhizomes in spring. Good fibrous loam, with some dried cow-dung rubbed up finely; with an abundance of water when growing.

E. Cardamo'mum (Cardamomum). 5 to 9. Greenish-white. August. S. India. 1815. "Cardamom."
„ *costa'ta* (ribbed). See AMOMUM COSTATUM.
„ *linguifo'rmis* (tongue-shaped). 4 to 6. Yellow, red. July. India. 1820.
„ *puni'cea* (purple). 6. Scarlet. June. Sumatra. 1820.

ELEUSI'NE. Crab Grass. (A classical name from *Eleusis*, a temple of Ceres. Nat. ord. Gramineæ.)

Hardy or half-hardy grasses of an ornamental character, and suitable for drying to mix with flowers in winter. Seeds. Well-drained garden-soil.

E. arista'ta (bearded). Baluchistan.
„ *barcinone'nsis* (Barcinon). September. Spain. Annual.
„ *coraca'na* (Coracan). S. Amer.
„ *i'ndica* (Indian). Tropical and subtropical regions.
„ *oligosta'chya* (few-spiked). Brazil.
„ *stri'cta* (erect). India.

ELEUTHERI'NE. (From *eleutheros*, free; the segments and filaments are free. Nat. ord. Iridaceæ.)

A stove bulb. Seeds; offsets. Fibrous loam, leaf-mould, a little dried cow-dung and sand.

E. plica'ta (plaited). 1 to 1½. White, fugitive. February. Trop. Amer. 1779.

ELEUTHEROCO'CCUS. (From *eleutherios*, noble, and *kokkos*, a berry; in allusion to the black, prickly berries. Nat. ord. Araliaceæ. Allied to Acanthopanax.)

Hardy shrubs with prickly stems. Seeds, and suckers; possibly also by roots and grafting on roots. Ordinary garden-soil.

E. Henry'i (Dr. Henry's). 10. Greenish-white. China. 1905.
„ *leucorrhi'zus* (white-rooted). Smaller and less vigorous than *E. Henryi*. China. 1905.
„ *Simo'ni* (Simon's). Stem and branches with sharp, strong spines. 1905.

ELICHRY'SUM. See HELICHRYSUM.

ELISE'NA. (Ancient name of romance. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Pancratium.)

E. longipe'tala is a fine, rare, greenhouse bulb, with a flowerscape a yard high, with six to eight large white flowers, more like a Peruvian Daffodil (*Ismene*) than a Pancratium, and requires more than one-half sand, with light loam, to flower it well. Offsets; peat and very sandy loam. Summer temp., 55° to 80°; winter, 45° to 55°.

E longipe'tala (long-petaled). May. Lima. 1837.
„ *subli'mis* (sublime). Andes of Peru. B. M., t. 3873.

ELI'SMA. (Etymology doubtful. Nat. ord. Alismaceæ.)

An interesting and beautiful water plant, with the root leaves submerged and the stem leaves floating. It may be grown in pots and submerged at no great depth in a tank. Division.

E. na'tans (floating). White, yellow. July and August. Britain.

ELLEA'NTHUS. (Derived from *eilo*, I shut in, and *anthos*, a flower; the latter is enclosed by bracts. Nat. ord. Orchidaceæ.)

Stove epiphytical Orchids. For cultivation, see ORCHIDS.

E. bracte'scens (large-bracted). Red. July. Mexico.
„ *capita'tus* (headed). White. June. Trop. Amer. 1795.
„ *Carava'ta* (Caravata). Yellow. November. Guiana. 1858.
„ *columna'ris* (columnar). White, purple. June. Colombia.
„ *ensa'tus* (sworded). Carmine. August. Ecuador.
„ *flave'scens* (yellowish). Yellow. May. Mexico.
„ *furfura'ceus* (scurfy). Scarlet. June. Mexico.
„ *kermesi'nus* (carmine). Rich carmine. January. Venezuela. 1843.
„ *lupuli'nus* (hop-like). Rose. August. Mexico.
„ *xantho'comus* (yellow-haired). Yellow. May. Peru. 1872.

ELLIO'TTIA. (After *S. Elliot*, an American botanist. Nat. ord. *Heathwords* [Ericaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Little evergreen bushes, with spikes of Andromeda-looking flowers. They require a warm situation and a peat border. Cuttings of small shoots under a hand-light in spring, or layers at the end of summer; sandy loam and peat. If in a greenhouse, winter temp., 35° to 40°.

E. panicula'ta (panicled). White. June. Japan.
„ *racemo'sa* (racemed). 2. White. June. Georgia.

ELLOBOCA'RPUS OLERA'CEUS. See CERATOPTERIS THALICTROIDES.

ELM. See ULMUS.

ELM-BEETLE. See SCOLYTUS DESTRUCTOR.

ELO'DEA OF JUSSIEU. See HYPERICUM.

ELO'DEA. (From *elodes*, a marsh, the native place of the species. Nat. ord. Hydrocharidaceæ.)

Aquatic annuals, requiring a cool stove. Sow in light loam annually, and keep the pots standing in trays of water.

E. canade'nsis (Canadian). 1. Green. N. Amer. 1836. This water-weed was accidentally introduced to County Down in 1836, and to England in 1841. It spread with enormous rapidity in ditches, streams, and canals, so choking up the latter as to impede the navigation. Only the female form was observed, and the plant increased by pieces being carried down-stream by the water, while waterfowl carried it from stream to stream and pond. It has now exhausted its vigour and ceased to be troublesome.

,, *guiane'nsis* (Guiana). ½. White. July. Guiana. 1820.

ELSHO'LTZIA. (A commemorative name. Nat. ord. Labiatæ.)

Hardy herbaceous perennials. Divisions. Ordinary soil.

E. inci'sa (incised). 2. White. September. Himalaya. 1824.

,, *Staunto'ni* (Staunton's). 3 to 5. Purple-red. N. China. 1909.

E'LYMUS. (From *eluo*, I roll up; the fruit being rolled up in the pale. Nat. ord. Gramineæ.)

Hardy grasses, some of which are of an ornamental character. Seeds, division. Ordinary soil.

E. arena'rius (sand-loving). 3 to 5. Leaves glaucous. Britain.

,, *gigante'us* (giant). 4 to 6. Leaves glaucous. Siberia.

EMBE'LIA. (From *Æmbelia*, its name in Ceylon, Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria* 1-*Monogynia*. Allied to Ardisia.)

Like Ardisia, the chief beauty resides in the leaves and berried fruit. The pungent berries of *Embe'lia Ri'bes* are eatable, and called currants in India. Stove evergreen. Cuttings of half-ripe young shoots in sandy soil, under a bell-glass, in heat; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

E. austra'lis (southern). Garden name.

,, *Krau'ssii* (Krauss'). Pale green. S. Africa.

,, *Ri'bes* (Ribes). Green. Berries edible. Trop. Asia. 1886.

,, *robu'sta* (robust). 20. White, green. India. 1823.

E'MBLICA OFFICINA'LIS. See PHYLLANTHUS EMBLICA.

EMBO'THRIUM. (From *en*, in, and *bothrion*, a little pit; referring to the pollen-cases, or anthers. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Knightia.)

Greenhouse evergreen shrubs. Cuttings in sandy soil, taken when the wood is ripe, under a glass; sandy peat, with a little fibrous loam. Winter temp., 35° to 45°.

E. cocci'neum (scarlet). 3. Scarlet. Chili. May. 1851.

,, *lanceola'tum* (lance-shaped). Scarlet. Chili.

,, *linea're* (linear). See GREVILLEA LINEARIS.

,, *sali'gnum* (willow-leaved). See HAKEA SALIGNA.

,, *seri'ceum* (silky). See GREVILLEA SERICEA.

,, *speciosi'ssimum* (showiest). See TELOPEA SPECIOSISSIMA.

,, *specio'sum* (showy). See TELOPEA SPECIOSISSIMA.

,, *strobili'num* (strobile-like). See KNIGHTIA STROBILINA.

,, *trunca'tum* (truncate). See TELOPEA TRUNCATA.

EMI'LIA. (A commemorative name. Nat. ord. Compositæ.)

Half-hardy annuals or greenhouse evergreens. Seeds in heat in March, and planted out during settled weather in April or May. Any good soil not too heavy.

E. fla'mmea (flame-coloured). 1. Scarlet. June. India. 1799.

,, *sonchifo'lia* (Sonchus-leaved). 2. Yellow. India. Greenhouse evergreen.

EMMENA'NTHE. (From *emmenes*, constant, and *anthos*, a flower. Nat. ord. Hydrophyllaceæ.)

Hardy annual increased by seeds in the open border in April.

E. penduliflo'ra (drooping-flowered). 2. Cream or yellow. California. 1892.

EMPE'TRUM. Crow Berry. (From *en*, in, or upon, and *petros*, a rock; plants grow in stony places. Nat. ord. *Crowberries* [Empetraceæ]. Linn. 22-*Dicœcia*, 3-*Triandria*.)

Low, spreading, heath-like plants, better suited for damp peat-beds than rock-work. The black berries are as wholesome as black currants, and more palatable. Their Gaelic name means raven-berries; but ravens or crows never touch them. Grouse eat them greedily, and Ptarmigans feed on the leaves in winter. Hardy evergreens; propagated by cuttings under a hand-light, in sandy peat, in summer, and by seeds sown in spring or autumn, which generally remain a year in the soil before vegetating; heathy soil, and rather moist situation.

E. ni'grum (black-*berried*). 1. April. Britain.

,, ,, *sco'ticum* (Scotch). ¾. April. Scotland.

,, ,, *tomento'sum* (felted).

,, *ru'brum* (red-*fruited*). See E. NIGRUM.

EMPLEU'RUM. (From *en*, in, and *pleuron*, a membrane; referring to the seed being suspended from the seed-cord by a thin membrane. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria*. Allied to Diosma.)

Greenhouse evergreen shrub. Cuttings of points of shoots when two inches in length, and getting a little firm at their base, taken off with a heel; peat, one part, sandy fibrous loam, two parts. Winter temp., 40° to 45°.

E. serrula'tum (fine-saw-edged). 3. Pink. June. 1774. S. Africa.

ENCE'LIA. (From *egchelion*, a little eel; formation of the seeds. Nat. ord. *Composites* [Compositæ]. 19-*Syngenesia*, 3-*Frustanea*. Allied to Sclerocarpus.)

Greenhouse evergreens and annuals. Seeds, when obtainable, in spring; cuttings, a little dried at the base, in sand, under a glass, and shaded; sandy, fibrous loam, with a little peat. Winter temp., 35° to 45°.

E. cane'scens (hoary). 1½. Orange. July. Peru. 1786.

,, *corda'ta* (heart-shaped). 3. Yellow. September. Mexico. 1826. Perennial.

,, *fœ'tida* (stinking). 2½. Yellow. August. Mexico. 1824. Annual.

,, *halimifo'lia* (Halimus-leaved). 1½. Yellow. July. Mexico. 1826.

,, *heterophy'lla* (various-leaved). 2. Yellow. July. Mexico. 1827. Annual.

ENCEPHALA'RTOS. (From *en*, in, *kephale*, a head, and *artos*, bread; the trunk contains much starch; made into bread by the Caffers. Nat. ord. Cycadaceæ.)

Stove plants of Palm-like aspect. Suckers and imported stems. Good fibrous loam and sand. Summer temp., 60° to 80°; winter, 50° to 60°.

E. Altenstei'nii (Altenstein's). 5. S. Africa. 1835.

,, *Barte'ri* (Barter's). 1. W. Trop. Africa. 1909.

,, *brachyphy'llus* (short-leaved). See E. CAFFER.

,, *ca'ffer* (Caffer). 3 to 10. S. Africa. 1775. "Caffer Bread."

,, *cycadifo'lius* (Cycas-leaved). S. Africa. 1775.

,, *elonga'tus* (elongated). S. Africa. 1840.

,, *Frederi'ci-Guilie'lmi* (Frederick-William's). See E. CYCADIFOLIUS.

,, *Ghelli'nckii* (Ghellinck's). S. Africa. 1867.

,, *gra'ndis* (grand). S. Africa. 1869.

,, *Hildebra'ndtii* (Hildebrandt's). Trop. Africa. 1877.

,, *ho'rridus* (very spiny). 3 to 5. Leaves glaucous. Trop. Africa. 1800.

,, ,, *trispino'sus* (three-spined). Leaves with fewer spines. S. Africa.

,, *lanugino'sus* (woolly). 3. S. Africa. 1812.

,, *la'tifrons* (broad-fronded). 1844.

,, *laurentia'nus* (Laurentian). 30. Congo Free State. 1904.

,, *Lehma'nni* (Lehmann's). S. Africa.

,, *lemarinelia'nus* (Lemarinelian). Congo Free State. 1901.

,, *longifo'lius* (long-leaved). 7. S. Africa. 1818.

E. M'Ke'nii (M'Ken's). See MACROZAMIA PAULI-GUILIELMI.
„ *Moo'rei* (Moore's). See MACROZAMIA MOOREI.
„ *plumo'sus* (plumy). S. Africa. 1869.
„ *pruni'ferus* (plum-bearing). 14. Country unknown.
„ *pu'ngens* (pricking). 10. S. Africa. 1775.
„ *rega'lis* (regal). Zululand. 1879. Scarcely distinct from *E. Hildebrandtii*.
„ *spinulo'sus* (finely-spiny). S. Africa. 1849. Very close to *E. Lehmanni* or a variety.
„ *tridenta'tus* (three-toothed). 2. S. Africa. 1814.
„ *Verschaffe'ltii* (Verschaffelt's). S. Africa. 1875.
„ *villo'sus* (woolly). 4. S. Africa. 1866.
„ „ *amplia'tus* (ampliated). 1874.
„ *Vroo'mi* (Vroom's). S. Africa. 1871.
„ *Woo'dii* (Wood's). 1½. Zululand. 1908.

ENCHANTER'S NIGHTSHADE. *Circæ'a.*

ENCHOLI'RION. See DYCKIA.

ENCHOLI'RIUM CORALLI'NUM SPLENDENS. See TILLANDSIA CORALLINA variety.
E. Jo'nghei. See TILLANDSIA JONGHEI.
„ *ro'seum.* See TILLANDSIA CORALLINA.
„ *Saunde'rsii.* See TILLANDSIA SAUNDERSII.

ENCY'CLIA. See EPIDENDRUM.

E'NDERA. See TACCARUM.

ENDIVE. (*Cicho'rium Endi'via.*) Used in salads.

Varieties.—The *green-curled* is cultivated for the main crops, as it best endures wet and cold; the *white-curled*, chiefly grown for summer and autumn; the *broad-leaved*, or *Batavian*, is preferred for soups and stews, but is seldom used for salads.

Soil and Situation.—A light, dry, but rich soil, dug deep and unshaded. It is best to form an artificial bed by laying a foot in depth of earth on a bed of brickbats, stones, &c.

Sowing.—For a first crop about the middle of April, to be repeated in May, but only in small portions, as those which are raised before June soon advance to seed. Towards the middle of June the first main crop may be sown, again in the course of July, and lastly, early in August; and in this month the main plantation is made. Sow in drills twelve inches apart, and about a quarter of an inch below the surface. When an inch in height, thin the plants to three or four inches apart: those taken away are too small to be of any service if pricked out. Give water freely in dry weather.

When the larger seedlings have been transplanted, the smaller ones which remain should have a gentle watering, and in twelve or fourteen days they will afford a second successional crop; and, by a repetition of this management, in general, a third. The plants are generally fit for transplanting when of a month's growth in the seed-bed, or when five or six inches high.

Planting.—Set them in rows twelve or fifteen inches apart each way; the Batavian requires the greatest space. Water must be given moderately every evening until the plants are established, after which only in excessive and protracted drought. Those which are left in the seed-bed, in general, attain a finer growth than those that have been moved. In November, some plants that have attained nearly their full size may be removed to the south side of a sloping bank of dry, light earth, raised one or two feet behind; to be protected by frames, mats, or thick coverings of litter, during severe and very wet weather; but to be carefully uncovered during mild, dry days. The plants, in this instance, are not required to be further apart than six or eight inches. This plan may be followed in open days during December and January, by which means a constant supply may be obtained. Instead of being planted in the above manner on a terrace, another method is to take the plants on a dry day, and the leaves being tied together, to lay them horizontally in the earth down to the tip of the leaves; this accelerates the blanching, but otherwise is far more subject to failure. As the number necessary for a family is but small, but few should be planted at a time.

Blanching.—About three months elapse between the time of sowing and the fitness of the plants for blanching. This operation will be completed in from ten to fourteen days in summer, or in three or four weeks in winter. To blanch the plants tie their leaves together; or place tiles or pieces of board upon them, or tie their leaves together, and cover them to their tips with mould, making it rise to a point, so as to throw off excessive rains. All these methods succeed in dry seasons, but in wet ones the plants, treated according to any of them, are liable to decay.

The one which succeeds best in all seasons is to fold the leaves round the heart as much as possible in their natural position; and, being tied together with a shred of raffia, covered up entirely with coal-ashes in the form of a cone, the surface being rendered firm and smooth with the trowel. Sand will do, but ashes are equally unretentive of moisture, whilst they are much superior in absorbing heat, which is so beneficial in the hastening of the process. If the simple mode of drawing the leaves together is adopted to effect this blanching, they must be tied very close, and, in a week after the first tying, a second ligature must be passed round the middle of the plant to prevent the heart-leaves bursting out. A dry afternoon, when the plants are entirely free from moisture, should be selected, whichever mode is adopted.

A very excellent mode is to spread over the surface of the bed about an inch in depth of pit-sand, and covering each plant with a small pot made of earthenware, painted both within and on the outside to exclude the wet—that worst hindrance of blanching. To avoid this, the pots should be taken off daily to allow the plants to dry, and the insides of the pots wiped. A sea-kale pot in miniature, with a handle on the top, is to be preferred; and if made of zinc or other metal, it would be better, because not porous and admissive of moisture.

To obtain Seed.—The finest and soundest plants should be selected of the last plantation. For a small family three or four plants of each variety will be sufficient. Plant these in March beneath a south fence, about a foot from it, and eighteen inches apart. As the flower-stem advances, fasten it to a stake, or, if they are placed beneath palings, by a string, to be gathered as the seed upon it ripens; for if none are gathered until the whole plant is changing colour, the first ripened and best seed will have scattered and be lost. Each branch must be laid, as it is cut, upon a cloth in the sun; and when perfectly dry, the seed beaten out, cleansed, and stored.

ENGELMA'NNIA. (Named in compliment to *Professor Engelmann*, an American botanist. Nat. ord. Compositæ.)

A hardy border perennial to be sown in the open garden in April, or divisions in March.
E. pinnati'fida (pinnatifid). 1 to 2. Yellow. July. N.W. Amer. 1879.

ENGINE. This name is applied to many contrivances for supplying water to plants.

1. *The pump-syringe*, or *syringe-engine*, can be supplied with water from a common bucket, from which it sucks the water through a perforated base. The handle is sometimes made to work like that of the common pump.

2. *The barrow watering-engine*, a most useful garden appliance, will throw the jet of water to a distance of forty or fifty feet, or somewhat less if a rose is upon the end of the delivery-pipe. It holds from twenty to thirty gallons of water; but may be made, with a leather-hose attached, to communicate with a pond or other reservoir of water.

3. *The curved barrel-engine* is excellent; for the barrel, piston-rods, &c., being so constructed as to be turned on a lathe, they are so accurate that there is the least possible loss of power, either from unnecessary friction or from an imperfect vacuum.

ENICOSTE'MA. (From *enikos*, single, and *stema*, a fibre. Nat. ord. Gentianaceæ.)

Stove biennial. Seeds in spring. Light, rich soil.
E. littora'le (shore). 1 to 1½. White or pale yellow. July. Tropical regions. 1817

ENKIA'NTHUS. (From *enkuos*, enlarged, and *anthos*, a flower; the flowers swollen in the middle. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Arbutus.)

Greenhouse or hardy evergreen shrubs. Cuttings of firm young shoots in sand, under a hand-light, in April or May; a bell-glass is too close, unless a little air is

admitted; sandy loam two parts, and fibrous peat one part. Winter temp., 40° to 45°.

E. campanula'tus (bell-shaped). Dark red. Japan. 1888. Hardy.
„ *ce'rnuus* (drooping). Japan.
„ *chine'nsis* (Chinese). Yellow-orange, striped red. Central and Western China. 1907.
„ *himala'icus* (Himalayan). Orange-red, tips deeper red. E. Himalayas. 1879.
„ *japo'nicus* (Japanese). White. February. Japan. 1870.
„ *quinqueflo'rus* (five-flowered). 3. May. China. 1812.
„ „ *serrula'tus* (serrulate). Central and Western China. 1907.
„ *reticula'tus* (netted). See E. QUINQUEFLORUS.
„ *subse'ssilis* (nearly-stalkless). 1 to 10. White. Japan. 1903.

ENNEALO'PHUS. (From *ennea*, nine, and *lophos*, a crest; the three stigmas have nine crests in the aggregate. Nat. ord. Iridaceæ.)

A greenhouse bulb, allied to Tigridia. Seeds, offsets. Loam, leaf-mould, and sand.

E. amazo'nicus (Amazonian). Blue-violet, white. Brazil. 1909.

ENSLE'NIA. (Named after *A. Enslen*, a botanist. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Asclepias.)

Hardy herbaceous climber. Seeds and divisions in spring; common soil.

E. a'lbida (whitish). White. July. N. Amer. 1828.

ENTA'DA. (The Malabar name. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Mimosa.)

The large brown beans, called Gela in India, and used by the natives for washing their hair, are the seeds of *E. scandens*. Stove evergreen climbers, with white flowers. Cuttings of young shoots getting firm, in sand, under glass, and in heat; loam and peat in equal portions. Summer temp., 60° to 75°; winter, 48° to 55°.

E. Adenanthe'ra (Adenanthera-like). See E. SCANDENS.
„ *monosta'chya* (single-spiked). See E. SCANDENS
„ *polysta'chya* (many-spiked). 26. W. Ind. 1816.
„ *Pursæ'tha* (Pursætha). See E. SCANDENS.
„ *sca'ndens* (climbing). 20. White. Trop. Amer. 1780.

ENTELE'A. (From *enteles*, perfect; the stamens all fertile. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Grewia.)

Greenhouse evergreens, from New Zealand. Cuttings of half-ripened shoots in sand, under a glass; sandy loam and a little peat. Winter temp., 35° to 45°.

E. arbore'scens (tree-like). 20. White. May. 1820.
„ *austra'lis* (southern). See E. ARBORESCENS.
„ *Bake'ri* (Baker's). Australia. 1869.
„ *palma'ta* (hand-*leaved*). 4. White. May. 1830.
„ *pube'scens* (downy). See E. PALMATA.

ENTEROLO'BIUM. (From *enteros*, inner, and *lobos*, a pod; the interior is hardened, like an inner pod. Nat. ord. Leguminosæ.)

Stove evergreen tree. Cuttings of half-ripe shoots in sandy peat in bottom-heat. Loam, peat, and sand.

E. cycloca'rpum (ring-fruited). 60. White. Caraccas. 1826.

ENTRANCES. Upon these parts of a residence, which should give a first and appropriate impression, Mr. Whateley has these just remarks: "The road which leads up to the door of the mansion may go off from it in an equal angle, so that the two sides shall exactly correspond; and certain ornaments, though detached, are yet rather within the province of architecture than of gardening; works of sculpture are not, like buildings, objects familiar in scenes of cultivated nature; but vases, statues, and termini, are usual appendages to a considerable edifice; as such, they may attend the mansion, and trespass a little upon the garden, provided they are not carried so far into it as to lose their connection with the structure. The platform and the road are also appurtenances to the house; all these may therefore be adapted to its form, and the environs will thereby acquire a degree of regularity; but to give it to the objects of nature, only on account of their proximity to others which are calculated to receive it, is, at the best, a refinement. Upon the same principles regularity has been acquired in the approach; and an additional reason has been assigned for it, that the idea of a seat is thereby extended to a distance; but that may be by other means than by an avenue. A private road is easily known; if carried through grounds, or a park, it is commonly very apparent; even in a lane, here and there a bench, a painted gate, a small plantation, or any other little ornament, will sufficiently denote it. If the entrance only be marked, simple preservation will retain the impression along the whole progress; or it may wind through several scenes distinguished by objects, or by an extraordinary degree of cultivation: and then the length of the way, and the variety of improvements through which it is conducted, may extend the appearance of a domain, and the idea of a seat, beyond the reach of any direct avenue."

EOME'CON. (From *eoie*, the morning or dawn, and *mekon*, a poppy. Nat. ord. Papaveraceæ.)

A pretty, hardy, perennial herb for the border or rockery. Division in spring. Light, rich garden-soil.

E. chiona'ntha (snow-flowered). 1 to 2. White. China. 1889.

EOPE'PON. See TRICHOSANTHES.

EPA'CRIS. (From *epi*, upon, and *akros*, the top. The Epacris grows on the tops of hills and rising grounds. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from Australia. Cuttings of the tips of the shoots when from one to two inches in length, in sand, under a bell-glass, in spring or early summer; three or four round a small pot. Sandy, fibrous peat suits them best. They are better kept in turf-pits than in the open air during the summer, as the sun striking upon the pots is apt to scorch the hair-like roots. If set out of doors, the pots should be plunged in earth or ashes. The plants should be cut back when done flowering, and kept close until new growth is making. Winter temp., 40° to 48°.

E. acumina'ta (acuminate). Australia.
„ *andromeæflo'ra* (Andromeda-flowered). 2. White, rose. 1848.
„ *apicula'ta* (small-tufted). 2. May. 1825.
„ *attenua'ta* (attenuate). See LYSINEMA PUNGENS.
„ *autumna'lis* (autumnal). Red, tipped white. Autumn. Hybrid.
„ *bi'color* (two-coloured-*flowered*). 2. Deep crimson, white. 1848. Hybrid.
„ *breviflo'ra* (short-flowered). 3. White. April. New South Wales.
„ *campanula'ta* (bell-*flowered*). See E. IMPRESSA.
„ „ *a'lba* (white-*flowered*). 2. White. April. 1830.
„ „ *ma'xima* (largest-bell-*flowered*). 3. Dark crimson. February. 1848.
„ *ceræflo'ra* (wax-flowered). See E. IMPRESSA.
„ *cocci'nea* (scarlet). Bright crimson. Seedling. 1839.
„ *delica'ta* (delicate). 2. Blush, white. April. 1848.
„ *densiflo'ra* (crowded-flowered). 2. Blush. April. 1848.
„ *diosmæfo'lia* (Diosma-leaved). Australia.
„ *du'bia* (doubtful). See E. HETERONEMA DUBIA.
„ *exse'rta* (drawn-out). 2. White. May. Tasmania. 1812.
„ *grandiflo'ra* (large-flowered). See E. LONGIFLORA.
„ *heteroné'ma* (various-stemmed). 3. White. June. 1823.
„ „ *du'bia* (doubtful). See E. BREVIFLORA
„ *hyacinthiflo'ra* (hyacinth flowered). Australia. 1876.
„ „ *carmina'ta* (carmine). Red.
„ *impre'ssa* (flattened). 3. Crimson. June. 1824
„ „ *parviflo'ra* (small-flowered). 3. Red. April. 1836.
„ *longiflo'ra* (long-flowered). 2 to 3. Crimson, tipped white. Australia. 1844.
„ *microphy'lla* (small-leaved). 2. White. May. 1822.
„ *minia'ta* (vermilion). See E. LONGIFLORA.
„ *multiflo'ra* (many-flowered). Crimson and white. 1860.
„ *niva'lis* (snowy-*flowered*). See E. IMPRESSA.
„ *obtusifo'lia* (blunt-leaved). White. Autumn. Australia.

E. onosmæflo'ra (Onosma-flowered). See E. PURPURASCENS.
,, *paludo'sa* (marsh). 3. Pale red. May. 1825.
,, *pulche'lla* (neat). 4. Pink. May. 1804.
,, *pu'ngens* (pricking). See E. PURPURASCENS and LYSINEMA PUNGENS.
,, *purpura'scens* (purplish). 3. Purple. February. 1803.
,, ,, *flo're ple'no* (double-white).
,, ,, *niva'lis* (snowy). Pure white, double.
,, ,, *ru'bra* (red-*flowered*). 3. Red. February. 1803.
,, *ro'sea* (rosy). See LYSINEMA PUNGENS.
,, *ru'bra* (red). See E. PURPURASCENS RUBRA.
,, *squarro'sa* (spreading). White. Tasmania. 1865.
,, *varia'bilis* (variable). See E. IMPRESSA.

EPE'RUA. (A South American name for a sword, in allusion to the shape of the pods. Nat. ord. Leguminosæ.) Stove shrub. Cuttings of half-ripe wood. Loam, peat, and sand.

E. grandiflo'ra (large-flowered). Guiana.

EPHE'DRA. (The Greek for the Hippuris, or Horse-tail, which it resembles. Nat. ord. *Joint Firs* [Gnetaceæ]. Linn. 22-*Diœcia*, 13-*Monadelphia*.)

Evergreens. *E. monosta'chya* inhabits the margins of salt lakes and springs in Siberia, and would be a useful little plant to cover spaces flooded by spring tides; both that and *E. dista'chya* would live on the sea-shore, and bear clipping.

E. alti'ssima (tallest). 24. Barbary. 1825. Half-hardy twiner.
,, *america'na andi'na* (Andian). Chili.
,, *dista'chya* (two-spiked). 2. June. France. 1570.
,, *folia'ta* (leafy). Northern and Central Asia.
,, *fra'gilis* (fragile). Mediterranean Region.
,, *gerardia'na* (Gerardian). Himalaya.
,, *helve'tica* (Swiss). Switzerland, &c.
,, *interme'dia* (intermediate). Central Asia, &c.
,, *mi'nor* (less). See E. DISTACHYA.
,, *monosta'chya* (one-spiked). See E. DISTACHYA.
,, *nebroden'sis* (Nebrodan). Mediterranean Region, &c.
,, *trifu'rca* (thrice-forked). 2 to 4. Western N. Amer.

EPIDE'NDRUM. (From *epi*, and *dendron*, a tree; air-plants attached to trees. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Lælia.)

Stove orchids. Division of the plant before active growth commences; fibrous peat, broken pots, a little charcoal, and sphagnum-moss; the plant fixed above the surface of a pot nearly filled with drainage. Summer temp., 60° to 90°, with moisture; winter, 55° to 60°, with more dryness.

E. acicula're (needle-like). Purple, white. Mexico. 1841.
,, *adenoca'rpum* (gland-fruited). White. Mexico. 1839.
,, *a'dvenum* (stranger). Yellow, purple, brown. Brazil. 1872.
,, *æ'mulum* (lovely). See E. FRAGRANS.
,, *agatho'smicum* (pleasant-smelling). Venezuela.
,, *aggrega'tum* (clustered). Peru.
,, *ala'tum* (winged). Green, white. Guatemala.
,, *Allema'nii* (Alleman's). Brazil.
,, *aloifo'lium* (aloe-leaved). See CYMBIDIUM ALOIFOLIUM.
,, *ama'bile* (lovely). Brown, yellow, mauve. Mexico. 1880.
,, *amethysti'num* (amethyst). Amethyst. Trop. Amer. 1867.
,, *a'nceps* (two-edged). Brownish. Trop. Amer. 1836.
,, *antenni'ferum* (antennæ-bearing). Brown. Mexico. 1850.
,, *arachnoglo'ssum* (spider-tongued). Rose. Colombia. 1882.
,, ,, *ca'ndidum* (white). White, orange. 1886.
,, *armeni'acum* (apricot). Apricot. Brazil and Peru. 1835.
,, *aroma'ticum* (aromatic). 3. Yellow. May. Guatemala. 1835.
,, *a'sperum* (rough). Yellowish. Mexico.
,, *atropurpu'reum* (dark purple). Brown, purple. Mexico. 1865.
,, ,, *a'lbum* (white). White, rose. May. 1824.
,, ,, *ocula'tum* (eyed). Brown, purple, white. Venezuela. 1865.
E. atropurpu'reum Ra'ndii (Rand's). Greenish-brown; lip white, red veins. Brazil. 1886.
,, ,, *ro'seum* (rosy). Rose. Guatemala. 1842.
,, *atroru'bens* (dark red). Red-purple. Mexico. 1896.
,, *auranti'acum* (orange). See CATTLEYA AURANTIACA.
,, *auricula'gerum* (ear-bearing). Straw, purple. 1888.
,, *auri'tum* (eared). Pale green. Mexico. 1843.
,, *au'ro-purpu'reum* (gold and purple). See E. BIFIDUM.
,, *Barkeri'ola* (Barkeriola). Rose; lip white, deep purple. 1884.
,, *bicamera'tum* (two-arched). Pale yellow. Mexico. 1871.
,, *bicornu'tum* (two-horned). See DIACRIUM BICORNUTUM.
,, *bi'fidum* (bifid). Yellow, purple, white. July. St. Domingo. 1835.
,, *bletioi'des* (Bletia-like). Purple. W. Ind.
,, *boothia'num* (Boothe's). ½. Green. September. Cuba. 1835.
,, *brachia'tum* (shortened). Pale yellow, spotted cinnamon. Mexico. 1880.
,, *brachychi'lum* (short-lipped). Yellow, brown. Sierra Nervada.
,, *brachyglo'ssum* (short-tongued). Yellow. Peru; Colombia. 1880.
,, *bractea'tum* (large-bracted). Yellow-green, speckled brown. Brazil. 1891.
,, *bracte'scens* (bracted). See E. ACICULARE.
,, *Brassa'volæ* (Brassavolæ). Straw-yellow, purple. Guatemala. 1867.
,, *cæspito'sum* (tufted). White, rose. Peru.
,, *caliga'rium* (obscured). Mexico. 1869.
,, *calochei'lum* (beautiful-lipped). See E. ALATUM.
,, *campe'stre* (field). Brazil. 1844
,, *campylo'stalix* (curved-columned). Green, brown. Central Amer. 1869.
,, *Cando'llei* (De Candolle's). Brown, yellow. Mexico. 1836.
,, *capartia'num* (Capartian). See E. OSMANTHUM.
,, *carno'sum* (fleshy). Yellow. Brazil.
,, *Cati'llus* (Catillus). Cinnabar, yellow. New Grenada. 1872.
,, *cauliflo'rum* (stem-flowering). Yellow. Rio Janeiro. 1830.
,, *cepifor'me* (onion-shaped). See E. CANDOLLEI.
,, *chio'neum* (snowy) White. New Grenada.
,, *chloroleu'cum* (yellow-white). Green, white. Guiana. 1838.
,, *chlo'rops* (green-eyed). Green. Mexico. 1881.
,, *christya'num* (Christyan). Greenish and brown. Bolivia. 1884.
,, *cilia're* (hair-fringed). 1. White. July. Martinique. 1793.
,, *cingi'llum* (small-ringed). Ochre, dark purple. 1882.
,, *cinnabari'num* (crimson). 1. Crimson. Pernambuco. 1837.
,, ,, *latifo'lium* (broad-leaved). Trinidad. 1836.
,, ,, *mi'nus* (smaller). Trinidad. 1836.
,, *citri'num* (Citron). See CATTLEYA CITRINA.
,, *clæsia'num* (Clæsian). 1893.
,, *clava'tum* (club-*stemmed*). ½. Green, white. July. Cumana. 1834.
,, *Clowe'sii* (Clowes'). Yellow, white. Guatemala. 1835.
,, *cnemido'phorum* (gaiter-bearing). Yellow, rose. Guatemala. 1867.
,, *cochlea'tum* (spiral). 1. Purple. July. W. Ind. 1799.
,, ,, *latifo'lium* (broad-leaved). Xalapa. 1828.
,, *colla're* (banded). 1½. White. Guatemala. 1843.
,, *colo'rans* (colouring). See E. POLYANTHUM.
,, *confu'sum* (confused). See E. FRAGRANS MEGALANTHUM.
,, *cono'pseum* (similar-looking). Green, white. S. United States.
,, *conspi'cuum* (conspicuous). White, purple. Brazil. 1869.
,, *cooperia'num* (Cooperian). Green, rose. Brazil. 1867.
,, ,, *caloglo'ssum* (beautiful-lipped). Lip rich purple. 1882.
,, *corda'tum* (heart-shaped). Peru.
,, *cordifo'lium* (heart-leaved). Brazil.
,, *coria'ceum* (leathery). See E. VARIEGATUM CORIACEUM.
,, *corniifo'lium* (leathery-leaved). Green. Central Amer. 1850.
,, *costarice'nse* (Costa Rican). Costa Rica. 1893.

E. costa'tum (ribbed). Reddish-brown, white, blotched purple. Mexico. 1845.
„ *coxia'num* (Coxian). Brownish-yellow, pale green. Trop. Amer. 1877.
„ *crassifo'lium* (thick-leaved). See E. ELLIPTICUM.
„ *crini'ferum* (hair-bearing). Yellow-green, brown. Costa Rica. 1871.
„ *crispa'tum* (curled). See E. ADENOCARPUM.
„ *cube'nse* (Cuban). Yellow, purple. June. Cuba. 1842.
„ *cuculla'tum* (hooded). Brazil.
„ *cuspida'tum* (pointed). See E. CILIARE.
„ *cyclote'llum* (small-circle). Mauve, purple. Mexico. 1880.
„ *densiflo'rum* (dense-flowered). Green, brown. Mexico. 1836.
„ *dichro'mum* (two-coloured). Rose, red. Bahia.
„ „ *ama'bile* (lovely). Rose, crimson. Bahia. 1865.
„ „ *stri'ctum* (upright). White, purple veined. Bahia. 1866.
„ *diffo'rme* (two-formed). See E. UMBELLATUM.
„ *diffu'sum* (spreading loosely). See SERAPHYTA MULTIFLORA.
„ *di'pus* (two-stalked). See E. NUTANS.
„ *di'scolor* (two-coloured). Brazil.
„ *du'rum* (hard). Yellow. Brazil. 1841.
„ *ebu'rneum* (ivory). Ivory-white. Panama. 1867.
„ *e'legans* (elegant). 1½. Light rose. Mexico. 1836.
„ „ *nobi'lior* (nobler). Flowers larger. 1886.
„ *elli'pticum* (elliptic). Pink. Brazil.
„ *Ellisii* (Ellis's). 1½. Rose, yellow. Colombia. 1894.
„ *elonga'tum* (long-*stalked*). See E. SECUNDUM.
„ „ *pa'llidum* (pale). Brazil. 1836.
„ *Endre'sii* (Endres's). Green, white, orange. Costa Rica. 1883.
„ *ensa'tum* (sword-*leaved*). Mexico.
„ *ensifo'lium* (sword-leaved). See CYMBIDIUM ENSIFOLIUM.
„ *e'quitans* (equalling). Mexico.
„ *erube'scens* (blushing). Rose. Mexico. 1837.
„ *eve'ctum* (prolonged). Rose-purple. Colombia. 1871.
„ *expa'nsum* (expanded). Colombia.
„ *falca'tum* (sickle-shaped). Yellow. Oaxaca. 1838.
„ *falsilo'quum* (falsely indicated). Pale yellow; lip white, with mauve lines. 1885.
„ *favo'ris* (favoured). Yellow-brown. Mexico. 1874.
„ *ferrugi'neum* (rusty). Peru.
„ *fimbria'tum* (fringed). White, violet. Peru.
„ *fla'vidum* (yellowish). See E. LEUCOCHILUM.
„ *fla'vum* (yellow). Yellow. Brazil.
„ *flexuo'sum* (zigzag). See E. IMATOPHYLLUM.
„ *floribu'ndum* (many-flowered). 1. Green, blue. October. Mexico.
„ *forgetea'num* (Forgetian). Yellowish, veined dull rose. 1893.
„ *fra'grans* (sweet-scented). ½. White. September. Jamaica. 1778.
„ „ *cinnamo'meum* (cinnamon-*scented*). White. September. Jamaica. 1836.
„ „ *megala'nthum* (large-flowered). Straw; lip with red lines. Guatemala. 1899.
„ *fraudule'ntum* (fraudulent). Rosy, yellow. 1886.
„ *Frederi'ci-Guili'lmi* (Frederick-William's). Crimson, white. Peru. 1871.
„ *fuca'tum* (dyed). Yellow, pink, white. Cuba. 1838.
„ *funckia'num* (Funck's). Brown. Mexico.
„ *funi'ferum* (rope-bearing). See E. POLYANTHUM.
„ *fusca'tum* (brown). Trop. Amer.
„ *ghiesbreghtia'num* (Ghiesbreghtian). Claret, white, purple, orange. Mexico.
„ *gigante'um* (gigantic). Brazil. 1843.
„ *glau'cum* (milky-green). Green, purple. June. Mexico. 1837.
„ *globo'sum* (globose). Trop. Amer.
„ *gluma'ceum* (chaffy). White. Brazil. 1839.
„ *glutino'sum* (clammy). See E. ODORATISSIMUM.
„ *godseffia'num* (Godseffian). See E. OSMANTHUM.
„ *gra'cile* (slender). 3. Red, green. March. Bahamas.
„ *Graha'mi* (Dr. Graham's). See E. PHŒNICEUM.
„ *grandiflo'rum* (large-flowered). See STANHOPEA BUCEPHALUS.
„ *grani'ticum* (grained). See E. ONCIDIOIDES.
„ *gra'vidum* (heavy). Mexico.
„ *guatemale'nse* (Guatemalan). See E. ONCIDIOIDES.

E. Hanbu'rii (Hanbury's). 2. Rose. August. Mexico 1843.
„ *Harriso'niæ* (Mrs. Harrison's). Pale green, white. Brazil.
„ *Ha'rtii* (Hart's). ½. Pale yellow. Trinidad. 1894.
„ *Hartwe'gii* (Hartweg's). Peru.
„ *Hormi'dium* (Hormidium). Yellow, green. August. Mexico. 1836.
„ *havane'nse* (Havannah). Havannah. 1836.
„ *herba'ceum* (herbaceous). Brazil. 1837.
„ *ibague'nse* (Ibaguan). Orange, cinnabar. Colombia. 1868. (Also spelt *ybaguense.*)
„ *imatophy'llum* (thong-leaved). Rose. Demerara.
„ *indivi'sum* (undivided). See DIACRIUM BICORNUTUM.
„ *inve'rsum* (inverted). Brazil.
„ *ionoce'ntrum* (violet-spurred). Greenish-brown; lip white, with violet. Trop. Amer. 1883.
„ *iono'smum* (violet-scented). Yellow, green. June. Guiana. 1836.
„ *Karwi'nskii* (Karwinsk's). Pale yellow, brown, white. Mexico. 1869.
„ *Kiena'stii* (Kienast's). Rose, purple; lip white, with purple ridges. 1887.
„ *lacerti'num* (lizard-*tailed*). Yellow, green. March. Guatemala. 1837.
„ *la'cerum* (torn). 3. Pale pink. November. Havannah. 1835.
„ *lactiflo'rum* (milky-flowered). See E. FALCATUM.
„ *lacu'stre* (lake). Yellow, green. Venezuela. 1840.
„ *lambeaua'num* (Lambeauan). ½. Greenish-white, tinged violet; lip purple. Brazil. 1905.
„ *lamella'tum* (lamellated). See E. STENOPETALUM.
„ *lancifo'lium* (lance-leaved). Pale yellow. March. Mexico. 1839.
„ *la'nipes* (woolly-stalked). Peru.
„ *latila'brum* (broad-lipped). Green. March. Brazil. 1840.
„ *lauchea'num* (Lauchean). ½. Brownish; lip green. Colombia. 1893.
„ *Lawre'nceæ* (Lady Lawrence's). 1. Pink. Guatemala. 1847.
„ *laxiflo'rum* (loose-flowered). Country unknown.
„ *ledifo'lium* (Ledum-leaved). Yellow. Mexico.
„ *lentigino'sum* (freckled). Yellow, green. March. Demerara. 1837.
„ *leucochi'lum* (white-lipped). See E. LACUSTRE.
„ *leucochi'lum* (white-lipped) of Link. Yellow. Colombia.
„ *Linde'nii* (Mr. Linden's). Rose. Merida.
„ *lindleya'num* (Lindleyan). 2. Rose-purple; lip white, purple. Mexico. 1842.
„ „ *Cente'ræ* (Mrs. Center's). Rosy-lilac. Costa Rica. 1873.
„ „ *supe'rbum* (superb). Dark rose. Guatemala.
„ *linea're* (narrow-*leaved*). Peru.
„ *linearifo'lium* (narrow-leaved). See E. ACICULARE.
„ *linkia'num* (Link's). Yellow, white. March. Mexico. 1840.
„ *longibu'lbon* (long-bulbed). Guiana. 1839.
„ *longi'colle* (long-necked). White, yellow. Guiana. 1844.
„ *longipe'talum* (long-petalled). See E. ALATUM.
„ *macrochi'lum* (large-lipped). See E. ATROPURPUREUM.
„ *macrosta'chyum* (large-spiked). Green, white. Colombia. 1845.
„ *mantinia'num* (Mantinian). White-green, with purple-brown dots. Trop. Amer. 1892. (Syn. *Nanodes.*)
„ *marmora'tum* (marbled). Crystalline white, with purple blotches. Mexico. 1876.
„ *Matthe'wsii* (Matthews'). Transparent, shaded purple; lip blood-purple. Peru. 1886.
„ *megala'nthum* (great-flowered). See E. FRAGRANS MEGALANTHUM.
„ *Medu'sæ* (Medusa's). Green, purple. Ecuador. (Syn. *Nanodes Medusæ.*)
„ *melanocau'lon* (black-stemmed). 1. Lilac. June. Mexico. 1848.
„ *meli'smum* (honey-scented). Mexico. 1869.
„ *michuaca'num* (Michuacan). Pale yellow. Mexico. 1840.
„ *microcha'ris* (little-beauty). Yellow, purple. Guatemala. 1870.
„ *monophy'llum* (one-leaved). White. Demerara.
„ *monroea'num* (Monroe's). White, pink. July. Guatemala. 1840.

E. moorea'num (Moorean). Green, purple, fragrant. Costa Rica. 1891.
„ *Mose'ni* (Mosen's). Vermilion, red. Colombia (?). 1880.
„ *muscí'ferum* (fly-bearing). See E. ANCEPS.
„ *myria'nthum* (myriad-flowered). Lilac. Guatemala. 1866.
„ *nævo'sum* (freckled). White, yellow. February. Oaxaca. 1846.
„ *nemora'le* (wood). Purple. June. Mexico. 1840.
„ *nocti'rnum* (night-*fragrant*). 1. White. September. Martinique. 1836.
„ „ *angustifo'lium* (narrow-leaved). W. Ind. 1835.
„ „ *latifo'lium* (broad-leaved). 1. Yellow, white. October. W. Ind. 1836.
„ „ *pu'milum* (dwarf). Ensequibo. 1835.
„ *nu'tans* (nodding). 1. Green. July. Jamaica. 1793.
„ *obtu'sum* (blunt). Mexico.
„ *ochra'ceum* (ochreous). Yellow-white. Mexico. 1838.
„ *odorati'ssimum* (sweetest-scented). 1. Dingy green. August. Rio Janeiro. 1827.
„ *oncidioi'des* (oncidium-like). 3. Yellow, brown. S. Amer.
„ *orchidiflo'rum* (orchis-flowered). Brown. Bahia.
„ *organe'nse* (Organ Mountains). ½. Dull yellow, lined brown-purple. Brazil. 1898.
„ *orgya'le* (six-foot). Yellow. St. Bogota.
„ *Ortgié'sii* (Ortgies's). Red, white; lip purple. 1892.
„ *osma'nthum* (scented-flowered). Brown, white, rose-purple. Brazil. 1892.
„ *ovalifo'lium* (oval-leaved). Green, white. April. Mexico. 1835.
„ *o'vulum* (egg-like). Green, white. July. Bolanos. 1842.
„ *oxype'talum* (sharp-petaled). Yellow. April. Cuba.
„ *pachya'nthum* (thick-flowered). Green. Guiana. 1837.
„ *palea'ceum* (scaly). See E. AURITUM.
„ *pallidiflo'rum* (pale-flowered). White, rose, purple. Dominica. 1829.
„ *palpi'gerum* (palpi-bearing). Lilac. Mexico. 1879.
„ *panicula'tum* (panicled). 3 to 4. Lilac. Trop. Amer. 1868.
„ *papillo'sum* (nippled). See E. ADENOCARPUM.
„ *parkinsonia'num* (Mr. Parkinson's). 2. Green, yellow. September. Mexico. 1838.
„ *pasto'ris* (shepherd's). White, green. March. Mexico. 1836.
„ *pa'tens* (spreading). White. W. Ind. and Guatemala.
„ *payte'nse* (Paytan). Brilliant scarlet, orange. Colombia; Peru. 1885.
„ *phœni'ceum* (purple). ½. Cream, purple, green. June. Cuba. 1840.
„ *physo'des* (bladder-like). White, brown. Costa Rica. 1873.
„ *pi'ctum* (painted). Yellow, crimson. Guiana. 1838.
„ *piperi'num* (peppery-*scented*). Colombia. 1846.
„ *plica'tum* (plaited). Green, violet, purple. Cuba. 1847.
„ *polya'nthum* (many-flowered). Brown, white. Mexico. 1851.
„ *polybu'lbon* (many-bulbed). Yellow, white. W. Ind.
„ *polysta'chyum* (many-spiked). Yellow. June. Peru. 1840.
„ *primuli'num* (primrose-*scented*). Yellow, brown. Bahamas. 1837.
„ *prismatoca'rpum* (prism-fruited). Yellow, rose, purple. Central Amer. 1862.
„ *Pri'stes* (Pristes). Cinnabar, yellow. 1886.
„ *propi'nquum* (related). Brown. Mexico.
„ *Pseu'd-epide'ndrum* (false Epidendrum). Green, orange, red. Panama. 1871.
„ „ *aura'tum* (golden). Lip crimson, edged orange. 1885.
„ *pteroca'rpum* (winged-fruited). Plant diminutive. Mexico. 1905.
„ *pugionifo'rme* (dagger-formed). Green, yellow, white. Mexico. 1890.
„ *pu'milum* (dwarf). Greenish-yellow. Costa Rica. 1893.
„ *puncta'tum* (dotted). See CYRTOPODIUM PUNCTATUM.
„ *puncti'ferum* (spot-bearing). Green; lip spotted purple. Brazil. 1908.

E. punctula'tum (dotted). Brown, green, yellow, dotted brown. Mexico. 1885.
„ *purpurachy'lum* (purple-juiced). Olive, green, deep purple, fragrant. 1900.
„ *pu'rum* (pure). Greenish-yellow; lip white. Colombia. 1842.
„ *pusi'llum* (insignificant). See E. BRACTEATUM.
„ *pygmæ'um* (pigmy). See HORMIDIUM UNIFLORUM.
„ *pyrifo'rme* (pear-shaped-*bulbed*). Red, yellow. January. Cuba.
„ *quadra'tum* (four-sided). Green, brown. Trop. Amer. 1850.
„ *radia'tum* (ray-*flowered*). 1. Green, purple. Mexico. 1835.
„ *radi'cans* (stem-rooting). Orange, yellow. October. Mexico. 1839.
„ *ramo'sum* (branched). Pale yellow. W. Ind. 1836.
„ *Ra'ndii* (Rand's). See E. ATROPURPUREUM RANDII.
„ *rani'ferum* (frog-bearing). ½. Green, brown. May. Mexico. 1839.
„ *recurva'tum* (bent-back). Rose. April. Venezuela. 1845.
„ *refra'ctum* (broken). Dark red. May. Caraccas.
„ *replica'tum* (re-folded). Yellow, pink. Colombia. 1881.
„ *rhizo'phorum* (rooting). See E. RADICANS.
„ *ri'gidum* (stiff-*petaled*). 1. Yellowish-white. June. Jamaica. 1836.
„ *ru'bro-ci'nctum* (red-edged). See E. DENSIFLORUM.
„ *ru'fum* (red). Red. Bahamas. 1845.
„ *sacchara'tum* (sugared). 1. Greenish-yellow; lip white, rose-purple. British Guiana. 1908.
„ *saxa'tile* (rock). Red, purple. Guiana.
„ *Sce'ptrum* (sceptre-like). Yellow, purple. Jago.
„ *Schombu'rgkii* (Schomburg's). 2. Scarlet. Guiana. 1837.
„ *scri'ptum* (written). Mexico.
„ *Scute'lla* (saucer-shaped). Green, yellow. Guiana.
„ *secu'ndum* (one-sided). 2. Red. May. Trop. Amer. 1798.
„ *selli'gerum* (saddle-formed). Pale white. April. Mexico. 1836.
„ *seria'tum* (rowed). Green, white, violet. Mexico. 1870.
„ *se'rpens* (snake-like). Violet. Peru.
„ *sine'nse* (Chinese). See CYMBIDIUM SINENSE.
„ *Skinne'ri* (Skinner's). ½. Green, white. July. Cumana. 1834. (Syn. *Barkeria Skinneri.*)
„ „ *ma'jor* (large-flowered). 1. Light purple. November. 1847.
„ *Sophroni'tis* (Sophronitis). Green, purple. Ecuador. 1857.
„ *specta'bile* (showy). Lilac and purple. July. Guatemala. 1843. (Syn. *Barkeria spectabilis.*)
„ *spondia'dum* (cupped). Costa Rica.
„ *squa'lidum* (squalid). Yellow, brown. June. Mexico. 1840.
„ *squama'tum* (scaly). Brazil.
„ *stamfordia'num* (Stamford's). White, red. April. Guatemala. 1836.
„ „ *leea'num* (Leean). Spotted purple. 1888.
„ *stangea'num* (Stangean). ½. Green. Panama. 1881.
„ *stanhopea'num* (Stanhopean). Green and purple. Colombia. 1897.
„ *stenope'talum* (acute-petaled). 1. Rose. March. Jamaica.
„ *stria'tum* (streaked). White, red. May. Mexico. 1838.
„ *subulatifo'lium* (awl-leaved). Yellow. Mexico.
„ *syringothy'rsis* (Lilac-thyrsed). Rose-purple, white. Bolivia. 1868.
„ *tampe'nse* (Tampan). Yellow, brown; lip white, purple. Florida. 1847.
„ *teretifo'lium* (terete-leaved). W. Ind.
„ *tessella'tum* (chequered). Guatemala. 1838.
„ *tibi'cinis* (piper's). See SCHOMBURGKIA TIBICINIS.
„ *tigri'num* (tiger-like). Yellow, red. Merida.
„ *tolime'nse* (Toliman). Yellow. Tolima. 1845.
„ *torqua'tum* (collared). Colombia.
„ *tovare'nse* (Tovaran). Colombia.
„ *trachychi'lum* (rough-lipped). Olive, green, yellow, dotted red. Mexico.
„ *tri'color* (three-coloured). ½. Light yellow. Venezuela. 1893.
„ *trida'ctylum* (three-fingered). See AMBLOSTOMA CERNUUM.

E. tri'dens (three-toothed). White, green. April. Demerara. 1836.
„ *tripuncta'tum* (three-spotted). See E. GHIESBREGHTIANUM.
„ *Turialva'e* (Mme. Turialva's). Costa Rica. 1871.
„ *umbella'tum* (umbelled). Green. Trop. Amer. 1793.
„ *Umlauf'ii* (Umlauff's). See E. COSTARICENSE.
„ *undula'tum* (waved). See ONCIDIUM CARTHAGINENSE.
„ *vandifo'lium* (Vanda-leaved). Purple. Mexico. 1849.
„ *vanneria'num* (Vannerian). (G. C., 1885, xxiv., 678.)
„ *varico'sum* (swollen). Central Amer.
„ *variega'tum* (variegated-*leaved and flowered*). 1. Green, white. January. Rio Janeiro. 1829.
„ „ *coria'ceum* (leathery). 1. Green, purple. Demerara.
„ *veno'sum* (veined-*lipped*). White, violet. Mexico.
„ *verruco'sum* (warted-*flower-stalked*). See E. NEMORALE.
„ *vesica'tum* (bladdery). Brazil.
„ *vincenti'num* (St. Vincent's). St. Vincent. 1840.
„ *viola'ceum* (violet). See CATTLEYA LODDIGESII.
„ *vi'rens* (green). Green. Serampore.
„ *vire'scens* (greenish). See E. ANCEPS.
„ *virga'tum* (twiggy). Mexico.
„ *viridiflo'rum* (green-flowered). Green, purple. Brazil. 1842.
„ *vi'ridi-purpu'reum* (green-purple). See E. ANCEPS.
„ *vitelli'num* (yoke-of-egg-*coloured*). 1. Orange, yellow. September. Mexico. 1840.
„ „ *flo're ple'no* (double). Flowers regular, of 12 segments. 1890.
„ „ *gigante'um* (giant). See E. V. MAJUS.
„ „ *ma'jus* (larger). Orange, yellow. September. Oaxaca. 1841.
„ *vivi'parum* (viviparous). White. January. Guiana. 1838.
„ *volu'bile* (twisting). Peru.
„ *Wagene'ri* (Wagener's). See E. VIRENS.
„ *Walli'sii* (Wallis's). Yellow, brown, white. Colombia. 1875.
„ *watsonia'num* (Watsonian). Brazil. 1892.
„ *wendlandia'num* (Wendlandian). Green; lip white, with purple lines. Mexico. 1893.
„ *xanthi'num* (yellow). Brazil.
„ *Xiphe'res* (Xipheres). Brownish-yellow, sulphur. Peru. 1853.
„ *xipheroi'des* (Xipheres-like). Green; lip yellow, with white callus. Brazil. 1896.

EPIDERMIS. The skin or outer layer of cells of the leaves and younger stems of plants. It usually consists of a hardened cuticle, beneath which are cells holding water but no chlorophyll or leaf green. The epidermis is furnished with pores known as stomata, most often on the undersurface of leaves, and on young stems, but some leaves have them on both surfaces.

EPIGÆ'A. (From *epi*, upon, and *gaia*, the earth; referring to its trailing habit. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
Hardy evergreen sweet-scented trailers, suitable for rock-works, and delighting in moist, peaty soil; propagated chiefly by layers; would be better in a cold pit during severe weather.
E. re'pens (creeping). ½. White. July. N. Amer. 1736.
„ „ *rubicu'nda* (red-*flowered*). ½. Red. March. 1836.

EPIGY'NIUM ACUMINA'TUM. See CORALLOBOTRYS ACUMINATA.

EPIGY'NIUM LEUCO'BOTRYS. See VACCINIUM SERRATUM LEUCOBOTRYS.

EPILO'BIUM. Willow Herb. (From *epi*, upon, and *lobos*, a pod; flowers superior, or seated on the seed-pod. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Clarkia and Zauschneria.)
Hardy herbaceous perennials. Divisions, and many by seeds; common, light garden-soil.
E. alpe'stre (alpine). See E. TRIGONUM.
„ *alpi'num* (alpine). Rose. N. Temperate Regions.
„ *alsinifo'lium* (Alsine-leaved). Pink. Britain.
„ *angustifo'lium* (narrow-leaved). 4. Purple. July. Britain.
„ „ *album* (white-*flowered*). 4. White. July. Britain.
E. angusti'ssimum (narrowest-*leaved*). See E. DODONÆI.
„ *billardieria'num* (Billardierian). Australia.
„ *bre'vipes* (short-stalked). New Zealand.
„ *cane'scens* (hoary). Rose. June. Australia. 1826.
„ *colora'tum* (coloured). 3. Purple. June. N. Amer. 1805.
„ *crassifo'lium* (thick-leaved). See E. DODONÆI.
„ *cyli'ndricum* (cylindrical). See E. ROSEUM.
„ *davu'ricum* (Davurian). ½. White. June. Davuria. 1822.
„ *Dodonæ'i* (Dodoen's). 1½. Purple. July. France. 1700.
„ *Flesiche'ri* (Fleischer's). See E. DODONÆI.
„ *glabe'llum* (small-smooth). New Zealand.
„ *hirsu'tum* (hairy. *Codlins and Cream*). 4. Purple. July. Britain.
„ „ *variega'tum* (variegated-*leaved*). 4. Rosy. June. England.
„ *hypericifo'lium* (Hypericum-leaved). Red. June. S. Europe. 1837.
„ *La'myi* (Lamy's). Pink. Britain.
„ *lanceola'tum* (spear-head-*leaved*). 1½. Purple. July. Italy. 1810.
„ *latifo'lium* (broad-leaved). N. Amer.
„ *linnæoi'des* (Linnæa-like). New Zealand.
„ *lo'ngipes* (long-stalked). See E. PEDUNCULA'RE.
„ *lu'teum* (yellow). 1. Pale yellow. N. Amer.
„ *melanocau'lon* (black-stemmed). New Zealand.
„ *minu'tum* (small). 1. White. August. N.W. Amer. 1838.
„ *monta'num* (mountain). Rose or pink. Britain.
„ *nummulurifo'lium* (money-leaved). New Zealand.
„ *nu'tans* (nodding). Blush. June. Bohemia. 1827.
„ *obcorda'tum* (obversely-heart-shaped). ½. Bright rose. California. 1885.
„ *obscu'rum* (obscure). 1 to 2. Rose. Britain.
„ *parvifo'rum* (small-flowered). Pink or rose. Britain.
„ *pedunculа're* (long-stalked). Rosy-pink. New Zealand.
„ *ro'seum* (rosy). 1½. Rose. July. Britain.
„ *rosmarinifo'lium* (rosemary-leaved). 2. Purple. June. N. Europe. 1800.
„ *spica'tum* (spiked). See E. ANGUSTIFOLIUM.
„ *stri'ctum* (erect). 1½. Purple. July. Pennsylvania. 1817.
„ *tetrago'num* (square-stemmed). 1 to 2. Rose. Britain.
„ *tomento'sum* (downy). See E. HIRSUTUM.
„ *trigo'num* (three-angled). 1 to 2. Rose or pink. Europe.
„ *villo'sum* (long-haired). See E. HIRSUTUM.
„ *virga'tum* (twiggy). See E. OBSCURUM.

EPIME'DIUM. Barrenwort. (From *epimedion*, a name used by Pliny. Nat. ord. *Berberids* [Berberidaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Jeffersonia.)
Hardy herbaceous perennials. Cuttings and divisions; sandy loam. *E. macra'nthum viola'ceum* likes the protection of a cold pit. *E. alpi'num* does best in moist, peaty soil.
E. alpi'num (alpine). ¾. Crimson. May. England.
„ *conci'nnum* (neat). ½. Purple. April. Japan. 1872.
„ *diphy'llum* (twin). See ACERANTHUS DIPHYLLUS.
„ *grandiflo'rum* (large-flowered). White. April. Japan. 1836.
„ *hexa'ndrum* (six-stamened). See VANCOUVERIA HEXANDRA.
„ *macra'nthum* (large-flowered). 1. White, violet. April. Japan. 1836.
„ „ *viola'ceum* (violet). Violet.
„ *musschia'num* (Mussch's). 1. White. March. Japan. 1836.
„ *perralderia'num* (Perralderian). Yellow, with red nectaries. Algeria.
„ *pinna'tum* (pinnate). 1. Yellow. April. Persia.
„ *ptero'ceras* (winged-horned). ½. Yellow. Caucasus. 1845.
„ *ru'brum* (red). 1. Crimson. April. Japan.
„ „ *versi'color* (changing colour). Yellow, red.
„ *viola'ceum* (violet). See E. MACRANTHUM VIOLACEUM.

EPIPA'CTUS. (From *epipegnuo*, to coagulate; its effect on milk. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Listera.)
Pretty terrestrial orchids, not difficult to grow.

Divisions; common soil; kept rather dry during the resting period.

E. gigante'a (giant). 1. Green and pink. Western N. Amer. and Temperate Asia. 1899.
„ *latifo'lia* (broad-leaved). 1½. Purple. July. Britain.
„ „ *me'dia* (intermediate). 1½. Green, purple. September. In woods.
„ „ *ova'lis* (oval). 1½. Blush, red. July. Mountain sides.
„ „ *purpura'ta* (purpled). 1½. Green, pink. July.
„ *palu'stris* (marsh). ½. Purple. July. England.
„ *purpu'rea* (purple). See CEPHALANTHERA RUBRA.
„ *roylea'na* (Roylean). See E. GIGANTEA.

EPI'PHORA PUBE'SCENS. See POLYSTACHYA PUBESCENS.

EPIPHYLLA'NTHUS. (From *epi*, upon, *phullon*, a leaf, and *anthos*, a flower; the flowers are borne on leaf-like branches. Nat. ord. Cactaceæ.)

An epiphytic plant with branching, jointed stems like Epiphyllum, which see for culture.

E. obtusa'ngulus (blunt-angled). Rose. Brazil. 1906. Syns. *Epiphyllum obtusangulum* and *Cereus obtusangulus.*

EPIPHY'LLUM. (From *epi*, upon, and *phullon*, a leaf; flowers borne on the edges of the leaf-like branches. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia.*)

Stove fleshy-stemmed plants. Cuttings in summer, dried at the bottom before inserting them, or rather, laying them down in any loose material, such as gravel and rough leaf-mould; soil, loam, peat, lime-rubbish, and dried cow-dung in equal proportions. The smaller kinds do well grafted on the *Ce'reus speciosi'ssimus*, *Pereskia*, &c. Summer temp., 60° to 80°; winter, 38° to 45°.

E. Altenstei'nii (Altenstein's). Red. Brazil. 1821.
„ *cruе'ntum* (blood-coloured). White.
„ „ *Ackerma'nni* (Ackermann's). See PHYLLOCACTUS ACKERMANNI.
„ *delica'tum* (pale-coloured). White, flushed pink. Brazil. 1902.
„ *Gærtne'ri* (Gærtner's). Orange-scarlet. Brazil. 1884.
„ *Gibso'ni* (Gibson's). Dark orange-red. 1886.
„ *Guedne'yri* (Guedneyr's). Creamy-white. 1875.
„ *makoya'num* (Makoyan). See E. GÆRTNERI.
„ *Rucke'ri* (Rucker's). See E. TRUNCATUM.
„ *russellia'num* (Russellian). Rose. May. Brazil.
„ „ *ru'brum* (red). Rose-red.
„ „ *supe'rbum* (superb). Purple, white.
„ *sple'ndidum* (splendid). See CEREUS SPLENDIDUS.
„ *trunca'tum* (snipped). Rose. June. Brazil. 1818,
„ „ *bi'color* (two-coloured). White, edged rose.
„ „ *cocci'neum* (scarlet). Rich scarlet.
„ „ *ruckeria'num* (Ruckerian). Purple, violet.
„ „ *viola'ceum* (violet). White, purple.

EPIPRE'MNUM. (From *epi*, upon, and *premnon*, a stem; grows, attached to the stems of trees. Nat. ord. Araceæ.)

Stove climbers, with ornamental foliage. Cuttings in bottom-heat. Fibrous loam, peat, some charcoal and sand.

E. gigante'um (giant). 100. Yellow-green. Leaves undivided. Malay Peninsula. 1904.
„ *mira'bile* (wonderful). Leaves of the full-grown plant deeply lobed. Trop. Asia. 1882. "Tonga Plant."

EPI'SCIA. (From *epi*, upon, and *skia*, shade; the plants grow in shady places. Nat. ord. Gesneraceæ.)

Stove herbs, mostly trailing, with short stems. Seeds; cuttings in sand, in a close case with bottom-heat. Light, rich soil.

E. æ'nea (bronzy). White. Colombia. 1875.
„ *bi'color* (two-coloured). Purple, white. Colombia.
„ *bracte'scens* (bracted). 2. White. June. Trop. Amer. 1852.
„ *chontale'nsis* (Chontalese). White. Nicaragua. 1867.
„ *cilio'sa* (eye-lashed). Trop. Amer.
„ *cuprea'ta* (coppery). Scarlet, yellow. June. Nicaragua. 1844.
„ „ *meta'llica* (metallic). Light scarlet. Colombia. 1869.
„ „ *viridifo'lia* (green-leaved). Leaves coppery-green. Colombia. 1860.
E. de'nsa (dense). Yellow, tinged purple. Leaves purplish. British Guiana. 1895.
„ *ery'thropus* (red-stalked). Flesh, with purple-orange spots. Colombia. 1876.
„ *fu'lgida* (shining). Scarlet. Colombia. 1873.
„ *gla'bra* (smooth). White. Autumn. Trop. Amer. 1846.
„ *Lucia'ni* (Lucian's). Bright red. Colombia. 1876.
„ *macula'ta* (blotched). Yellow and brown. British Guiana. 1890.
„ *melittifo'lia* (balm-leaved). Crimson. Spring. W. Ind. Brazil. 1852.
„ *pi'cta* (painted). White. Trop. Amer. 1851.
„ *pulche'lla* (pretty). Yellow, red. July. Trinidad.
„ *puncta'ta* (spotted). ½. Yellow, violet. May. Trop. Amer.
„ *splen'dens* (brilliant). Light red. Colombia. 1866.
„ *tessella'ta* (chequered). Yellow. Peru. 1869.
„ *villo'sa* (shaggy). 1½. White. May. Gulana.

EPISE'MA CÆRU'LEO-CE'PHALA. The Figure-of-eight Moth. See DILOBA CÆRULEO-CEPHALA.

EPISTE'PHIUM. (From *epi*, upon, and *stephos*, a crown. Nat. ord. Orchidaceæ.)

Greenhouse terrestrial Orchid. See ORCHIDS FOR CULTURE.

E. Willia'msii (Williams's). Rose, purple. Brazil. 1865.

EQUISE'TUM. Horse-tail. (Derived from *equus*, a horse, and *seta*, a strong hair. Nat. ord. Equisetaceæ.)

Hardy perennial herbs. *E. ma'ximum* is a strong growing species, suitable for damp spots and the edges of ponds; *E. sylva'ticum* is slender, graceful, and likes shade. Division of clumps.

E. ma'ximum (largest). 2 to 5. Britain.
„ *sylva'ticum* (wood). 1½ to 2. Britain.

ERAGRO'STIS. Love Grass. (From *eros*, love, and *agrostis*, a grass. Nat. ord. Gramineæ.)

Hardy and half-hardy grasses of an ornamental character. Seeds.

E. abyssi'nica (Abyssinian). See POA ABYSSINICA.
„ *ægypti'aca* (Egyptian). N. Africa.
„ *capilla'ris* (hair-like). N. Amer.
„ *cilia'ris* (eye-lashed). Tropical Regions.
„ *e'legans* (elegant). Brazil.
„ *ma'jor* (greater). Tropical Regions.
„ *megasta'chya* (large-spiked). See E. MAJOR.
„ *mi'nor* (smaller). Tropics.
„ *pectina'ta* (combed). Mexico.
„ *peruvia'na* (Peruvian). S. Amer.
„ *pilo'sa* (thinly-hairy). N. Amer.
„ *poæoi'des* (Poa-like) See E. MINOR.
„ *Pu'rshii* (Pursh's). N. Amer.
„ *re'ptans* (creeping). Tropical Regions.
„ *te'nuis* (slender). N. Amer.

ERA'NTHEMUM. (From *erao*, to love, and *anthos*, a flower; referring to the beauty of the flowers. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia.*)

Cuttings of points of shoots when a little firm, in sandy loam, in bottom-heat, in a propagating case; peat one part, loam two parts. Summer temp., 60° to 75°; winter, 45° to 55°.

E. acantho'phorum (thorny). See HAPLANTHUS VERTICILLARIS.
„ *albifl'rum* (white-flowered). 2½. White. July. Brazil.
„ *a'lbo-margina'tum* (white-margined). Leaves with broad white edge. Polynesia. 1880.
„ *a'lbum* (white). 2. White. June. E. Ind. 1816.
„ *ambi'guum* (doubtful). 2. Red. July. 1821. See ANTHACANTHUS ACICULARIS.
„ *Anderso'ni* (Anderson's). White, spotted purple. November. Malaya. 1868.
„ *aspe'rsum* (scattered). White, spotted purple. Solomon Isles. 1868.
„ *atropurpu'reum* (dark-purple). Leaves and stems dark purple. Polynesia. 1875.
„ *barlerioi'des* (Barleria-like). Blue. August. See DÆDALACANTHUS SUFFRUTICOSUS
„ *Beyri'chii* (Beyrich's). Lilac. Brazil.
„ „ *Gaudichau'dii* (Gaudichaud's). Leaves variegated. Brazil. 1869.

E. Beyri'chii variega'tum (variegated). Leaves variegated with white. Brazil. 1866.
„ *bi'color* (two-coloured). ½. White, red. July. Luzon. 1802.
„ *borneé'nse* (Bornean). White, sulphur. May. Borneo.
„ *capé'nse* (Cape). See DÆDALACANTHUS MONTANUS.
„ *cinnabari'num* (cinnabar). Scarlet. Burma. 1880.
„ „ *ocella'tum* (eyed). Crimson, with white spot. 1871.
„ *Coopé'ri* (Cooper's). White, purple. June. New Caledonia. 1864.
„ *crenula'tum* (notched). Lilac. Autumn. Himalayas. 1824.
„ *eboracé'nse* (New York). White. Duke of York's Island. 1881.
„ *Eldora'do* (Eldorado). Leaves golden-yellow, veined green. Polynesia. 1877.
„ *e'legans* (elegant). 3. Scarlet. June. Guinea. 1824.
„ *fœcu'ndum* (prolific). 1½. Lilac. June. Brazil. 1829.
„ *Gaudichau'dii* (Gaudichaud's). See E. BEYRICHII GAUDICHAUDII.
„ *graciliflo'rum* (graceful-flowered). Penang.
„ *hypocraterifo'rme* (salver-shaped). Red. Trop. Africa. 1870.
„ *i'gneum* (fiery). Yellow. Leaves veined red. Peru.
„ *i'ndicum* (Indian). Red. Himalaya.
„ *laxiflo'rum* (lax-flowered). 2 to 3. Purple. Fiji. 1877.
„ *leuconeu'ron* (white-nerved). Lilac. Brazil.
„ *longifo'lium* (long-leaved). Scarlet. November. S. Amer.
„ *macrophy'llum* (large-leaved). See DÆDALACANTHUS MACROPHYLLUS.
„ *macula'tum* (blotched). Leaves blotched.
„ *marmora'tum* (marbled). S. Amer. 1874.
„ *monta'num* (mountain). 2. Lilac, purple. March. Ceylon. 1843.
„ *Moo'rei* (Moore's). Leaves spotted. Polynesia.
„ *nervo'sum* (nerved). See DÆDALACANTHUS NERVOSUS.
„ *nigre'scens* (blackish). See E. ATROPURPUREUM.
„ *ni'grum* (black). Leaves purple. Solomon Islands. 1880.
„ *palati'ferum* (palate-bearing). Scarlet, yellow. Himalayas. 1871.
„ *Pari'shii* (Parish's). Pale lilac. Burma. 1864.
„ *pulche'llum* (pretty). See DÆDALACANTHUS NERVOSUS.
„ *racemo'sum* (racemed). Blush. August. E. Ind. 1826.
„ *reticula'tum* (netted). Leaves netted with yellow. Polynesia. 1875.
„ *ro'seum* (rosy). 2. Rose-purple. Brazil. 1876.
„ *rubrone'rvium* (red-nerved). See FITTONIA VERSCHAFFELTII.
„ *sanguineole'ntum* (blood-red). Leaves netted red. Madagascar. 1864.
„ *Schombu'rgkii* (Schomburgk's). See E. RETICULATUM.
„ *spino'sum* (spined). 3. July. W. Ind. 1733. See ANTHACANTHUS SPINOSUS.
„ *stri'ctum* (erect). See DÆDALACANTHUS STRICTUS.
„ *tri'color* (three-coloured). Leaves blotched, grey-purple and salmon. Polynesia. 1876.
„ *tubercula'tum* (tuberculated). White. New Caledonia. 1863.
„ *varia'bile* (variable). 2. Purple. June. Australia. 1820.
„ *veluti'num* (velvety). Rose-pink. Leaves velvety olive-green. 1886.
„ *verbena'ceum* (Verbena-like). White variegation. Brazil. 1862.
„ *Verschafe'ltii* (Verschaffelt's). See FITTONIA VERSCHAFFELTII.
„ *versi'color* (changing-coloured). Leaves variegated. Polynesia. 1875.
„ *Wa'ttii* (Watt's). 1 to 2. Deep blue. India. 1901.

ERA'NTHIS. Winter Aconite. (From *er*, spring, and *anthos*, a flower; referring to its early flowering. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)
Hardy tubers; offsets; common soil.
E. cili'cica (Cilician). Bright yellow. Cilicia. 1900.
„ *hyema'lis* (*common* winter). ½. Yellow. February. Italy. 1596.
„ *sibi'rica* (Siberian). ½. Yellow. March. Siberia. 1826.

ERCI'LLA. (The diminutive of *ercis*, creeping. Nat. ord. Phytolaccaceæ.)
Hardy, evergreen climber, clinging like Ivy, and requiring a wall.
E. spica'ta (spicate). See E. VOLUBILIS.
„ *volu'bilis* (climbing). Purple. Chili and Peru. 1840.

ERECHTHI'TES. (From *erechtho*, to distress; possibly from the extreme difficulty of defining the limits of the species. Nat. ord. Compositæ. Allied to Brachyglottis and Cineraria.)
Hardy, or half-hardy annual. Seeds. Ordinary garden-soil.
E. valerianæfo'lia (Valerian-leaved). 4. Yellow. July. Brazil. 1800.

EREMÆ'A. (From *eremos*, solitary; referring to the female organ, or solitary style. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*. Allied to Callistemon.)
Greenhouse evergreens, from Swan River. Cuttings of young shoots in April or May, in sand, under a bell-glass; peat one part, and loam two parts. Winter temp., 35° to 45°.
E. ericifo'lia (heath-leaved). See E. PILOSA.
„ *fimbria'ta* (fringed-*flowered*). Purple. June. 1841.
„ *pilo'sa* (hairy). Pink. June. 1842.

ERE'MIA. (From *eremos*, solitary; referring to the seed being but one in a cell. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Erica.)
Greenhouse evergreens, from South Africa. Cuttings of the points of shoots when fresh growth has extended beyond one inch; sandy peat. Winter temp., 35° to 45°.
E. To'tta (Hottentot). 2. Red. June. 1810.
„ *tubercula'ris* (tubercular). S. Africa.

EREMO'PHILA. (From *eremos*, solitary, or desert, and *phileo*, to love; the plants grow in dry places. Nat. ord. Myoporaceæ.)
Greenhouse evergreen shrubs from Australia. Cuttings of young shoots in sand, under a bell-glass. Loam, peat, and sand.
E. Brow'nii (Brown's). 2. Yellow, or red. October. 1803.
„ *longifo'lia* (long-leaved). 4. Scarlet. April. 1825.
„ *macula'ta* (spotted). 3. Scarlet. April. 1820.

EREMOSPA'RTON. (From *eremos*, solitary, and *sparton*, broom. Nat. ord. Leguminosæ.)
Hardy leafless shrub. Seeds; cuttings. Ordinary soil.
E. aphy'llum (leafless). 4. Violet. July. Caspian region. 1800.

EREMOSPA'THA. (From *eremos*, solitary, and *spatha*, a spathe; the floral spathe is solitary. Nat. ord. Palmaceæ.)
A slender, climbing, stove Palm. For cultivation, see PALMS.
E. haullevillea'na (Haullevillean). Leaves pinnate, with a prickly apex. Congo. 1909.

EREMOSTA'CHYS. (From *eremos*, solitary, and *stachus*, a spike; usually only one spike from a plant. Nat. ord. Labiatæ.)
Hardy herbs for the herbaceous border. Cuttings in a cold frame in spring, and seeds. Light, well-drained soil.
E. labio'sa (large-lipped). Persia.
„ *lacinia'ta* (cut-leaved). 6. Purple, yellow. July. Asia Minor. 1731.
„ „ *fla'va* (yellow). Yellow.
„ *moluccelo'ides* (Molucella-like). 2. Purple. Tartary. 1796.
„ *supe'rba* (superb). 1. Primrose-yellow. Western Himalaya. 1907.

EREMU'RUS. (From *eremos*, solitary, and *oura*, tail; referring to the flower-spike. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Asphodel.)
Hardy herbaceous perennial, with yellow flowers. Divisions; sandy loam.
E. alta'icus (Altaian). Siberia.
„ *auranti'acus* (orange). See E. BUNGEI.

E. bucha'ricus (Bucharan). 3. White, with reddish midrib. Bokhara. 1890.
„ *Bu'ngei* (Bunge's). 2 to 3. Yellow. Persia. 1879.
„ „ *citri'nus* (citron). Citron-yellow. 1907.
„ *cauca'sicus* (Caucasian). See E. SPECTABILIS.
„ *Elwe'sii* (Elwes's). See E. ROBUSTUS ELWESIANUS.
„ *himala'icus* (Himalayan). 3 to 6. White. Himalayas. 1881.
„ *Kaufma'nni* (Kaufmann's). Turkestan.
„ *Olgæ* (Olga's). White, with greenish-brown rib. Turkestan.
„ *robu'stus* (robust). 5 to 8. Pink. Turkestan. 1874.
„ „ *a'lbus* (white). Pure white. 1909.
„ „ *elwesia'nus* (Elwesian). 5 to 8. Pink.
„ „ *elwesia'nus a'lbus* (white). White.
„ *specta'bilis* (beautiful). 2. Yellow. May. Siberia. 1800.
„ *turkesta'nicus* (Turkestanian). 4. Reddish-brown.
„ *Wa'rei* (Ware's). 8. Orange-yellow. Central Asia. 1900.

ERGOT. A fungus (*Claviceps purpurea*) attacking the fruits of various grasses, especially rye grass. It forms hard masses of filaments, that project in curved, finger-like masses from the seeds, which are destroyed. The hard masses are known as sclerotia, and from them other bodies like drum-sticks arise, with numerous cavities containing linear spores, by which the fungus reproduces itself.

ERIA. (From *erion*, wool; referring to the down on the leaves of some of the species. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Dendrobium.)

Stove orchids. Divisions; fibrous peat and chopped, decayed moss; the plant to be raised, roots and all, above the surface of the pot or shallow basket. Summer temp., 60° to 90°, with plenty of moisture; winter, 50° to 55°, dry.

E. acerva'ta (heaped-up). White. E. Ind.
„ *acutifo'lia* (acute-leaved). White, violet, purple, yellow. India. 1842.
„ *acuti'ssima* (very acute). Yellow, brown. Pacific Islands (?). 1876.
„ *a'lba* (white). White. India.
„ *a'lbido-tomento'sa* (whitish-felted). Java.
„ *albiflo'ra* (white-flowered). White. S. India. 1893.
„ *ambro'sia* (divine). See BULBOPHYLLUM WATSONIANUM.
„ *ami'ca* (friendly). White, red; lip yellow. India. 1908.
„ *armeni'aca* (apricot). See E. ORNATA.
„ *barba'ta* (bearded). Yellow, purple. N. India. 1856.
„ *barringtonia'na* (Barringtonian). Pale yellow. Borneo. 1872.
„ *bi'color* (two-coloured). White, purple. Ceylon. 1888.
„ *bicrista'ta* (two-crested). Java.
„ *biflo'ra* (two-flowered). ½. Whitish-yellow. Sikkim and Burma. 1896.
„ *bigi'bba* (two-chinned). Red; lip white and purple. Borneo. 1885.
„ *bracca'ta* (breeched). Ceylon. 1859.
„ *bracte'scens* (large-bracted). White, crimson. Singapore, Burma. 1844.
„ *cæspito'sa* (tufted). White, purple, yellow. Hainan. 1896.
„ *carina'ta* (keeled). Sikkim and Khasia.
„ *cinnabari'na* (cinnabar). Cinnabar-orange. Borneo. 1894.
„ *clau'sa* (closed). Whitish-green, with purple keels. Sikkim. 1910.
„ *clavicau'lis* (club-stemmed). White, yellow. Chirra. 1837.
„ *con'color* (one-coloured). Burma.
„ *confu'sa* (confused). India.
„ *convallario'des* (Convallaria-like). White, yellow. N. Ind. 1841.
„ „ *ma'jor* (greater). Ivory-white. 1847.
„ *Corne'ri* (Corner's). Green, white, purplish. Formosa. 1878.
„ *corona'ria* (garland). See TRICHOSMA SUAVIS.
„ *crassicau'lis* (thick-stemmed). Khasia.
„ *crista'ta* (crested). Moulmein.
E. Curti'sii (Curtis's). Yellow-white. Borneo. 1880.
„ *daya'na* (Dayan). Honey-yellow, brown. India. 1877.
„ *Dillwy'nii* (Dillwyn's.) See E. BRACTESCENS.
„ *Elwe'sii* (Elwes's). See E. MEIRAX.
„ *eriæoi'des* (Eria-like). Dingy purple. Queensland. 1909.
„ *excava'ta* (hollowed-out). Light yellow, violet purple. Himalaya. 1878.
„ *extincto'ria* (extinguisher). ½. White, purple. Burma. 1871.
„ *fe'rox* (fierce). Brown and white. Malaya. 1869.
„ *ferrugi'nea* (rusty). White, pink. Himalaya. 1839.
„ *Fitza'lani* (Fitzalan's). Flowers small. Queensland. 1899.
„ *fla'va* (yellow). 1. Yellow, purple. Himalaya.
„ *floribu'nda* (many-flowered). 1. White, crimson. Singapore. 1842.
„ *Fo'rdii* (Ford's). Yellow-green, yellow, crimson veins. Hong-Kong. 1886.
„ *goldschmidtia'na* (Goldschmidtian). Whitish-yellow; lip red. Formosa. 1910.
„ *globi'fera* (globe-bearing). Light yellow, purple. Annam. 1905.
„ *hyacinthoi'des* (hyacinth-like). White, yellow anther. Java. 1908.
„ *i'gnea* (fiery). Vermilion and yellow. Borneo. 1881.
„ *latibractea'ta* (broad-bracted). Tawny yellow, purple. Borneo. 1898.
„ *lauchea'na* (Lauchean). Green and purple. 1892.
„ *leucoxa'ntha* (white-yellow). See TAINIA LATIFOLIA.
„ *Licheno'ra* (Lichenora). E. Ind. 1859.
„ *lineoli'gera* (line-bearing). White, purple. Siam. 1885.
„ *longicau'lis* (long-stemmed). White. Chirra. 1837.
„ *longila'bris* (long-lipped). White, purple. Philippines. 1838.
„ *longispi'ca* (long-spiked). Yellow, red-purple. Borneo. 1907.
„ *margina'ta* (margined). White; lip yellow, edged red. Burma. 1889.
„ *Mei'rax* (Meirax). ½. Brownish-purple. Burma. 1880.
„ *mergue'nsis* (Merguan). Light sulphur. India. 1880.
„ *micholitzia'na* (Micholitzian). New Guinea. 1900.
„ *monosta'chya* (one-spiked). Light greenish-yellow. Java. 1885.
„ *musci'cola* (fly-loving). Yellowish-green. Ceylon. 1887.
„ *myristicæfo'rmis* (Myristica-formed). White. Burma. 1863.
„ *nu'tans* (nodding). White, red, yellow. Malaya.
„ *obe'sa* (fat). White, tinted pink. Burma. 1863.
„ *obli'qua* (oblique). White. Singapore. 1840.
„ *ochra'cea* (ochre-coloured). Greenish-yellow. Malaya. 1909.
„ *orna'ta* (adorned). Java and Philippines.
„ *panicula'ta* (panicled). Greenish-yellow. E. Ind.
„ *pa'nnea* (clothed). Himalaya; Malaya. 1842.
„ *polysta'chya* (many-spiked). Neilgherries.
„ *polyu'ra* (many-tailed). Pink, purple, yellow. Manilla.
„ *pube'scens* (downy). Neilgherries.
„ *pulche'lla* (pretty). Yellow. Malaya. 1840.
„ *retico'sa* (netted). S. India.
„ *reticula'ta* (netted). ½. Purple-brown or red. India.
„ *rhodo'ptera* (red-winged). Whitish-ochre, purple. 1882.
„ *rhyncostyloi'des* (Rhyncostylis-like). White, tinted rose. Java. 1907.
„ *Rimma'ni* (Rimman's). Light yellow, purple. Burma. 1885.
„ *ri'ngens* (gaping). Burma.
„ *ro'sea* (rosy). Pink. Autumn. Hong-Kong. 1824.
„ *rostriflo'ra* (beak-flowered). Fiji.
„ *sphærochi'la* (spherical-lipped). See E. EXCAVATA.
„ *stella'ta* (starred). 2. Yellowish-red. February. Java.
„ *striola'ta* (striated). Ochreous, lined purple. New Guinea. 1888.
„ *veluti'na* (velvety). Singapore. 1840.
„ *vesti'ta* (clothed). 1. Red, brown. India. 1842.
„ *vitta'ta* (striped). Green, striped red. N. Ind. 1882.

ERIA'NTHUS. (From *erion*, wool, and *anthos*, a flower; there is a tuft of woolly hairs at the base of each spikelet of flowers. Nat. ord. Gramineæ.)

Strong growing, perennial grasses of an ornamental character, suitable for subtropical and wild gardening.

E. fastigia'tus (upright). India.
„ *fu'lvus* (tawny). Himalaya.
„ *japo'nicus* (Japanese). See MISCANTHUS JAPONICUS.
„ *Monstie'rii* (Monstier's). 10. Olympus. 1872.
„ *Ravenna'e* (Ravena's). 3 to 5. Mediterranean region.
„ *stri'ctus* (upright). N. Amer.

ERI'CA. Heath. (From *erico*, to break; referring to the brittle nature of the wood. Nat. ord. *Heathworts* [Ericaceæ]. Linn 8-*Octandria*, 1-*Monogynia*.)

All natives of South Africa, except where otherwise mentioned. Cuttings of shoots, when fresh growth enables the handling of them easily, or short side-shoots, pulled off with a heel, trimmed, and the lower leaves removed, inserted in sand, the pots previously being half-filled with drainage, and then filled with sandy peat, in various degrees of fineness—the rough over the drainage, the fine at the top, all surmounted by, at least, half an inch of silver sand, well pressed and watered, and pressed again a day before using, and then covered with a bell-glass, and set in a close pit or frame. Some slow-growing kinds require to be put into heat, in order to get cuttings. Sandy peat for all, especially the slow-growing, using plenty of drainage; for the very strong-growing, a very little fibrous loam may be used. In potting from the cutting-pots, it is best to place three or four round the sides of small pots for the first winter, singling them out, and then keeping them close the following spring, hardening them off by degrees; as larger pots are wanted, pieces of charcoal and sandstone are valuable for keeping the soil open. The pots, if set out of doors, should be protected from the sun in summer; if plunged, drainage should be secured by setting the pot on bricks. Winter temp., 35° to 45°, with abundance of air.

HARDY EVERGREEN.

E. arbo'rea (tree). 5. White. May. S. Europe. 1658.
„ „ *alpi'na* (alpine). 2 to 3. White. Mts. of Cuenca, Spain. 1910.
„ „ *mi'nima* (least). White. April. S. Europe.
„ „ *squarro'sa* (spreading). 4. White. April. S. Europe. 1800.
„ „ *stylo'sa* (*long*-styled). 5. White. May. S. Europe. 1658.
„ *austra'lis* (southern). 2 to 3. Rose-purple. Portugal.
„ *ca'rnea* (flesh-coloured). ½. Pale purple. February. Germany. 1763.
„ „ *a'lba* (white).
„ *cilia'ris* (ciliated). 1. Purple. Autumn. Cornwall.
„ „ *mawia'na* (Mawean). 1 to 1½. Purplish-crimson. Autumn. Portugal. 1882.
„ *cine'rea* (grey). 1. Purple. July, August. Britain.
„ „ *a'lba* (white). 1. White. Britain.
„ „ *cocci'nea* (scarlet). 1. Deep red.
„ *herba'cea* (herbaceous). See E. CARNEA.
„ *lusita'nica* (Portuguese). 3 to 5. White or pale pink. Spain and Portugal.
„ *Macka'ii* (Mackay's). Purple. July. Ireland.
„ *mediterra'nea* (Mediterranean). 4. Purple. April. Portugal. 1648.
„ „ *a'lba* (white). White.
„ „ *hibe'rnica* (Irish). 1 to 1½. Pale purple. Ireland.
„ „ *hy'brida* (hybrid). Rose-purple. January to March.
„ *multiflo'ra* (many-flowered). 1 to 2. Rose-purple. August. S. Europe.
„ *scopa'ria* (broom). White. Western Mediterranean region.
„ *stri'cta* (upright). 2 to 5. Pale purple. July to September. S. Europe. 1795.
„ *Te'tralix* (Tetralix). 1 to 2. Flesh. July to September. Britain. "Cross-leaved Heath."
„ „ *a'lba* (white). White. Britain.
„ *umbella'ta* (umbelled). Pale purple. April to July. Western Mediterranean region.
„ *va'gans* (wandering). 1 to 3. Pale purple. August to October. Cornwall. "Cornish Heath."
E. va'gans a'lba (white). White.
„ „ *grandiflo'ra* (large-flowered). Rosy-purple.
„ *Vei'tchii* (Veitch's). White. Garden hybrid. 1907.
„ *Watso'ni* (Watson's). 1. Purple. S.W. England.

GREENHOUSE EVERGREEN.

E. acumina'ta (pointed-*leaved*). See E. MASSONI.
„ „ *pa'llida* (pale). 1. Pale red. June. 1820.
„ *acu'ta* (pointed-*cupped*). ½. Red. June. 1799.
„ *æ'mula* (lovely).
„ *affi'nis* (allied). 3 to 6. Yellow. June.
„ *aggrega'ta* (crowded). Pink. July. 1803.
„ *aitonia'na* (Aitonian). 2. White, purple. August. 1790.
„ *a'lbens* (whitish). 2. White. July. 1826.
„ *Albe'rti* (Albert's). Gardens.
„ *a'lbida* (whitish). See E. ALBENS.
„ *ama'na* (pleasing). See E. PLUMOSA.
„ *ampulla'cea* (flask-shape-*flowered*). 2. White, red. June. 1790.
„ *andromedæflo'ra* (Andromeda-flowered). 2. Pink. May. 1803.
„ *Arbu'scula* (shrub). See E. LATERALIS.
„ *archeria'na* (Lady Archer's). 1½. Dark scarlet. September. 1796.
„ *a'rdens* (glowing). 2. Scarlet. May. 1800.
„ *argentiflo'ra* (silvery-flowered). See E. PURPUREA.
„ *arista'ta* (awned). 1½. Purple, white. June. 1801.
„ *aristu'lla* (finely-awned). 2. Scarlet. June. 1800.
„ *articula'ris* (jointed). Pink. Spring.
„ *a'spera* (rough). See E. SPARMANNI.
„ *assu'rgens* (rising). See E. PERSOLUTA ALBA.
„ *au'rea* (golden). 2. Orange. August. 1799.
„ *austinia'na* (Austinian). Gardens.
„ *azaleæfo'lia* (azalea-leaved). Lilac. June. 1798.
„ *ba'ccans* (berry-like). 1½ Pink. April to July.
„ *bandonia'na* (Bandon's). 2. Purple. July. 1810.
„ *banksia'na* (Bank's). ½. White, purple. April. 1789.
„ „ *a'lba* (white). ½. White. June. 1812.
„ „ *purpu'rea* (purple). ½. Purple. June. 1800.
„ *barba'ta* (bearded). S. Africa.
„ *beaumontia'na* (Beaumont's). ½. Purple. June. 1820.
„ *bergia'na* (Bergius's). 1½. Purple. June. 1787.
„ *bi'color* (two-coloured). 2. Green, red. June. 1790.
„ *biflo'ra* (two-flowered). See E. DIANTHIFOLIA.
„ *bla'nda* (*Rollinson's* charming). 2. Purple, orange. May. 1798.
„ *blandfordia'na* (Blandford's). 1½. Yellow. May. 1803.
„ *bonplandia'na* (Bonpland's). See E. MUSCARI.
„ *borboniæfo'lia* (Borbonia-leaved). 1. Red. June.
„ *bowiea'na* (Bowian). 1. White. October. 1822.
„ *brevifo'lia* (short-leaved). 1. April. 1800.
„ *broadleya'na* (Broadleyan). 1 to 2. Red-purple, yellow. Autumn.
„ *brunia'des* (Brunia-like). 3 to 6. Flesh. Spring.
„ *buccinifo'ra* (trumpet-flowered). See E. MASSONI.
„ *Burne'ttii* (Burnett's). Red, white.
„ *ca'ffra* (Caffrarian) 1½. White. May. 1802.
„ „ *spica'ta* (spiked). 1½. White. September. 1800.
„ *caledo'nica* (Caledonian). Rose. June. 1816.
„ *calo'stoma* (beautiful-mouthed). See E. MASSONI.
„ *calyci'na* (large-calyxed). ½. Flesh. Autumn.
„ *campanula'ta* (bell-flowered). 1. Yellow. June. 1791.
„ *campylophy'lla* (crooked-leaved). See E. FLORIDA.
„ *canalicula'ta* (channelled). 2. Pale purple. Spring.
„ „ *mi'nor* (smaller). Pale purple.
„ *candidi'ssima* (whitest). Gardens.
„ *cane'scens* (hoary). See E. VILLOSA.
„ *cantharæfo'rmis* (Canthara-formed). White. May.
„ *carina'ta* (keeled). 1½. Purple. September. 1820.
„ *carni'ola* (flesh). See E INFLATA.
„ *cavendishia'na* (Cavendishian). 3 to 6. Yellow. May to July. Hybrid.
„ *celsia'na* (Cels's). See E. THUNBERGII.
„ *cerinthoi'des* (honeywort-like). Dark scarlet. September. 1774.
„ „ *ma'jor* (larger). 4. Scarlet. May. 1800.
„ „ *na'na* (dwarf). 1. Scarlet. May. 1800.
„ *ce'rnua* (nodding). 1. Pink. Autumn.
„ *Chamisso'nis* (Chamisso's). 1½. Rose-pink. 1874.

E. chlorolo'ma (green-fringed). Crimson, green. Autumn. 1838.
„ *cinera'scens* (grey-*leaved*). 1. Purple. May. 1810.
„ *clavæflo'ra* (club-flowered). Pale green. August to October. 1802.
„ *cliffordia'na* (Lady Clifford's). See E. TENUIFLORA.
„ *coarcta'ta* (congested). Purple. June. 1822.
„ *cocci'nea* (scarlet). 1½. Scarlet. 1783.
„ *colo'rans* (colouring). 2. White, red. May. 1817.
„ *como'sa* (tufted). ½. Red. June. 1787.
„ „ *a'lba* (white). ½. White. June. 1787.
„ „ *ru'bra* (red). ½. Red. June. 1787.
„ *comptonia'na* (Compton's). See E. CURVIFOLIA.
„ *conca'va* (concave). See E. BICOLOR.
„ *conci'nna* (neat). 2½. Flesh. September. 1773.
„ *co'ncolor* (one-coloured). 2. June. 1820.
„ *confe'rta* (crowded). White. Winter.
„ *conge'sta* (crowded). See E. STYLARIS.
„ *co'nica* (conical). 2. Purple. June. 1820.
„ *conspi'cua* (conspicuous). 2. Dark yellow. July. 1774.
„ *coventrya'na* (Lord Coventry's). See E. PAVETTÆFLORA.
„ *crassifo'lia* (thick-leaved). Lilac. May. 1826.
„ *crini'ta* (stiffly-hairy). Red. April to July 1820.
„ *crue'nta* (blood-coloured). Red. August to September. 1774.
„ *cu'bica* (cube-*flowered*). 1. Purple. May. 1790.
„ „ *ma'jor* (larger). 1. Purple. June. 1800.
„ *cupre'ssina* (Cypress-like). S. Africa.
„ *curvifo'ra* (curve-flowered). 2. Yellow. August. 1774.
„ „ *ru'bra* (red). 2. Red. August. 1800.
„ *curvifo'lia* (curved-leaved). 2. Purple. June. 1802.
„ *curviro'stris* (curved-beaked). Flesh. Autumn. 1774.
„ *cushinia'na* (Cushin's). 2. September. 1816.
„ *cyathifo'rmis* (cup-formed). See E. LÆVIS.
„ *cyli'ndrica* (cylindrical). See E. MASSONI.
„ *daphnifo'ra* (Daphne-flowered). Red, spring. 1792.
„ *daphnoi'des* (Daphne-like). See E. PRÆSTANS.
„ *deci'piens* (deceiving). Flesh. May. 1822.
„ *declina'ta* (declinate). See E. CURVIROSTRIS.
„ *deco'ra* (graceful). 2. Purple. June. 1790.
„ *de'nsa* (closely-*leaved*). See E. VENTRICOSA.
„ *denticula'ta* (small-toothed). 1½. Purple. April. 1821.
„ *depre'ssa* (depressed). ¾. Yellow. July. 1789.
„ *dianthifo'lia* (Dianthus-leaved). White, pink.
„ *dichroma'ta* (two-coloured). See E. DICHRUS.
„ *di'chrus* (two-coloured). 3. Yellow, pink. August. 1800.
„ *Dickenso'ni* (Dickson's). See E. PALLENS.
„ *di'scolor* (two-coloured). Flesh, yellow. Winter.
„ *di'stans* (distant). Violet. November. 1822.
„ *diosmæflo'ra* (diosma-flowered). 2. May. 1792.
„ *droseroi'des* (Drosera-like). See E. GLUTINOSA.
„ *dumo'sa* (bushy). 1. Purple. May. 1812.
„ *echiiflo'ra* (Echium-flowered) See E. COCCINEA.
„ *ela'ta* (tall). See E. CONSPICUA.
„ *e'legans* (elegant). ½. Green. August. 1799.
„ *elonga'ta* (elongated). White. November. 1810.
„ *empetrifo'lia* (Empetrum-leaved). Pink. May. 1774.
„ *empetroi'des* (Empetrum-like). Soft pink. June. 1796.
„ *episto'mia* (spout-*flowered*). See E. SACCIFLORA.
„ *eriocе'phala* (woolly-headed). See E. VILLOSA.
„ *ero'sa* (bitten). See E. MASSONI.
„ *erube'scens* (blushing). 1½. Flesh. May. 1800.
„ *exi'mia* (choice). See E. ARISTELLA.
„ *expa'nsa* (expanded). See E. PATENS.
„ *exposi'ta* (exposed). See E. PELLUCIDA.
„ *exquisi'ta* (exquisite). 1882.
„ *exsu'rgens* (rising). 1½. Dark orange. 1792.
„ „ *ca'rnea* (flesh-coloured). 1. Orange. 1800.
„ „ *grandiflo'ra* (large-flowered). 1. Orange. 1800.
„ „ *ma'jor* (larger). 1. Orange. 1800.
„ „ *pa'llida* (pale). 1. Pale red. 1810.
„ *exu'dans* (exuding). See E. PELLUCIDA.
„ *Ewera'na* (Ewer's). See E. UHRIA.
„ *fascicula'ris* (parcel-*flowered*). 1½. Purple. April. 1787.
„ *fastigia'ta* (peaked). 1½. White. July. 1797.
„ *ferrugi'nea* (rusty). See E. SQUARROSA.
„ *filamento'sa* (thready). 1½. Purple. Autumn.
„ *fimbria'ta* (fringed). ½. Red-purple. Spring.
E. flagella'ta (whip-like). 1½. Flesh. June to August.
„ *fla'mmea* (flame-*flowered*). 1½. Light yellow. June. 1798.
„ *fla'va* (yellow). See E. PARILIS.
„ *flexuo'sa* (flexuous). See E. IMBRICATA.
„ *floribu'nda* (bundle-flowered). 1. Pale pink. May. 1800.
„ *flo'rida* (florid). 1. Red. Juné. 1803.
„ „ *moscha'ta* (musky). 1. Red. May.
„ *formo'sa* (handsome). 2. Red. August. 1795.
„ „ *a'lba* (white). 2. White. August. 1795.
„ *fra'grans* (fragrant). ¾. Purple. April. 1803.
„ *fu'lgida* (shining). Red. June.
„ *ge'lida* (ice-cold). See E. GILVA.
„ *gemmi'fera* (many-budded). See E. MASSONI.
„ *gi'lva* (pale yellow). 3. Green, white. June. 1799.
„ „ *a'lbens* (whitish). 2. White. June. 1820.
„ *globo'sa* (globe-*flowered*). 1½. Pink. August. 1789.
„ *glomera'ta* (crowded). 2. Pink. June. 1814.
„ *glomiflo'ra* (crowded-flowered). See E. REFLEXA.
„ *glutino'sa* (clammy). Purple. August. 1788.
„ *gra'cilis* (slender). 1. Purple, red. March. 1794.
„ „ *niva'lis* (snowy). Pure white. 1903.
„ *grandiflo'ra* (large-flowered). 3. Yellow. July. 1785.
„ „ *hu'milis* (lowly). 2. Yellow. May. 1806.
„ *grandino'sa* (hail-stone). ½. White. March. 1810.
„ *halicaca'ba* (red nightshade). 1. Yellow. June. 1780.
„ *Hartne'lli* (Hartnell's). See E. CRINITA.
„ *hibberti'na* (Hibbert's). 2. Orange, yellow. July 1800.
„ *hirsu'ta* (hairy). See E. PERSPICUA.
„ *hi'rta* (hairy). See E. SPECIOSA HIRTELLA.
„ *hirtiflo'ra* (hairy-flowered). Red. Autumn and winter.
„ *hi'spida* (hispid). See E. RACEMOSA.
„ *hispi'dula* (short-bristled). Purple. July. 1790.
„ *humea'na* (Sir A. Hume's). See E. FASTIGIATA.
„ *hyema'lis* (winter). Purple and white. Winter. Garden hybrid.
„ „ *a'lba* (white). White. 1882.
„ *igne'scens* (glowing). 1½. Red. May. 1792.
„ *imbrica'ta* (overlapping). ½. Flesh, or white. April to July. 1796.
„ *imperia'lis* (imperial). See E. FASCICULARIS.
„ *inca'na* (hoary). See E. PUBESCENS.
„ „ *ru'bra* (red-*flowered*). 1½. Red. July. 1810.
„ *incarna'ta* (flesh-coloured). See E. LATERALIS.
„ *incu'rva* (incurved). Pink. March.
„ *infla'ta* (swollen). 1½. White, red. July. 1809.
„ *infundibulifo'rmis* (funnel-shaped). See E. PAVETTÆFLORA.
„ *interme'dia* (intermediate). S. Africa.
„ *interte'xta* (interwoven). See E. EMPETRIFOLIA.
„ *irbya'na* (Irby's). 1½. White, green. August. 1800.
„ *jasminiflo'ra* (jasmine-flowered). 2. White, pink. August. 1794.
„ „ *a'lba* (white). 2. White. August.
„ *juba'ta* (maned). See E. MELANTHERA.
„ *julia'na* (July). See E. WALKERIA'NA.
„ *Lachnæ'a* (Lachnæa). 1½. White. June. 1793.
„ *lachnæfo'lia* (Lachnæa-leaved). See E. LACHNÆA.
„ *lactiflo'ra* (milk-flowered). White. March.
„ *læ'vis* (smooth). White. March to July.
„ *lambertia'na* (Lambert's). See E. PHYSODES.
„ *lana'ta* (woolly). White. July to December.
„ *lanugino'sa* (woolly). Yellow-white and dusky purple. Winter.
„ *larici'na* (larch-like). Pink. July. 1824.
„ *latera'lis* (lateral). Purple. August to December. 1793.
„ *latifo'lia* (broad-leaved). Red. Summer.
„ *Lawso'ni* (Lawson's). 3. Flesh. May. 1802.
„ *la'xa* (loose). Rose. September to February.
„ *leea'na* (Lee's). 2½. Orange, yellow. April. 1788.
„ *leptoca'rpa* (slender-fruited). See E. LAWSONI.
„ *leuca'ntha* (white-flowered). White. Winter to spring.
„ *linnæa'na* (Linnæan). See E. PERSPICUA.
„ *linnæoi'des* (Linnæa-like). See E. PERSPICUA.
„ *longiflo'ra* (long-flowered). See E. CONSPICUA.
„ *longifo'lia* (long-leaved). White. Spring and summer.
„ „ *ca'rnea* (flesh-coloured). Flesh. May.
„ *longipeduncula'ta* (long-flower-stalked). 1. Pink. July. 1805.
„ *lu'cida* (shining). Blush. April to June.
„ *lu'tea* (yellow). ¾. Pale yellow. March. 1774.

E. magni'fica (magnificent). See E. MASSONI.
„ *mammo'sa* (nippled). 2. Purple. August. 1762.
„ „ *mi'nor* (smaller). 1. Purple. August. 1800.
„ *margarita'cea* (pearly). 1½. White. Summer.
„ *marifo'lia* (Marum-leaved). 1. White. April to July.
„ *Masso'ni* (Masson's). 3. Red, green. August. 1787.
„ „ *mi'nor* (smaller). 1. Red, green. August.
„ *melanthe'ra* (black-anthered). 2 to 3. Pale pink, with black anthers. Spring. 1802.
„ *mela'stoma* (black-mouthed). See E. PETIVERII.
„ *metulæflo'ra* (ninepin-flowered). See E. MASSONI.
„ *Meuro'ni* (Meuron's). Pink. Summer. 1820.
„ *minutæflo'ra* (small-flowered). See E. COARCTATA.
„ *mira'bilis* (wonderful). See E. PRÆSTANS.
„ *mollea'ris* (soft). See E. EMPETRIFOLIA.
„ *mo'llis* (soft). Red.
„ *monade'lphia* (one-bundled). See E. BANKSIANA.
„ *monsonia'na* (Lady Monson's). 4. White. July. 1787.
„ *moscha'ta* (musky). 1½. Green. June. 1805.
„ *muco'sa* (mucous). 2 to 3. Bright purple. Summer.
„ *mucosoi'des* (mucosa-like). See E. MUCOSA.
„ *mucrona'ta* (small-pointed). 1½. Flesh. Summer.
„ *mu'ndula* (neatish). See E. FASTIGIATA.
„ *Musca'ri* (Muscari). 1½. Light yellow. March to July.
„ *muta'bilis* (changeable). See E. CRUENTA.
„ *nidula'ria* (nest-like). 2. White, pink. 1809.
„ *nigri'ta* (black). White. April to July.
„ *ni'tida* (shining). White. Late summer and autumn.
„ *niva'lis* (snowy). White. June. 1812.
„ *ni'vea* (snowy). 2. White. April. 1816.
„ *nivenia'na* (Nivenian). Purple. February to June.
„ „ *longiflo'ra* (long-flowered). Purple.
„ *obla'ta* (flattened). Red, white. June. 1796.
„ *obli'qua* (twisted-*leaved*). 1½. Purple. August. 1800.
„ *oblo'nga* (oblong). See E. MASSONI.
„ *obtu'sa* (blunt-*leaved*). See E. BREVIFOLIA.
„ *odora'ta* (perfumed). 1. Pink. June. 1829.
„ *o'llula* (little-jar). See E. INFLATA.
„ *oppositifo'lia* (opposite-leaved). ½. White. Summer.
„ „ *ma'jor* (larger). White.
„ „ *ru'bra* (red). Red.
„ *orba'ta* (globular). White. 1810.
„ *orbicula'ris* (orbicular). See BLÆRIA ERICOIDES.
„ *ostri'na* (purple). See E. COCCINEA.
„ *ovalifo'lia* (oval-leaved). White, pink. N. India. 1842.
„ *ova'ta* (egg-shape-*flowered*). 1. Purple. June. 1811.
„ *pa'llens* (pale). Yellow. April to July. 1809.
„ „ *a'lba* (white). White. 1809.
„ „ *ru'bra* (red). Red. 1809.
„ *pa'llida* (pale). Flesh, white. Summer.
„ *palu'stris* (marsh). 1. Flesh. July. 1799.
„ *panicula'ta* (panicled). See E. PERSOLUTA.
„ *pa'rilis* (equal). 2. Yellow. July. 1795.
„ *parmentieria'na* (Parmentier's). See E. PRÆSTANS.
„ *parviflo'ra* (small-flowered). Pink. Autumn and winter.
„ *pa'tens* (spreading). Purple. Spring and early summer.
„ *patersonia'na* (Patersonian). 2½. Yellow. May. 1791.
„ „ *ma'jor* (larger). 3. Yellow. May.
„ *patersonioi'des* (Patersonia-like). See E. MASSONI.
„ *pavettæflo'ra* (Pavetta-flowered). 1 to 2. Pink or pale red. Summer. 1801.
„ *pedunculo'sa* (stalked). Light purple. March to June.
„ *pellu'cida* (clear). 2. White. September. 1800.
„ *pelta'ta* (shield-*leaved*). Green, purple. July. 1804.
„ *pelviformis ca'rnea* (flesh-coloured). Flesh.
„ *pe'ndula* (pendulous). See E. RUBENS.
„ *penicilla'ta* (pencilled). Greenish-yellow. Summer.
„ *persolu'ta* (garland-*flowered*). 1½. Purple. April. 1774.
„ „ *a'lba* (white). 1. White. March. 1800.
„ *perspi'cua* (clear-*flowered*). 2. White, purple. May. 1790.
„ „ *na'na* (dwarf). 1. Pink. April. 1800.
„ *petiola'ta* (stalked). White. Summer.
„ *Petive'rii* (Petiver's). 2. Yellow. May. 1774.
„ „ *cocci'nea* (scarlet). 2. Scarlet. May.
„ *Pezi'za* (Peziza). See E. NIVALIS.
„ *physo'des* (puffed-out). 1½. White. May. 1788.
„ *pilo'sa* (thinly-hairy). See E. VILLOSA.

E. pilula'ris (pill-like). White. November. 1820.
„ *piluli'fera* (hair-bearing). See E. MUCOSA.
„ *pinifo'lia* (pine-leaved). See E. LONGIFOLIA.
„ *planifo'lia* (flat-leaved). Purple. August.
„ *pi'nea* (pine-*leaved*). 2. Red. October. 1790.
„ „ *di'scolor* (two-coloured). 2. Red. October.
„ „ *favori'des* (honeycomb-like). 2. Red. October.
„ „ *pulche'lla* (pretty). 2. Red. October.
„ *Plunkene'tii* (Plunkenet's). ½. Red. May. 1774.
„ „ *pa'llida* (pale). 1. Pale red. June. 1794.
„ *plumo'sa* (plumy). Purple. Spring and summer. 1799.
„ *Pohlma'nni* (Pohlmann's). See E. LACHNÆA.
„ *præ'cox* (early). See E. STRIGOSA.
„ *præ'gnans* (swelled). See E. VENTRICOSA.
„ *præ'stans* (excelling). 1. White. August. 1810.
„ *primuloi'des* (cowslip-like). See E. FASTIGIATA.
„ *pri'nceps* (princely). See E. MASSONI.
„ *pro'cera* (lofty). See E. ARBOREA.
„ *procu'mbens* (procumbent). Pink. Summer.
„ *prope'ndens* (forward-hanging). 1½. Purple. July. 1800.
„ *pseudo-vesti'ta* (false-vestita). Seems to be E. MASSONI.
„ *pube'scens* (downy) of Andrews. See E. HIRTIFLORA.
„ *pube'scens* (downy) of Linnæus. White. Autumn.
„ *pulche'lla* (pretty). 1½. Red. July. 1792.
„ *pulverule'nta* (powdered). 1. Purple. July. 1820.
„ *pu'mila* (dwarf). 1. Purple. June. 1812.
„ *pu'ra* (pure). See E. PUBESCENS.
„ *purpu'rea* (purple). 2. Light purple. 1789.
„ *pusi'lla* (very small). Blush-pink. May.
„ *pygmæ'a* (pigmy). See E. SICÆFOLIA.
„ *pyramida'lis* (pyramidal). 1½. Pink. March. 1787
„ *quadrangula'ris* (four-angled). See E. MASSONI.
„ *quadra'ta* (square). See E. FORMOSA.
„ *quadriflo'ra* (four-flowered). Purple. Summer.
„ *quadrifo'lia* (four-leaved). See E. QUADRIFLORA.
„ *racemi'fera* (raceme-bearing). See E. REGERMINANS.
„ *racemo'sa* (racemed). 1½. Pink. April. 1793.
„ *radia'ta* (rayed). See E. MASSONI.
„ *ramenta'cea* (scaly). 1½. Dark red. September 1786.
„ *recurva'ta* (recurved). Whitish. Spring and early summer.
„ *refle'xa* (reflexed). Flesh. July to October.
„ *refu'lgens* (refulgent). See E. VERSICOLOR.
„ *rege'rminans* (resprouting). 1½. Red. June. 1791.
„ *resino'sa* (resinous). See E. VERNIX.
„ *reto'rta* (curled-back-*leaved*). 1. Pink, white. June. 1787.
„ *ri'gida* (rigid). See E. MASSONI.
„ *Ri'nzii* (Rinz's). S. Africa. 1857.
„ *Rollisso'nia* (Rollisson's). 2. Purple. June. 1820.
„ *ro'sea* (rosy). See E. VESTITA.
„ *rube'lla* (reddish). See E. GLOMERATA.
„ *ru'bens* (red). 1. Dark red. July. 1810.
„ *ru'bida* (reddish). See E. MASSONI.
„ *rubro'calyx* (red-calyxed). See E. MASSONI.
„ *rubrose'pala* (red-sepaled). See E. MASSONI.
„ *rugo'sa* (wrinkled). See E. MASSONI.
„ *rupe'stris* (rock). See E. DEPRESSA.
„ *russellia'na* (Russell's). 1½. Pink. May. 1820.
„ *sacciflo'ra* (sac-flowered). 2. Yellow, green. May. 1810.
„ *sainsburya'na* (Sainsburyan). See E. INFLATA.
„ *salisburya'na* (Salisbury's). See E. PURPUREA.
„ *sangui'nea* (bloody). 1. Crimson. 1815.
„ *sanguineole'nta* (blood-red). See E. SICÆFOLIA.
„ *savilea'na* (Savile's). ¾. Red. June. 1800.
„ *scabriu'scula* (roughish). 1. White. May. 1805.
„ *scario'sa* (dry). See E. ACUTA.
„ *schollia'na* (Schollian). See E. PLUMOSA.
„ *seba'na* (Seba's). 2. Orange. April. 1774.
„ „ *fu'sca* (brown). 2. Brown. May. 1812.
„ „ *lu'tea* (yellow). 2. Yellow. May. 1800.
„ „ *mi'nor* (smaller). 1. Orange. May. 1810.
„ *serpyllifo'lia* (thyme-leaved). See E. HISPIDULA.
„ *serratifo'lia* (serrate-leaved). Orange-yellow. August to December.
„ *sessiliflo'ra* (stalkless-flowered). See E. CLAVÆFLORA.
„ *seta'cea* (hair-like). White. Spring.
„ *sexfa'ria* (six-rowed). White. Spring and summer.
„ *shannonia'na* (Lady Shannon's). 1½. White, purple. June. 1816.
„ *sicæfo'lia* (poniard-leaved). Blood-red. Summer.

E. si'cula (Sicilian). See PENTAPERA SICULA.
„ *smithia'na* (Smith's). See E. REGERMINANS.
„ *Sola'ndra* (Solander's). 2. Pink. June. 1800.
„ *solandroi'des* (Solandra-like). See E. STELLATA.
„ *so'rdida* (dirty). See E. CONSPICUA.
„ *Sparma'nni* (Sparmann's). 2. Yellow. Winter.
„ *spa'rsa* (scattered). See E. FLORIBUNDA.
„ *specio'sa* (showy). 2. Red, green. July. 1800.
„ „ *hirte'lla* (finely hairy).
„ *spica'ta* (spiked). Pale yellow and green. Autumn and winter.
„ *sple'ndens* (shining). 2. Scarlet. July. 1792.
„ *Sprenge'lii* (Sprengel's). 2. Yellow, purple. June. 1806.
„ *spumo'sa* (frothy). Red. May. 1786.
„ *spu'ria* (spurious). See E. MASSONI.
„ *squammæflo'ra* (scaly-flowered). See E. IMBRICATA.
„ *squamo'sa* (scaly). Purple. Spring and summer.
„ *squarro'sa* (spreading). Red. May. 1793.
„ *stami'nea* (long-stamened). Red, green. Summer.
„ *stella'ta* (starry). White. 1806.
„ *stelli'fera* (star-bearing). See E. MASSONI.
„ *strigo'sa* (thinly-hairy). Pink. Spring. 1800.
„ *styla'ris* (long-styled). White. June.
„ *suave'olens* (sweet-scented). 1. Pink. August. 1800.
„ *sulphu'rea* (sulphur-coloured). 2. Yellow. June. 1805.
„ *supe'rba* (superb).
„ *Swainso'nii* (Swainson's). See E. MASSONI.
„ *taxifo'lia* (yew-leaved). Pink.
„ *Te'mplea* (Temple's). 2. Red. Purple. July. 1820.
„ *tene'lla* (delicate). ½. Purple. June. 1791.
„ *tenuiflo'ra* (slender-flowered). 1. Yellow. April to June. 1812.
„ „ *a'lba* (white). White. July.
„ *teretiu'scula* (nearly terete). Red-purple, green. Spring.
„ *thalictrifo'ra* (Thalictrum-flowered). See E. STAMINEA.
„ *Thunbe'rgii* (Thunberg's). 1½. Orange. June. 1794.
„ *thymifo'lia* (thyme-leaved). ½. Purple. July. 1789.
„ *tiaræflo'ra* (tiara-flowered). Flesh. May to July.
„ *toga'ta* (gowned). See E. BORBONIÆFOLIA.
„ *tomento'sa* (downy). 2. Purple. June. 1778.
„ *tortuo'sa* (twisted). 2. May. 1816.
„ *translu'cens* (clear). 2. Red. June. 1797.
„ *transpa'rens* (transparent). 1½. White. May. 1800.
„ „ *bla'nda* (charming). Carmine. February. 1843.
„ *tri'ceps* (three-headed). White. Autumn. 1800.
„ *tri'color* (three-coloured). 2. Red, green. June. 1810.
„ „ *ma'jor* (larger). 2. Red, green. June. 1810.
„ „ *mi'nor* (smaller). 1. Red, green. June. 1810.
„ *triflo'ra* (three-flowered). 1½. White. April. 1774.
„ *triu'mphans* (conquering). See E. ANDROMEDÆFLORA.
„ *tro'ssula* (spruce). See E. MUSCARI.
„ *tubercula'ris* (tubercular). See EREMIA TUBERCULARIS.
„ *tubiflo'ra* (tube-flowered). 2. Pink. May. 1775.
„ *tubiu'scula* (slightly-tubed). See E. PARVIFLORA.
„ *tu'mida* (swollen). 1½. Scarlet. July. 1812.
„ *turbina'ta* (top-shaped). Flesh. Summer.
„ *tu'rgida* (bloated). 1. Purple. May. 1821.
„ *U'hria* (Eweran). Blood-red, green. August.
„ „ *longiflo'ra* (long-flowered). 2. Red. June. 1793.
„ „ *pilo'sa* (hairy). Red-purple, green.
„ „ *specio'sa* (showy). 2. Red. August. 1733.
„ *undula'ta* (waved). Red. June, July.
„ *urceola'ris* (urn-shaped). White. Summer. 1778.
„ *va'ria* (various). 1. Purple, yellow. July. 1810.
„ *ventrico'sa* (bellied). 1. Flesh. June. 1787.
„ „ *a'lba* (white). 1. White. June.
„ „ *ca'rnea* (flesh-coloured). 1. Flesh. June.
„ „ *cocci'nea* (scarlet). 1. Scarlet. June.
„ „ *ere'cta* (erect). 1. Flesh. June.
„ „ *hirsu'ta* (hairy). 1. Flesh. June.
„ „ *na'na* (dwarf). ½. Flesh. June.
„ „ *supe'rba* (superb). 1. Scarlet. June.
„ *verecu'nda* (modest). See E. MEURONI.
„ *verna'lis* (spring). See E. PYRAMIDALIS.
„ *Ve'rnix* (varnish). Golden-yellow, green. Spring.
„ „ *ru'bra* (red). Brilliant crimson-red. Spring.
„ „ *longiflo'ra* (long-flowered). Golden-yellow, flushed red, green. Summer.

E. versi'color (various-coloured). 2. Orange, red August. 1720.
„ „ *ma'jor* (larger). 2. Scarlet. September. 1800.
„ *verticilla'ta* (whorled). 3. Scarlet. August. 1774.
„ „ *ma'jor* (larger). 2. Scarlet. September. 1800.
„ *vesti'ta* (clothed). 3. White. 1789.
„ „ *a'lba* (white). 2. White. 1789.
„ „ *bla'nda* (charming). 2½. Pink. May. 1827.
„ „ *cocci'nea* (scarlet). 3. Scarlet. 1789.
„ „ *e'legans* (elegant). 2. Purple. 1810.
„ „ *fu'lgida* (bright). 3. Orange. 1789.
„ „ *incarna'ta* (flesh-coloured). 2. Pink. 1789.
„ „ *lu'tea* (yellow). 3. Yellow. 1789.
„ „ *muta'bilis* (changeable). 3. Scarlet, white. 1800.
„ „ *purpu'rea* (purple). 2. Purple. June. 1789.
„ „ *ro'sea* (rosy). 3. Light red. August. 1789.
„ *villo'sa* (shaggy). White or pink. March to June. 1790.
„ *villosiu'scula* (slightly-shaggy). See E. PUSILLA.
„ *vire'scens* (greenish). Yellow-green. Spring. 1804.
„ *viride'scens* (greenish). See E. VIRESCENS.
„ *viridiflo'ra* (*dark*-green-flowered). 2. Orange. July 1810.
„ *vi'ridis* (green-*flowered*). See E. LEEA'NA.
„ *visca'ria* (viscid). Purple. May to July.
„ *walkeria'na* (Walker's). Red. July. 1806.
„ „ *ru'bra* (red). Deep flesh. Spring.
„ *Ze'yheri* (Zeyher's). Lilac. June. 1824.

ERICINE'LLA. (From *Erica*, and *ella*, diminutive. Nat. ord. Ericaceæ.)
Greenhouse shrub, requiring somewhat warmer treatment than Heaths, but in other respects similar.
E. Ma'nni (Mann's). Crimson. June, July. Trop. Africa at high elevations. 1866.

ERIGE'NIA. (From *er*, spring, and *genos*, a race. Nat. ord. Umbelliferæ.)
Hardy, tuberous-rooted herb. Seeds and offsets. Ordinary soil.
E. bulbo'sa (bulbous). 1 to 2 in. White. N. Amer. 1899.

ERI'GERON. (From *er*, the spring, and *geron*, old man; some being hoary with a downy covering early in the season. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Stenactis.)
Seeds and divisions; garden-soil.

HARDY ANNUALS.

E. apure'nsis (Apuran). 1. White. August. China. 1818.
„ *bonarie'nsis* (Buenos Ayres). 1½. Purple. July. S. Amer. 1732.
„ *canade'nsis* (Canadian). 1. White. August. England.
„ *chine'nsis* (Chinese). See E. APURENSIS.
„ *fœ'tidus* (stinking). See NIDORELLA FOLIOSA.
„ *grave'olens* (strong-smelling). See INULA GRAVEOLENS.
„ *linifo'lius* (flax-leaved). 1. Purple. July. S. Amer.

HARDY BIENNIALS.

E. a'cris (sharp). 1½. Blue. July. Britain.
„ „ *asteroi'des* (Aster-like). 1. Purple. July. Podolia 1821.
„ *chile'nsis* (Chili). See CONYZA CHILENSIS.
„ *delphinifo'lius* (lark-spur-leaved). 1½. Purple. August. Mexico. 1816. Greenhouse.
„ *divarica'tus* (straggling). 1. White. August. Mississippi. 1818.
„ *dræbache'nsis* (Dræbachan). Purple. Europe.
„ *læviga'tus* (smooth-*leaved*). 1. White. July. Cayenne. 1822.
„ *podo'licus* (Podolian). See E. ACRIS ASTEROIDES.

HARDY PERENNIALS.

E. alpi'nus (alpine). 1. Purple. July. Scotland.
„ *armerifo'lius* (thrift-leaved). Purple. July. Siberia. 1829.
„ *a'sper* (rough). See E. GLABELLUS ASPER.
„ *asteroi'des* (aster-like). 1½. White. July. Hudson Bay. 1776.
„ *a'ticus* (Attic). See E. VILLARSII.
„ *auranti'acus* (orange). 1. Orange. Turkestan. 1879. "Orange Daisy."

E. bellidifo'lius (daisy-leaved). 1½. Purple. July. N. Amer. 1790. "Robin's Plantain."
„ *Blu'mei* (Blume's). See E. VILLARSII.
„ *carolinia'nus* (Carolina). 1. Purple. July. N. Amer. 1727.
„ *cauca'sicus* (Caucasian). See E. FULCHELLUS.
„ *compo'situs* (composite). ½. White, red. July. N. Amer. 1811.
„ *Cou'lteri* (Coulter's). 1. White. Colorado. 1901.
„ *dive'rgens* (diverging). White or purple. West United States. 1904.
„ *eriocе'phalus* (woolly-headed). See E. UNIFLORUS.
„ *filifo'lius* (thread-leaved). N.W. Amer.
„ *flagella'ris* (whip-like). ½. White or pale lilac. West United States. 1904.
„ *fri'gidus* (frigid). Pyrenees.
„ *glabe'llus* (smooth). 1. Purple. N. Amer. 1828.
„ „ *arizo'nicus* (Arizonian). Violet-purple. Arizona. 1906.
„ „ *a'sper* (rough). Stem and leaves rough.
„ *glau'cus* (sea-green). ½. Light purple. August. N. Amer.
„ „ *semperflo'rens* (ever-flowering). Plant dwarf and floriferous. California. 1905.
„ *grami'neus* (grass-like). See ARCTOGERON GRAMINEUM.
„ *grandiflo'rus* (large-flowered). Purple. Western N. Amer.
„ „ *ela'tior* (taller). 1 to 1½. Lilac. 1902.
„ *Howe'llii* (Howell's). N.W. Amer.
„ *hu'milis* (humble). ½. Flesh. August. N. Amer. 1828.
„ *hyssopifo'lius* (hyssop-leaved). 2. Pale purple. September. N. Amer.
„ *kamtscha'ticus* (Kamtschatcan). See E. ACRIS.
„ *Lehma'nni* (Lehmann's). Lilac. August. 1828.
„ *leio'merus* (smooth-parted). ½. Violet, with yellow disc. Colorado. 1900.
„ *macra'nthus* (large-flowered). 1. Dark purple. N.W. Amer.
„ „ *Me'sa* (Mesa). 2. Bright purple, 1 to 2 inches across.
„ *ma'ximus* (largest). Purple. July. Mexico. 1830. Half-hardy.
„ *mucrona'tus* (small-pointed). ½. Purple and white. Mexico.
„ *multiradia'tus* (many-rayed). 1 to 2. Purple, with yellow disc. Himalaya. 1880.
„ *ne'o-mexica'nus* (New Mexican). White. New Mexico. 1901.
„ *philade'lphicus* (Philadelphian). 1. Purple. July. N. Amer. 1776.
„ *pube'scens* (downy). White. July. Mexico. 1827.
„ *pulche'llus* (pretty). Purple. April. Dahuria. 1818.
„ *pu'milus* (dwarf). White. August. N. Amer. 1818.
„ *purpu'reus* (purple). See E. PHILADELPHICUS.
„ *rupe'stris* (rock). ½. Purple. July. Switzerland. 1819.
„ *salsugino'sus* (brackish). 1. Purple, yellow. June. N.W. Amer. 1829.
„ „ *Howe'llii* (Howell's). See E. HOWELLII.
„ *sero'tinus* (late). See E. ACRIS.
„ *specio'sus* (handsome). Blue. June. N.W. Amer. 1838.
„ „ *grandiflo'rus* (large-flowered). Flowers larger and deeper in colour than *E. s. superbus*. 1909.
„ „ *supe'rbus* (superb). Flowers large, mauve.
„ *strigo'sus* (thinly-hairy). 1. White. July. N Amer. 1816.
„ *tri'fidus* (trifid-leaved). ½. White or pale lilac. Rocky Mountains. 1904.
„ *uniflo'rus* (one-flowered). ½. Yellow. July. Northern and Arctic regions. 1800.
„ *Va'hlii* (Vahl's). See ASTER VAHLII.
„ *Villa'rsii* (Villars's). 1. Purple. July. Piedmont. 1804.

ERINA'CEA. (From *erineos*, woollen; in allusion to the woolly character of the plant. Nat. ord. Leguminosæ. Allied to Anthyllis.)

A shrubby plant with silky leaves, but usually leafless and spiny, requiring a dry situation on the rockery. Cuttings in sand in a cold frame during July and August.

E. hispa'nica (Spanish). See E. PUNGENS.
„ *pu'ngens* (pricking). 1. Purple. May. Spain. 1759.

ERINO'SMA VE'RNUM. See LEUCOJUM VERNUM.

ERI'NUS. (From *er*, the spring; referring to the early time of flowering. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Wulfenia.)

Hardy and half-hardy plants. Seeds and divisions; mostly require the protection of a cold pit in winter. Succeed well as rock-plants in summer, if the soil is sandy loam.

HERBACEOUS PERENNIALS.

E. alpi'nus (*smooth* alpine). ½. Red. March. Pyrenees. 1739.
„ „ *a'lbus* (white). White.
„ *hispa'nicus* (*hairy*. Spanish). See E. ALPINUS.

EVERGREENS.

E. fra'grans (fragrant). See ZALUZIANSKYA LYCHNIDEA.
„ *lychnide'us* (Lychnidea). See ZALUZIANSKYA CAPENSIS.
„ *tri'stis* (dark-*flowered*). 1. Purple. May. Cape of Good Hope. 1825.

ERIOBO'TRYA. Loquat. (From *erion*, wool, and *botrys*, a bunch of grapes; referring to the downy flower-racemes. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Digynia*. Allied to Photinia.)

Half-hardy evergreen fruit-trees, with white flowers. Cuttings of side-shoots, from one to two inches in length, in sand, under a bell-glass, and in a few days placed in bottom-heat; by seeds in a hotbed as soon as gathered, also by grafting on the White Thorn, or, better still, on the Quince. Peat and loam; will grow against a wall with a protection in winter; has been fruited in pots by turning it out to rest in summer, giving a stove heat in winter, when it flowered in December, and fruited in April.

E. bengale'nsis (Bengal). 10. Himalaya; Malaya. 1821.
„ *elli'ptica* (oval-*fruited*). 12 to 30. Nepaul. 1823.
„ *japo'nica* (Japanese). 15. October. Japan and China. 1787.

ERIOCA'LIA MA'JOR. See ACTINOTUS HELIANTHI.

ERIOCAU'LON. Pipewort. (From *erion*, wool, and *caulos*, a stem. Nat. ord. *Pipeworts* [Eriocaulaceæ]. Linn. 3-*Triandria*, 3-*Trigynia*.)

The only known European Pipewort is *E. septangula're*, a small bog or marsh-plant in the Isle of Skye. There are many other species, but all more curious than beautiful.

E. decangula're (ten-angled). 2 to 3. Pale yellow. July. N. Amer.
„ *septangula're* (seven-angled). 1 to 2. Dusky and black. Skye; W. of Ireland.

ERIOCE'PHALUS. (From *erion*, wool, and *kephale*, a head; referring to the appendage. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria*.)

Greenhouse evergreens, from the Cape of Good Hope. Cuttings of young shoots, getting firm, in April, in sand, under a glass; sandy loam and a little peat. Winter temp., 38° to 45°.

E. africa'nus (African). White. Winter. 1731.
„ *decussa'tus* (crossed). See E. GLABER.
„ *gla'ber* (smooth). 4. Yellow. April. 1816.
„ „ *larici'nus* (larch-like). 4. Purple. April. 1816.
„ *purpu'reus* (purple). See E. GLABER LARICINUS.
„ *racemo'sus* (racemed). 3. Yellow. March. 1739.

ERIOCHA'SMA. (From *erion*, wool, and *chasme*, a rent; referring to the spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. All now referred to Nothochlæna.)

Ferns, with brown or brownish-yellow spores. Division, before fresh growth commences; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°. The greenhouse species will do with 5° to 10° lower temperature. *E. vesti'ta* is hardy.

GREENHOUSE.

E. di'stans (distant). ½. May. Wales. 1823.
„ *hi'rta* (hairy). ½. May. Cape of Good Hope. 1816.
„ *stella'pilis* (starry-haired). May. N.S. Wales. 1840.
„ *sulca'ta* (furrowed). May. N.S. Wales.
„ *vesti'ta* (clothed). ½. August. Amer. 1812. Hardy.

STOVE.

E. hypoleu'ca (white-beneath). July. W. Ind.
„ *languino'sa* (woolly). ½. July. Bourbon. 1818.
„ *ru'fa* (reddish). August. W. Ind. 1830.
„ *tomento'sa* (woolly). May. N.S. Wales. 1842.

ERIOCHI'LUS. (From *erion*, wool, and *cheilos*, a lip. Nat. ord. Orchidaceæ.)

Terrestrial orchids from Australia. Offsets and division. Equal parts of fibrous loam and peat, with sand and some charcoal to keep the compost porous.

E. autumna'lis (autumnal). Red. October. 1823.
„ *dilata'tus* (dilated). April, May.
„ *latifo'lius* (broad-leaved). October.
„ *multiflo'rus* (many-flowered). March, April.
„ *sca'ber* (rough). September.

ERIOCNE'MA ÆNEA, E. MARMORATA, and **E. SANDERÆ.** See BERTOLONIA MARMORATA.

ERIO'COMA FLORIBU'NDA. See MONTANOA FLORIBUNDA.

ERIO'COMA FRA'GRANS. See MONTANOA TOMENTOSA.

ERIODE'NDRON. (From *erion*, wool, and *dendron*, a tree; referring to the silky wool in seed-pods. Nat. ord. *Mallow-worts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Bombax.)

Stove trees; seeds in a hotbed; rich, sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

E. anfractuo'sum (winding). 100. Scarlet. E. Ind. 1739.
„ *caribæ'um* (Caribæan). See E. ANFRANTUOSUM.
„ *guinee'nse* (Guinea). See E. ANFRACTUOSUM.
„ *leianthe'rum* (smooth-anthered). 70. Scarlet. Brazil. 1818.

ERIO'GONUM. (From *erion*, wool, *gonu*, a joint; downy at the joints of the stems. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 9-*Enneandria*, 1-*Monogynia*. Allied to Polygonum.)

Hardy herbaceous perennials with yellow flowers, from North America. Seeds and divisions in March and April; loam and a little peat.

E. compo'situm (compound). 1½. June.
„ *fla'vum* (yellow). 1. July. 1811.
„ *longifo'lium* (long-leaved). 2. June. 1822.
„ *pauciflo'rum* (few-flowered). 2. June. 1820.
„ *racemo'sum* (racemed). 1 to 1½. Rosy-white. Western N. Amer. 1910.
„ *seri'ceum* (silky). See E. FLAVUM.
„ *tomento'sum* (woolly). 2. May. 1811.

ERIOPA'PPUS. See LAVIA.

ERIO'PHORUM. Cotton Grass. (From *erion*, wool, and *phoreo*, to bear; in reference to the silky tails or coverings of the seeds. Nat. ord. *Sedges* [Cyperaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

The Cotton Grasses are pretty bog plants. They are natives of peat marshes, and do not belong to Grasses, though erroneously so called.

E. angustifo'lium (narrow-leaved). 1½. White, many-headed. Britain.
„ *capita'tum* (headed). See E. SCHEUCHZERI.
„ *Scheuchze'ri* (Scheuchzer's). 1. White. N. temperate and cold regions.
„ *vagina'tum* (sheathing). 1. White, one-headed. Britain.

ERIOPHY'LLUM. (From *erion*, wool, and *phullon*, a leaf; woolly-leaved. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Hardy evergreens, from North America. Divisions of the roots in spring; common soil.

E. cæspito'sum (turfy). 1. Yellow. May. 1826.
„ *confertiflo'rum* (crowded-flowered). Yellow. California. 1888.
„ *oppositifo'lium* (opposite-leaved). See BAHIA OPPOSITIFOLIA.

ERIO'PSIS. (From *Eria*, a genus of orchids, and *opsis*, like. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Division; fastened to wood with a little moss. Summer temp., 60° to 90°; winter, 55° to 60°.

E. bi'loba (two-lobed). 1½. Orange. September. Peru 1845.
„ *Hele'næ* (Helen's). 1½ to 2. Orange, twice as large as *E. biloba*. Peru. 1897.
„ *Fuerstenbe'rgii* (Fuerstenberg's). Brown, orange, white, purple. 1908.
„ *rutidobu'lbon* (wrinkled-bulbed). 2. Orange, purple. Colombia. 1846.
„ *Spru'cei* (Spruce's). Light yellow, edged red. Brazil. 1884.

ERIOSE'MA. (From *erion*, wool, and *sema*, a standard. Nat. ord. Leguminosæ.)

Evergreen stove shrubs. Seeds; cuttings of short side-shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

E. chine'nse (Chinese). 1. Purple. June. Nepaul. 1821. Greenhouse.
„ *grandiflo'rum* (large-flowered). 2. Yellow. August. Mexico.
„ *parviflo'rum* (small-flowered). 3. Zanzibar. 1823.
„ *viola'ceum* (violet). 4. Purple. March. Guiana. 1820.

ERIOSPE'RMUM. (From *erion*, wool, and *sperma*, a seed; woolly-seeded. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anthericum.)

Greenhouse bulbs from South Africa. Offsets; sandy peat. Winter temp., 35° to 45°.

E. albuco'ides (Albuca-like). ½. Yellow, green. 1875.
„ *Bellende'ni* (Bellenden's). 1. Light blue. July. 1806.
„ *bre'vipes* (short-stalked). 1½ to 2. White, with green rib. 1862.
„ *calcara'tum* (spurred). ½. White, green. 1875.
„ *folioli'ferum* (leaflet-bearing). ½. Yellow, green. July. 1806.
„ *lanceæfo'lium* (spear-head-leaved). 1. Light blue. July. 1795.
„ *lanugino'sum* (woolly). 1. White, green. July. 1820.
„ *latifo'lium* (broad-leaved). 1. Light blue. July. 1800.
„ *Macke'nii* (Macken's). Yellow. July. 1871.
„ *parado'xum* (wonderful). 1. July. 1825.
„ *parvifo'lium* (small-leaved). ½. Dark blue. July. 1796.
„ *proli'ferum* (proliferous). White, green. May to August. 1821.
„ *pube'scens* (downy). 1. White, green. July. 1820.
„ *spira'le* (spiral). 1. White. May. 1824.

ERIOSTE'MON. (From *erion*, wool, and *stemon*, a stamen; appearance of stamens. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Crowea.)

Greenhouse evergreens, from Australia. Cuttings of young shoots in April, in sand, under a bell-glass, and in about a week plunged in a mild hotbed; three parts sandy peat, and one sandy, fibrous loam. Summer temp., 55° to 75°; winter, 45° to 50°.

E. affi'nis (related). 3. White. Australia. 1903.
„ *buxifo'lius* (box-leaved). 2. Pink. May. 1824.
„ *cuspida'tus* (spine-pointed). See E. MYOPOROIDES.
„ *ericifo'lius* (heath-leaved). 3. Red. June. 1824.
„ *glauce'scens* (milky-green). Lilac. April. 1824.
„ *gra'cilis* (graceful). 1. Lilac. June. 1831.
„ *interme'dius* (intermediate). See E. MYOPOROIDES.
„ *lanceola'tus* (spear-head-*leaved*). See E. SALICIFOLIUS.
„ *latifo'lius* (broad-leaved). 3. White. 1845.
„ *linearifo'lius* (narrow-leaved). See GEIJERA PARVIFLORA.
„ *myoporoi'des* (Myoporum-like). 1½. White. September. 1824.
„ *nerifo'lius* (oleander-leaved). See E. MYOPOROIDES.
„ *nodiflo'rus* (knot-flowered). Blush. 1841.
„ *oblongifo'lius* (oblong-leaved). See ACRONYCHIA LÆVIS.
„ *salicifo'lius* (willow-leaved). 3. Red. June. 1823.
„ *sca'ber* (rough-*leaved*). 1½. Pink. April. 1840.

ERIO'THRIX. (From *erion*, wool, and *thrix*, hair; referring to the appendages on the seeds. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Neurolæna.)

Stove shrub. Cuttings in sand in a close case. Fibrous loam, peat, and sand.

E. juniperifo'lia (juniper-leaved). White. July. Bourbon. 1828. Syn. *E. lycopodioides*.

ERI'SMA. (From *erisma*, strife; referring to the difficulty of assigning their position in the natural arrangement. Nat. ord. *Vochyads* [Vochysiaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Stove evergreen tree. Cuttings of young shoots getting firm, in April, in sand, under a glass, and in bottom-heat; sandy loam and peat. Summer temp., 55° to 80°; winter, 48° to 55°.

E. floribu'ndum (many-flowered). 40. Blue. October. Guiana. 1825.

ERI'THALIS. (From *erithallo*, to grow green; referring to the glossy, deep green of the leaves. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Guettarda.)

Stove evergreen trees. Cuttings of young stubby side-shoots in spring or summer, in sand, under a bell-glass, and in bottom-heat; sandy, fibrous loam, and a little peat. Summer temp., 60° to 80°; winter, 50° to 55°.

E. frutico'sa (shrubby). 13. White. July. Jamaica. 1793.

„ *Ti'mon* (Timon). See TIMONIUS RUMPHII.

ERITRI'CHIUM. (Derived from *erion*, wool, and *thrix*, a hair; some of the species being covered with woolly hairs).

Hardy annual or perennial herbs. Seeds or division in spring. Sheltered positions on the rockery.

E. barbi'gerum (beard-bearing). See KRYNITZKIA BARBIGERA.

„ *na'num* (dwarf). ¼. Blue, with yellow eye. Cold Northern and Alpine regions. 1869.

„ *nothofu'lvum* (dull-tawny). White, sweet-scented. California. 1892.

„ *rupe'stre* (rock). 1. Blue. July. Altai Mountains. 1824.

„ *seri'ceum* (silky). 1. Purple, yellow. Siberia. 1802.

„ *stri'ctum* (upright). 1. Blue. July. Northern India. Annual.

ERLA'NGEA. (A commemorative name. Nat. ord. Compositæ.)

A greenhouse shrub with felted leaves and the habit of a Eupatorium. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

E. tomento'sa (felted). 3 to 5. Lilac. Trop. E. Africa. 1909.

ERNO'DEA. (From *ernodes*, branched. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Spermacoce.)

Half-hardy evergreen trailer. Division; dry, gravelly soil; protection of a cold-frame in winter.

E. littora'lis (sea-shore). White. Winter. W. Ind.

„ *monta'na* (mountain). See PUTORIA CALABRICA.

ERO'DIUM. Heron's-bill. (From *erodios*, a heron; referring to the resemblance of the style and ovaries to the beak and head of the heron. Nat. ord. *Cranesbills* [Geraniaceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*. Allied to Geranium.)

The biennials and annuals may be sown in front of a border in April; perennials, divided in March; the half-hardy, by seeds and divisions; sandy loam, and the protection of a cold pit in winter.

HARDY ANNUALS.

E. chi'um (Chian). Blush. June. Levant. 1724.

„ *cico'nium* (stork's). Lilac. July. S. Europe. 1711.

„ *grui'num* (crane's). Blush. July. Crete. 1596.

„ *murica'tum* (prickly). ½. Red. July. 1827.

„ *mu rcicum* (Murcian). See E. CHIUM.

„ *pimpinellifo'lium* (burnet-leaved). See E. CICUTARIUM PIMPINELLÆFOLIUM.

HARDY BIENNIALS.

E. bipinna'tum (doubly-leafleted). See E. CICUTARIUM.

„ *cicuta'rium* (Cicuta-like). Purple. Summer. Britain.

„ „ *pimpinellæfo'lium* (Pimpinella-leaved). ½. Purple. July. S. Europe. 1800.

„ *geifo'lium* (Geum-leaved). 1. Lilac. Algeria. 1835.

„ *lacinia'tum* (cut-leaved). 1. Lilac. Mediterranean regions. 1794.

„ *Manesca'vi* (Manescave's). 1. Purple, crimson. Pyrenees.

„ *pulveru'ntum* (powdered). See E. LACINIATUM.

„ *roma'num* (Roman). ½. Purple. June. Rome. 1724.

HARDY HERBACEOUS.

E. alnifo'lium (Alder-leaved). ½. Purple. June. Sicily. 1800.

„ *alpi'num* (alpine). ½. Red. June. Italy. 1814.

„ *anthemidifo'lium* (chamomile-leaved). ½. Purple. June. Iberia. 1820.

„ *carvifo'lium* (Caraway-leaved). 1. Purple. Spain.

„ *caucalifo'lium* (Caucalis-leaved). See E. ROMANUM.

„ *chamædryoi'des* (Chamædrys-like). ½. White. July. Balearic Isles. 1783.

„ *chrysa'nthum* (yellow-flowered). Lemon-yellow. Greece. 1897.

„ *co'rsicum* (Corsican). ½. Purple. June. Corsica. 1817.

„ *gutta'tum* (spotted). Purple, spotted black. Mediterranean regions. 1861.

„ *glaucophy'llum* (grey-leaved). Lilac. July. Egypt. 1732.

„ *Gusso'ni* (Gusson's). 1. Pale purple. June. Naples. 1821.

„ *hi'rtum* (hairy). ½. Purple. June. Egypt. 1818.

„ *litto'reum* (sea-shore). Lilac. June. Narbonne. 1818.

„ *macrade'nium* (large-glanded). ½. Pale purple, with black blotches. Pyrenees. 1867.

„ *malachoi'des* (Malachium-like). Mediterranean region.

„ *malopoi'des* (Malope-like). See E. ALNIFOLIUM.

„ *petræ'um* (rock). ½. Purple. July. S. Europe. 1640.

„ *Reicha'rdi* (Reichard's). See E. CHAMÆDRYOIDES.

„ *Salzma'nni* (Salzmann's). Southern Spain.

„ *Semeno'vii* (Semenow's). Central Asia.

„ *sero'tinum* (late). ½. Blue. August. Caucasus. 1821.

„ *sibthorpia'num* (Sibthorpian). Orient.

„ *stephania'num* (Stephan's). ½. Blue. June. Himalaya. 1820.

„ *styla'tum* (long-styled). ½. Purple. June. 1826.

„ *supraca'num* (grey above). ½. Purple. Spain.

„ *tmo'leum* (Tmolan). Asia Minor.

„ *trichomanefo'lium* (Trichomanes-leaved). Purple, spotted crimson. Spain.

HALF-HARDY HERBACEOUS.

E. crassifo'lium (thick-leaved). ½. Scarlet. June. Cyprus. 1788.

„ *glandulo'sum* (glanded). See E. MACRADENIUM.

„ *hymeno'des* (Hymen-like). ½. Pink. July. Barbary. 1789

„ *incarna'tum* (flesh-coloured). ½. Flesh. June. Cape of Good Hope. 1787. Evergreen.

„ *melasti'gmum* (black-stagmaed). 1. Purple. June. 1823.

„ *munbya'num* (Munbyan). Purple. Algeria. 1872.

„ *pelargoniiflo'rum* (Pelargonium-flowered). White, purple. July. Orient. 1850.

ERO'PHILA. (From *er*, the spring, and *phileo*, to love; referring to the time of flowering. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Draba.)

Hardy annuals, with white flowers. Seeds; common soil.

E. america'na (American). See E. VULGARIS.

„ *præ'cox* (early). ½. March. Britain. 1820.

„ *vulga'ris* (common). ½. March. Britain.

ERPE'TION RENIFO'RME. New Holland, or Spurless Violet. See VIOLA HEDERACEA.

ER'VUM GRA'CILE. See LATHYRUS FILIFORMIS.

ERY'CINA. (From *eruko*, to detain; in allusion to the bristles on the plant. Nat. ord. Orchidaceæ.)

A stove Orchid. For cultivation, see ORCHIDS.

E. echina'ta (hedgehog-like). ½. Yellow. Mexico.

ERYNGIUM. Eryngo. (From *Eryngeon*, a name adopted by Pliny from Dioscorides. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Dignyia*. Allied to Sanicula.)

The roots of *E. mari'timum* and *campe'stre* are sweet, aromatic, and tonic; they are candied, and sold by the name of Eringo-roots. Annual, biennial, and perennial hardy kinds by seeds and divisions in common soil; if sandy loam, they will thrive best. Half-hardy species require the protection of a pit or greenhouse in winter, and sandy loam.

HARDY ANNUALS, &c.

E. te'nue (slender). 1. Blue. July. Spain. 1824.
„ *tricuspida'tum* (three-pointed). 2. Green. September. Spain. 1699. Biennial.

HALF-HARDY HERBACEOUS.

E. bromeliæfo'lium (Bromelia-leaved). 3. White. July. Mexico.
„ *Carli'næ* (Carlina-like). Blush. August. Mexico. 1827.
„ *Cervante'sii* (Cervantes's). 1. Green. August. Mexico. 1820.
„ *como'sum* (tufted). Blue. July. Mexico. 1818.
„ *ebractea'tum* (bractless). 2. July. Buenos Ayres. 1817.
„ *ebu'rneum* (ivory). 6. White. Autumn. Brazil. 1872.
„ *fœ'tidum* (stinking). 1. Green. September. W. Ind. 1714.
„ *gra'cile* (graceful). 1. Blue. July. Mexico. 1824.
„ *grami'neum* (grass-*leaved*). Blush. August. Mexico. 1825.
„ *Lassau'xii* (Lassaux's). 6. White. Autumn. Argentina. 1872.
„ *longifo'lium* (long-leaved). 3. White. July. Mexico. 1820.
„ *monoce'phalum* (one-headed). Purple. August. Mexico. 1824.
„ *ovi'num* (sheep). See E. ROSTRATUM.
„ *rostra'tum* (beaked). 1½. White. July. Australia. 1824.
„ *serra'tum* (saw-edged). 1. Blue. July. Mexico. 1800.
„ *terna'tum* (three-leafleted). Purple. August. Crete.

HARDY HERBACEOUS.

E. alpi'num (alpine). 2. Blue. July. Switzerland. 1507.
„ *amethysti'num* (amethystine). 3. Light blue. July. Styria. 1648.
„ *Anderso'nii* (Anderson's). 2. Blue. July. 1800.
„ *aqua'ticum* (aquatic). See E. YUCCÆFOLIUM.
„ *Aquifo'lium* (holly-leaved). 1. Blue. August. Spain. 1816.
„ *asperifo'lium* (rough-leaved). See E. GIGANTEUM.
„ *azu'reum* (light blue). 2. Blue. July. S. Europe. 1790.
„ *Baldwi'nii* (Baldwin's). Blush. August. Carolina. 1824.
„ *Billardie'rii* (Billardière's). Blush. July. S. France. 1731.
„ *Bourga'ti* (Bourgati's). 2. Pale blue. July. Spain. 1731.
„ *cæru'leum* (sky-blue). 2. Blue. July. Caspian. 1816.
„ *campe'stre* (field). 2. Blue. July. Britain.
„ *cordifo'lium* (heart-leaved). See E. ALPINUM.
„ *cornicula'tum* (small-horned). 1. Green. July. Portugal. 1803.
„ *cre'ticum* (Cretan). Greece.
„ *crini'tum* (fringe-*leaved*). See E. AQUIFOLIUM.
„ *dicho'tomum* (spreading). 2. Blue. July. S. Europe. 1820.
„ *dilata'tum* (dilated). 1½. Blue. July. Portugal. 1821.
„ *durieæ'num* (Durieæan). Portugal.
„ *galioi'des* (Galium-like). ½. Green. July. Portugal. 1810.
„ *gigante'um* (giant). 4. Blue. July. Armenia. 1820.
„ *glacia'le* (glacial). ½. Light blue. Sierra Nevada. 1898.
E. glomera'tum (crowded). 1. Blue. July. Asia Minor. 1826.
„ *macrophy'llum* (large-leaved). 1831.
„ *mari'timum* (sea-*holly*). 1½. Blue. July. Britain.
„ *oliveria'num* (Oliverian). 3 to 4. Blue. Orient.
„ *panicula'tum* (panicled). 4 to 5. White. Chili.
„ *petiola'tum* (stalked-leaved). N.W. Amer.
„ *pla'num* (flat-*leaved*). 3. Light blue. July. Europe. 1596.
„ *proleæfo'rum* (Protea-flowered). 3. Light blue. Mexico. 1907.
„ *pusi'llum* (small). ½. Green. July. Spain. 1640.
„ *ri'gidum* (stiff). ½. Blue. July. France. 1816.
„ *Sanguiso'rba* (Sanguisorba). Brazil.
„ *se'rbicum* (Servian). 1 to 1½. Leaves finely divided. Servia. 1906.
„ *Se'rra* (saw). 6. White. Autumn. Brazil. 1872.
„ *Spina'lba* (white-spined). White. August. S. Europe. 1816.
„ *triqué'trum* (triangular). 1. Blue. July. S. Europe. 1824.
„ *Vase'yi* (Vasey's). California.
„ *virga'tum* (twiggy). 1. Light blue. June. N. Amer. 1810.
„ *virginia'num* (Virginian). 2. Blue. August. N. Amer.
„ *vesiculo'sum* (bladdery). Australia.
„ *Wri'ghtii* (Wright's). Texas.
„ *yuccæfo'lium* (Yucca-leaved). 4. White. August. N. Amer. 1699.

ERYSIMUM. Hedge Mustard. (From *eruo*, to draw; supposed to produce blisters. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Sisymbrium.)

Annuals and biennials, by seed in the open border, in September or March; perennials, seeds, cuttings, and divisions.

HARDY PERENNIALS.

E. lanceola'tum (lance-shaped). Yellow. May. Alps of Europe.
„ *linifo'lium* (flax-leaved). 2. Purple. April. Spain. 1815.
„ *mura'le* (wall). 2. Yellow. June. Europe. 1820. Evergreen.
„ *ochroleu'cum* (yellow-white). 1. Soft yellow. June. Europe. 1819.
„ „ *helvé'ticum* (Swiss). 1. Bright yellow. Switzerland.
„ *pulché'llum* (pretty). See E. RUPESTRE.
„ *pu'milum* (dwarf). ½. Yellow. May. Switzerland. 1819.
„ *rupe'stre* (rock). 1. Bright yellow. May. 1880.
„ *suffrutico'sum* (sub-shrubby). See E. MURALE.
„ *versi'color* (party-coloured). 1. Variegated. May. Caucasus. 1825.
Wahlenbe'rgii (Wahlenberg's). 1½. Yellow. Transylvania. 1891.

HARDY ANNUALS.

E. perfolia'tum (leaf-pierced). See CONRINGIA ORIENTALIS.
„ *quadrico'rne* (four-horned). See TETRACME QUADRICORNE.

HARDY BIENNIALS.

E. alti'ssimum (tallest). See E. HIERACIFOLIUM.
„ *andrzejoskia'num* (Andrzejoski's). See E. CANESCENS.
„ *arkansa'num* (Arkansan). See E. ASPERUM ARKANSANUM.
„ *a'sperum* (rough). 1. Yellow. N. Amer.
„ „ *arkansa'num* (Arkansan). 1. Bright yellow. N. Amer.
„ *au'reum* (golden). 1. Yellow. June. Caucasus. 1820.
„ *bi'color* (two-coloured). 1. Yellow. May. Switzerland. 1818.
„ *borya'num* (Boryan). Yellow. Greece.
„ *cane'scens* (hoary). 1. Yellow. June. S. Europe. 1816.
„ *cheiranthoi'des* (wallflower-like). 1 to 2. Yellow. July. Britain. "Treacle Mustard."
„ *colli'num* (hill). 1. Yellow. May. Caucasus. 1823.
„ *cra'ssipes* (thick-leaf-stalked). 1. Yellow. June Asia Minor. 1835.
„ *decu'mbens* (decumbent). See E. OCHROLEUCUM.
„ *fi'rmum* (firm). See E. VIRGATUM.

E. græ'cum (Grecian). Yellow. Greece.
„ *hieracifo'lium* (hawkweed-leaved). 1. Yellow. June. N. Europe. 1816.
„ *ibe'ricum* (Iberian). 1. Yellow. May. Caucasus. 1803.
„ *interme'dium* (intermediate). 2. Yellow. June. Switzerland. 1819.
„ *kotschya'num* (Kotschyan). Yellow. Asia Minor.
„ *leptophy'llum* (fine-leaved). 1. Yellow. June. Iberia. 1821.
„ *longifo'lium* (long-leaved). 1. Yellow. June. S. Europe. 1823.
„ *longisiliquo'sum* (long-podded). 1½. Yellow. June. Switzerland. 1819.
„ *panno'nicum* (Pannonian). 2. Yellow. June. Austria. 1819.
„ *pa'tulum* (spreading). 1. Yellow. June. S. Europe. 1820.
„ *perofskia'num* (Perofsky's). 1½. Orange. July. Caucasus. 1838.
„ *Redo'wskii* (Redowsky's). 1. White. June. Siberia. 1821.
„ *rhæ'ticum* (Rhætian). See E. OCHROLEUCUM.
„ *strigo'sum* (short-bristled). 1. Yellow. June. Siberia. 1806.
„ *stri'ctum* (erect). See E. PANNONICUM.
„ *thyrsoi'deum* (thyrse-like). Yellow. Asia Minor.
„ *virga'tum* (twiggy). 2. Yellow. June. Europe. 1816.

ERYTHA'LIA. See GENTIANA.

ERYTHE'A. (In Greek mythology *Erythea* was one of the daughters of the West, and here fancifully applied. Nat. ord. Palmaceæ.)

Greenhouse Palms of ornamental character, and may be treated like Howea or Kentia.

E. aculea'ta (prickly). See E. ARMATA.
„ *arma'ta* (armed). Leaf-stalks spiny and felted. California. 1883.
„ *Brandege'ei* (Brandegee's). The tallest fan-leaved palm. Lower California. 1908.
„ *edu'lis* (edible). 30. March. California.
„ *e'legans* (elegant). The dwarfest Erythea. Fruit yellowish. Mexico. 1908.

ERYTHRÆ'A. (From *eruthros*, red; the colour of the flowers of some species. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The biennial should be sown in autumn; the perennials, by seeds and division; sandy loam, with a little peat. The species worth cultivating require a pit or frame in winter.

E. aggrega'ta (clustered). ¼. Red. July. S. Europe. 1824. Biennial.
„ *Centau'rium* (Centaurium). 1. Rose. Britain. Annual. "Centaury."
„ *chile'nsis* (Chilian). Rose. Chili.
„ *chironioi'des* (Chironia-like). See E. VENUSTA.
„ *confe'rta* (clustered). ¼. Pink. June. Spain. 1824. Perennial.
„ *diffu'sa* (spreading). See E. MASSONII.
„ *grandiflo'ra* (large-flowered). Rose. Portugal.
„ *linarifo'lia* (Linaria-leaved). Rose. Europe.
„ *littora'lis* (sea-shore). Pink. Europe. "Narrow-leaved Centaury."
„ *mari'tima* (sea). ½. Yellow. July. Mediterranean regions. 1777. Herbaceous trailer.
„ *Masso'nii* (Masson's). Rose. July. Azores. 1777. Herbaceous.
„ *Muehlenbe'rgii* (Muehlenberg's). ½. Pink. April. California.
„ *pulche'lla diffu'sa* (spreading). See E. MASSONII.
„ *ramosi'ssima* (most-branched). Rose. Europe. 1882.
„ *venu'sta* (lovely). ¾. Deep rose, with white centre. California. 1878.

ERYTHRI'NA. Coral-tree. (From *eruthros*, red; the colour of the flowers. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

According to Dr. Royle, gum lac is the produce of a species of Coral-tree, *E. monospe'rma*, not here in cultivation. Stove plants; all scarlet-flowered. By cuttings of the young shoots breaking from the old collar of the plant in spring, and when two or three inches long; also by cutting up the old flowering-stems when ripe, and in both cases covering with a bell-glass, after placing them in sand, and in a strong bottom-heat; peat, loam, and dried cow-dung, in equal proportions, with a portion of sand. Summer temp., 55° to 80°; winter, 45° to 55°. *E. Cri'sta-ga'lli* does out of doors in sheltered places, cut down, and the roots slightly protected as for fuchsias, in winter.

E. bogote'nsis (Bogotan). Red. Colombia. 1873.
„ *ca'fra* (Caffrarian). Scarlet. S. Africa.
„ *ca'rnea* (flesh). 8. Flesh. Spring. S. Amer. 1733.
„ *constantia'na* (Constantian). 30. Scarlet. Country unknown. 1896.
„ *Corallode'ndron* (coral-tree). 20. May. W. Ind. 1690.
„ *Cri'sta-ga'lli* (cock's-comb). 40. June. Brazil. 1771.
„ „ *compa'cta* (compact). Dwarf, free-flowering. 1882.
„ „ *specta'bilis* (showy). Leaves variegated with yellow.
„ *erythrosta'chya* (red-spiked). Scarlet. July. 1849.
„ *fu'lgens* (brilliant). 10. E. Ind. 1810.
„ *glau'ca* (sea-green). 10. Coppery-red. Venezuela.
„ *herba'cea* (herbaceous). 3. July. Carolina. 1824. Herbaceous.
„ *humea'na* (Humean). 30 to 50. Scarlet. S. Africa.
„ *i'ndica* (Indian). 5 to 20. Scarlet. Trop. Asia. 1814.
„ „ *a'lba* (white). White.
„ „ *Parce'lli* (Parcell's). Red. Leaves with pale yellow variegation. South Sea Islands.
„ *ine'rmis* (unarmed). See E. MITIS.
„ *insi'gnis* (remarkable). Bright scarlet. Country unknown.
„ *insula'ris* (insular). Red. Queensland.
„ *laurifo'lia* (laurel-leaved). See E. CRISTA-GALLI.
„ *lithospe'rma* (stone-seeded). Red. Burma and Malaya.
„ *macrophy'lla* (large-leaved). 20. Teneriffe. 1822.
„ *marmora'ta* (marbled). Scarlet. May. Leaves blotched and spotted with white. South Sea Islands. 1879.
„ *mi'tis* (mild). Scarlet. May. Venezuela.
„ *ovalifo'lia* (oval-leaved). 10. Scarlet. India and Malaya. 1816
„ *Parce'lli* (Parcell's). See E. INDICA PARCELLI.
„ *pi'cta* (painted). 6. E. Ind. 1696.
„ *poia'nthes* (summer-flowered). Scarlet. Winter. S. Amer. 1828.
„ „ *subine'rmis* (nearly unarmed). Scarlet. Madeira.
„ *portorice'nsis* (Porto Rico). See RUDOLPHIA VOLUBILIS.
„ *pulche'rrima* (fairest). Crimson. 1876.
„ *secundiflo'ra* (side-flowering). 20. Brazil. 1820.
„ *specio'sa* (showy). 10. September. W. Ind. 1805.
„ *specta'bilis* (showy). Leaves boldly variegated. South Sea Islands. 1881.
„ *spino'sa* (spiny). See E. CORALLODENDRON.
„ *tomento'sa* (felted). Scarlet. Trop. Africa.
„ *veluti'na* (velvety). Scarlet. June. Venezuela.
„ *Vesperti'lio* (bat-leaved). Scarlet. Australia. 1885.

ERYTHROCHÆ'TE. See SENECIO.

ERYTHROCHI'TON. (From *eruthros*, red, and *chiton*, a tunic; referring to the flower-envelope, or calyx. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Galipea.)

Stove evergreen tree. Seeds and cuttings, in sand and heat; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

E. brasilie'nsis (Brazilian). 10. White. July. Brazil. 1842.
„ *hypophylla'nthus* (under-leaf-flowered). White. Colombia. 1853.
„ *Linde'ni* (Linden's). Mexico. 1840.

ERYTHROLÆ'NA CONSPI'CUA. See CNICUS CONSPICUUS.

ERYTHRO'NIUM. Dog's-Tooth Violet. (From *eruthros*, red; referring to the colour of the leaves and flowers of the species first discovered. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy bulbs; offsets; common garden-soil; *E. lanceola'tum* requires a little heat.

E. a'lbidum (whitish). ½. White. April. Louisiana. 1824.
„ *america'num* (American). Bright yellow, spotted with red. Eastern N. Amer. 1665.
„ *califo'rnicum* (Californian). Cream, with orange base. N. California.
„ *citri'num* (citron). Light citron yellow, with yellow or orange base. Southern Oregon.
„ *De'ns-ca'nis* (dog's-tooth. *Common*). ½. Lilac. March. Europe. 1596.
„ „ *a'lbidum* (whitish). ½. White. March. Italy. 1596.
„ „ *ru'brum* (red-*flowered*). ½. Red, lilac. March. Europe. 1596.
„ *gigante'um* (gigantic). Yellow. April. N.W. Amer.
„ *grandiflo'rum* (large-flowered). ½. Yellow. May. N.W. Amer. 1826.
„ *Hartwe'gi* (Hartweg's). White, with orange or yellow base. N.W. Amer.
„ *Henderso'ni* (Henderson's). Pale lilac purple, with maroon-purple zone. Oregon. 1888.
„ *Howe'lli* (Howell's). Pale yellow, with orange base. Oregon.
„ *Johnso'ni* (Johnson's). Reddish-pink, with golden-orange zone. Southern Oregon. 1896.
„ *lanceola'tum* (spear-head-*leaved*). See E. AMERICANUM.
„ *longifo'lium* (long-leaved). See E. DENS-CANIS.
„ *macula'tum* (spotted). See E. DENS-CANIS.
„ *monta'num* (mountain). Pure white. Oregon and Washington. 1903.
„ *nuttallia'num* (Nuttallian). Golden-yellow, with brownish-red anthers. N. Amer. 1871.
„ *purpura'scens* (purplish). Pale yellow, with orange blotch, becoming purple. California.
„ *revolu'tum* (revolute). 1. White to rosy-purple, with orange blotch. California to Columbia River. 1897.

ERYTHROPHLE'UM. Red Water-tree. (From *eruthros*, red, and *phleo*, to flow; in allusion to the red juice of the tree when wounded. Nat. ord. Leguminosæ.)

Evergreen, stove trees. Cuttings of mature wood in sand, in a close case, with bottom-heat. Good fibrous loam, with one-third peat, and sand.

E. guinee'nse (Guinean). 100. Yellow. Trop. Africa. 1793.
„ *pubistami'neum* (downy-stamened). 25. Angola. 1889.

ERYTHROPO'GON IMBRICA'TUS. See METALASIA UNIFLORA.

E. umbella'tus. See METALASIA UMBELLATA.

ERYTHRO'TIS BEDDO'MEI. See CYANOTIS KEWENSIS.

ERYTHRO'XYLON. (From *eruthros*, red, and *xylon*, wood. Nat. ord. *Erythroxyls* [Linaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)

The wood of some species is deep red. *E. ova'tum* is the best garden-plant among them. Stove evergreen trees, with yellowish-green flowers. Cuttings of half-ripe shoots in sand, under a glass, and in heat; peat and loam. Summer temp., 60° to 75°; winter, 48° to 55°.

E. Co'ca (Coca). 2 to 6. Greenish-yellow. Peru. 1869. The natives chew the leaves of this plant to allay hunger.
„ „ *no'va-granate'nse* (New Grenadan).
„ „ *sprucea'num* (Sprucean).
„ *havane'nse* (Havannah). See E. OVATUM.
„ *hypericifo'lium* (Hypericum-leaved). 40. Mauritius. 1818.
„ *laurifo'lium* (laurel-leaved). 50. Mauritius. 1823.
„ *mexica'num* (Mexican). Greenish-yellow. Mexico. 1869.
„ *ova'tum* (egg-shaped). 10. Greenish-yellow. W. Ind. 1822.

ESCALLO'NIA. (Named after *Escallon*, a Spanish traveller. Nat. ord. *Escaloniads* [Saxifragaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Evergreen greenhouse or hardy shrubs. Cuttings of young shoots rather ripe, in sandy soil, under a hand-light, in summer; or younger smaller shoots under a bell-glass, in the greenhouse; peat and loam, with a little road-drift, and well drained; most of them will do against a wall, with the protection of a spruce-branch in frosty weather, in winter, especially if the wall has a broad coping.

E. bi'fida (bifid). See E. MONTEVIDENSIS.
„ *ca'ndida* (white). White. Brazil.
„ *caracasa'na* (Caraccas). See E. FLORIBUNDA.
„ *Clausse'nii* (Claussen's). 5. July. Brazil. 1846.
„ *di'scolor* (two-coloured). 6. White. S. Amer. 1820.
„ *floribu'nda* (many-flowered). White. July. New Grenada. 1827.
„ *glandulo'sa* (glanded). See E. RUBRA.
„ *grahamia'na* (Grahamian). 5. White. Autumn. Chili.
„ *grandiflo'ra* (large-flowered). See E. CLAUSSENII.
„ *illi'nita* (varnished). 5. White. August. Chili. 1830.
„ *inca'na* (hoary). July. 1847.
„ *littora'lis* (sea-shore). Chili.
„ *macra'ntha* (large-flowered). 3 to 15. Rose or red. Chiloe. 1848.
„ „ *sangui'nea* (blood-red). See E. PUNCTATA.
„ *monta'na* (mountain). Red. Chili. 1873.
„ *montevide'nsis* (Monte Video). 6. White. July. Brazil. 1827.
„ *organe'nsis* (Organ *Mountains*). 3. Rose. Organ Mountains. 1844.
„ *philippia'na* (Philippian). White, fragrant. Valdivia. 1873.
„ *ptero'cladon* (winged-branched). 4. White, red. July. Patagonia. 1854. Hardy.
„ *pulverule'nta* (dusted). 8. Chili. 1831.
„ *puncta'ta* (punctured). 3 to 8. Deep red. July. Chili. 1828.
„ *revolu'ta* (revolute). 10 to 15. White. September. Chili. 1887.
„ *ru'bra* (red-*flowered*). 3. Red. September. Chili. 1827.
„ „ *albiflo'ra* (white-flowered). 6. White. July.
„ „ *pube'scens* (downy). 6. Red. July.
„ „ *puncta'ta* (punctured). See E. PUNCTATA.
„ *visco'sa* (clammy). 5. White. Mendoza. 1829.

ESCHALLOT, or **SHALLOT.** *A'llium ascalo'nicum.*

Varieties.—The *Common*, which puts up long, slender, dark-green leaves, and has narrow, long-pointed bulbs; and the *Long-keeping*, with larger bulbs and dwarfer habit, and keeps good for nearly or quite two years. Both have a stronger taste than the onion, yet not leaving its disagreeable smell on the palate. Large Red has large bulbs of a pale reddish-brown colour. The Jersey Shallot also has large bulbs that frequently run to seed, but they do not keep long as a rule.

Propagation.—Each offset will increase in a similar manner as its parent, and may be planted out either in the months of October and November, or early in the spring, from February to the beginning of April. Autumn is the best season for planting, if the soil lies dry. If planted in beds, let them be three feet and a half wide, and three or four inches higher than the alleys, and the surface of the bed a little arched. Set out the rows nine inches apart from row to row, and plant the offsets singly with the hand upon the surface of the bed, six inches apart in the row, just pressing each bulb down firm in the soil; see occasionally that they are not cast out of their places by worms or other vermin; or each bulb may be covered with either a little old tan or coal-ashes, in little ridges along the rows, an inch and a half or two inches deep. When the bulbs are well established and growing, this covering should be removed with the hand; no other culture is required, except earth-stirring. Take them up for storing, when full grown, towards the end of June or July, as soon as the leaves begin to decay. Spread them out to dry, on boards, in some airy situation.

ESCHSCHO'LTZIA. (Named after *Dr. Eschscholtz*, a botanist. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 4-*Tetragynia*.)

Bright and showy, hardy annuals, with yellow flowers; seeds sown in the open border, in March; when once introduced they will generally sow themselves; if sown

in autumn, and an evergreen branch bent over them in severe weather, they will bloom early.

E. cæspito'sa (tufted). 1. Yellow. California.
„ *cuculla'ta* (hooded). 1. Lemon-yellow. California. 1894.
„ *mari'tima* (maritime). Light yellow, with orange blotch. California. 1894.
„ *califo'rnica* (Californian). 1. September. California. 1826.
„ „ *compa'cta* (compact). 1. August. California. 1833.
„ „ *cro'cea* (saffron-coloured). 1. August. California. 1833.
„ *Dougla'sii* (Douglas's). Golden-yellow, 14 days earlier than the rest. California. 1898.
„ *fumariæfo'lia* (fumaria-leaved). See HUNNEMANNIA FUMARIÆFOLIA.
„ *tenuifo'lia* (tender-leaved). See E. CÆSPITO'SA.

ESMERA'LDA. See ARACHNANTHE.

ESPALIERS. A term used to express modes of training fruit-trees on rails of iron or wood, as bordering to the walks of kitchen-gardens, whereby the margins are rendered more ornamental, and the walls are relieved of many trees for the benefit of others too tender to withstand the ordinary rigours of our climate. The forms of these trellises vary much; some are placed perpendicularly, others horizontal, and others, again, in a curved or saddle-like form, with various other shapes which the fancy of the owner, or the peculiar situation, may dictate. These rails are generally placed within a few feet of the garden-walk, having, also, another walk or alley at the back, in order to facilitate operations. Espaliers being nearer to the ground than ordinary standards, we need hardly say that in such a position they are warmer. The mode of training tends to check exuberance of growth, which is of some service in a dwarfing, and, by consequence, an early fruiting system. The trees are completely within reach for stopping, and various other manipulations, which, on standards, require ladders and other cumbrous machines. Again, a much greater collection of fruits may be cultivated, in any garden, by an espalier system, than by the ordinary course of culture. The espalier system can be rendered conducive to the greatest amount of produce, as well as to the most ornamental appearance.

Form of Trellis.—This is very material. There are fruits which must have sunshine to perfect them, yet will succeed with a moderate share. There are others which will succeed in what is commonly termed a northern aspect; such are adapted for the northern side of trellises, which run east and west. Again, others must have a full exposure to the sun. Kitchen-gardens are mostly rectangular, and if most or all of the margins be appropriated to trellises, there will be a great difference between those which run north and south and east and west. To avoid over-shadowing, we think that what have been termed *Table Trellises*, that is, those which present a flat surface, parallel to the horizon, at about a foot or half a yard from the ground are by far the best for the majority of fruits.

Perpendicular Rails are, however, very well adapted for many of our fruits, and if iron is not used, a very nice, but somewhat perishable structure may be formed by means of wood. Permanent stakes of oak, larch, &c., may be driven at from two to three feet apart perpendicularly, and temporary stakes driven as wanted between them, of more perishable material. The temporary, or intervening stakes are to be movable at pleasure, and when the trees acquire a strong fabric, may be entirely dispensed with.

The *Strained-wire Rail* is, however, much superior, and will, doubtless, prove most economical in the end. Such, well-constructed, with stone bases to the iron uprights, would endure a century, and are, at least, particularly to be recommended for trees of slender wood. As for perpendicular iron treillage, an ordinary field hurdle will give a pretty good idea; the distance between the rails being, of course, ruled by the mode of growth of the tree.

With regard to *Arched* or *Saddle Trellises*, we would speak with some caution. Running north and south, and occupied with trees properly adapted, they will doubtless succeed, and they are assuredly ornamental.

Gooseberries and currants we have found conveniently trainable to a cheap trellis in the form of pairs of stakes, crossed like the letter X, and placed in a row. It is not the least advantage attendant upon this mode of training that the fruit is easily covered and protected.

ESPELE'TIA. (Named in compliment to *Don Jose de Espeleta*, a governor of Colombia. Nat. ord. Compositæ.)

Evergreen, greenhouse plants with woolly leaves. Fibrous loam and peat, with an abundance of sand. The leaves must be kept dry in winter.

E. arge'ntea (silvery). 6. Yellow. Colombia. 1845.
„ *grandiflo'ra* (large-flowered). 10. Yellow. Colombia.
„ *neriifo'lia* (Nerium-leaved). 2 to 3. Yellow. Venezuela.

ESTERHA'ZYA. (A commemorative name. Nat. ord. Scrophulariaceæ.)

Stove evergreen shrub. Cuttings in sand, in bottom-heat. Loam, peat, and sand.

E. splе'ndida (splendid). 6. Yellow. Brazil. 1820.

ETIOLATION. The same as blanching.

EUADE'NIA. (From *eu*, well, and *aden*, a gland; in allusion to glands in the flowers. Nat. ord. Capparidaceæ.)

A dwarf, shrubby stove plant. Cuttings in sand, in a close case, with bottom-heat. Good fibrous loam, with plenty of sand.

E. e'minens (eminent). Greenish-yellow. January. Trop. Africa. 1861.

EUCALY'PTUS. Gum-tree. (From *eu*, good, and *kaluptos*, covered; referring to the flower-envelope, or calyx, which covers the flower and falls off like a cap. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Metrosideros.)

Greenhouse evergreen trees, from Australia, except where otherwise indicated, and all with white blossoms. Cuttings of young, firm side-shoots in the beginning of summer, in sandy soil, under a bell-glass; peat and loam; a cool greenhouse. Winter temp., 35° to 45°. Most of them in warm places will do well against walls, with a little protection, if dryness is secured.

E. acmenioi'des (Acmena-like). Australia.
„ *ala'ta* (winged). 1816.
„ *alpi'na* (Alpine). Australia.
„ *amygdali'na* (almond-*leaved*). 1830.
„ *andrea'na* (Andrean). White. Somewhat similar to *E. amygdalina*. 1890.
„ *botryoi'des* (bunch-like). Australia.
„ *calophy'lla* (beautiful-leaved). 1885.
„ *citriodo'ra* (lemon-scented). 1881. Foliage fragrant.
„ *cocci'fera* (berry-bearing). 20. Purple. December. Tasmania.
„ *corda'ta* (heart-shaped). Tasmania.
„ *coria'cea* (leathery). See E. PAUCIFLORA.
„ *cornu'ta* (horned). 20 to 80. Red, yellow.
„ *corymbo'sa* (corymb-*flowered*). 1788.
„ *cosmophy'lla* (orderly-leaved). S. Australia.
„ *cotinifo'lia* (cotinus-leaved). 1818.
„ *erythrone'ma* (red-filamented). 20. Filaments red. W. Australia. 1903.
„ *eugenioi'des* (Eugenia-like). 1830.
„ *ficifo'lia* (fig-leaved). Crimson. W. Australia. 1882.
„ *gigante'a* (giant). Australia.
„ *Glo'bulus* (globuled). 150. 1810.
„ *gomphoce'phala* (nail-headed). Australia.
„ *Gu'nnii* (Gunn's). Victoria. Hardy in some districts.
„ „ *monta'na* (mountain). 1901. Hardy in the east and south of England.
„ *hæma'stoma* (bloody-mouthed). 30. 1803.
„ *heterophy'lla* (various-leaved). See E. OBLIQUA.
„ *hirsu'ta* (hairy). See ANGOPHORA CORDIFOLIA.
„ *hypericifo'lia* (Hypericum-leaved). 1823.
„ *incrassa'ta* (thickened). 6. 1818.
„ *Lehma'nni* (Lehmann's). Australia.
„ *leuco'xylon* (white-wood). White. "Iron Bark."
„ „ *purpu'rea* (purple). Bright purple. 1909.
„ *longifo'lia* (long-leaved). See E. AMYGDALINA.
„ *macra'ndra* (large-anthered). Australia.
„ *macroca'rpa* (large-fruited). 6. June. 1842.
„ *macula'ta* (blotched). Australia.
„ *margina'ta* (*thick*-edged). May. 1794.
„ *me'dia* (intermediate). 1823.

E. microcoʻrys (small-helmet). Australia.
„ *microphyʻlla* (small-leaved). 20. 1823.
„ *mucronaʻta* (sharp-pointed). 1823.
„ *Muelleʻri* (Mueller's). See E. INCRASSATA.
„ *multifloʻra* (many-flowered). 1820.
„ *myrtifoʻlia* (myrtle-leaved). 6. 1823.
„ *oblíʻqua* (twisted-*leaved*). 100. July. 1774.
„ *occidentaʻlis* (western). Australia.
„ *orbiculaʻris* (globe-shaped). 1816.
„ *ovaʻta* (egg-form-*leaved*). 6. 1820.
„ *paniculaʻta* (panicled). Australia.
„ *paucifloʻra* (few-flowered). Australia.
„ *perfoliaʻta* (leaf-pierced). 1820.
„ *persicifoʻlia* (peach-leaved). See E. VIMINALIS.
„ *phillyræoïʻdes* (Phillyræa-like). 1820.
„ *pilulaʻris* (pelleted). 1804.
„ *piperiʻta* (pepper). 1810.
„ *planchoniaʻna* (Planchonian). Australia.
„ *polyaʻnthemos* (many-flowered). Hardy in some districts.
„ *preissiaʻna* (Preissian). 10. Yellow. 1843.
„ *ptychocaʻrpa* (name-marked-fruited). Australia.
„ *pulchéʻlla* (pretty). 1820.
„ *pulverulénʻta* (powdery). 30. June. 1816.
„ *pulviʻgera* (powdered). See E. PULVERULENTA.
„ *purpuraʻscens* (purplish-*nerved*). 1823.
„ *raveretiaʻna* (Raveretian). Australia.
„ *reduʻnca* (rehooked). Australia.
„ *réʻgnans* (ruling). Australia.
„ *resiniʻfera* (resin-bearing). Australia.
„ „ *grandifloʻra* (large-flowered). White. July.
„ *robuʻsta* (robust). Australia,
„ *rostraʻta* (beaked). Australia.
„ *saliʻgna* (willow-like). 1804.
„ *scaʻbra* (rough). See E. PIPERITA.
„ *sideroʻxylon* (iron-wood). See E. LEUCOXYLON.
„ *splachnicaʻrpa* (heart-fruited). See E. CALOPHYLLA.
„ *staigeriaʻna* (Staigerian). White. Foliage fragrant. 1889.
„ *stenophyʻlla* (narrow-leaved). 1823.
„ *striʻcta* (erect).
„ *tetragoʻna* (four-angled). 18. Red. July. 1824.
„ *tereticoʻrnis* (round-horned). Australia.
„ *urniʻgera* (urn-bearing). White. Fruit urn-shaped. Tasmania. 1888.
„ *verrucoʻsa* (warted). 1820.
„ *viminaʻlis* (rod-like). 1810.
„ *virgaʻta* (twiggy). 15.

EUCHÆ'TIS. (From *eu*, well, and *chaite*, a head of hair; the bottom of the petals furnished with hairs inside. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Diosma.)

Greenhouse evergreen shrub, from South Africa. For culture, see DIOʻSMA.

E. glomeraʻta (close-*flowered*). 1. White. May. 1818.

EUCHARI'DIUM. (From *eucharis*, agreeable; referring to the general appearance of this exquisite little hardy annual. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Clarkia.)

Sow in the open ground, in September, March, and middle of May, for flowering from May to September; sow, also, in a slight hotbed in March, and transplant into the borders.

E. Breweʻri (Brewer's). Rose-red. July. California.
„ *conciʻnnum* (neat). 1. Purple. June. California. 1824.
„ *grandifloʻrum* (large-flowered). See E. CONCINNUM.

EU'CHARIS. (From *eu*, well or good, and *charis*, attraction; in allusion to the beauty of the flowers. Nat. ord. Amaryllidaceæ.)

Evergreen stove bulbs. Offsets. Good fibrous loam, with some dried cow manure rubbed fine and some sharp sand. Feed with liquid manure when making their growth.

E. amazoʻnica (Amazonian). See E. GRANDIFLORA.
„ *bakeriaʻna* (Bakerian). White. Colombia. 1890.
„ *caʻndida* (white). 1. White; corona tinted yellow. Colombia. 1876.
„ *grandifloʻra* (large-flowered). 1 to 2. White. Colombia. 1856.
„ „ *Loʻwii* (Low's). White; segments incurved. Colombia. 1893.
E. grandifloʻra Mooʻrei (Moore's). White, yellow. 1888.
„ *Lehmaʻnni* (Lehmann's). White; corona 12-toothed. Popayan, Colombia. 1889.
„ *Masteʻrsii* (Masters'). White; corona 12-toothed, striped green. Colombia. 1885.
„ *Sandeʻri* (Sander's). White; corona none. Colombia. 1883.
„ „ *multifloʻra* (many-flowered). Flowers 5 to 6, smaller.
„ *subedentaʻta* (nearly-toothless). White. Winter. Colombia. 1876.

EUCHI'LUS OBCORDA'TUS. See PULTENÆA OBCORDATA.

EUCHLÆ'NA. (From *eu*, fine, and *chlaina*, wool; in allusion to the long, thread-like stigmas. Nat. ord. Gramineæ.)

A valuable grass for tropical countries, producing a luxuriant crop 8 to 15 ft. high and suitable for fodder. It may be reared in heat, and planted out at the end of May or beginning of June, like a half-hardy annual. Seeds. Garden soil.

E. mexicaʻna (Mexican). Purple, green. Mexico. Syn. *E. luxurians*.

EUCHRE'STA. (From *euchrestos*, good for use; the seeds of *E. Horsfieldii* being used as medicine by the natives of Java. Nat. ord. Leguminosæ.)

The only species introduced is a greenhouse shrub. Seeds; cuttings of mature wood in very sandy soil in a close case, with a gentle bottom-heat. Loam, peat, and sand.

E. japoʻnica (Japanese). Blue-white. Japan. 1865.

EUCHRO'MA COCCI'NEA. See CASTILLEJA COCCINEA.

EUCHRO'MA GRANDIFLO'RA. See CASTILLEJA SES, SILIFLORA.

EUCLE'A. (From *eukleia*, glory; referring to the beauty of the ebony-like wood, and fine green leaves. Nat. ord. *Ebenads* [Ebenaceæ]. Linn. 22-*Diœcia*, 10-*Decandria*. Allied to Diospyros.)

Greenhouse evergreens, with white flowers, from South Africa. Cuttings of half-ripe shoots, in sand, under a bell-glass, in April; peat and loam. Summer temp., 55° to 75°; winter, 40° to 45°.

E. racemoʻsa (racemed-*round-leaved*). 5. November. 1772.
„ *undulaʻta* (waved-*leaved*). 5. 1794.

EUCNI'DE. See MENTZELIA

EUCODO'NIA. See ACHIMENES.

EU'COMIS. (From *eukomes*, beautiful-haired; referring to the tufted crown of the flower-spike. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Daubenya.)

Strong, hardy, or greenhouse bulbs, which, if planted six inches deep in a rich, light border in front of a greenhouse, remain uninjured, and flower every year. Propagated by offsets.

E. amaryllidifoʻlia (Amaryllis-leaved). 1. Green. S. Africa. 1879.
„ *biʻcolor* (two-coloured). 1. Green, edged violet. Natal. 1878.
„ *bifoʻlia* (two-leaved). See WHITHEADIA LATIFOLIA.
„ *clavaʻta* (clubbed). See E. REGIA.
„ *gambesiʻaca* (Gambesian). See E. ZAMBESIACA.
„ *Jacquiʻnii* (Jacquin's). See E. NANA JACQUINII.
„ *macrophyʻlla* (large-leaved). See E. REGIA.
„ *naʻna* (dwarf). ½. Brown. May. S. Africa. 1774.
„ „ *Jacquiʻnii* (Jacquin's). ½. Green. S. Africa. 1903.
„ *pallidifloʻra* (pale-flowered). 2. Greenish-white. S. Africa. 1887.
„ *punctaʻta* (dotted). 2. Green, brown. June. S. Africa. 1783.
„ *purpureocauʻlis* (purple-stalked). See E. NANA.
„ *réʻgia* (royal). 2. Green. March. S. Africa. 1702.
„ *robuʻsta* (robust). 2. Green, tinted brown. Natal. 1894.
„ *striaʻta* (streaked). See E. PUNCTATA.
„ *undulaʻta* (waved-*leaved*). 2. Green. April. S. Africa. 1760.
„ *zambesiʻaca* (Zambesian). 2. Green. E. Trop. Africa. 1886.

EUCO'MMIA. (From *eu*, good, and *kommi*, gum; the juice abounds in gutta-percha. Nat. ord. Trochodendraceæ.)

A hardy, deciduous shrub, interesting chiefly as the only hardy plant producing gutta-percha in its laticiferous tissues. Seeds, layers, and probably cuttings.

E. ulmoï'des (Elm-like). Leaves 6 to 7 in. long. Fruits winged. China. 1899.

EUCRO'SIA. (From *eu*, beautiful, and *krossos*, a fringe; referring to the cup above the insertion of the stamens. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Stenomesson and Elisena.)

This is the best ill-used bulb in British gardens. Sweet, Don, Loudon, and Paxton make it a native of Cape Horn, instead of the western declivities of the Peruvian Andes—a mistake which caused the destruction of many bulbs. Hooker and Lindley gave badly-coloured figures of it, and the latter placed it in alliance with Phycella, with which it has no affinity. *Bi'color* refers to a dark-green stripe in the middle of the petals, outside; the flower is of a bright vermilion. It delights in strong loam; rests in winter, and prefers the stove. Offsets; light, rich loam. Winter temp., 35° to 45°.

E. bi'color (two-coloured). 1. Scarlet, green. April. Peru. 1816.

EUCRY'PHIA. (From *eu*, well, and *kryphia*, a covering; in reference to the cap-like cover formed by the calyx. Nat. ord. Rosaceæ.)

Evergreen shrubs, hardy in some of the more favoured districts, especially *E. pinnatifo'lia*, having large, handsome flowers like a white Hypericum. Cuttings of young shoots in sand, in a mild heat. Well-drained garden soil, with a little peat for plants in pots.

E. Billardie'ri Milliga'ni (Billardière's, Milligan's var.). White. Tasmania. 1891.
„ *cordifo'lia* (heart-shaped-leaved). 20. White. Chili. 1851.
„ *pinnatifo'lia* (pinnate-leaved). 10. White. Chili. 1880.

EUDE'SMIA TETRAGO'NA. See EUCALYPTUS TETRAGONA.

EUFRA'GIA LATIFO'LIA. See BARTSIA LATIFOLIA.

EUGE'NIA. (Named after *Prince Eugene* of Saxony. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Includes Jambosa and Caryophyllus.)

Stove evergreens, all white-blossomed. Cuttings of firm shoots in sand, with bottom-heat. Fibrous loam, one-third peat, and a dash of sand.

E. a'cris (bitter). 20. May. W. Ind.
„ *acumina'ta* (long-pointed). Green. May. Moluccas. 1816.
„ *amplexicau'lis* (stem-clasping). 3. Summer. India; Burma.
„ *apicula'ta* (apiculate). See MYRTUS LUMA.
„ *a'quea* (watery). 20. India and Ceylon. 1820.
„ *aroma'tica* (aromatic). See E. CARYOPHYLLATA.
„ *austra'lis* (southern). See E. MYRTIFOLIA.
„ *axilla'ris* (axillary). See E. MONTICOLA.
„ *balsa'mica* (balsamic). 15. Jamaica. 1816.
„ *baru'ensis* (Baruan). Dominica.
„ *bifa'ria* (two-ranked). May. Himalayas. 1824.
„ *biflo'ra* (two-flowered). 10. May. Jamaica. 1759.
„ *brachya'ndra* (short-stamened). Australia.
„ *brasilie'nsis* (Brazilian). 6. April. Brazil.
„ *buxifo'lia* (box-leaved). 4. May. W. Ind. 1818.
„ *caryophylla'ta* (nut-leaf). 20. Moluccas. 1797. "Clove-tree."
„ *cauliflo'ra* (stem-flowering). Brazil.
„ *chaguane'nsis* (Chaguan). Country unknown.
„ *Che'quen* (Chequen). White. Chili. 1867.
„ *compactifo'lia* (compact-leaved). Brazil.
„ *confu'sa* (confused). 5. W. Ind.
„ *cotinifo'lia* (Cotinus-like). 50. Isle of Bourbon. 1823.
„ *dysente'rica* (dysenteric). Brazil.
„ *edu'lis* (edible). Argentina.
„ *elli'ptica* (oval-*fruited*). See E. SMITHII.
„ *eucalyptoï'des* (Eucalyptus-like). Australia.
„ *ferrugi'nea* (rusty). Chili.
E. floribu'nda (bundle-flowered). See E. CONFUSA.
„ *formo'sa* (beautiful). White. May. India; Burma.
„ „ *ternifo'lia* (three-leaved). White. May. India; Burma. 1822.
„ *fra'grans* (sweet-scented). 10. April. Jamaica. 1790.
„ *frondo'sa* (leafy). May. Himalaya. 1824.
„ *frutico'sa* (shrubby). May. Himalaya; Burma. 1824.
„ *Garbe'ri* (Garber's). 60. Florida. 1889.
„ *glanduli'fera* (glanded). See E. ZEYLANICA.
„ *glomera'ta* (clustered). May. Mauritius. 1824.
„ *Gre'gii* (Greg's). 6. Dominica. 1776.
„ *Gua'biju* (Guabiju). Greenish-white. Berries blue-black. Uruguay. 1897.
„ *inophy'lla* (fibrous-leaved). May. Moluccas. 1826.
„ *Jambola'na* (Jambolana). 20. August. Trop. Asia. 1796.
„ „ *obtusifo'lia* (blunt-leaved). 8. 1821.
„ *Ja'mbos* (Jambos). 20. Trop. Asia.
„ *java'nica* (Javanese). 10. Java. 1823.
„ *korthalsia'na* (Korthalsian). Borneo. 1872.
„ *lanceola'ta* (lance-shaped). Java and Sumatra.
„ *latifo'lia* (broad-leaved). 10. Guiana. 1793.
„ *Lu'ma* (Luma). See MYRTUS LUMA.
„ *macroca'rpa* (large-fruited). 20. E. Ind. 1822.
„ *magnifica* (magnificent). Pale rose. New Caledonia. 1878.
„ *malacce'nsis* (Malaccan). 20. Scarlet. July. Malaya. 1768. "Malay Apple."
„ „ *purpu'rea* (purple). Purple. June. Malaya. 1768.
„ *Miche'lii* (Michel's). See E. UNIFLORA.
„ *monti'cola* (mountain-dwelling). S. Amer.; W. Ind.
„ *myriophy'lla* (myriad-leaved). 1 to 2. Brazil.
„ *myrtifo'lia* (myrtle-leaved). Australia. B. M., t. 2230.
„ *obova'ta* (reversed-egg-*leaved*). Isle of France. 1822.
„ *obscu'ra* (obscure). 6. July. Maranham. 1823.
„ *obtusifo'lia* (blunt-leaved). See E. JAMBOLANA.
„ *oleoï'des* (olive-like). White, in panicles. Colombia.
„ *ova'ta* (egg-shaped). Chili.
„ *panicula'ta* (panicled). April. Bourbon. 1822.
„ *parvifo'lia* (small-leaved). Peru.
„ *Pime'nta* (Pimenta). See PIMENTA OFFICINALIS.
„ *Pita'nga* (Pitanga). Fruits scarlet. Brazil. 1900.
„ *polype'tala* (many-petaled). Himalaya.
„ *polysta'chya* (many-spiked). Guiana. 1824.
„ *pulche'lla* (pretty). 10. E. Ind. 1824.
„ *pu'ngens* (pungent). Brazil.
„ *racemo'sa* (racemed). See BARRINGTONIA RACEMOSA.
„ *rubicu'nda* (reddish). India.
„ *rugo'sa* (wrinkly). See E. POLYSTACHYA.
„ *rupe'stris* (rock). Brazil.
„ *Se'lloi* (Sello's). 4. White. Fruit yellow. Brazil. 1884.
„ *sinemarie'nsis* (Sinemaria). 4. June. Guiana. 1823.
„ *Smi'thii* (Smith's). 8. July. Australia. 1790.
„ *ternatifo'lia* (ternate-leaved). Brazil.
„ *trine'rvia* (three-nerved). See RHODAMNIA TRINERVIA.
„ *U'gni* (Ugni—native name). See MYRTUS UGNI.
„ *uniflo'ra* (one-flowered). 12. Trop. Amer.
„ *veno'sa* (veiny). White. May. Madagascar. 1824.
„ *Ventena'tii* (Ventenat's). Australia.
„ *virgulto'sa* (twiggy). 6. July. Jamaica. 1787.
„ *vulga'ris* (common). See E. JAMBOS.
„ *xalape'nsis* (Xalapan). Mexico.
„ *Zeyhe'ri* (Zeyher's). S. Africa.
„ *zeyla'nica* (Cingalese). 10. India. Malaya. 1798.

EULA'LIA GRACI'LLIMA. See MISCANTHUS SINENSIS.

EULA'LIA JAPO'NICA. See MISCANTHUS JAPONICUS.

EULO'PHIA. (From *eulophos*, handsome crested; referring to the handsome lip, or labellum, furrowed into elevated ridges. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Galeandra.)

A family of those forms of orchids, which, like our British species, derive their nutriment from the ground, and hence are called ground or terrestrial orchids. An Indian species of Eulophia furnishes, from its tuberous roots, the nutritive substance called *salep*. Division of the plant when in a state of rest, just as fresh growth commences; peat and loam, both fibrous, and well drained; well watered when growing, kept nearly dry when resting. Summer temp., 60° to 80°; winter, 45°

to 55°. Those from Sierra Leone and East Indies require a few degrees more.

E. andama'nica (Andamanic). Andaman Islands.
„ *barba'ta* (bearded). 1. July. S. Africa. 1825.
„ *be'lla* (beautiful). 2. Yellow, white, carmine, rose, green, brown. Zambesi. 1889.
„ *callichro'ma* (beautiful-coloured). Yellow. Zambesi. 1889.
„ *campe'stris* (field). India.
„ *coiloglo'ssa* (hollow-tongued). Natal.
„ *Co'leæ* (Miss E. Cole's). Greenish, white. Somaliland. 1903.
„ *congoe'nsis* (Congolan). See E. GUINEENSIS.
„ *defle'xa* (deflexed). 2. Purple, lilac; lip fringed white. Natal. 1895.
„ *dregea'na* (Dregean). Chocolate, white. S. Africa.
„ *ensa'ta* (sword-shaped). 1. Green-yellow. S. Africa. 1822.
„ *euglo'ssa* (beautiful-tongued). White, red. Trop. Africa. 1866.
„ *explana'ta* (spread-out). N.W. India.
„ *flexuo'sa* (flexuous). 1. White, with purple spots and a yellow blotch. E. Trop. Africa. 1894.
„ *gigante'a* (giant). 3 to 4. Greenish, lilac, yellow. W. Trop. Africa. 1888.
„ *gra'cilis* (slender). W. Trop. Africa.
„ *guinee'nsis* (Guinea). 1. Purple, brown. September. Sierra Leone. 1822.
„ „ *purpura'ta* (purple). Dark purple, rose-purple.
„ *Hellebori'na* (Helleborine). See HABENARIA HELLEBORINA.
„ *latifo'lia* (broad-leaved). W. Trop. Africa.
„ *Ledie'nii* (Ledien's). Red-brown, white. W. Trop. Africa.
„ *longico'rnis* (long-horned). See MYSTACIDIUM FILICORNE.
„ *lubbersia'na* (Lubbersian). Leaves marbled with white. Congo Free State. 1900.
„ *lu'rida* (lurid). W. Trop. Africa.
„ *mackaya'na* (Mackayan). See ZYGOPETALUM MACKAII.
„ *Macke'nii* (Macken's). Natal. 1892.
„ *macrosta'chya* (large-spiked). 2. Yellow, green. October. Ceylon.
„ *macula'ta* (blotched). Pink, white. Brazil.
„ *megistophy'lla* (largest-leaved). Flowers panicled. Comoro Islands. 1885.
„ *monophy'lla* (one-leaved). Mauritius.
„ *nu'da* (naked). Rose-lilac. India. 1891.
„ *panicula'ta* (panicled). 1. Purple-brown, green. Rhodesia. 1905.
„ *pu'lchra* (pretty). 2. Light yellow-green, striped purple. Madagascar. 1882.
„ „ *dive'rgens* (diverging). Lip broader in front. 1884.
„ *saundersia'na* (Saundersian). W. Trop. Africa.
„ *scri'pta* (written). Green, yellow, brown. Madagascar. 1872.
„ *squa'lida* (squalid). Dingy. July. Manilla. 1838.
„ *streptope'tala* (twisted petaled). See LISSOCHILUS STREPTOPETALUS.
„ *undula'ta* (waved). 1. Purple-brown, pale green. Rhodesia. 1905.
„ *vi'rens* (green). Green, purple. Ceylon and S. India. 1866.
„ *Woodfo'rdii* (Woodford's). Green; lip claret-purple. Old Calabar. 1901.
„ *Zeyhe'ri* (Zeyher's). 1½. Yellow, purple-brown. S. Africa.

EULOPHIE'LLA. (From *Eulophia*, and *ella*, diminutive; the two genera are closely related. Nat. ord. Orchidaceæ.)

Handsome terrestrial Orchids. For cultivation, see EULOPHIA.

E. Elizabe'thæ (Elizabeth's). White; lip yellow; dull purple on the back. Madagascar.
„ *Hameli'nii* (Hamelin's). White; lip spotted red, with yellow keels. Madagascar. 1900.
„ *peetersia'na* (Peetersian). Rose. Madagascar. 1896

EUMERUS ÆNEUS. Brassy Onion-fly. Mr. Curtis says the maggots are brownish, and are very rough from a multitude of rigid bristles, especially towards the tail. The fly itself is of a reddish-ochre colour, freckled with dark brown, and there are two spiny processes like short horns upon the thorax, in the female at least. It is densely clothed with short hairs, thickly and distinctly punctured, and of an olive-green colour, with a brassy tinge; the antennæ (feelers) are entirely black, the seta naked; the face is very hairy, simply convex, and silvery white; eyes dark brown, and slightly hairy; rostrum very short; thorax with two whitish lines down the back. The maggots of this fly do not seem to be confined to the onion, for Mr. Curtis bred one in the middle of May from cabbage-roots, and specimens have been taken flying about hedges in June and July, in the neighbourhood of London and Bristol. As it often happens, the female has not been observed depositing her eggs; the spot that she selects is therefore yet unknown. Drought does not suit them.

EUNO'MIA OPPOSITIFO'LIA. See ÆTHIONEMA OPPOSITIFOLIUM.

EUO'NYMUS. The Spindle-tree. (From *eu*, good, and *onoma*, a name; literally, of good repute. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Interesting trees and shrubs in autumn, their opening capsules looking very beautiful when other things are losing their attractions. Seeds may be sown either in autumn or spring; cuttings of ripe young shoots may be planted in a border in autumn; common soil. The American species require a moist situation. Those from Nepaul, though from a high altitude, have not been proved quite hardy, though it is presumed they would in many places; protect them in winter.

HALF-HARDY EVERGREENS.

E. bulla'tus (knobbed). Greenish. May. Himalaya.
„ *chine'nsis* (Chinese). 4. Pink. May. China. 1820.
„ *echina'tus* (prickly). 10. White. May. Nepaul. 1824. Deciduous.
„ *grandiflo'rus* (large-flowered). 8. White. June. Nepaul. 1824.
„ *hamiltonia'nus* (Hamilton's). 20. White. June. Nepaul. 1825.
„ *japo'nicus* (Japanese). 6. Pink. July. Japan and China. 1804
„ „ *a'lbo-margina'tus* (white-edged). Leaves with narrow white edge.
„ „ *au'reus* (golden). Leaves golden and green.
„ „ *latifo'lius a'lbo-variega'tus* (broad-leaved silver). Leaves with white variegation.
„ „ *macrophy'llus* (large-leaved).
„ „ *macula'tus* (blotched). 6. Greenish-white. July. Japan. 1836.
„ „ *microphy'llus* (small-leaved). ½ to 1.
„ „ *ova'tus-au'reus* (golden egg-shaped). Leaves ovate, with golden variegation.
„ „ *pulche'llus fo'liis argе'nteis* (silvery).
„ „ *variega'tus* (variegated). 6. Greenish-white. July. Japan. 1836.
„ *na'nus* (dwarf). 1 to 3. Greenish-white. Northern Caucasus. 1830.
„ *pe'ndulus* (pendulous). Malaya. Stove.
„ *radi'cans* (rooting). A dwarf rooting plant, but climbs 5 to 15 ft. on walls. Japan. 1862.
„ „ *Carrie'ri* (Carriere's). Green. 1881.
„ „ *fo'liis ro'seo-argе'nteis* (rosy-silver). Leaves silvery tinted rose.
„ „ *fo'liis tricolo'ribus* (three-coloured). Leaves edged silver and rose.
„ „ *microphy'llus* (small-leaved). Leaves as small as Box leaves.
„ „ *Silver Gem*. Leaves silvery white, broad.

HARDY DECIDUOUS.

E. ala'tus (winged). Green. Japan. 1870.
„ *america'nus* (American). 6. Pink. June. N. Amer. 1683.
„ „ *angustifo'lius* (narrow-leaved). 6. Yellow, red. June. N. Amer. 1806. Evergreen.
„ *atropurpu'reus* (dark purple). 6. Purple. June. N. Amer. 1756.
„ *bungea'nus* (Bungean). Green. China.
„ *europæ'us* (European). 15. White. June. Britain.
„ „ *atropurpu'reus* (dark purple). Leaves dark purple.
„ „ *fo'liis variega'tis* (variegated-leaved). 15. White May.

E fimbria'tus (fringed). Green. May. Himalayas.
„ *hi'ans* (gaping). Seeds blood-red, with blood-red aril. Japan. 1904.
„ *latifo'lius* (broad-leaved). 10. Green. June. Europe; Asia. 1730.
„ „ *pla'nipes* (flat-stalked). Leaf-stalks flattened.
„ *lu'cidus* (shining). See E. PENDULUS.
„ *Maa'ckii* (Maack's). Amurland.
„ *macro'pterus* (large-winged). Whitish. Amur region. 1909.
„ *obova'tus* (obversely egg-shaped). 3. Green. June. Canada; United States. 1820.
„ *oxyphy'llus* (acute-leaved). Green. China and Japan.
„ *pa'tens* (spreading). Green. Leaves not leathery. China (?). 1903.
„ *pe'ndulus* (pendulous). 7. White. Himalayas. 1820.
„ *pulche'llus fo'liis variega'tis* (leaves variegated). Garden variety, with small variegated leaves. 1890.
„ *semiexse'rta* (half-exserted). Arillus orange. Seed blood-red. Japan. 1910.
„ *sieboldia'nus* (Sieboldian). Green. China and Japan.
„ *ti'ngens* (tinging). Green. Himalayas.
„ *thunbergia'nus* (Thunbergian). Green. Amurland; Japan.
„ *veluti'nus* (velvety). White. June. Caucasus. 1838.
„ *verruco'sus* (warty). 5. Green. May. E. Europe to Amurland. 1763.
„ *yedoe'nsis* (Yedoese). 6 to 10. Yellow-green. Fruit pale carmine-rose. Japan. 1906.
„ „ *caloca'rpa* (beautiful-fruited). 6 to 10. Yellow-green. Fruit deep carmine-rose. 1910.

EUO'SMA ALBIFLO'RA. See LOGANIA FLORIBUNDA.

EUPATO'RIUM. (Named after *Mithridates Eupator*, King of Pontus, who discovered one of the species to be an antidote against poison. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Stove shrubs and under-shrubs, by cuttings in sand, under a bell-glass; peat and loam; stove, greenhouse, and hardy herbaceous plants, by division, as fresh growth is commencing; common soil. Usual stove and greenhouse temperatures.

STOVE AND GREENHOUSE.

E. adeno'phorum (gland-bearing). See E. TRAPEZOIDEUM and variety.
„ *ageratifo'lium* (Ageratum-leaved). Autumn. W. Ind. 1877.
„ *arizo'nicum* (Arizonian). White. Arizona. 1904.
„ *atroru'bens* (dark-red). Reddish-lilac. Mexico.
„ *Berlandie'ri* (Berlandier's). See E. AGERATIFOLIUM.
„ *berteria'num* (Berterian). See E. GUADALUPENSE.
„ *cane'scens* (grey). See E. SINUATUM.
„ *chamædrifo'lium* (Chamædrys-leaved). 1. Blue. August. Peru. 1822.
„ *conyzoi'des* (Conyza-like). 1½. Blue. July. Trop. Amer. 1823.
„ *Da'lea* (Dalea-like). 6. Pink. August. Jamaica and Cuba. 1773.
„ *deltoi'deum* (triangular). Large rosy-purple. Mexico. 1907.
„ *floribu'ndum* (free-flowering). See E. CONYZOIDES.
„ *glandulo'sum* (glandular). 3 to 4. White. Mexico.
„ *grandiflo'rum* (large-flowered). Reddish. Country unknown. 1882.
„ *guadalupe'nse* (Guadaloupean). White. August. Guadaloupe. 1830.
„ *haagea'num* (Haagean). White. S. Amer (?). 1867.
„ *ianthi'num* (violet). 2. Purple. January. Mexico. 1849.
„ *ivæfo'lium* (Iva-leaved). 3. Pink. September. W. Ind. 1794.
„ *ligustri'num* (Privet-like). See E. MICRANTHUM.
„ *macrophy'llum* (large-leaved). 4. White. July. Trop. Amer. 1823.
„ *megalophy'llum* (large-leaved). Lilac. Mexico. 1862. Fragrant.
„ *micra'nthum* (small-flowered). Winter.
„ *odora'tum* (scented). See E. WEINMANNIANUM.
„ *paname'nse* (Panaman). Lilac-rose. Panama. 1877.
„ *panicula'tum* (panicled). 6. Pink. August. S. Amer. 1818.
„ *petiola're* (stalked). See E. PURPUSI.
„ *pro'bum* (good). White. Peru. 1890.
E. pycnoce'phalum (dense-headed). White. June. Mexico. 1833.
„ *Purpu'si* (Purpus's). Free-flowering, sweet-scented, pink. 1905.
„ *Raffi'llii* (Raffill's). 2. Deep lilac. Central Amer. 1908.
„ *reticula'tum* (netted). Whitish. 1878.
„ *ripa'rium* (river-bank). 2. White. Winter. Mexico. 1867.
„ *schiedea'num* (Schiedean). See E. PYCNOCEPHALUM.
„ *serrula'tum* (finely-sawed). Rosy-lilac. Uruguay. 1894.
„ *sinua'tum* (waved). 3. Purple, yellow. Jamaica. 1821.
„ *tetrago'num* (four-angled). White. Mexico. 1832.
„ *trapezoi'deum* (lozenge-shaped). 3 to 4. White. Winter. Mexico (?).
„ „ *fo'liis-variega'tis* (leaves variegated). Yellow-white variegation.
„ *urole'pis* (tail-scaled). 2. Rosy-lilac. Summer. Brazil.
„ *verna'le* (vernal). February. Mexico.
„ *viscosi'ssimum* (very clammy). Upper part of the plant glandular. Lower California. 1906.
„ *weinmannia'num* (Weinmannian). 2. White, fragrant. Mexico. 1867.
„ *xalape'nse* (Xalapan). 3. White. July. Mexico. 1826.

HARDY HERBACEOUS.

E. ageratoi'des (Ageratum-like). 4. White. August. N. Amer. 1610.
„ *alti'ssimum* (tallest). 5. Pink. September. N. Amer. 1699.
„ *ambi'guum* (doubtful). See E SEROTINUM.
„ *aroma'ticum* (aromatic). 4. White. July. N. Amer. 1739.
„ *cannabi'num* (hemp-like. *Agrimony*). 4. Pink. July. Britain.
„ *corda'tum* (heart-shaped). See E. AROMATICUM.
„ *coronopifo'lium* (coronopus-leaved). 3. White. August. Carolina. 1824.
„ *fœniculu'ceum* (fennel-*leaved*). 4. Pale yellow. October. N. Amer. 1807.
„ *Frase'ri* (Fraser's). See E. AGERATOIDES.
„ *hyssopifo'lium* (hyssop-leaved). 1. White. August. N. Amer. 1699.
„ *japo'nicum* (Japanese). White. Japan; Formosa. 1889.
„ *Kirilo'wii* (Kirilow's). 2 to 3. White. China.
„ *lanceola'tum* (spear-head-*leaved*). See E. TEUCRIFOLIUM.
„ *macula'tum* (spotted-*stalked*). See E. PURPUREUM MACULATUM.
„ *perfolia'tum* (pierced-leaved). 2. White. July. N. Amer. 1699.
„ *pube'scens* (downy). See E. ROTUNDIFOLIUM.
„ *purpu'reum* (purple-*stalked*). 5. Pink. August. N. Amer. 1640.
„ „ *macula'tum* (spotted). 3. Purple. August. N. Amer. 1656.
„ *rotundifo'lium* (round-leaved). 1. White. July. N. Amer. 1699.
„ *salvifo'lium* (Salvia-leaved) of B. M., t. 2010. See E. PERFOLIATUM.
„ *sero'tinum* (late). N. Amer.
„ *sessilifo'lium* (stalkless-leaved). 1. White. September. N. Amer. 1777.
„ *syri'acum* (Syrian). 4. Purple. August. Syria. 1807.
„ *teucrifo'lium* (Teucrium-leaved). 2. White. July. N. Amer. 1810.
„ *trifolia'tum* (three-leaved). 6. Purple. August. N. Amer. 1768.
„ *trunca'tum* (cut-off). See E. SESSILIFOLIUM.
„ *verticilla'tum* (whorl-*leaved*). See E. PURPUREUM.

EUPE'TALUM PETALO'DES. See BEGONIA PETALODES.

EUPE'TALUM PUNCTA'TUM. See BEGONIA HERACLEIFOLIA.

EUPHO'RBIA. Spurge, or Milkwort. (Named after *Euphorbus*, physician to the King of Mauritania. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 11-*Dodecandria*, 3-*Trigynia*.)

The unripe seed-pods of *E. La'thyris* are the British

capers. A large family, widely differing in their habits. Hardy annuals may be sown in the open border, in April; but, with the exception of *plumo'sa* and a few more, the rest are not worth ground-room. Even the tropical annuals are little better; they require to be raised in a hotbed and transplanted. Herbaceous perennials are chiefly hardy; divisions of the plant, and seeds; sandy soil; shrubs and under-shrubs chiefly require a dry stove and warm greenhouse, and are propagated by seeds and by cuttings, which should be dried at the base before placing in any rough, loose material. The species which are firm and hard require a rich, light loam, with a little peat; those that are very succulent should have a large portion of lime-rubbish and broken bricks. Winter temp., not much below 45°. There are two sub-evergreen shrubs, natives of England, *amygdaloi'des* and *Chara'cias*, both of which, and especially the latter, do well for rock-work. *Spino'sa*, from the south of Europe, is useful for planting on the rockery.

Hardy Annuals.

E. exi'gua (petty). ½. June. Europe. (Britain).
„ *globo'sa* (globular). 1. July. 1818.
„ *heterophy'lla* (various-leaved). Bracts red at the base. N. Amer. 1889.
„ *La'thyris* (Lathyrus). Yellow-green. England. "Caper Spurge." Biennial.
„ *neapolita'na* (Neapolitan). See E. Terracina.
„ *plumo'sa* (feathery). July. 1816.
„ *ru'bra* (red). See E. exigua.
„ *segeta'lis* (corn). 1. June. Europe. 1820.
„ *serpyllifo'lia* (thyme-leaved). ½. July. N. Amer. 1817.
„ *tau'rica* (Taurian). See E. segetalis.
„ *Terraci'na* (Terracina). 1½. July. Mediterranean region. 1816.
„ *variega'ta* (variegated). See E. marginata.

Stove Annuals.

E. hi'rta (hairy). See E. pilulifera.
„ *ophtha'lmica* (ophthalmic). See E. pilulifera.
„ *pilulifera* (globule-bearing). ½. July. Tropics of both hemispheres. 1818.
„ *scordifo'lia* (Scordium-leaved). ½. July. Trop. Africa. 1823.

Greenhouse Evergreens.

E. aphy'lla (leafless). 1½. Teneriffe. 1815.
„ *A'pios* (pear-*rooted*). ½. July. Candia. 1596.
„ *a'tro-purpu'rea* (dark purple). 3. July. Teneriffe. 1815.
„ *balsami'fera* (balsam-bearing). June. Canaries. 1779.
„ *Bivo'næ* (Bivona's). 1. June. Sicily. 1824.
„ *frutico'sa* (shrubby). See E. Bivonæ.
„ *imbrica'ta* (imbricated). 1. August. Portugal. 1800.
„ *læ'ta* (joyous). See E. dendroides.
„ *nummulariæfo'lia* (moneywort-leaved). See E. imbricata.
„ *orni'thopus* (bird's-foot). 1. July. S. Africa.
„ *spathulæfo'lia* (spatula-leaved). 2. August. India. 1800.

Greenhouse Herbaceous.

E. ale'ppica (Aleppo). 1. July. S. Europe. 1820.
„ *Dinte'ri* (Dinter's). Stems 7 to 8-angled. S.W. Africa. 1906.
„ *erythri'na* (red). 1. July. Cape of Good Hope. 1823.
„ *genicula'ta* (jointed). 2. August. Trop. Amer. 1799.
„ *margina'ta* (bordered). 1. June. N. Amer. 1811. Leaves edged with white.
„ *mu'lticeps* (many-headed). Allied to *E. tuberculata*. S. Africa. 1905.
„ *prunifo'lia* (plum-leaved). See E. geniculata.
„ *serra'ta* (*narrow*-saw-*leaved*). 1. July. S. Europe. 1710.

Stove Evergreens.

E. abyssi'nica (Abyssinian). Abyssinia.
„ *aggrega'ta* (aggregate). ½. S. Africa. 1910.
„ *alcico'rnis* (elk's-horn). Madagascar.
„ *anacampseroi'des* (anacampseros-like). See Pedilanthus padifolius.
„ *anaca'ntha* (spineless). S. Africa.
E. antiquo'rum (antique). 9. April. E. Ind. 1768.
„ *arbore'scens* (arborescent). See E. grandidens.
„ *beaumierea'na* (Beaumierean). Morocco.
„ *biglandulo'sa* (twin-glanded). 3. Greece. 1808.
„ *Bo'jeri* (Bojer's). 4. Scarlet. November. Madagascar.
„ *bractea'ta* (bracted). See Pedilanthus bracteatus.
„ *Bryo'nii* (bryony-like). Scarlet.
„ *bupleurifo'lia* (bupleurum-leaved). 1½. August. Cape of Good Hope. 1793.
„ *cærule'scens* (bluish). See E. virosa.
„ *cala'brica* (Calabrian). W. Trop. Africa.
„ *canarie'nsis* (Canary). 20. July. Canaries. 1697.
„ *Candela'brum* (candelabrum). S. Africa.
„ „ *Erythræ'æ* (Eritrea). Stem 4-angled. Eritrea. 1910.
„ *Ca'put Medu'sæ* (*great*-Medusa-headed). 2. August. S. Africa. 1731.
„ „ *pu'mila* (dwarf). 1. August. Cape of Good Hope. 1768.
„ *cereifo'rmis* (Cereus-shaped). 2. April. Cape of Good Hope. 1731.
„ „ *submamilla'ris* (slightly-teated). Ribs with transverse furrows. 1902.
„ *cervico'rnis* (stag's-horn). S. Africa.
„ *cirsioi'des* (Cirsium-like). Resembling a thistle. Madagascar. 1907.
„ *clandesti'na* (clandestine). S. Africa.
„ *Cla'va* (club). 1. May. S. Africa. 1800.
„ *colletioi'des* (Colletia-like). Mexico.
„ „ *sulca'ta* (furrowed).
„ *Commeli'ni* (Commelin's). See Caput-Medusæ.
„ *compa'cta* (compact). Garden name.
„ *Coope'ri* (Cooper's). S. Africa.
„ *corolla'ta* (petaloid). See E. pulcherrima alba.
„ *cri'spa* (curled). ½. July. Cape of Good Hope. 1819.
„ *cucumeri'na* (cucumber-like). ½. June. Cape of Good Hope.
„ *drupi'fera* (drupe-bearing). 6. W. Trop. Africa. 1789.
„ *eno'pla denta'ta* (toothed). Stems 6 to 10-angled. S. Africa.
„ *enneago'na* (nine-angled). See E. cereiformis.
„ *Fournie'ri* (Fournier's). Madagascar. Re-introduced. 1896.
„ *Fru'ctus-Pi'ni* (Pine-fruited). See E. Caput-Medusæ.
„ „ *gemina'ta* (twin-*branched*). ½. August. Cape of Good Hope. 1731.
„ *franckia'na* (Franckian). Stem 4-angled. Country unknown.
„ *fu'lgens* (blazing). 4. Scarlet. August. Mexico. 1836.
„ *globo'sa* (globose). S. Africa.
„ *grandico'rnis* (large-horned). Trop. Africa.
„ *gra'ndidens* (large-toothed). 5. July. Cape of Good Hope. 1823.
„ *grandifo'lia* (large-leaved). See E. drupifera.
„ *hæmato'des* (blood-coloured). Country unknown.
„ *Hawo'rthii* (Haworth's). See E. Clava.
„ *helicothe'le* (spiral-nippled). See E. Nivulia.
„ *heptago'na* (seven-angled). 3. September. Cape of Good Hope. 1731.
„ „ *fulvispi'na* (tawny-spined). Spines reddish-brown. 1902.
„ „ *ru'bra* (red-*spined*). 4. September. Cape of Good Hope. 1731.
„ *hermentia'na* (Hermentian). Congo Free State. 1901.
„ *heterochro'ma* (various-coloured). 1½. Branches 4-angled. Uganda. 1910.
„ *Hy'strix* (porcupine). 6. July. Cape of Good Hope. 1695.
„ *Inti'sy* (Intisy). 20 to 23. Madagascar. 1907. A source of rubber.
„ *jacquiniæflo'ra* (Jacquinia-flowered). See E. fulgens.
„ *la'ctea* (milky). 4. July. India. 1804.
„ *Lama'rckii* (Lamarck's). See E. obtusifolia.
„ *laurifo'lia* (laurel-leaved). 2. Peru. 1820.
„ *Ledie'nii* (Ledien's). 3. Yellow. S. Africa. 1868.
„ *linea'ris* (narrow-*leaved*). July. Vera Cruz. 1824.
„ *linifo'lia* (flax-leaved). 2. W. Ind. 1774.
„ *lophogo'na* (crested-angled). 3. Madagascar. 1824.
„ *macrogly'pha* (long-sculptured). Madagascar.
„ *ma'gnidens* (large-toothed). See E. grandidens.
„ *magnima'mma* (large-nippled). 3. Mexico. 1823.
„ *mamilla'ris* (nippled-*angled*). 2. July. Cape of Good Hope. 1759.

E. mamilla'ris spino'sior (more spiny). Spines more numerous. 1902.
,, *maurita'nica* (Moroccan). S. Africa.
,, *meloto'rmis* (melon-shaped). ½. July. Cape of Good Hope. 1774.
,, ,, *Cordero'yi* (Corderoy's).
,, *Montei'ri* (Monteir's). Green. Trop. Africa. 1865.
,, *Mori'nii* (Morin's). Stem 1½ to 2 in. thick. S. Africa.
,, *myrtifo'lia* (myrtle-leaved). 2. July. Cape of Good Hope. 1699.
,, *natale'nsis* (Natal). S. Africa.
,, *nerifo'lia* (Nerium-leaved). Malaya.
,, ,, *variega'ta* (variegated).
,, *neu'tra* (neither). Stems with grey-brown spine-shields. Country unknown.
,, *Nivu'lia* (Nivulia). India.
,, *obe'sa* (fat). ½. Stem 8-ribbed, crossed by purple lines. S. Africa. 1903.
,, *oblongicau'lis* (oblong-stemmed). Arabia.
,, *obtusifo'lia* (blunt-leaved). 1½. July. Teneriffe. 1800.
,, *odontophy'lla* (tooth-leaved). See E. CEREIFORMIS.
,, *officina'rum* (shop). 6. June. N. Africa. 1597.
,, *oxyste'gia* (sharp-covered). 3. Green, yellow. S. Africa. 1862.
,, *pe'ndula* (hanging-down). 1. 1808.
,, *pentago'na* (five-angled). S. Africa.
,, *pereskiæfo'lia* (Pereskia-leaved). S. Africa.
,, *Phillipsiæ* (Mrs. Phillips's). Yellow. British Somaliland. 1903.
,, *piscato'ria* (fishing). Canaries.
,, *plumerioi'des* (Plumeria-like). Bracts scarlet. Java. 1874.
,, *polyaca'ntha* (many-spined). Abyssinia.
,, *polygo'na* (many-angled) of Haworth. S. Africa.
,, *polygo'na* (many-angled) of Loddiges. See E. CEREIFORMIS.
,, *procu'mbens* (lying-down). ½. August. Cape of Good Hope. 1768.
,, *Pseudoca'ctus* (false-Cactus). Stem 4 to 5-angled. Country unknown.
,, *pugnifo'rmis* (fist-formed). See E. PROCUMBENS.
,, *pulche'rrima* (fairest). 2 to 4. Bracts scarlet. Winter. Mexico. 1834.
,, ,, *a'lbida* (whitish). Bracts creamy-white. Winter. 1834.
,, *puni'cea* (scarlet-*flowered*). 6. April. Jamaica. 1778.
,, *Re'gis-Ju'bæ* (King Juba's). Teneriffe.
,, *repa'nda* (wavy-edged). 2. August. E. Ind. 1808.
,, *resini'fera* (resin-bearing). Morocco.
,, *Sapi'nii* (Sapin's). Leaves 9 to 12 in. long, in an apical tuft. Congo. 1906.
,, *Schimpe'ri* (Schimper's). Arabia.
,, *si'milis* (similar). Resembles *E. abyssinica*. Natal (?).
,, *Sipoli'sii* (Sipolis's). Brazil.
,, *sple'ndens* (shining). 4. Scarlet. June. Isle of France. 1826.
,, *squarro'sa* (spreading). ½. S. Africa.
,, *stapelioi'des* (Stapelia-like). S. Africa.
,, *Sta'pfii* (Stapf's). See E. HETEROCHROMA.
,, *stygia'na* (Stygian). Pale yellow. Azores. 1865.
,, *tetrago'na* (four-angled). 4. S. Africa.
,, *Tiruca'lli* (Tirucall's). Trop. Africa.
,, *triangula'ris* (triangular). S. Africa.
,, *tubero'sa* (tuberous). ½. July. Cape of Good Hope. 1808.
,, *uncina'ta* (hooked). ½. July. Cape of Good Hope. 1794.
,, *verticilla'ta* (whorled). August. W. Ind. 1826.
,, *viperi'na* (viper-like). Branches with 6 to 7 spiral rows of 6-sided tubercles. S. Africa (?). 1902.
,, *viro'sa* (poisonous). 3. June. S. Africa. 1824.
,, *xylophylloi'des* (Xylophylla-like). Madagascar.

HARDY EVERGREENS.

E. amygdaloi'des (almond-like). 2. April. England.
,, ,, *variega'ta* (striped-*leaved*). 2. March. Britain.
,, *Chara'cias* (Characias). 4. April. England.
,, *dendroi'des* (tree-like). ½. July. Italy. 1768.
,, *Heldrei'chii* (Heldreich's). 2. Green, in tiers. Greece. 1909.
,, *melli'fera* (honey-bearing). Flowers chiefly terminal. Madeira.
E. Myrsini'tes (Myrsinites). Leaves sea-green. S. Europe.
,, *Sibtho'rpii* (Sibthorp's). Flowers terminal and axillary. Greece.
,, *spino'sa* (spiny). ½. June. S. Europe. 1710.
,, *Wulfe'ni* (Wulfen's). Young leaves tinted red. Flowers carried down the stem. Dalmatia. 1905.

HARDY HERBACEOUS.

E. alti'ssima (tallest). Asia Minor.
,, *angustifo'lia* (narrow-leaved). 1. Yellow. July. Trinidad. 1827.
,, *atla'ntica* (Atlantic). 1. June. Algeria. 1818.
,, *biumbella'ta* (double-umbelled). 1. Barbary. 1780.
,, *cæspito'sa* (tufted). See E. PINEA.
,, *carnio'lica* (Carniolian). Tyrol.
,, *coralloi'des* (coral-like). S. Europe.
,, *corderia'na* (Corderian). 1. May. S. Europe. 1824.
,, *corolla'ta* (wreathed). N. Amer.
,, *cybire'nsis* (Cybira). July. Eastern Mediterranean region. 1818.
,, *Cypari'ssias* (Cyparissias). 1. Yellow. Europe. "Cypress Spurge."
,, *denta'ta* (toothed). N. Amer.
,, *denticula'ta* (small-toothed). 1. June. Asia Minor. 1810.
,, *du'lcis* (sweet). 1. July. Europe. 1759.
,, *epithymoi'des* (Epithymum-like). 1 to 1½. Yellow. Europe.
,, *flavi'coma* (yellow-haired). 1½. July. Spain. 1820.
,, *hybe'rna* (Irish). Greenish-yellow. Ireland. "Irish Spurge."
,, *Laga'scæ* (Lagasca's). Sardinia.
,, *longifo'lia* (long-leaved). 1. June. Nepaul. 1823.
,, *lu'cida* (shining). Eastern Europe.
,, *medicagi'nea* (Medicago-like). Spain.
,, *multicorymbo'sa* (many-corymbed). 1. July. 1805.
,, *nicæ'nsis* (Nice). Mediterranean region.
,, *palu'stris* (marsh). 2 to 4. Yellow. Europe. "Marsh Spurge."
,, *Para'lias* (Paralias). ½ to 1. Whole plant grey-green. Britain. "Seaside Spurge."
,, *pilo'sa* (hairy). 1. Yellow. June. Europe. 1820.
,, *pi'nea* (piny). ½. July. Mediterranean region. 1820.
,, *portla'ndica* (Portland). ½. Britain. "Portland Spurge."
,, *purpura'ta* (purpled). See E. DULCIS.
,, *salicifo'lia* (willow-leaved). Europe.
,, *stri'cta* (upright). Europe.
,, *trunca'ta* (cut-short). July. S. Europe.
,, *Valeria'næ* (Valerian-like). See E. CYBIRENSIS.
,, *verruco'sa* (warted). Europe.
,, *villo'sa* (shaggy). See E. PILOSA.
,, *virga'ta* (twiggy). Eastern Europe.

EUPHO'RIA. See NEPHE'LIUM.

EUPHRA'SIA. Eyebright. (From *euphraino*, to delight; fabled to cure blindness. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Bartsia.)

Hardy annuals. Seeds, in March or April, in the open border.

E. alpi'na (alpine). See E. OFFICINALIS ALPINA.
,, *linifo'lia* (flax-leaved). See BARTSIA PURPUREA.
,, *lu'tea* (yellow). See BARTSIA LUTEA.
,, *officina'lis* (shop). White, purple, yellow. Britain.
,, ,, *alpi'na* (alpine). 1. Purple. July. Europe. 1827.

EUPO'DIUM KAULFU'SSII. See MARATTIA KAULFUSSII.

EUPOMA'TIA. (From *eu*, well, and *poma*, a lid; the calyptra covering the unexpanded flower like an extinguisher. Nat. ord. *Anonads* [Anonaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*.)

Greenhouse evergreen shrub. Seeds in a slight hotbed, in spring; cuttings of ripened shoots in sand, under a bell-glass; sandy peat and fibrous loam. Winter temp., 40° to 45°.

E. Benne'ttii (Bennett's). 4. Greenish-yellow. Australia, 1824. Syn. *E. laurina*.

EUPTE'LEA. (From *eu*, well, and *Ptelea*, the Shrubby Trefoil. Nat. ord. Trochodendraceæ.)

Small, hardy tree of elegant habit, but insignificant flowers. Seeds, layers, and probably cuttings in a cold frame. Ordinary soil.

E. Franche'ti (Franchet's). 20. Greenish-yellow. W. China. 1904.

EURO'TIA. (From *euros*, breadth, and *ous*, *otos*, an ear; referring to the perianth of the male flowers. Nat. ord. Chenopodiaceæ.)

A hardy shrub with grey felted leaves and stems. Cuttings in sandy soil in a cold frame in summer. Ordinary soil.

E. ceratioi'des (horn-like). Green. Caucasus; Asia Minor.

„ *lana'ta* (woolly). Green. Fruits red. Western N. Amer. 1894.

EU'RYA. (From *eurus*, large; referring to the flowers. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Freziera.)

Greenhouse evergreens. Cuttings of ripened shoots in early autumn or spring, in sandy peat, with a glass over them; peat and loam, both fibrous, with a portion of silver-sand. Winter temp., 40° to 48°.

E. acumina'ta (long-pointed). 2. White. Himalayas. 1823.

„ *angustifo'lia* (narrow-leaved). Java. 1862.

„ *chine'nsis* (Chinese). 2. White. June. China. 1823.

„ *Jacquema'rtii* (Jacquemart's). Japan. 1869.

„ *japo'nica* (Japanese). Greenish. Japan.

„ „ *variega'ta* (variegated). Leaves variegated.

„ *latifo'lia* (broad-leaved). See CLEYERA FORTUNEI.

„ *multiflo'ra* (many-flowered). See E. ACUMINATA.

„ *viti'ensis* (Fijian). See E. JAPONICA.

EU'RYALE. (The name of one of Ovid's Gorgons, whose heads he fabled to be covered with vipers instead of hair; referring to the fierce aspect of the plant in flower. Nat. ord. *Waterlilies* [Nymphæaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to *Victoria regia*.)

The leaves of Euryale in the East Indies vie with those of Victoria; but its flowers are inconspicuous. The seeds are eatable. Stove aquatic. Seeds and divisions; loamy soil, in a tub set in water, and kept at a high temperature. Summer temp., 60° to 80°; winter, 55° to 60°.

E. amazo'nica (Amazonian). See VICTORIA REGIA.

„ *fe'rox* (fierce). Purple. August. India. 1809.

EURYA'NGIUM SU'MBUL. See FERULA SUMBUL.

EURY'BIA. See OLEARIA.

EURY'CLES. (From *eurus*, broad, and *klas*, a branch; referring to the broad leaves or branch-like footstalks Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Calostemma.)

Stove bulbs, requiring rest in winter. Seeds, but chiefly offsets; light, sandy loam, and a little vegetable-mould, or very rotten cow-dung; watered and heat given when growing, drier and cooler when resting. Summer temp., 55° to 80°; winter, 45° to 55°.

E. Cunningha'mii (Cunningham's). 1. White. Summer. Australia. 1824.

„ *sylve'stris* (wood). 1½. White. August. Malaya and Australia. 1759. Syns. *E. amboinensis* and *E. australasica*.

EURY'COMA. (From *eurus*, large, and *kome*, a head of hair; in reference to fringe-like hairs on the ovary. Nat. ord. *Simarubads* [Simarubaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen. For culture, see CO'NNARUS.

E. longifo'lia (long-leaved). 20. Purple. Sumatra. 1826.

EURYGA'NIA. (*Eurygania*, wife of Œdipus. Nat. ord. Vacciniaceæ.)

Evergreen, greenhouse shrub. Cuttings in sand and peat in mild heat. Fibrous, sandy peat.

E. angustifo'lia (narrow-leaved). Peru.

„ *ova'ta* (egg-shaped). Crimson. July. Peru. 1878.

EU'RYOPS. (From *eurus*, broad, and *ops*, aspect. Nat. ord. Compositæ.)

Greenhouse shrub, with the leaves divided into 3 to 4 long, narrow segments. Cuttings in sand in a close case. Fibrous loam, leaf-mould, and sand.

E. abrotanifo'lius (Abrotanum-leaved). 3. Yellow. May. S. Africa. 1692.

„ *Athana'siæ* (Athanasia-like). 3. Yellow. January. S. Africa. 1795.

„ *pectina'tus* (comb-like). Yellow. S. Africa.

„ *tenui'ssimus* (very slender). 1½. Yellow. May. S. Africa. 1759.

„ *socotra'nus* (Socotran). 3. Yellow. Socotra. 1902.

„ *virgi'neus* (virgin-like). 3. Yellow. October. S. Africa. 1821.

EU'SCAPHIS. (From *eu*, fine, and *scaphis*, a cup; in allusion to the cup at the base of the fruit. Nat. ord. Sapindaceæ.)

Greenhouse shrub, with ornamental foliage. Seeds, layers, cuttings. Fibrous loam, peat, and sand.

E. staphyleoi'des (Staphylea-like). White. Fruit red. Japan. 1889.

EUSTE'GIA. (From *eu*, good, and *stege*, a covering; referring to the bracts. Nat. ord. Asclepiadaceæ. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Peplonia.)

Greenhouse evergreen trailer. Cuttings in sandy soil, and by trailing runners; peat and loam. Winter temp., 38° to 45°.

E. hasta'ta (halbert-*leaved*). 1. White. July. S. Africa. 1816.

EU'STOMA. (From *eustoma*, a beautiful mouth; referring to the opening of the flower. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Leianthus.)

Seeds sown in a slight hotbed in March, and transplanted into the border in May, and some in the end of April. *E. exalta'tum* by division, and cool greenhouse treatment.

E. exalta'tum (tall). 2. Deep blue. July. Mexico. 1804. Greenhouse biennial.

„ *russellia'num* (Russell's). Purple. August. Texas. 1835. Hardy biennial.

„ *silenifo'lium* (Silene-leaved). 1. White. July. Isle of Providence. 1804. Hardy annual.

EU'STREPHUS. (From *eu*, good, and *strepho*, to twine; literally, beautiful twiners. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Dianella.)

Half-hardy evergreen twiners, from New South Wales, with pale purple flowers. Cuttings of firm young shoots in early autumn or spring, in sandy soil, under a glass; sandy peat. They will bear the same treatment as Dianella.

E. angustifo'lius and *E. Brow'nii*. See E. LATIFOLIUS.

„ *latifo'lius* (broad-leaved). 3. June. 1800.

EUTA'SSA and **EUTA'CTA**, synonyms for *Arauca'ria Cunningha'mii* and *exce'lsa*.

EUTA'XIA. (From *eutaxia*, modesty; referring to the delicate aspect of the flowers. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Dillwynia.)

Greenhouse evergreen shrubs, from Australia. Cuttings of short young shoots, getting firm at the base, in sand, under a bell-glass, in April or May; peat and loam, in equal proportions. Winter temp., 40° to 45°. *E. myrtifo'lia*, with a little protection, will do against a wall near London.

E. Baxte'ri (Baxter's). 6. Yellow. 1830.

„ *empetrifo'lia* (Empetrum-leaved). 2. Yellow. May. Australia. 1803.

„ *myrtifo'lia* (myrtle-leaved). 1½. Orange. August. 1803.

„ *pu'ngens* (pungent). See DILLWYNIA PUNGENS.

EUTE'RPE. (After *Euterpe*, one of the nine Muses. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*. Allied to Areca.)

Stove palms. Seeds; rich loam. Summer temp., 60° to 85°, and moist; winter, 50° to 60°.

E. caribæ'a (Caribæan). See OREODOXA OLERACEA.

„ *edu'lis* (edible). 100. Trop. Amer. 1841.

„ *globo'sa* (round-*fruited*). See E. EDULIS.

„ *monta'na* (mountain). Yellow. Grenada. 1815.

„ *olera'cea* (pot-herb). 100. Brazil. 1847.

EU'THALES. See VELLEIA.

EUTHA'MIA. See SOLIDAGO.

EU'TOCA MULTIFLO'RA. See PHACELIA MENZIESII.

EU'TOCA WRANGELIA'NA. See PHACELIA DIVARICATA WRANGELIANA.

EUTRE'MA. (From *eu*, well, and *tremo*, to tremble; in reference to the shaking of the flowers by the wind. Nat. ord. Cruciferæ.)

Hardy perennial herbs, with radical leaves, suitable for the rock-garden. Seeds, cuttings in summer, and divisions in spring. Garden soil.

E. alpe'stre (alpine). White. May. Siberia. 1822.

EUXE'NIA GRA'TA. See PODANTHUS OVATIFOLIUS.

EU'XOLUS LINEA'TUS. See AMARANTUS INTERRUPTUS.

EVELY'NA. See ELLEANTHUS.

EVENING FLOWER. See HESPERUS MATRONALIS.

EVENING PRIMROSE. *Œnothe'ra.*

EVERGREENS are such plants as do not shed all their leaves at any one time during the year.

EVERGREEN THORN. *Cratæ'gus Pyraca'ntha.*

EVERLASTING. *Gnapha'lium*, *Anapha'lis*, *Helechry'sum*, *Heli'pterum*, &c.

EVERLASTING PEA. *La'thyrus latifo'lius.*

EVO'DIA. (From *evodia*, sweet scent; referring to that of the leaves. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Pilocarpus.)

Stove evergreen shrubs. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in April; light, fibrous loam. Summer temp., 55° to 75°; winter, 50° to 55°.

E. e'legans (elegant). 2 to 4. White. Winter. New Guinea. 1899.
,, *fraxinifo'lia* (ash-leaved). 20. Whitish. April. Cochin-China. 1822.
,, *officina'lis* (shop). 20. White. Central China. 1908. Used by the Chinese to give colour and a bitter taste to beer.
,, *microco'cca* (small-berried). Australia.
,, *triphy'lla* (three-leaved). 7. White. E. Ind. 1820.

EVO'LVULUS. (From *evolvo*, the opposite to Convolvulus; referring to the plants not twining. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Convolvulus.)

For culture, see CONVO'LVULUS. All blue-flowered trailers, except where otherwise specified.

HARDY ANNUAL.

E. arge'nteus (silvery). ½. July. N. Amer. 1824. Syn. *E. nuttallianus.*

STOVE EVERGREENS.

E. cæru'leus (sky-blue). July. Jamaica. 1845.
,, *lanceola'tus* (spear-head-*leaved*). See E. VILLOSUS.
,, *latifo'lius* (broad-leaved). 2. White. June. Brazil. 1819.
,, *purpu'reo-cæru'leus* (purplish-blue). 1½. July. Jamaica. 1845.
,, *villo'sus* (shaggy). 1. July. S. Amer. 1810.

STOVE ANNUALS.

E. alsinoi'des (chickweed-like). ½. July. Tropics of both Worlds. 1817.
,, *emargina'tus* (end-notched). See IPOMŒA RENIFORMIS.
,, *gange'ticus* (Ganges). 1. July. E. Ind. 1820.
,, *hirsu'tus* (hairy). See E. ALSINOIDES.
,, *inca'nus* (hoary). ½. July. S. Amer. 1810.
,, *linifo'lius* (flax-leaved). See E. ALSINOIDES.
,, *nummula'rius* (moneywort-like). See E. ALSINOIDES.
,, *seri'ceus* (silky). See E. INCANUS.

EVO'NIMUS and **EVO'NYMUS.** See EUONYMUS.

EVO'SMUS. See LINDERA.

EXACUM. (From *ex*, out of, *ago*, to drive; supposed virtue of expelling poison. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Chironia.)

Stove and greenhouse annual, biennial, or perennial herbs. Seeds; cuttings in a close case with bottom-heat. Fibrous loam and peat in equal proportions with sand.

E. affi'ne (allied). 1. Lilac-purple. Early spring. Socotra. 1881.
,, *bi'color* (two-coloured). 1. Pale purple. June. India. 1846.
,, *Forbe'sii* (Forbes's). 1. Purple; anthers yellow. Socotra. 1902.
,, *macra'nthum* (large-flowered). See E. ZEYLANICUM MACRANTHUM.
,, *pulche'llum* (pretty). See CICENDIA PULCHELLA.
,, *tetrago'num* (four-angled). 1½. Blue. August. Nepaul. 1820.
,, ,, *bi'color* (two-coloured). See E. BICOLOR.
,, *visco'sum* (clammy). See IXANTHUS VISCOSUS.
,, *Walke'ri* (Walker's). Ceylon.
,, *zeyla'nicum* (Cingalese). 1 to 2. Violet. Ceylon. 1848.
,, ,, *macra'nthum* (large-flowered). 1½. Deep blue-purple. Winter. Ceylon. 1853.

EXARRHE'NA MACRA'NTHA. See MYOSOTIS MACRANTHA.

EXCÆCA'RIA. (From *excæco*, to blind; the juice and smoke of burning branches injure the eyesight. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 22-*Dicœcia*, 13-*Polyandria*. Allied to Gussonia and Hippomane.)

Stove evergreen shrubs, with white flowers; cuttings in sandy soil, under a bell-glass, in spring or autumn; fibrous, sandy loam. Summer temp., 60° to 75°; winter, 48° to 55°.

E. Agallo'cha (Ceylon). 5. May. E. Ind. 1820.
,, *glandulo'sa* (glanded). 5. May. Jamaica. 1821.
,, *serra'ta* (saw-*leaved*). See ADENOPELTIS COLLIGUAYA.

EXCRESCENCE. Independently of *Galls*, which are caused by the punctures of insects, and the swellings which always accompany *Canker*, the excrescences which injure the gardener's crops are very few. That which appears above the point of union between the scion and stock is caused by the former being the freer grower of the two, and is a warning that should be remembered, for it curtails the longevity of the tree, the supply of sap gradually becoming inefficient. The excrescences which occur upon the branches of some apples, as those of the codling and June-eating, cannot be looked upon as disease, for they arise from congeries of abortive buds, which readily protrude roots if buried in the soil, making those among the few apples which can be readily or easily propagated by cuttings. Of a similar nature are the huge excrescences so prevalent on aged oaks and elms. Bulbous excrescences are formed upon the roots of many plants if compelled to grow upon a soil drier than that which best suits them. This is the case especially with two grasses, *Phle'um prate'nse* and *Alopecu'rus genicula'tus*, and is evidently a wise provision of a nature to secure the propagation of the species, for those bulb-like thickenings will vegetate long after the remainder of the plant has been destroyed by the excessive dryness of the soil.

EXOCA'RPUS. (From *exo*, outside, and *karpos*, a fruit. Nat. ord. Santalaceæ.)

Small trees or shrubs, requiring greenhouse treatment. Seeds. Loam, peat, and sand.

E. cera'micus (Ceramic). August. Malaya. 1816.
,, *cupressifo'rmis* (Cypress-formed). Australia. 1888.

EXOCHO'RDA. (From *exo*, outside, and *chorde*, a cord. Nat. ord. Rosaceæ.)

Ornamental, hardy, deciduous shrubs allied to Spiræa. Seeds, cuttings. Well-drained garden soil.

E. Albe'rtii (Albert's). 10 to 12. White. Turkestan.
,, *Gira'ldii* (Girald's). Flower-buds cherry-red; flowers white. N. China. 1908.
,, *grandiflo'ra* (large-flowered). 5 to 8. White. April, May. China.
,, ,, *prostra'ta* (prostrate). Branches prostrate. 1907.

E'XOGENS. A name formerly employed for Dicotyledons.

EXOGO'NIUM FILIFO'RME. See IPOMŒA FILIFORMIS.

EXOGO'NIUM PU'RGA. See IPOMŒA PURGA.

EXOGO'NIUM REPA'NDUM. See IPOMŒA REPANDA.

EXORRHI'ZA. (From *exo*, out of, and *rhiza*, a root; the roots grow largely out of the soil. Nat. ord. Palmaceæ.)

An ornamental stove Palm. For cultivation, see PALMS.

E. wendlandia'na (Wendlandian). 60. Leaves pinnate. Fiji. 1901.

EXOSTE'MMA. (From *exo*, externally, and *stemma*, a crown; referring to the flower-heads. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Luculia.)

Stove evergreen tree. Cuttings of ripe young shoots in sand, under a glass, in bottom-heat; loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°.

E. longifło'rum (long-flowered). 30. White. June. St. Domingo. 1820.

„ *subcorda'tum* (nearly heart-shaped). 2 to 10. White, fragrant. W. Ind. 1909.

EXOTICS. Plants belonging to a country different from that in which they are growing.

EXTRAVASATED SAP may arise from five causes:

1. The acrid or alkaline state of the sap, which has been considered already, when treating of the *Canker*.

2. Plethora, or that state of a plant's excessive vigour in which the sap is formed more rapidly than the circulatory vessels can convey it away. When this occurs, rupture must take place. If the extravasation proceeds from this cause, there is but one course of treatment to be pursued—root-pruning, and reducing the staple of the soil, by removing some of it, and admixing less fertile earthy components, as sand or chalk. This must be done gradually, for the fibrous roots that are suited for the collection of food from a fertile soil are not at once adapted for the introsusception of that from a less abundant pasturage. Care must be taken not to apply the above remedies before it is clearly ascertained that the cause is not an unnatural contraction of the sap vessels, because, in such case, the treatment might be injurious rather than beneficial. We have always found it arising from an excessive production of sap, if the tree, when afflicted by extravasation, produces at the same time super-luxuriant shoots. Severe pruning, lopping, or pollarding produces similar results.

3. Local contraction of the sap vessels. If the extravasation arises from this cause, there is usually a swelling of the bark immediately above the place of discharge. In such a case the cultivator's only resource is to reduce cautiously the amount of branches, if the bleeding threatens to be injuriously extensive, otherwise it is of but little consequence, acting, like temporary discharges of blood, as a relief to the system.

4. The extravasation of the sap from a wound is usually the most exhausting, and as the wound, whether contused or cut, is liable to be a lodgment for water and other foreign bodies opposed to the healing of the injured part, the discharge is often protracted. This is especially the case if the wound be made in the spring, before the leaves are developed, as in performing the winter pruning of the vine later than is proper. In such case, the vine always is weakened, and in some instances it has been destroyed.

5. During hot and dry periods in summer, the leaves of certain trees, but more especially Limes and Sycamores, appear covered with a viscid secretion, known as *honeydew*. This is caused by enormous numbers of their own particular species of aphis, on the underside of the leaves. The extravasated sap, in this instance, is a liquid excreted by the aphides themselves, through or by means of two tubular glands or excretory organs at the tail-end of the insect. The excreted liquid falls on the leaves beneath them, keeping the same in a moist and viscid or sticky condition all day, notwithstanding the heat of the sun. In the case of trees overhanging the side pavement of streets, the stones are kept moist all day through the same cause. Clean water or soap-suds applied to the underside of the leaves by means of the garden engine would wash down or destroy the aphides, and thus effect a cure.

Azaleas sometimes, but rarely, have the hairs on their leaves, especially on their lower surface, beaded, as it were, with a resinous exudation. This can scarcely be called a disease. It is never found but upon plants that have been kept in a temperature too high, and in a soil too fertile. It is an effort to relieve the surcharged vessels, and occurs in various forms in other plants.

The various successful applications of liquids to plants, in order to prevent the occurrence of the honey-dew and similar diseases, would seem to indicate that a morbid state of the sap is the chief cause of the honey-dew, for otherwise it would be difficult to explain the reason why the use of a solution of common salt in water, applied to the soil in which a plant is growing, can prevent a disease caused by insects. But if we admit that the irregular action of the sap is the cause of the disorder, then we can understand that a portion of salt introduced in the juices of the plant would naturally have an influence in correcting any morbid tendency; and that by such a treatment the honey-dew may be entirely prevented, we have often witnessed when experimentalising with totally different objects. Thus we have seen plants of various kinds, which have been treated with a weak solution of common salt and water, totally escape the honey-dew, where trees of the same kind growing in the same plot of ground not so treated, have been materially injured by its ravages.

EYE-BRIGHT. *Euphra'sia.*

EYSENHA'RDTIA. (Named after *Eysenhardt*, a Prussian botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Amorpha.)

Cuttings of young shoots in sand, in bottom-heat, in April or May; loam and peat. Summer temp., 60° to 85°; winter, 50° to 55°.

E. amorphoi'des (Amorpha-like). 15. Pale yellow. June. Mexico. 1838.

F

FA'BA. Garden Bean. (From *phago*, to eat. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Now referred to Vicia.)

For culture, see BEAN.

F. vulga'ris (common). See VICIA FABA.

„ „ *equi'na* (horse). See VICIA FABA EQUINA.

FABA'GO. See ZYGOPHY'LLUM.

FABIA'NA. (Named after *F. Fabiano*, a Spaniard. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Vestia.)

A half-hardy evergreen shrub, having the aspect of a Cape Heath. Seeds in a hotbed, in March; cuttings of firm young shoots in sand, under a bell-glass, in April; set at first in a cold greenhouse or pit, and then plunged in a mild bottom-heat; sandy peat. Winter temp., 40° to 48°.

F. imbrica'ta (scaly). 3. White. May. Chili. 1838.

FABRI'CIA. (Named after *Fabricius*, a Swedish naturalist. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. See LEPTOSPERMUM.)

F. læviga'ta (smooth-*leaved*). See LEPTOSPERMUM LÆVIGATUM.

„ *myrtifo'lia* (myrtle-leaved). See LEPTOSPERMUM PUBESCENS.

„ *seri'cea* (silky). See LEPTOSPERMUM PUBESCENS.

„ *stri'cta* (erect). See AGONIS MARGINATA.

FADYE'NIA. (Named after *Dr. Fadyen*, author of a Flora of Jamaica. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Allied to Aspidium.)

This must not be confounded with Endlicher's *Fadye'nia*, which belongs to Garryads. Stove Fern. Division; loam and peat. See FERNS.

F. proli'fera (proliferous). ½. Brown. May Jamaica. 1843.

FAGA'RA. See ZANTHOXYLUM.

FAGE'LIA. (Named after *Fagel*, a botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Cajanus.)

Greenhouse evergreen twiner. Seeds, steeped in warm water, sown in light soil, and put in a mild hotbed. Cuttings of the points of young shoots before they get hard, in sand, under a bell-glass; peat and loam, both sandy and lumpy. Winter temp., 40° to 48°.

F. bitumino'sa (pitchy). 4. Yellowish-purple. June. S. Africa. 1774.

FAGOPY'RUM. (From *phago*, to eat, and *pyren*, a kernel; referring to the triangular kernel of the nut. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 8-*Octandria*, 3-*Trigynia*. Allied to Polygonum.)

Hardy annual. Seed in April. Common soil.

F. cymo'sum (cymed). Pink. July. Nepaul. 1827.
„ *escule'ntum* (esculent). 1 to 3. White to pink. Summer. Europe. Northern Asia (England).
„ *tata'ricum* (Tartarian). 1 to 3. White. Summer. Europe, &c.

FAGRÆ'A. (Named after *Dr. Fagræus*. Nat. ord. *Loganiads* [Loganiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Logania.)

Loganiads stand foremost among the most deadly poisons in the vegetable kingdom. Stove evergreen trees. Cuttings of young shoots beginning to get firm, in April, in sand, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 60° to 80°; winter, 55° to 60°.

F. auricula'ta (auricled). Yellow. Burma. Malaya.
„ *ceila'nica* (Cingalese). 12. White. Ceylon. 1816.
„ *imperia'lis* (imperial). See F. AURICULATA.
„ *lanceola'ta* (lance-shaped). White. Java.
„ *obova'ta* (reversed-egg-*leaved*). 20. White. Silhet. 1816.
„ *zeyla'nica* (Ceylon). See F. CEILANICA.

FA'GUS. The Beech. (From *phago*, to eat; referring to the edible seeds. Nat. ord. *Mastworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

By seeds, gathered in autumn, dried in the sun, kept dry during the winter, and sown in light soil, in March. They might be sown in the autumn, only mice, &c., make havoc among them; loamy soil, over chalk, suits them well, as the roots seldom run deep. The different varieties are propagated by grafting in March and April. The male catkins, when swept up, are often used for packing fruit, and filling pillows for the poor man's bed. The morel and the truffle are chiefly found under beeches.

HALF-HARDY EVERGREENS.

F. betuloi'des (birch-like). 50. Magellan. 1830. Hardy.
„ *cliffortioi'des* (Cliffortia-like). New Zealand.
„ *Cunningha'mii* (Cunningham's). Australia. 1843.
„ *fu'sca* (brown). New Zealand.
„ *Menzie'sii* (Menzies'). New Zealand.
„ *Moo'rei* (Moore's). Australia.

HARDY DECIDUOUS.

F. anta'rctica (antarctic). 50. Magellan. 1830.
„ „ *uligino'sa* (marsh). Leaves heart-shaped. Chili and Argentina. 1906.
„ *Casta'nea* (Chestnut). See CASTANEA SATIVA.
„ *castaneæfo'lia* (Chestnut-leaved). See F. SYLVATICA CASTANEÆFOLIA.
„ *comptoniæfo'lia* (Comptonia-leaved). See F. SYLVATICA HETEROPHYLLA.
„ *ferrugi'nea* (rusty). 30. June. N. Amer. 1766.
„ „ *carolinia'na* (Carolinian). See F. FERRUGINEA.
„ „ *pube'scens* (downy). Leaves hairy beneath. Massachusetts. 1907.
„ *grandifo'lia pube'scens* (downy). See F. FERRUGINEA PUBESCENS.
„ *obli'qua* (oblique). Leaves dark green above, glaucous below. Southern Chili. 1906.
„ *orienta'lis* (oriental). Crown pyramidal. Asia Minor, N. Persia, &c. 1907.
„ *purpu'rea* (purple). See F. SYLVATICA PURPUREA.
„ *sylva'tica* (wood). 70 to 80. June. Britain.
„ „ *america'na* (American). 100. May. N. Amer.
„ „ *Anso'rgei* (Ansorg's). See F. SYLVATICA HETEROPHYLLA.
E. sylva'tica asia'tica (Asiatic).
„ „ *atropurpu'rea* (dark purple). Leaves dark purple.
„ „ *atropurpu'rea Roha'ni* (Rohan's). Leaves deeply cut, copper-coloured. 1894.
„ „ *atoru'bens* (dark red). 30. June.
„ „ *au'rea Spæ'thii* (Spath's golden).
„ „ *au'reo-variega'ta* (golden-variegated).
„ „ *castaneæfo'lia* (Chestnut-leaved). June. N. Amer.
„ „ *cochlea'ta* (shell-like).
„ „ *conglomera'ta* (crowded).
„ „ *conglomera'ta Bandrille'ri* (Bandriller's). 1888.
„ „ *crista'ta* (crested). 30. May.
„ „ *cu'prea* (copper). Leaves copper-coloured. "Copper Beech."
„ „ *fastigia'ta* (erect). Branches erect. "Dawyck Beech."
„ „ *fo'liis argе'nteis* (silvery). May.
„ „ *fo'liis argе'nteo-marmora'tis* (marbled-silver). Young leaves speckled white. 1899.
„ „ *fo'liis au'reis* (golden-leaved). June.
„ „ *fo'liis stria'tis* (leaves striated). Leaves with golden lines. 1892.
„ „ *grandidenta'ta* (large-toothed).
„ „ *heterophy'lla* (various-leaved). 40. April, May. "Fern-leaved Beech."
„ „ *inci'sa* (cut-leaved). See F. SYLVATICA HETEROPHYLLA.
„ „ *ni'gra* (black). Leaves nearly black.
„ „ *pe'ndula* (pendulous). May. Gardens. "Weeping Beech."
„ „ *purpu'rea* (purple). 40 to 50. May. "Purple Beech."
„ „ *purpu'rea pe'ndula* (pendulous). May. "Weeping Purple Beech."
„ „ *purpu'rea ro'seo-margina'ta* (rose-edged-purple). Leaves copper, edged rose. 1888.
„ „ *rotundifo'lia* (round-leaved). Leaves nearly orbicular. 1894.
„ „ *tri'color* (three-coloured). Leaves purple-green, spotted carmine-rose, and white. 1885.
„ „ *variega'ta* (variegated).
„ „ *Zla'tia* (Zlatia). Leaves golden-tinted. Servia. 1892. "Golden Beech."

FAIRY RINGS. On meadows, pastures, and frequently on garden lawns, dark green circles or broken circles may be observed. They are due to the presence of fungi, which live and feed in the soil, and extend their area radially in ever-widening circles from year to year. The grass inside the circles is usually poorer in character, often with dead patches, owing to the fungi having absorbed the nutriment of the grasses. The most common fungus forming these rings is *Marasmius oreades*, but some of the Agarics, such as the field and horse mushrooms, also occur, and at their proper season appear above the soil. In the following year they appear in a ring outside the previous one. The injured grass may be restored by means of a good top dressing of soil and well-rotted manure during the winter. Grass seed may be sown upon the bare patches towards the end of March or the beginning of April. Four soakings of Bordeaux mixture, given at intervals of eight days, will also destroy the fungus.

FA'LKIA. (Named after *Falk*, a Swedish botanist. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Digynia*.)

Greenhouse evergreen creeper. Cuttings under a hand-glass, in sandy peat, in April or May; peat and loam. Winter temp., 35° to 45°.

F. re'pens (creeping). ½. Pink. July. Cape of Good Hope. 1774.

FALL OF THE LEAF. Dr. Lindley thus explains this phenomenon: In the course of time a leaf becomes incapable of performing its functions; its passages are choked up by the deposit of sedimentary matter; there is no longer a free communication between its veins and the wood and liber. It changes colour, ceases to decompose carbonic acid, absorbs oxygen instead, gets into a morbid condition, and dies; it is then thrown off. This phenomenon, which we call the fall of the leaf, is going on the whole year. Those trees which lose the whole of their leaves at the approach of winter, and are called deciduous, begin, in fact, to cast their leaves within a few weeks after the commencement of their

vernal growth; but the mass of their foliage is not rejected till late in the season. Those, on the other hand, which are named evergreens, part with their leaves much more slowly; retain them in health at the time when the leaves of other plants are perishing; and do not cast them till a new spring has commenced, when other trees are leafing, or even later. In the latter class, the function of the leaves is going on during all the winter, although languidly; they are constantly attracting sap from the earth through the root hairs, and are therefore in a state of slow but continual winter growth.

Microscopical examination of the base of a leaf-stalk shows the presence of a layer of cells in course of development all through the season, and these in autumn or at the time of the fall of the leaf assume the nature of cork, so that when this is complete, only the woody fibres connect the leaf with the tree, and these are easily snapped by the wind or even by a sharp frost at night in the case of the Ash, Horse-Chestnut, and many others. The fall of the leaf is thus predestined from the commencement of growth.

FALLOWING is needless where there is a due supply of manure, and a sufficient application of the spade, fork, and hoe to the soil. Fallowing can have no other beneficial influence than by destroying weeds, aiding the decomposition of offensive exuviæ, exposing the soil to the disintegrating influence of the air, and accumulating in it decomposing matter. Now all these effects can be produced by judicious manuring, and a constant application of the hoe and fork.

FALSE BLOSSOM is the very erroneous name applied sometimes to the male flowers, which, containing only stamens, do not produce fruit, yet are essential for causing fruitfulness in what gardeners call the *true blossoms* which contain the pistils.

FALLU'GIA. (Named after *Fallugius*, an Italian botanist of the seventeenth century. Nat. ord. Rosaceæ.)

A handsome, hardy, or nearly hardy shrub. Seeds; cuttings of half-ripe, leafy shoots in summer in a close frame. Well-drained garden soil.

F. parado'xa (paradoxical). 3 to 4. White. July. California, &c. 1877.

FAN PALM. *Co'rypha.*

FARADA'YA. (Named in compliment to *Professor Faraday*. Nat. ord. Verbenaceæ.)

Stove climbing plants. Seeds; cuttings of half-ripe wood in sand in a close case, with bottom-heat. Good fibrous loam, leaf-mould, and sand.

F. papua'na (Papuan). White. New Guinea. 1884.
,, *splé'ndida* (splendid). White, sweet-scented, in terminal panicles. Australia. 1890.

FARA'MEA. (The derivation has not been explained; probably a commemorative one. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to the Coffee-tree.)

A sweet-scented stove evergreen bush, long known in our gardens as *Tetrame'rium*. Cuttings of firm young shoots in May, in sand, under a bell-glass, in bottom-heat; peat and loam, both fibrous, with silver-sand, and lumps of charcoal.

F. odorati'ssima (most-fragrant). 6. White. S. Amer. 1793.

FARFU'GIUM GIGANTE'UM and **F. GRA'NDE.** See SENECIO KÆMPFERI AUREO-MACULATUS.

FARINA, a name for the pollen or fertilising dust produced by the anthers, or male organs, of a flower.

FARMYARD MANURE. See DUNG.

FARSE'TIA. (Named after *Farseti*, an Italian botanist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Alyssum.)

Hardy annuals sow in border, in March or April; hardy perennials, by division and seeds; half-hardy evergreens, by cuttings under a hand-light, in May, in sandy loam. Sandy loam; good for rock-works and mounds. The half-hardy should have the protection of a pit in winter.

HARDY.

F. cheiranthifo'lia (wallflower-leaved). See F. CLYPEATA.
,, *clypea'ta* (buckler-*podded*). 1½. Yellow. July. S. Europe. 1596. Herbaceous perennial.

HALF-HARDY EVERGREENS.

F. ægy'ptia (Egyptian). 1. White. Purple. July. Egypt. 1788.
,, *cheiranthoi'des* (stock-like). See F. ÆGYPTIA.
,, *eriocа'rpa* (woolly-fruited). 1. Yellow. July. Asia Minor. 1820.
,, *lunarioi'des* (Lunaria-like). 1. Yellow. July. Grecian Archipelago. 1731.
,, *suffrutico'sa* (sub-shrubby). 1. Violet. April. Persia. 1823.

FASCICLE is the name applied to flowers on small stalks variously subdivided and attached to one flower-stem, and collected into a close bundle, level at the top, as in the Sweet William.

FA'TSIA. (Derived from the Japanese name *Fatsi*, applied to *F. japo'nica*. Nat. ord. Araliaceæ.)

Evergreen shrubs or small trees. *F. horrida* is hardy, while *F. japo'nica* is also hardy as far north as London if sheltered from strong winds in winter. Rice-paper is made from the pith of *F. papyrifera* by the Chinese. The last two are handsome plants for subtropical gardening. *F. japonica* makes a good window plant. Seeds; cuttings and occasionally suckers. Well-drained garden soil.

F. ho'rrida (spiny). 6 to 12. White. Stem covered with yellow spines. N.W. Amer. 1829.
,, *japo'nica* (Japanese). White. Japan. 1858.
,, ,, *au'reo-margina'ta* (golden-edged). Leaves edged yellow.
,, ,, *au'reo-reticula'ta* (golden-netted). Leaves netted with yellow. 1870.
,, ,, *variega'ta* (variegated). Leaves with white variegation.
,, *papyri'fera* (paper-bearing). 7. Green. China. 1852. Greenhouse. "Rice-paper Tree."

FEABERRY. A local name for the Gooseberry.

FEATHERS. See ANIMAL MATTERS.

FE'DIA. (A word of unknown origin. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Centranthus.)

Hardy annuals. Seeds in the open border, in April.

F. Cornuco'piæ (cornucopia-*fruited*). 1. Red. July. S. Europe. 1796. "Horn of Plenty."
,, ,, *candidi'ssima* (whitest). White. 1895.
,, ,, *floribu'nda ple'na* (free-flowering-double). Pink. Double.
,, *graciliflo'ra* (slender-flowered). See F. CORNUCOPIÆ.
,, *rupe'stris* (rock). See PATRINIA RUPESTRIS.

FEE'A NA'NA. See TRICHOMANES BOTRYOIDES.

FEE'A SPICA'TA. See TRICHOMANES SPICATUM.

FEIJO'A. (A commemorative name. Nat. ord. Myrtaceæ.)

An evergreen shrub or small tree, that will live and bloom on a warm wall in the latitude of London; further north it requires the protection of a greenhouse. Fruit guava-like, aromatic, edible. Seeds; cuttings of half-ripe wood in sand, in heat. Fibrous loam with some peat and sand.

F. sellowia'na (Sellowian). White outside, blood-red inside. Brazil and Uruguay. 1898.

FELI'CIA. (From *felix*, happy; from their cheerful appearance. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Frustranea*. Allied to Aster.)

Natives of South Africa. Annuals, sown in open border, in April; evergreens require the protection of a cool greenhouse, and may be easily raised by cuttings under a hand-light, in May; soil, chiefly sandy loam.

HARDY ANNUALS.

F. fra'gilis (fragile). Violet. June. 1769.
,, *tene'lla* (delicate). See F. FRAGILIS.

GREENHOUSE EVERGREENS.

F. abyssi'nica (Abyssinian). Lilac. Trop. Africa. 1895.
„ *angustifo'lia* (narrow-leaved). 4. Lilac. May. 1812.
„ „ *gla'bra* (smooth). 6. Blue. May. 1804.
„ *echina'ta* (prickly). Yellow. May. 1820.
„ *frutico'sa* (shrubby). 1 to 2. Purple. May. This is *Aster fruticosus.*
„ *petiola'ta* (petioled). Rosy-purple, with yellow disc. 1907.
„ *refle'xa* (bent-back). Red, white. February. 1759.
„ *villo'sa* (shaggy). See F. ANGUSTIFOLIA.

FELWORT. *Swe'rtia.*

FEMALE FERN. *Asple'nium Fi'lix-fœ'mina.*

FENCES are employed to mark the boundary of property, to exclude trespassers, either human or four-footed, and to afford shelter. They are either live fences and are then known as *hedges;* or dead, and are then either *banks, ditches, palings,* or *walls;* or they are a union of two, to which titles the reader is referred.

FENDLE'RA. (A name commemorative of *Mr. Fendler,* who collected plants in Trinidad. Nat. ord. Saxifragaceæ.)

A hardy shrub, with small leaves and large, solitary, showy flowers, with conspicuous stamens. Seeds; cuttings under a hand-light in summer; also by layers. Well-drained garden soil.

F. rupi'cola (rock-inhabiting). 2 to 4. White. S.W. United States. 1888.

FENNEL (*Fœniculum vulgare*) in a dry soil is longest lived. It is propagated both by offsets, partings of the root, and by seed, any time between the beginning of February and the end of April. The best season for sowing is autumn, soon after the seed is ripe, at which time it may also be planted.

Insert the plants a foot apart, and the seed in drills, six or twelve inches asunder, according as it is intended that the plants are to be transplanted or to remain.

When advanced to the height of four or five inches, if they are intended for removal, the plants are pricked out eight inches apart, to attain strength for final planting in autumn or spring. Water must be given freely at every removal, and until established, if the weather is at all dry.

The stalks of those that are not required to produce seed must be cut down as often as they run up in summer. If this is strictly attended to the roots will last for many years; but those which are allowed to ripen their seed seldom endure for more than five or six.

FENNEL-FLOWER. *Nige'lla.*

FENUGREEK. *Trigone'lla.*

FE'NZLIA. See GILIA DIANTHOIDES.

FERNANDE'ZIA. (After *Fernandez,* a Spaniard. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria,* 1-*Monandria.*) See LOCKHARTIA.

F. acu'ta (acute-*leaved*). See LOCKHARTIA ACUTA.
„ *e'legans* (elegant). See LOCKHARTIA ELEGANS.
„ *longifo'lia* (long-leaved). July. Merida.
„ *luni'fera* (crescent-*lipped*). See LOCKHARTIA LUNIFERA.
„ *robu'sta* (robust). See LOCKHARTIA VERRUCOSA.

FERNE'LIA. (Named after *J. Fernel,* a French physician. Nat. ord. *Cinchonads* [Cinchonaceæ]. Linn. 4-*Tetrandria,* 1-*Monogynia.* Allied to Condalia.)

Stove evergreen shrubs. Cuttings of firm young shoots in May, in sand, under a bell-glass, and in bottom-heat; peat and loam, lumpy and sandy. Summer temp., 60° to 80°; winter, 50° to 55°.

F. buxifo'lia (box-leaved). Isle of France. 1816.
„ *obova'ta* (reversed-egg-*leaved*). Isle of France. 1816.

FERNS. STOVE FERNS.

Propagation: by Division.—Any species of Fern that sends out stolons, or creeping stems underground, readily increases by division. This requires considerable care. They should never be divided till the parts to be separated have a portion of roots to each. Turn the plants out of the pots, and with a sharp knife divide the plants into as many parts as have roots and a small ball; pot them into pots only a little larger than the little ball; drain them well, give a gentle watering, and place them in a shady place till they begin to grow again, and send up fresh fronds.

By Young Buds on the Fronds.—Several species produce miniature or embryo plants on the fronds. These should be pegged down in a pot filled with the proper soil, and placed so near to the parent plant as to allow the fronds to remain attached to it. When the buds have made roots into the new soil, and pushed forth some new fronds, they should be detached from the parent, and potted into 2½-inch pots, gently watered, and placed in a shady place. Some few kinds have these buds or knobs so strongly developed, that they may, when in a sufficiently forward state, be cut off and potted at once. Examples of this kind of bud may be observed in *Pte'ris palma'ta, P. effu'sa, Da'rea rhizophy'llum,* and *Woodwa'rdia radi'cans.*

By Spores.—Several of the finest Ferns cannot be increased by division, or, if they can, several years elapse. If right means are followed, they may be raised by spores. This requires a constantly humid, warm atmosphere, and little, if any, sunshine. Procure a wide earthen pan, a hand or bell-glass that will go within it, and rest on the bottom, and a shallow, wide pot that will stand within the glass and above the rim of the pan two or three inches. Fill this pot half full of potsherds, and upon them a sufficient number of small pieces of turfy peat, mixed with small pieces of sandstone, about the size of peas, to come up to the pot. Then take the frond of any Fern that is full of spores or seeds, and, with the hand, brush them off upon the prepared pot, set it in the pan, place the glass over the pot, and fill the pan nearly with water. Place the whole in the warmest part of the stove, shading it from the sun. The small pieces of turf and stone can be easily separated, and the seedlings on each put into small pots, without any danger of destroying them by the process of potting. In the moist atmosphere of the orchid-house, several species of Fern will come up spontaneously in the pots, baskets, and upon the blocks. These may be carefully detached as soon as they are large enough, and potted in small pots, placed for a time in a shady situation, and they will soon make nice, bushy plants.

Other methods are followed with great success. One plan is to carefully prepare some pots or pans as above advised, half filling them with drainage. Fill up the remainder with a compost of two parts of finely sifted peat to one-half part each of sand and finely broken potsherds or soft red brick. Press this firm and sow the spores. Another plan is to get some burnt clay and break it up into small particles, filling the pots with the same, and sowing the spores on the top. The burning of the clay serves to sterilise it and prevent the growth of moss, which is so destructive to young ferns. Stand the pots or pans in a vessel containing water, so that the compost may be moistened from the bottom upwards. Never water on the top, nor must the water be so deep as to rise to the surface, or the spores will be washed away. Stand the pots on moist ashes in a moderately warm house in a shady situation and cover them with a hand-light.

Soil.—Ferns require a light, open soil. A compost of sandy, fibrous peat two parts, turfy loam one part, and leaf-mould one part, with a free admixture of sand, will suit them well.

Summer Culture.—Temperature, 65° minimum, 75° maximum by day, and 60° by night.

Time of Potting.—Early in March, drain well, and give a moderate shift. Small plants may be potted twice, the second time the first week in July.

Watering.—Ferns are like Heaths, if they once get thoroughly dry they will perish, therefore keep them constantly well watered, more especially when the pots are full of roots. Should they by any chance appear to be suffering severely from drought, take such and let them stand in a vessel of water, that will cover the top of the pot, for an hour or two. This will thoroughly wet every part of the ball, and often recover the plant. If such a convenience is at hand, the smaller Ferns, like other stove plants, will be greatly benefited by a few weeks sojourn in the middle of summer in a deep, cold pit. Here they should be well supplied with water, and

nearly every afternoon, about three o'clock, have a gentle syringing, shutting them up close afterwards. As soon as the nights begin to be cold in September, remove them back again into the stove, and give them an extra supply of water for a short time, till they become used to the drier atmosphere.

Winter Culture.—Temperature, 60° maximum, and 55° minimum by day; 52° by night. During this season, rather less water will be required. Remove all decaying fronds, and give them a top-dressing in December. This will carry them through till the potting season arrives in March.

Insects.—The green fly and thrips will frequently appear on them. Smoking with tobacco will destroy them both.

Greenhouse Ferns.

Propagation.—The same methods of increase suit the greenhouse varieties, and also the same compost. The only difference is in the temperature. In summer they may be set out of doors with the rest of the greenhouse inhabitants, and brought into it as soon as there is any danger of frost. The great advantage of growing Ferns in a greenhouse is, that they fill up many a corner where nothing else will grow.

Hardy Ferns.

Propagation: by Division.—All that produce side-shoots may be increased by division. If they are planted out in a bed, or on rock-work, they should be taken up and divided into pieces, with a portion of earth to each. They may be replanted; but a better plan is to pot them, and place them in a cold frame, kept close, and shaded till they make fresh roots and fronds. Scarce kinds may be increased by spores. Even the rare *Woo'dsia ilve'nsis* has been increased by spores. Something of the same method as that described for stove Ferns must be adopted for hardy ones. If some small sand-stones be placed in a damp, shady place, and the Fern spores be scattered upon them, and then be covered with a hand-glass, the spores will germinate, and the stones will be covered with Ferns. For the more rare kinds a little extra care will be necessary. Sow them upon rough pieces of dead turf, place them under a hand-glass, in a situation where they can have a close, warm, moist atmosphere; a cold frame, kept close in summer, will answer admirably.

Culture.—Hardy Ferns are found in various situations, and, consequently, require various modes of treatment. Some grow on rocks in exposed situations; others in boggy, moist ground; some grow on hedge-banks and shady woods, whilst others, again, grow near waterfalls, where the spray keeps them constantly moist. To succeed in cultivating all these in one place, an approximation must be made to the circumstances in which they are found wild. A low, moist soil, at the foot of a bank of rock-work, will suit those found in a similar situation; the lower part of rock will suit those found on hedge-banks. Those found in shady woods may be planted on the north side of the rock-work, near to the ground; whilst those that grow wild on exposed rocks, or old walls, may be placed near the top of the rock-work in chinks between the stones. The most difficult to manage are those found within the reach of the spray of a waterfall. The only way to succeed tolerably with these is to place them so as they can be covered with a hand-glass in the shady side of the rock, and to keep them moist by sprinkling them every day through the rose of a watering-pot, protecting them in winter by a covering of matting thrown over the hand-glass in frosty weather.

FERO'NIA. (After *Feronia*, the goddess of the groves. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to the Orange.)

The young leaves, when bruised, are said to be deliciously fragrant; the flowers and wood also partake of the fragrance of the orange and citron. Stove evergreen. Cuttings of ripe young shoots in spring or summer, in sandy peat, under a bell-glass, and in bottom-heat; loam, peat, rotten dung, and a little sand. Summer temp., 60° to 80°; winter, 48° to 55°.

F. elepha'ntum (elephant-*apple*). 4. Blush. April. E. Ind. 1804.

FERRA'RIA. (Named after *Ferrari*, an Italian botanist. Nat. ord. *Irids* [Iridaceæ]. Linn., 16-*Monadelphia*, 1-*Triandria*. Allied to Pardanthus.)

Very dwarf bulbs, from the Cape of Good Hope. Seeds sown when ripe, or kept dry until the following spring; offsets, which are plentifully produced; sandy loam and a little peat; bulbs to be kept dry after the leaves have withered; fresh potted when they begin to move, and then supplied with moisture. If planted on a warm border, placed at least six inches deep, and the soil and young shoots protected from frost, they may be grown in the open ground.

F. angustifo'lia (narrow-leaved). See F. ANTHEROSA ANGUSTIFOLIA.
„ *anthero'sa* (*large*-anthered). ½. Green, brown. June. 1800.
„ „ *angustifo'lia* (narrow-leaved). ½. Brown. June. 1825.
„ *atra'ta* (darkened). ½. Dark purple. June.
„ *divarica'ta* (straggling). ½. Brown. June. 1825.
„ *elonga'ta* (elongated). Dark purple. July. Monte Video. 1828.
„ *Ferrari'ola* (Ferrariola). See F. ANTHEROSA.
„ *obtusifo'lia* (blunt-leaved). ½. Brown. June. 1825.
„ *Pavo'nia* (Pavonia). See TIGRIDIA PAVONIA.
„ *Tigri'dia* (Tigridia). See TIGRIDIA PAVONIA.
„ *tricu'spis* (three-pointed). See MORÆA TRICUSPIS.
„ *uncina'ta* (hooked). ½. Brown. June. 1825.
„ *undula'ta* (wavy-*leaved*). ½. Green, brown. April. 1775.
„ *viridiflo'ra* (green-flowered). See F. ANTHEROSA.

FE'RREOLA BUXIFO'LIA. See MABA BUXIFOLIA.

FE'RULA. Giant Fennel. (Pliny's name for this plant. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Heracleum.)

The Giant Fennels, like the Cow Parsnips, are peculiarly well fitted to form striking contrasts near water, on banks, or by the recesses of rock-work in gardens, besides their interest as furnishing assafœtida from the milky juice of *F. Narthex*, *F. fœtida*, &c. Hardy herbaceous perennials, with yellow flowers, except where otherwise specified. Seed in spring; common garden-soil.

F. ammoni'aca (ammoniac). 6. White. June. Persia. 1831.
„ *Assafœ'tida* (assafœtida). 7. July. Persia.
„ *au'rea* (golden). See PEUCEDANUM AUREUM.
„ *campe'stris* (field). See F. FERULAGO.
„ *capilla'ris* (hair-like). 4. June. Spain. 1820.
„ *ca'spica* (Caspian). 3. July. Caucasus. 1819.
„ *commu'nis* (common). 13. July. S. Europe. 1597.
„ „ *brevifo'lia* (short-leaved). Leaf segments shorter. Mediterranean region. 1907.
„ *Ferula'go* (Ferulago). 6. July. S. Europe.
„ *fœ'tida* (fetid). Turkestan. 1877.
„ *fœtidi'ssima* (most fetid). Yellowish-white, small. Turkestan. 1878.
„ *galbani'flua* (galbanum-yielding). Persia. "Galbanum Plant."
„ *glau'ca* (milky-green). 8. July. Italy. 1596.
„ *Li'nkii* (Link's). Canary Islands.
„ *longifo'lia* (long-leaved). 4. July. Siberia. 1820.
„ *meoi'des* (Meum-like). 3. July. Levant. 1810.
„ *Meye'ri* (Meyer's). 4. July. Central Asia. 1816.
„ *monti'cola* (mountain-dwelling). Greece.
„ *N'arthex* (Narthex). 6 to 8. Green. July. Orient. "Devil's dung."
„ *nodiflo'ra* (node-flowered). Mediterranean region.
„ *nu'da* (naked). 1. July. Siberia. 1821.
„ *nudicau'lis* (naked-stemmed). January. Sicily. 1825.
„ *obtusifo'lia* (blunt-leaved). See MALABAILA OBTUSIFOLIA.
„ *orienta'lis* (eastern). 3. July. Levant. 1759.
„ *pauci'juga* (few-paired-*leaved*). See JOHRENIA CANDOLLEI.
„ *pe'rsica* (Persian). 6. August. Persia. 1782.
„ *Pola'ki* (Polak's). See F. NARTHEX.
„ *pube'scens* (downy). See CACHRYS ODONTALGICA.
„ *sa'ncta* (sacred). See F. TINGITANA.
„ *sibi'rica* (Siberian). See F. MEYERI.
„ *soonga'rica* (Soongarian). August. Siberia. 1825.
„ *stri'cta* (erect). 2. July. Cape of Good Hope. 1818.
„ *Su'mbul* (Sumbul). 9. Summer. Turkestan. 1872. "Sumbul."

F. sylva'tica (wood). 3. June. Podolia. 1829.
„ *syri'aca* (Syrian). Origin unknown.
„ *thyrsiflo'ra* (thyrse-flowered). 1½. June. Candia. 1823.
„ *tingita'na* (Tangier). 8. July. Barbary. 1680.
„ *villo'sa* (shaggy). See ARCHANGELICA HIRSUTA.

FERULA'GO. See FERULA.

FESTOON. An arch curving downwards, and the most graceful form for training climbers, either out of doors or in the conservatory.

FESTU'CA. Fescue Grass. A genus of grasses containing some of the best of our pasture-grasses, such as Sheep's Fescue (*F. ovi'na*) and Hardish Fescue (*F. duriu'scula*). *F. va'ria*, introduced in 1890, is an ornamental grass 2 to 3 in. high.

FEVERFEW. See CHRYSANTHEMUM PARTHENIUM.

FEVERWORT. *Trio'steum.*

FEVI'LLEA. (Commemorative of *Louis Feuillée*, a botanical author. Nat. ord. Cucurbitaceæ.)
A free-flowering stove climber. Seeds in stove heat. Cuttings of short side-shoots in summer, in a close case, with bottom-heat. Fibrous loam and sand.
F. Moo'rei (Moore's). Pale brick red. Guiana. 1870.
„ *peda'ta* (pedate). See TELFAIRIA PEDATA.

FICA'RIA. Pilewort. (From *ficus*, a fig; in reference to the fig-shaped little tubers of the root. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Joined to Ranunculus.)
F. ranunculoï'des and *F. ve'rna*. See RANUNCULUS. FICARIA.

FI'CUS. Fig-tree. (The fig-tree has nearly the same name in all the European languages, and is supposed to be derived from the Hebrew name *fag*. Nat. ord. *Morads* [Urticaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*.)
Besides the cultivated figs, there are a vast number of other species belonging to Ficus, all natives of the tropics, where they arrest the attention of the traveller either by their grateful shade, their enormous growth, or by their manner of sending down roots from their branches to support and extend their distorted arms, as in the *Banyan-tree*. By layers and cuttings; by the latter mode in the case of greenhouse and stove species. In either case, dry the cut ends before inserting them in sandy soil, but not removing more of the leaves than those at the joint cut through; in each case, place a hand-light over them. For the stove species there should be the addition of a hotbed; peat and loam will suit them well, the latter should preponderate when compactness of growth is desirable. *F. ela'stica* is the India-rubber plant. *F. Ca'rica*, the cultivated fig, is the only one hardy enough to bear our climate, though a few succeed near the south and west coasts. Most of the stove species will do in a warm greenhouse. See FIG.

HARDY IN MILD DISTRICTS.

F. Ca'rica (Carian). 15. June. Europe; Orient. 1548. Deciduous. "Common Fig."
„ *edu'lis* (edible). Leaves with red veins. Australia. 1862.
„ *mi'nima* (smallest). See F. STIPULATA MINIMA.
„ *stipula'ta* (stipuled). Japan and China. 1721. Creeping like Ivy.
„ „ *mi'nima* (smallest). Leaves very much smaller. 1875.

GREENHOUSE EVERGREENS.

F. cape'nsis (Cape). 4. S. Africa. 1816.
„ *corda'ta* (heart-*leaved*). 6. S. Africa. 1802.
„ *macrophy'lla* (large-leaved). 14. Australia.
„ *pu'mila* (dwarf). ½. China. 1759. Trailer.

STOVE EVERGREENS.

F. Abe'lii (Abel's). See F. PYRIFORMIS.
„ *acumina'ta* (long-pointed). See F. ROSTRATA.
„ *alti'ssima* (tallest). Trop. Asia.
„ *angustifo'lia* (narrow-leaved). 15. Guiana.
„ *arbutifo'lia* (Arbutus-leaved). March. Brazil. 1825.
„ *a'spera* (rough). 10. New Hebrides. 1820.
„ *auranti'aca* (orange-like). 10. Malacca. 1824.
„ *austra'lis* (southern). See F. RUBIGINOSA.
F. barba'ta (bearded). See F. VILLOSA.
„ *Barte'ri* (Barter's). 6 to 25. Fruits orange, edible. W. Trop. Africa. 1903.
„ *bengale'nsis* (Bengalese). India. "Banyan."
„ *Benjami'na* (Benjamin-tree). 40. E. Ind. 1757.
„ *Bonne'tii* (Bonnet's). 1869.
„ *bonplandia'na* (Bonplandian). 20. Mexico. 1823.
„ *Cano'ni* (Canon's). Society Islands. 1888. Syn. *Artocarpus Canoni.*
„ *Cavro'ni* (Cavron's). Midrib yellow-white above. Leaves rusty beneath. Brazil. 1887.
„ *cerasifo'rmis* (cherry-formed). See F. PARIETALIS.
„ *cestrifo'lia* (Cestrum-leaved). Brazil.
„ *como'sa* (long-haired). See F. BENJAMINA.
„ *Coope'ri* (Cooper's) of gardens. See F. EDULIS.
„ *coria'cea* (leathery-*leaved*). 10. E. Ind. 1772.
„ *cornifo'lia* (Cornus-leaved). Java. 1846.
„ *corona'ta* (crowned). 6. June. 1800.
„ *crassine'rvia* (thick-nerved). 10. S. Amer. 1823.
„ *dealba'ta* (whitened). See COUSSAPOA DEALBATA.
„ *Decræ'ni* (Decræn's). Peru. 1869.
„ *diversifo'lia* (diverse-leaved). Leaves with light brown spots. Malaya. 1881.
„ *dryepondtia'na* (Dryepondtian). Leaves brownish-purple beneath. Congo. 1906.
„ *dumo'sa* (bushy). 6. 1825.
„ *ebu'rnea* (ivory). Leaves veined with white. India. 1869.
„ *eetveldia'na* (Eetveldian). Leaves broadly oval. Congo Free State. 1900.
„ *ela'stica* (elastic-*gum*). 20. India. 1815. "India Rubber."
„ „ *au'reo-margina'ta* (golden-edged). Leaves with broad golden edge. 1882.
„ „ *variega'ta* (variegated).
„ *e'legans* (elegant). Java. 1871.
„ *elli'ptica* (oval). 20. S. Amer. 1824.
„ *ere'cta* (erect). India, China, and Japan.
„ „ *Siebo'ldii* (Siebold's).
„ *eriobotryoï'des* (Eriobotrya-like). Country unknown. 1846.
„ *eugenioï'des* (Eugenia-like). Australia.
„ *exaspera'ta* (roughened). 6. Trop. Africa.
„ *exi'mia* (choice). Brazil.
„ *excu'lpta* (cut-out). Leaves twice cut. South Sea Islands. 1879.
„ *falca'ta* (sickle-shaped). Leaves very small, sickle shaped. Malaya.
„ *ferrugi'nea* (rusty). S. Amer.
„ *fu'lva* (tawny). Brazil.
„ *gardeniæfo'lia* (Gardenia-leaved). See F. HIRSUTA.
„ *glomera'ta* (clustered). India; Burma. 1869.
„ *heterophy'lla* (various-leaved). 20. Trop. Asia. 1816
„ *hirsu'ta* (hairy). Brazil.
„ *hi'spida* (hispid). 4. Trop. Asia. 1802.
„ *Hooke'ri* (Hooker's). 6. W. Ind. 1816.
„ *infecto'ria* (staining) of Roxburgh. India and Malaya.
„ *infecto'ria* (staining) of Willdenow. See F. TSJAKELA.
„ *irregula'ris* (irregular). Celebes.
„ *Kri'shnæ* (Krishna's). Leaves cup-shaped. India. 1906.
„ *læviga'ta* (polished). 6. W. Ind. 1823.
„ *leucantato'ma* (white-*cleft*). 20. E. Ind. 1763.
„ *Lichtenstei'nii* (Lichtenstein's). See F. CAPENSIS.
„ *Loga'nii* (Logan's). 20. Caraccas. 1824.
„ *longifo'lia* (long-leaved). 20. E. Ind. 1825.
„ *Lucia'ni* (Lucian's). Congo Free State. 1900.
„ *lu'cida* (shining). E. Ind.
„ *lute'scens* (yellowish). See F. DIVERSIFOLIA.
„ *macroca'rpa* (large-fruited). 25. India. 1869.
„ *macrophy'lla* (large-leaved). Australia. 1869. "Australian Banyan."
„ *macrophy'lla* (large-leaved) of Roxburgh. See F. ROXBURGHII.
„ *microca'rpa* (small-fruited). Java.
„ *myrtifo'lia* (myrtle-leaved). 4. 1824.
„ *Neuma'nni* (Neumann's). Country unknown.
„ *ni'tida* (shining). Java.
„ *nu'da* (naked). See F. BENJAMINA.
„ *nymphæfo'lia* (water-lily-leaved). 10. Trop. Amer. 1759.
„ *obtusifo'lia* (blunt-leaved). See F. BONPLANDIANA.
„ *oppositifo'lia* (opposite-leaved). See F. HISPIDA.
„ *ovoï'dea* (egg-shaped). Penang.
„ *palma'ta* (hand-shaped). Trop. Africa; Arabia; India.

F. pandura'ta (fiddle-shaped). Leaves fiddle-shaped, 1 ft. long or more. 1902.
„ *Parce'lli* (Parcell's). Leaves variegated with white. Polynesia. 1874.
„ *parieta'lis* (parietal). Malaya.
„ *pertu'sa* (pierced-*leaved*). 8. S. Amer. 1780.
„ *pilo'sa* (hairy). India and Australia.
„ *populifo'lia* (poplar-leaved). Arabia.
„ *popu'lnea* (poplar-*leaved*). 12. S. Amer. 1812.
„ *portea'na* (Portean). Mexico. 1862.
„ *pri'nceps* (chief). Brazil.
„ *purpura'scens* (purplish). Java.
„ *pyrifo'rmis* (pear-formed). India and China.
„ *quercifo'lia* (oak-leaved). India and Malaya.
„ *racemo'sa* (racemed). 4. E. Ind. 1759.
„ *radi'cans* (rooting). Country unknown.
„ „ *variega'ta* (variegated). Leaves with broad white margin. 1897.
„ *Reinwa'rdtii* (Reinwardt's). Burma and Malaya.
„ *religio'sa* (religious). 25. E. Ind. 1731. "Pepul."
„ *re'pens* (creeping-*stemmed*). See F. STIPULATA.
„ *rhizoca'rpa* (rooting-fruited). Malaya. 1875.
„ *Ri'bes* (Ribes). India and Malaya.
„ *Rœ'zlii* (Rœzl's). Leaves with wine-red veins beneath. S. Amer. 1876.
„ *rostra'ta* (beaked). 6. Orange. Himalaya. 1833.
„ *Roxbu'rghii* (Roxburgh's). 20. Himalaya and Burma.
„ *rubigino'sa* (rusty). Leaves smaller than *F. elastica;* buds green. Australia.
„ „ *variega'ta* (variegated). Leaves variegated with white or yellow. 1908.
„ *rubrine'rvis* (red-nerved). 10. Brazil. 1824.
„ *sagitta'ta* (arrow-head-*leaved*). ½. E. Ind. 1810. Creeper.
„ *salicifo'lia* (willow-leaved). Arabia.
„ *sca'bra* (rough). See F. HISPIDA.
„ *sca'ndens* (climbing). Himalaya and Burma.
„ *seta'cea* (bristly). Leaves 3-lobed. India. 1825.
„ *Siebo'ldii* (Siebold's). See F. ERECTA SIEBOLDII.
„ *subtripline'rvia* (somewhat-three-nerved). Leaves large, with ivory-white nerves. Brazil. 1900.
„ *Suringa'rii* (Suringar's). Leaves red-nerved. Amboyna. 1866.
„ *syringæfo'lia* (Syringa-leaved). Venezuela.
„ *Sycamo'rus* (Mulberry Fig). 30. N. Africa. "Sycamore Fig." "Fig-tree" of Scripture.
„ *Thunbe'rgii* (Thunberg's). S. Africa.
„ *tincto'ria* (dyeing). 14. May. Society Isles. 1793.
„ *triangula'ris* (triangular). W. Trop. Africa.
„ *Trime'ni* (Trimen's). India and Ceylon.
„ *Tsjake'la* (Tsjakela). 15. India. 1763.
„ *urophy'lla* (tail-leaved). 2. June. India. 1829.
„ *veno'sa* (veiny-*leaved*). 10. E. Ind. 1763.
„ *ve'sca* (sweet). See F. GLOMERATA.
„ *villo'sa* (shaggy). Malaya.
„ *virga'ta* (twiggy). See F. PALMATA.
„ *viscifo'lia* (clammy-leaved). See F. DIVERSIFOLIA.
„ *Voge'lii* (Vogel's). Liberia.

FIDDLE-WOOD. *Citharexylum.*

FIE'LDIA. (Named after *Baron Field*, once chief judge of New South Wales. Nat. ord. *Gesneraceæ* [Gesneraceæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Cyrtandra.)

Greenhouse climber; cuttings of points of shoots getting a little firm, or, better still, firm side-shoots, about two inches in length, in sandy soil, under a bell-glass, kept shaded, and after a fortnight placed in a mild bottom-heat; peat and loam, with a little sand, and pieces of charcoal. Winter temp., 40° to 48°.

F. austra'lis (southern). 1. White. July. 1826.

FIG. *Fi'cus Ca'rica.*

Varieties.—For forcing, we recommend the *Brown Turkey*, or *Lee's Perpetual*, *Negro Largo*, *White Ischia*, and *White Marseilles*. The *Nerii* is also well spoken of. To plant out-doors, the *Brunswick*, *Brown Turkey*, *Brown Ischia*, *Black Ischia*, and *White Marseilles*.

Propagation.—The fig roots so firmly by *cuttings*, that few resort to any other mode. They propagate, however, as freely by *layers*. Some persons, also, have raised them from *seed*, but it does not appear that they are valuable, though new kinds have been originated by such means. *Cuttings* of ripe wood, about three or four inches long, planted in pots in January or February, and plunged in any ordinary bottom-heat, will make very nice plants during the same summer. Those for forcing in pots or boxes must be potted off when rooted, and again plunged in bottom warmth, and the highest course of culture pursued, shifting them when necessary. Those who plant on the open walls should do so in the middle of March; and if the plants are from pots, the roots must be uncoiled and spread nicely out. Many persons who have established trees merely take *suckers* away from them; such only need fastening in the soil, and, it may be, a shading when they begin to grow.

Soil.—The fig will thrive in almost any ordinary garden-soil, but it is said to prefer a chalky loam. When planted against walls out of doors, care must be taken not to make the soil rich, for invincible grossness would be the consequence. A plain "maiden" soil is quite good enough for general purposes.

Culture in Growing Period.—Out-door culture consists in an early disbudding of all superfluous shoots; this is performed when the young shoots are about three inches long, reserving all those which are short-jointed and compact-looking. Care must be taken to reserve shoots for blank places. This disbudding is generally performed twice or thrice during the season; for waste and watery-looking spray will continue to spring up until August, especially in moist summers, and when the plants are gross. Such disbudding should be carried out until almost every leaf of the future year's bearing-wood obtains a free exposure to sunshine, say by the middle of August. About the end of this month it is accounted good practice to pinch the ends of all growing shoots, or rather to squeeze them with the thumb and finger. Nothing more is needed as summer culture, except a timely training of all reserved shoots, in order to obtain all the sunlight possible.

Culture in Rest Period.—This merely consists in protection from frost, and in pruning. Towards the beginning of December, some protection ought to be given, as mats, straw, fern fronds, or spruce boughs. Before closing them, or, indeed, at the end of October, every fig which has become as large as a horse-bean should be pulled away, for such rob the trees, and are sure to perish. The trees must be uncovered again in the end of February, if matted, otherwise such materials as fern or straw may remain on a little longer; the spruce, until *pruning* time. The latter operation should not be performed until the young buds are beginning to swell, when wood of a proper character may be distinguished readily from that which is useless. All the latter must be cut away, unless required for blank spaces; but if summer disbudding has been properly performed, there will be little for the pruner to do. After this, they must be duly trained.

Forcing.—Some build houses for the fig, but most prefer growing them in tubs or large pots. The general principles of forcing them so closely resemble those of the vine, that it will be needless to go into details. As to general temperature, although they will bear much heat, yet most cultivators agree that one intermediate between the peach-house and the forcing vinery is the most congenial. It requires, however, a little more excitement to bring the fig into leaf than the peach. Under good house culture it will produce two satisfactory crops in one year. A first crop may be obtained as early as May, and after a couple of months or so, the second will commence ripening; the latter being those on the wood of the current season. The first crop, or the embryo fruit of the previous year, is very apt to fall prematurely, and much care is necessary. Regular waterings the moment they are dry, and an avoidance of atmospheric extremes, are the best preventives. Most good cultivators make a point of pinching the ends of the young shoots when about six or eight eyes or buds in length; this soon causes the fruit to form in the axils of the leaves. Frequent syringings should be practised in the growing season; and when at rest they should never be subjected to a lower temperature than 40°. Under all circumstances, the fig delights in a soil somewhat moist: a neglect of watering when necessary, even for a day, may cause them to cast their fruit.

Fruit.—Its use is almost entirely confined to the ripe state, as dessert; as for keeping, if such is attempted, it must be on the retarding system, by partial shade, and a lowering of temperature just before ripening.

Insects.—The *Red Spider* and the *Brown Scale* alone

cause any alarm to Fig cultivators. The spider must be combated by the syringe, by an occasional dusting of sulphur, and by dressing the shoots all over, before commencing forcing, with soap water and sulphur; three ounces of soft soap to a gallon of warm water, well beat up, adding four handfuls of sulphur, will make a mixture which, brushed into every crevice, will extirpate both scale and spider. Sulphur, however, should be used on the pipes during the growing season.

FIG MARIGOLD. *Mesembrya'nthemum.*

FIGURE-OF-EIGHT MOTH. *Diloba cæruleocephala.*

FILBERT. See Co'RYLUS.

FIMBRIA'RIA. (From *fimbria*, fringe; a second name for *Schwa'nnia*, a fine shrub with fringed leaves. Nat. ord. *Malpighiads* [Malpighiaceæ]). See SCHWANNIA.

F. e'legans (elegant). See SCHWANNIA ELEGANS.

FINGERS-AND-TOES. See AMBURY.

FINOCHIO, or **AZOREAN FENNEL** (*Ane'thum azo'ricum*), cannot be cultivated successfully in this country.

FIR. *Pi'nus.*

FIRE. See FURNACE.

FISCHE'RIA. (Named after *Dr. Fischer*, of St. Petersburgh. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Gonolobus.)

Stove evergreen climber. Cuttings of shoots, young or old, in light, open soil, and in heat; peat and loam, with broken bricks and charcoal mixed with the compost, in addition to good drainage. Summer temp., 60° to 80°; winter, 48° to 55°.

F. hi'spida (roughly-hairy). See GONOLOBUS HISPIDUS.
,, *martia'na* (Martian). White, green. May. Nicaragua. 1845.
,, *sca'ndens* (climbing). Green, yellow. May. S. Amer. 1826.

FISH. See ANIMAL MATTERS.

FITTO'NIA. (Named in honour of two ladies, *E.* and *S. M. Fitton*, authors of *Conversations on Botany*. Nat. ord. Acanthaceæ.)

Ornamental foliage stove plants, with beautifully netted evergreen leaves. Cuttings of shoots getting firm in sand, in a close case, with bottom-heat. Light, fibrous loam and peat, with sand.

F. argyroneu'ra (silvery-nerved). Leaves bright green, netted with white. Peru. 1867.
,, *gigante'a* (giant). Dull purple. Leaves netted with red. Peru. 1869.
,, *Verschaffe'ltii* (Verschaffelt's). Yellow, pink. Leaves netted with red. Peru. 1863.

FITZRO'YA. (So called after *Capt. R. Fitzroy*, *R.N.*, commander of a surveying expedition. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

Evergreen hardy trees. Cultivated like the *Ce'drus Deoda'ra*.

F. Arche'ri (Archer's). Tasmania.
,, *patago'nica* (Patagonian). 80. Yellow, green. Patagonia.

FLACOU'RTIA. (Named after *E. Flacourt*, a French botanist. Nat. ord. *Bixads* [Bixaceæ]. Linn. 22-*Diœcia*, 12-*Polyandria*.)

Stove evergreens with white flowers, the fruit of which is wholesome. Cuttings of half-ripened shoots in April, in sand, and in heat, under a bell-glass; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°.

F. cataphra'cta (all-armed). 4. India and China. 1804.
,, *flave'scens* (yellowish). 15. Guinea. 1780.
,, *ine'rmis* (unarmed). 20. E. Ind. 1819.
,, *prunifo'lia* (plum-leaved). Colombia.
,, *Ramo'ntchi* (Ramontchi). 12. July. Madagascar. 1775.
,, *rhamnoi'des* (Rhamnus-like). See DOVYALIS ZIZYPHOIDES.
,, *rotundifo'lia* (round-leaved). 12. E. Ind. 1820.
,, *Ru'kam* (Rukam). Malacca and Philippines.
,, *sa'pida* (well-tasted. *Esculent*). See F. RAMO'NTCHI.
,, *sepia'ria* (hedge). 6. E. Ind. 1816.

FLAGELLA'RIA. (From *flagello*, to whip or scourge; in reference to the long, flexible shoots. Nat. ord. *Whipworts* [Flagellariaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)

Stove evergreen climber. Cuttings in sand, under a bell-glass, but chiefly by suckers; peat and loam; more curious than beautiful; leaves very astringent.

F. i'ndica (Indian). 7. White. June. India. 1782.

FLAKE is the term by which a carnation is distinguished that has two colours only, and these extending through the length of the petals.

FLAME-LILY. *Pyroli'rion.*

FLAT-BODY MOTH. *Depressaria depressella.*

FLAVE'RIA. (From *flavus*, yellow; in allusion to the yellow dye obtained from the plants. Nat. ord. Compositæ.)

Annual or perennial herbs, of no great value for garden purposes. Seeds in light, sandy soil.

F. Contraye'rba (Contrayerba). 1½. Yellow. September. Trop. Amer. 1794.
,, *repa'nda* (scolloped). Yellow. Mexico.

FLAX. *Li'num.*

FLAX-LILY. *Pho'rmium.*

FLAX-STAR. *Asteroli'non stella'tum.*

FLEU'RYA. (Named in compliment to *J. F. Fleury*, who wrote on Orchids. Nat. ord. Urticaceæ. Allied to the Nettle.)

Stove annual, furnished with stinging hairs. Seeds. Loam, leaf-mould, and sand.

F. æ'stuans (raging). 3. Green. Trop. Amer.

FLINDE'RSIA. (Named in honour of *Capt. M. Flinders, R.N.*, who explored the coast of Australia in the beginning of the last century. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Chloroxylon.)

A greenhouse evergreen tree. Cuttings of the ripened shoots in sand, under a bell-glass, in spring; loam and peat. Winter temp., 38° to 45°.

F. austra'lis (southern). 60. White. Australia. 1823.

FLORAL DIAGRAMS may aptly be termed the ground-plan of a flower, and are designed to show the number and arrangement of the sepals, petals, stamens, and carpels making up the structure of a flower. They also show whether the parts of each set or whorl are free from one another or joined (*connate*), whether free from, or joined to, any other whorl (*adnate*). When the sepals merely touch by their edges in bud they are *valvate;* but if they overlap, they are *imbricate*. The petals are mostly alternate with the sepals, and when joined they are said to be *connate*, or that the corolla is gamopetalous. The stamens may be free from one another (*polyandrous*), or joined (*monadelphous*), or adnate to the corolla (*epipetalous*). The pistil may consist of two or more carpels; and if free it is said to be *apocarpous;* or if united, *syncarpous*. These various conditions are indicated by the lines and markings of the floral diagram.

FLORESTI'NA. (Derivation not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Bahia.)

Seeds of *callo'sa* in the open ground, in April; seeds of *peda'ta* in a hotbed, in March, and transplanted in May to a sheltered situation, or grown in a cool greenhouse.

F. callo'sa (hardened). See POLYPTERIS CALLOSA.
,, *peda'ta* (double-lobed-*leaved*). White. July. Mexico. 1803.

FLORETS. The small stalkless flowers united on a common undivided receptacle, and enclosed in one common involucre of bracts to form a compound flower or capitulum.

FLORIST. A dealer in flowers, flowering shrubs, and their seeds.

FLORISTS' FLOWERS are those which, by their beauty or fragrance, power to produce permanent varieties, and facility of cultivation, are so largely in demand as to render them especially worthy of cultivation as an article of commerce.

Mr. Glenny has enumerated the necessary character-

istics of a florist's flower to be—First, The power to be perpetuated and increased by slips and other modes independent of its seed. Secondly, The power to produce new varieties from seed, capable, like their parent, of being perpetuated; and, thirdly, it must possess sufficient interest and variety to be grown in collections.

At present, the chief florists' flowers are the Amaryllis, Antirrhinum, Anemone, Auricula, Calceolaria, Carnation, Chinese Primula, Chrysanthemum, Cineraria, Crocus, Dahlia, Fuchsia, Gladiolus, Hippeastrum, Hyacinth, Hydrangea, Ixia, Iris, Lily, Lobelia, Narcissus, Pansy, Pæony, Pelargonium, Petunia, Phlox, Pink, Polyanthus, Ranunculus, Rhododendron, Rose, Sweet Pea, Tuberous Begonia, Tulip, Verbena, Viola.

FLOWER. See BLOOM.

FLOWER FENCE. *Poincia'na.*

FLOWER-GARDEN is that portion of the ground in the vicinity of the residence disposed in parterres and borders, tenanted by flowers and flowering shrubs, and among walks and lawns, so that the occupiers of the house may have ready access to what is so beautiful in form, colour, and fragrance. See LANDSCAPE GARDENING, PLANTATION, &c.

FLOWERING ASH. *O'rnus.*

FLOWER OF JOVE. *Ly'chnis Flo's-jo'vis.*

FLOWER-POTS are of various sizes and names:—

Thimbles and thumbs; any size under three inches diameter at the top.

	Width of Top in Inches.	Depth in Inches.	Old Name.
Three-inch pot	3	4	60s
Five-inch	5	5	48s
Six-inch	6	6	32s
Eight-inch	8	8	24s
Nine-inch	9	9	16s
Eleven-inch	11	10	12s
Twelve-inch	12	11	8s
Thirteen-inch	13	12	6s
Fifteen-inch	15	13	4s
Eighteen-inch	18	14	2s

In addition to the above, there is a description of flower-pots called *uprights*, which are used for growing bulbous plants, the roots of which do not spread laterally, but perpendicularly. They are deeper in proportion to their width than common flower-pots, and may be thus particularised:

	Top Width in Inches.	Depth in Inches.	
Upright 15-inch (Old upright 16s)	15	16	Used for growing 7, or a large mass of Gladioli, and third-sized bulbs of Japan lilies; for ordinary-sized Alströmerias; and for large tubers of *Tropæ'olum tricolo'rum* and its allies.
Upright 8-inch (Old upright 24s)	8	10	For 5 Hyacinths, Narcissi, or strong early tulips, like Golden Standard and *Rex rubro'rum.*
Upright 6-inch (Old upright 32s)	6	7	For 3 Hyacinths, or Narcissi, and for 1 strong Gladiolus, Auricula, &c.
Upright 5-inch (Old upright 48s)	5	6	For single Hyacinths, or Narcissi; for 5 Ixias or Crocuses; and for 4 dwarf early Tulips, such as the Duc Van Thol.

For sizes larger than 15-inch it is needless to have any pots but those of the usual proportions.

Thimbles are sometimes called "small nineties," and thumbs, "large nineties."

The form and material also vary. Mr. Beck makes them very successfully of slate; and the prejudice against glazed pots is now exploded.

It was formerly considered important to have the pots made of a material as porous as possible; but a more miserable delusion never was handed down untested from one generation to another. Stoneware and chinaware are infinitely preferable, for they keep the roots more uniformly moist and warm. Common garden-pots, if not plunged, should be thickly painted. Large pots have been recommended to be employed, and there is no doubt that this is a system much abridging the gardener's labour; but as with due care small pots will produce magnificent specimen plants, we cannot recommend an adoption of large pots, insuring as they do such an immense sacrifice of room in the hot and greenhouses. Captain Thurtell, one of the most successful of growers of the Pelargonium, never employed pots larger than twenty-fours.

It is usual to have *saucers* in which to place flower-pots when in the house, and so far as preventing stains and the occurrence of dirt, they are deserving adoption; but as to their being used for applying water to plants, they are worse than useless, except to plants almost aquatic. The great difficulty in pot cultivation is to keep the drainage regular; and no more effective preventive of this could be devised than keeping a pot in a saucer containing water. No plan for most cultivated plants could be invented more contrary to nature; for we all know that she supplies moisture to the surface of the soil, and allows it to descend, thus supplying the *upper* roots first. For drawings of various flower-pots, see *The Cottage Gardener*, No. 64.

FLOWER STAGES are made for the exhibition of flowers at shows, in the greenhouse, and elsewhere. The following are some very judicious observations on the subject. The first object in the construction of stages should be to have them so formed and situated as to afford facilities for grouping plants; the second should be to give plants more the appearance of growing in borders than upon artificial structures; and the third to keep the pot out of sight. This is requisite for two reasons: first, because they are no ornament; and, secondly, that it is always desirable to protect the plant from being scorched by exposure to the sun. It is also desirable to adopt another mode of construction, for the purpose of giving plants that aspect which is most suited to their habits; and, therefore, instead of placing the stages from the front to the back of the house, as is generally the case, let them be placed in groups of stages, thus producing an effect similar to the borders in a well-arranged flower-garden. The spectators, in their progress from group to group, would be attracted by the separate display in each, instead of having their attention drawn away by a whole blaze of beauty at once.

Mr. Ainger, also, makes these good suggestions: "Stages are frequently formed of an equal or nearly equal series of ascents, in consequence of which the upper plants are by no means so well seen as the lower ones. The proper plan is to commence by small elevations, gradually increasing as the shelves recede from the eye. The lowest shelf to be eighteen inches from the floor, the first rise is six inches, the next nine, twelve, fifteen, eighteen, twenty-one, and so on. The upper shelves should also be broader than the lower, for larger pots. The advantage of this arrangement, as commanding a better view of the flowers, is obvious."

FLUED WALL. See WALLS.

FLUES are pipes formed of brick or slate, for conducting heated air through stoves or other buildings where a high artificial temperature is desired. It is a mode of heating much less used than formerly, being superseded by the much more manageable and effectual modes of heating by hot water; and flues have the additional disadvantages, that they require frequent sweeping, and that they emit a sulphurous fume that is injurious to plants, and disagreeable to the frequenters of the structures so heated. This has been obviated by using Valencia slates in the place of bricks; yet flues under few circumstances can compare with either the pipe or tank system of hot-water heating. When flues are employed, they are constructed inside and near the walls of the building; each flue eight or nine inches wide in

the clear, by two or three bricks on edge deep, ranged horizontally one over the other the whole length of the back wall, in three or four returns communicating with each other, continued, also, along the end and front walls in one or two ranges, to be used occasionally; furnished with a regulator to slide open and shut as required, the whole proceeding from the first lowermost flue, which communicates immediately from the furnace or fireplace behind either the back wall at one end, or in the back part of the end walls; or if very long stoves, of more than forty feet length, two fireplaces are requisite, one at each end; each having its set of flues ranging half-way; each set of flues terminating in an upright chimney at the end of the back outside. Flues are merely chimneys horizontal, instead of being entirely upright, terminating, however, generally in an upright tube or shaft, which discharges their contents into the open air. They are most effectual when they traverse the ends and the front of the house; as, if the back wall is a solid material, there can be less danger of cold there. Arrangements must be made for a good draught, by having the bottom of the furnace two feet below the level of the bottom of the flue. The flue should, after entering the house, rise a little to the extreme end. It should stand a little raised above the floor, and never be placed below it, unless when well supplied with air by cross drains. It should be constructed of the best brick and tiles, be plastered over if a strong heat is necessary, and merely whitewashed if a heat is only wanted occasionally. Evaporating basins should be secured, so that the atmosphere be supplied with moisture as well as heat. See STOVE.

FLUE'GGEA. See OPHIOPOGON.

FLU'GGEA. (Named in compliment to the German botanist *Herr John Flugge.* Nat. ord. Euphorbiaceæ.)

A stove shrub. Cuttings in sand in bottom-heat, and not overwatered. Fibrous loam and plenty of sand.

F. Leucopy'rus (white-pear). Fruit white. E. Ind. 1825.
,, *microca'rpa* (small-fruited). August. Tropics Old World. 1806.

FLY. See BLACK FLEA.

FLYWORT. *Mya'nthus*, a section or group of Catasetum.

FŒNI'CULUM. Fennel. (The classical name for this or some similar plant. Nat. ord. Umbelliferæ.)

See FENNEL FOR CULTIVATION.

F. du'lce (sweet) and *F. officina'le* (shop). See F. VULGARE.
,, *piperi'tum* (pepper). 6. Yellow. July. Italy. 1824.
,, *vulga're* (common). 2 to 4. Yellow. July to September. Britain.

FŒTI'DIA. (From *fœtidus*, fetid; referring to the unpleasant smell of the leaves and wood. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*. Allied to Gustavia.)

Cuttings of ripe wood, with the leaves remaining, in sand, in spring, under a bell-glass, and in heat; fibrous loam and turfy peat, with silver sand. Summer temp., 60° to 75°; winter, 48° to 55°.

F. mauritia'na (Mauritius). 26. White. Mauritius. 1825.

FOGGING-OFF. The same as *damping-off*.

FOKIE'NIA. (From *Fokien*, a province of Eastern China. Nat. ord. Coniferæ.)

An evergreen tree, hardy in the more favoured parts of Britain and Ireland. Seeds; cuttings in a cold frame, introduced to gentle heat after callusing. Ordinary soil.

F. Hodgi'nsii (Captain Hodgins'). 30 to 40; girth 3 ft. Fokien, Eastern China. 1909.

FOLLICLE, a seed-vessel of one entire piece, and one-celled, bursting lengthwise, and having the seeds on or near its edges, on a receptacle parallel with it. Examples are the seed-vessels of the Periwinkle and Pæony.

FONTANE'SIA. (In honour of the French botanist, *Des Fontaines*. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Lilac.)

Grafted standard high on the Manna Ash (*O'rnus*) it would make an interesting object on lawns. It resembles the common Privet, but with rough bark. Layers and cuttings under a hand-glass, in autumn, and by grafting on the Privet. When grown to a single stem it has a graceful appearance, owing to its slender, drooping branches.

F. Fortu'nei (Fortune's). China. 1859.
,, *phillyræoi'des* (Phillyræa-like). 12. Yellow. August. Syria. 1787.
,, ,, *longifo'lia* (long-leaved).

FORCING is compelling culinary vegetables to be edible, flowers to bloom, and fruits to ripen at unnatural seasons, being the very contrary of the object for which our greenhouses and hothouses are constructed; viz. to secure a temperature in which their tenants will be in perfection at their natural seasons. Under the heads of HOTBEDS, and of each particular plant, will be found directions for forcing, and it will be sufficient here to coincide with Dr. Lindley in saying, that as forced flowers are always less beautiful and less fragrant, and forced vegetables and fruits less palatable and less nutritious than those perfected at their natural periods, it is desirable, at the very least, to devote as much effort and expense to obtain superior produce at accustomed times, as to the procuring it unseasonably. Rarity is good, but excellence is best.

FORE-RIGHT SHOOTS are the shoots which are emitted directly in front of branches trained against a wall, and, consequently, cannot be trained in without an acute bending, which is always in some degree injurious.

FORE-SHORTENING. A method of pruning back fruit-trees in summer, and of pruning forest-trees at any time, by which the lower branches are shortened, without removing them altogether.

FORESTIE'RA. (A commemorative name. Nat. ord. Oleaceæ.)

Hardy shrubs allied to the Privet. Grafting on the Privet; layers; cuttings in autumn, under a cold frame or hand-light. Ordinary garden soil.

F. acumina'ta (long-pointed). Greenish-white. Southern United States.
,, *neomexica'na* (New Mexican). Flowers small. Berries blue-black. N.W. Amer. 1898.

FORFICULA AURICULARIA. See EARWIG.

FORGET-ME-NOT. *Myoso'tis palu'stris.*

FORK. This instrument is preferable to the spade, even for digging over open compartments, for the soil can be reversed with it as easily as with the spade; the labour is diminished, and the pulverisation of the soil is more effectual. (See DIGGING.) For stirring the soil in plantations, shrubberies, and fruit-borders, a two-pronged fork is often employed; but that with three prongs is quite as unobjectionable, and a multiplicity of tools is an expensive folly. Dr. Yelloly's fork is certainly a good working implement. Entire length, three feet three and a half inches; handle's length, two feet two inches; its diameter, one and a half inch; width of the entire prongs, seven inches at the top; width at the points, six inches; prongs, thirteen and a half inches long, and at the top seven-eighths of an inch square, tapering to a point. The straps fixing the head to the handle are eleven inches long, two inches wide, and half an inch thick, feathering off; weight of fork, eight pounds.

Leaf-fork. Mr. Toward, of Bagshot Park, describes a very serviceable implement of this kind. He says: "One person with this implement will take up with greater facility more leaves than two persons could do with any other tool. It is simply a large four-tined fork, made of wood, shod with iron; the tines are eighteen inches long, and are morticed into a head about seventeen inches long, and one and a half inch by two and a quarter inches thick. The tines are one inch in width, and one and a half inch in depth at the head, gradually tapering to a point, with a curve or bend upwards. The wood of which they are formed ought to be hard and tough; either oak or ash will do, but the *Robi'nia Pseu'd-aca'cia* is preferable to either. The head should be made of ash, with a handle of the same, and should be two feet four inches long. Its recommendations are its size and lightness; the leaves, also, do not hang upon it as on a common fork, the large size of the tines tearing them asunder."

FORMICA. See ANT.

FORRE'STIA. (Commemorative of *P. Forrest*, a botanist of the seventeenth century. Nat. ord. Commelinaceæ.)

Stove perennials with showy flowers. Cuttings of shoots getting firm, in sand, under a bell-glass or in a propagating case, with gentle bottom-heat. Fibrous loam with an equal part of leaf-mould and well-decayed cow manure and sand.

F. Hooke'ri (Hooker's). 3. Purplish, in heads. E. Ind. 1864.
,, *margina'ta* (margined). 3. Purple. Java.

FORSY'THIA. (In honour of *Mr. Forsyth*, royal gardener at Kensington. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Fontanesia.)

Hardy deciduous shrubs. Cuttings or layers; common, sandy loam.

F. europæ'a (European). 3 to 5. Yellow. Albania. 1903.
,, *Fortu'nei* (Fortune's). See F. SUSPENSA.
,, *suspe'nsa* (hanging-down). Yellow. China.
,, *viridi'ssima* (greenest). 10. Yellow. March. N. China. 1845.

FORSYTH'S PLAISTER, for healing the wounds and restoring to vigour decayed trees, was as follows: One bushel of fresh *cow-dung*; half a bushel of *lime-rubbish* (that from ceilings of rooms is preferable), or powdered chalk; half a bushel of *wood-ashes*; one-sixteenth of a bushel of *sand*; the last three to be sifted fine. The whole to be mixed and beaten together until they form a fine plaister. There is nothing in this compound sufficiently differing from others recommended by his contemporaries and predecessors to have entitled him to call it his invention.

FORTUNÆ'A. (Named in compliment to *Mr. Fortune*, botanical collector in China. Nat. ord. *Juglands* [Juglandaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.) See PLATYCARYA.

F. chine'nsis (Chinese). See PLATYCARYA STROBILACEA.

FOTHERGI'LLA. (Named after *Dr. Fothergill*. Nat. ord. *Witch-Hazels* [Hamamelidaceæ]. Linn. 12-*Icosandria*, 2-*Digynia*.)

Hardy little shrubs, from North America; their white, sweet-scented flowers appearing before the leaves. Seeds, which frequently ripen in this country, sown in spring, in a peat border, or in pans, and transplanted; layers in March and August; sandy, moist peat.

F. Garde'ni (Garden's). 4. May. 1765. Syn. *F. alnifolia*.
,, ,, *acu'ta* (acute-*leaved*). 4. June. 1765.
,, ,, *ma'jor* (larger). 4. May. 1765.
,, ,, *oblu'sa* (blunt-*leaved*). 4. June. 1765.
,, ,, *sero'tina* (late-*flowering*). 4. August. 1765.
,, *monti'cola* (mountain-dwelling). 1 to 2. White. N. Amer. 1909. Seems identical with *F. Gardeni major*.

FOUGEROU'XIA. See BALTIMORA.

FOUNTAINS, or, as they are sometimes called, *Jets d'eau*, surprise by their novelty, and the surprise is proportioned to the height to which they throw the water; but these perpendicular columns of water have no pretence to beauty. The Emperor fountain at Chatsworth is the most surprising in the world, for it tosses its waters to a height of 267 feet, impelled by a fall from a reservoir 381 feet above the ajutage, or mouth of the pipe from which it rushes into the air. The supply of water, either naturally or artificially, is brought from a higher level than the discharging pipe; but the water will not rise so high as the level from whence it came, which is owing to the resistance of the air at the discharging point, its own gravity, and the friction of the sides of the pipe in which it is conveyed. Whatever be the form in which the water is discharged, if it is designed to throw it up in a perpendicular direction, the pipe must be so narrowed where the water issues out as not to be above one-fourth the diameter of the conducting pipe.

FOUQUIE'RIA. (Commemorative of *Peter Edward Fouquier, M.D.*, a French doctor. Nat. ord. Tamaricaceæ.)

Cool stove or intermediate house shrubs. Cuttings of half-mature wood, in sand, in a close case. Fibrous loam and peat, with sand.

F. columna'ris (columnar). Flowers small. Stem pyramidal. Mexico. 1899.
,, *formo'sa* (beautiful). 6 to 10. Scarlet. Mexico.
,, *spino'sa* (spiny). 12. Scarlet. Mexico.
,, *splе'ndens* (splendid). 6–20. Scarlet. New Mexico; S.W. United States.

FOURCRO'YA. See FURCRÆA.

FOXBANE. *Aconi'tum Lyco'ctonum.*

FOXGLOVE. *Digita'lis.*

FRACTURES. If an immaterial branch is broken, it is best to remove it entirely; but it sometimes happens that a stem or branch which cannot be replaced is thus injured, in which case it is advisable to attempt a reduction of the fracture; and if it be only partial, and the stem or branch but small, the parts will again unite by being put back into their natural position, and well propped up. The cure may be expected not to succeed if the fracture is accompanied with contusion, or if the stem or branch is large; and even where it succeeds, the woody fibres do not contribute to the union; but the granular and herbaceous substance only which exudes from between the wood and liber, insinuating itself into all interstices, and finally becoming indurated in the wood. Splints extending at least a foot above and below the fracture should be bound very firmly all round, and a plaister of grafting-clay to exclude wet be placed over all, and every precaution adopted to prevent the surfaces of the wound being moved by the force of the wind.

FRAGA'RIA. The Strawberry. (From *fragrans*, perfumed; in reference to the flavour of the fruit. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Hardy evergreens. Seeds, sown early in a slight hotbed, and planted out early, will in many cases produce fruit in the autumn of the same season. Plants are most easily obtained by detaching the runners. Deep loam suits them. See STRAWBERRY.

F. bercherie'nsis (Berkshire). ½. White. May. Berkshire.
,, *bonarie'nsis* (Buenos Ayres). 2. Apetal. June. Buenos Ayres.
,, *bresli'ngea* (Breslingian). See F. COLLINA.
,, *califo'rnica* (Californian). 1. White. California.
,, *calyci'na* (*large*-calyxed). 1. White. April. France.
,, *canade'nsis* (Canadian). See F. VIRGINIANA.
,, *chiloe'nsis* (Chili). ½. White. May. S. Amer. 1727.
,, *colli'na* (hill. *Green Pine*). 1. White. June. Europe. 1768.
,, *ela'tior* (taller. *Hautbois*). 1½. White. May. Britain.
,, *grandiflo'ra* (*Pine*. Great-flowered). 1. White. May. Surinam. 1759.
,, *hagenbachia'na* (Hagenbachian). 1. White. S. Amer.
,, *i'ndica* (*yellow*. Indian). 1. Yellow. July. India. 1805.
,, *Majau'fea* (Majaufe de Champ). See F. COLLINA.
,, *mexica'na* (Mexican). See F. VESCA.
,, *monophy'lla* (one-leaved). See F. VESCA MONOPHYLLA.
,, *nilgerre'nsis* (Nilgherrian). India.
,, *platanoi'des* (plane-like). 1. Red. May. N. Amer.
,, *roseiflo'ra* (rose-flowered). Europe.
,, *ve'sca* (edible. *Common wild*). 1. White. May. Britain.
,, ,, *flo're ple'no* (double-flowered).
,, ,, *monophy'lla* (one-leaved). ½. White. May. 1773.
,, *virginia'na* (*Scarlet*. Virginia). 1. White. April. N. Amer. 1629.

FRAMES are structures employed either in forcing, or in protecting plants, and are of various sizes.

According to the good practical rules of Abercrombie, the *one-light frame* may be about four feet and a half in width from back to front, and three feet six inches the other way; fifteen or eighteen inches high in the back, and nine in front, with a glass sash or light, made to fit the top completely, to slide up and down, and move away occasionally.

The *two-light frame* may be seven feet long, four and a half wide, and fifteen or eighteen inches high in the

back, with bars reaching from it at top to the front, serving both to strengthen the frame and help to support the lights; the two lights to be each three feet six inches wide, made to fit the top of the frame exactly.

The *three-light frame* should be ten feet six inches long, four and a half wide, and from eighteen inches to two feet high in the back, and from nine to twelve or fifteen inches in front—observing that those designed principally for the culture of melons may be rather deeper than for cucumbers, because they generally require a greater depth of mould or earth on the beds; though frames, eighteen or twenty inches in the back, and from nine to twelve in front, are often made to serve occasionally both for cucumbers and melons. Each frame should have two cross-bars ranging from the top of the back to that of the front, at three feet six inches distance, to strengthen the frame, and support the lights; and the three lights should be each three feet six inches wide; the whole together being made to fit the top of the frame exactly, every way in length and width.

Sometimes the above sort of frames are made of larger dimensions than before specified; but in respect to this it should be observed, that if larger they are very inconvenient to move to different parts where they may be occasionally wanted, and require more heat to warm the internal air; and in respect to depth particularly, if they are but just deep enough to contain a due depth of mould, and for the plants to have moderate room to grow, they will be better than if deeper, as the plants will be then always near the glasses, which is an essential consideration in early work, and the internal air will be more effectually supported in a due temperature of warmth; for the deeper the frame, the less in proportion will be the heat of the internal air, and the plants being far from the glasses will be some disadvantage in their early growth. Besides, a too deep frame, both in early and late work, is apt to draw the plants up weakly; for they always naturally aspire towards the glasses, and the more space there is, the more they will run up; for which reason the London kitchen-gardeners have many of their frames not more than fourteen or fifteen inches high behind, and seven in front, especially those which are intended to winter the more tender young plants, such as cauliflower and lettuce, and for raising early small salads, herbs, radishes, &c.

The woodwork of the back, ends, and front should be of inch or inch and a quarter deal, as before observed, which should be all neatly planed even and smooth on both sides; and the joints, in framing them together, should be so close that no wet or air can enter. The cross-bars or bearers at top, for the support of the glasses, should be about three inches broad and one thick, and neatly dovetailed in at back and front even with both edges, that the lights may shut down close, each having a groove or channel along the middle to conduct off all wet falling between the lights. At the end of each frame, at top, should be a thin slip of board, four inches broad, up to the outside of the lights, being necessary to guard against cutting winds rushing in at that part immediately upon the plants, when the lights are occasionally tilted behind for the necessary admission of fresh air, &c.

With respect to the lights, the woodwork of the frame should be one inch and a half thick and two and a half broad; and the bars for the immediate support of the glass-work should be about an inch broad, and not more than an inch and a half thick; for, if too broad and thick, they would intercept the rays of the sun, so should be only just sufficient to support the lights, and be ranged from the back part to the front, nine or twelve inches asunder.

All the woodwork, both of the frames and lights, should be painted, to preserve them from decay. A lead colour will be the most eligible; and if done three times over, outside and in, will preserve the wood exceedingly from the injuries of weather, and from the moisture of the earth and dung.

Mr. Knight has suggested an important improvement in the form of frames. He observes, that the general practice is to make the surface of the bed perfectly horizontal, and to give an inclination to the glass. That side of the frame which is to stand towards the north is made nearly as deep again as its opposite; so that if the mould is placed of an equal depth (as it ought to be) over the whole bed, the plants are too far from the glass at one end of the frame, and too near at the other. To remove this inconvenience, he points out the mode of forming the bed on an inclined plane; and the frame formed with sides of equal depth, and so put together as to continue perpendicular when on the bed, and face the sun.

There are several minor points in the construction of frames that deserve attention. The strips of lead or wood that sustain the panes of glass should run across the frame, and not lengthwise; they then neither obstruct so much the entrance of light, nor the passing off of rain. The inside of the frame should be painted white, since plants generally suffer in them for want of light: if the accumulation of heat was required, the colour should be black.

Raising the Frames.—It is a well-known difficulty that the gardener has in raising the frames so as to keep the foliage of the plants within them at a determined and constant distance from the glass. To remedy this, Mr. Nairn, gardener to J. Cresswell, Esq., of Battersea Priory, introduced an ingenious contrivance, consisting of a movable frame, and a brick-built pit, having a separate inner lining, and a nine-inch outer wall. Between these the sides of the frame pass, and are lowered or elevated by racks and spindles.

A more simple plan might perhaps be adopted, by having frames of the same length and breadth as the original, but only from an inch to three inches, or upwards, deep. These, as necessary, might be put on the top, and would be kept close by the pressure of the lights; bolts and nuts might also be easily applied, and the interstices rendered still more impervious to air by being faced with list.

Glass and Glazing.—See STOVE.

Shelter for the Glass.—In proportion to the number of lights, matting for shading and sheltering must be at hand. The usual mode of covering at night is by laying on mats, and over these litter, in thickness according to the severity of the season. Some gardeners lay hay immediately in contact with the glass, and over this the mats. Every person conversant with these modes of shelter is aware of their inconvenience. In rainy weather they soon become wet, and rapidly chill the beds; added to which, the trouble caused in placing and removing them, and the danger to the glass from the stones laid on as a resistance to the wind, are by no means inconsiderable.

Mr. Seton, to obviate these inconveniences, employs a particular covering, which he constructs of four laths, two of such a length as to exceed a little that of the frame, and the others in a similar manner that of its breadth. These are bound together at right angles, so as to form a parallelogram of the form and size of the frame; and pieces are bound across this at a foot apart from each other. Over this a mat is spread, and over the mat a layer of straw is fastened, laid on level like thatch, from three to six inches thick, as may appear necessary. If the breadth of the frame is, or exceeds, four feet, it is best to have the covering in two parts, otherwise it becomes weak and unwieldy. These panels, as they may be called, Mr. Seton also employs in preserving tender plants through the winter. A pit of frames, earthed up all round, and covered with one of them, or two or three if needful, is completely impervious to frost.

Substitutes for Glass.—Oiled paper was formerly employed; but this has been superseded by linen dressed with Whitney's or Tanner's compositions; or the gardener may employ the following preparation: Old pale linseed-oil, three pints; sugar of lead (acetate of lead), one ounce; white resin, four ounces. Grind the acetate with a little of the oil, then add the rest and the resin. Incorporate thoroughly in a large iron pot over a gentle fire; and, with a large brush, apply hot to a fine calico stretched loosely previously, by means of tacks, upon the frame. On the following day it is fit for use, and may be either done over a second time, or tacked on tightly to remain.—*Gardener's Chronicle.*

The quantity made according to this recipe will be sufficient for about 100 square feet of calico.

FRANCI'SCEA. We have referred the species to Brunfelsia.

FRANCI'SIA. See DARWINIA.

FRANCO'A. (Named after *F. Franco*, a Spaniard. Nat. ord. *Francoads* [Saxifragaceæ]. Linn. 8-*Octandria*, 4-*Tetragynia*.)

Hardy herbaceous perennials, natives of Chili, and impatient of wet under cultivation. A few plants should be kept in cold frames, to replace such as die off during severe winters. Seeds in a slight hotbed, in spring; plants hardened off, and then transplanted; dry, sandy loam suits them best. In severe weather, they are worth the labour of sticking a few evergreen boughs round them.

F. appendicula'ta (appendaged). 2. Purple. July. 1830.
,, *ramo'sa* (branched). 2. White. July. 1831.
,, *sonchifo'lia* (sowthistle-leaved). 2. Purple. July. 1830.

FRANKE'NIA. Sea Heath. (Named after *Frankenius*, a Swedish botanist. Nat. ord. *Frankeniads* [Frankeniaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Small plants, found chiefly near the sea, more curious than pretty, though useful for rock-works, or for a collection of alpines. Seeds, cuttings, and dividing the roots; sandy loam, and a little peat.

HALF-HARDY EVERGREEN TRAILERS.

F. ericifo'lia (heath-leaved). ½. Red. July. Canaries. 1816.
,, *nodiflo'ra* (knot-flowered). ½. Flesh. June. Cape of Good Hope. 1818.
,, *pauciflo'ra* (few-flowered). 1. Pink. July. N. Holland. 1824.

HARDY EVERGREEN TRAILERS.

F. corymbo'sa (corymbose). See F. HIRSUTA.
,, *hirsu'ta* (hairy). ½. Light blue. July. Siberia. 1789.
,, *interme'dia* (intermediate). ½. White. July. S. Europe. 1817.
,, *læ'vis* (smooth). ½. Flesh. July. England.
,, *mo'llis* (soft). See CRESSA CRETICA.
,, *No'thria* (Nothria). ½. Flesh. July. Cape of Good Hope. 1816.
,, *pulverule'nta* (powdery). ½. Red. July. Mediterranean regions. Annual.

FRANKINCENSE. *Pi'nus Tæ'da.*

FRANSE'RIA. (Named after *Antoine Franser*, a Spanish botanist. Nat. ord. Compositæ.)

A half-hardy biennial or perennial herb. Seeds. Light, sandy soil.

F. artemisioi'des (Artemisia-like). 5–6. Andes of Chili and Peru. 1890.

FRA'SERA. (Named after *John Fraser*, botanical collector in North America. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Chironia.)

Hardy biennial marsh-plants. Seeds in spring, and transplanted; also by division of the roots; sandy peat, with a little turfy loam.

F. caroline'nsis (Carolina). 4. Green, yellow. July. Carolina. 1795.
,, *specio'sa* (showy). Yellow. N. Amer.

FRAXINE'LLA. *Dicta'mnus.*

FRA'XINUS. The Ash. (*Fraxinus* is the Latin for an ash-tree. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 23-*Polygamia*, 2-*Dicœcia*.)

Hardy deciduous trees, with green flowers. Seeds ripe in October, then to be collected, and stored in thin layers in the ground, mixed with sandy soil, and turned once or twice during the winter; the seeds sifted from the soil, and sown in March or April. Most of the species may also be propagated by seeds, and the most distinct of them; as also the varieties by grafting. Dry, deep loam makes them produce the best timber. The *Weeping*, the *Silver*, and *Golden-barked* varieties of *F. excel'sior* are interesting.

* FRAXINASTER.

F. acumina'ta (pointed. *Green*). See F. AMERICANA.
,, *a'lba* (white). See F. AMERICANA.
,, *amari'ssima* (bitterest). See F. EXCELSIOR AMARISSIMA.
F. america'na (American-*white*). 40 May. N. Amer. 1723.
,, ,, *fo'liis argе'nteo-margina'tis* (white-edge-leaved). 1886.
,, ,, *latifo'lia* (broad-leaved). 20. May.
,, *angustifo'lia* (narrow-leaved). 30–40. Greenish-yellow. S. Europe, Caucasus. 1815.
,, *ano'mala* (anomalous). Leaves mostly of one ovate leaflet. Utah. 1896.
,, *appe'ndica* (appendaged). 20. May.
,, *appendicula'ta* (appendiculate). See F. EXCELSIOR.
,, *arbutifo'lia* (Arbutus-leaved). Leaves with rusty felt beneath.
,, *argе'ntea* (silvery). 15. June. Corsica. 1835.
,, *a'tro-vi'rens* (dark green). See F. EXCELSIOR CRISPA.
,, *berlandieria'na* (Berlandierian). Southern Mexico.
,, *caroliniа'na* (Carolina). 30. June. Southern United States. 1783. "Swamp Ash," "Water Ash."
,, *chine'nsis* (Chinese). China.
,, *cine'rea* (grey). 30. May. N. Amer. 1824.
,, *cu'rvidens* (curve-toothed). See F. CAROLINIANA.
,, *cuspida'ta* (short-pointed). 30. Green. May. Mexico. 1825.
,, *dimo'rpha* (two-formed). N. Africa.
,, *elli'ptica* (oval). See F. PENNSYLVANICA.
,, *Elo'nza* (Elonza). Origin unknown.
,, *epi'ptera* (wing-upon-wing). See F. AMERICANA.
,, *excе'lsior* (taller. *Common Ash*). 80. May. Britain.
,, ,, *amari'ssima* (bitterest). 20. May.
,, ,, *angustifo'lia* (narrow-leaved). Leaves linear, very narrow. Spain. 1815.
,, ,, *argе'ntea* (silver-*barked*). 20. May. Britain.
,, ,, *au'rea* (golden-*barked*). 20. May. Britain.
,, ,, *au'rea pe'ndula* (yellow-pendulous). May. Britain.
,, ,, *cri'spa* (curled). 4. May. Britain.
,, ,, *ero'sa* (gnawed). 20. May. Britain.
,, ,, *fo'liis argе'nteis* (silvery-leaved).
,, ,, *fo'liis au'reis* (golden-leaved). Leaves yellow, tinted violet when young. 1878.
,, ,, *fungo'sa* (fungous). 26. May. Britain.
,, ,, *heterophy'lla* (various-leaved). Leaves mostly of one leaflet.
,, ,, *heterophy'lla lacinia'ta* (cut-leaved). Leaflet deeply incised.
,, ,, *heterophy'lla pe'ndula* (drooping). Various-leaved, weeping.
,, ,, *heterophy'lla variega'ta* (variegated). Ireland. 1836.
,, ,, *horizonta'lis* (horizontal). 20. May. Britain.
,, ,, *jaspi'dea* (jasper-like. *Yellow-barked*). 30. May.
,, ,, *Kinca'rnia* (Kincairney). 40. May. Kincairney.
,, ,, *leucoca'rpa* (white-fruited). Fruits variegated or wholly white. 1907.
,, ,, *lu'tea* (yellow-*edged*). 20. May. Britain.
,, ,, *monstro'sa* (monstrous). June. Britain.
,, ,, *myrtifo'lia* (myrtle-leaved). April. 1812.
,, ,, *na'na* (dwarf). 10. May. Britain.
,, ,, *pe'ndula* (pendulous). 20. May. "Weeping Ash."
,, ,, *pe'ndula Wentwo'rthi* (Wentworth). "Wentworth Weeping Ash."
,, ,, *scolopendrifo'lia* (Scolopendrium-leaved).
,, ,, *stria'ta* (streaked). 20. May. Britain.
,, ,, *verruco'sa* (warted-*barked*). 60. May. England.
,, ,, *verruco'sa pe'ndula* (pendulous-warted). May. England.
,, ,, *versi'color* (many-coloured). May. Britain.
,, ,, *verticilla'ta* (whorled). 20. May. Britain.
,, ,, *vi'rens* (green). 20. May.
,, ,, ,, *variega'ta* (variegated). 20. April.
,, *expa'nsa* (expanded). See F. PENNSYLVANICA LANCEOLATA.
,, *fu'sca* (dark brown). 30. May. N. Amer. 1823.
,, *gla'bra* (glabrous). Leaves smooth.
,, *heterophy'lla* (various-leaved). See F. EXCELSIOR HETEROPHYLLA.
,, ,, *variega'ta* (variegated-*leaved*). See F. EXCELSIOR HETEROPHYLLA VARIEGATA.
,, *holo'tricha* (all-hairy). Leaves, branches, and fruit hairy. Country unknown. 1906.
,, *juglandifo'lia* (walnut-leaved). See F. AMERICANA.
,, ,, *subintege'rrima* (nearly-entire). 40. May.
,, *lacinia'ta* (jagged-*leaved*). May. N. Amer.
,, *la'ncea* (lance-*leaved*). See F. PENNSYLVANICA.
,, *lentiscifo'lia* (lentiscus-leaved). See F. PARVIFOLIA.

F. lentiscifo'lia pe'ndula (pendulous). See F. PARVIFOLIA PENDULA.
,, *longifo'lia* (long-leaved). See F. PENNSYLVANICA.
,, *lu'cida* (shining). See F. ANGUSTIFOLIA.
,, *macrophy'lla* (large-leaved). See F. AMERICANA.
,, *mandshu'rica* (Mandshurian). Mandshuria to Sachalin and Japan.
,, *mexica'na* (Mexican). See F. CUSPIDATA.
,, *mi'xta* (mixed). See F. AMERICANA.
,, *ni'gra* (black-*branched*). 30. May. N. Amer. 1800. "Black Ash."
,, ,, *cri'spa* (curled). 30. May.
,, *numi'dica* (Numidian). N. Africa.
,, *orego'na* (Oregonian). Western United States.
,, *ova'ta* (egg-shaped). See F. PENNSYLVANICA.
,, *oxyca'rpa* (sharp-fruited). See F. ANGUSTIFOLIA.
,, ,, *oxyphy'lla* (sharp-leaved). See F. ANGUSTIFOLIA.
,, *pa'llida* (pale). See F. CAROLINIANA.
,, *panno'sa* (cloth-*leaved*). 30. May. Carolina. 1820.
,, *parvifo'lia* (small-leaved). 20. May. Levant. 1822.
,, ,, *pe'ndula* (drooping). 20. June. 1833.
,, *pennsylva'nica* (Pennsylvanian). 30. May. N. Amer. 1811. "Red Ash."
,, ,, *fo'liis argе'nteis margina'tis* (silver-edged-leaved).
,, ,, *lanceola'ta* (lance-leaved). 30. N. Amer. 1824. "Green Ash."
,, *platyca'rpa* (broad-fruited). See F. CAROLINIANA.
,, *platy'poda* (flat-stalked). Hook. Icon. Pl., t. 1929.
,, *polemonifo'lia* (Greek-Valerian-leaved). See F. EXCELSIOR MYRTIFOLIA.
,, *potamo'phila* (river-loving). Turkestan.
,, *pube'scens* (downy). See F. PENNSYLVANICA.
,, *pulverule'nta* (powdery). 30. May. N. Amer. 1824.
,, *quadrangula'ta* (four-angled). 30. May. N. Amer. 1822. "Blue Ash."
,, ,, *nervo'sa* (nerved). 30. May.
,, *Rege'lii* (Regel's). Turkestan. 1889.
,, *rhyncophy'lla* (beak-leaved). Winter buds globose, ¼ in. in diameter. China. 1893.
,, *Richa'rdi* (Richard's). 30. May. N. Amer.
,, *rubicu'nda* (ruddy-*veined*). 30. May. N. Amer. 1824.
,, *ru'fa* (rusty). 30. May. N. Amer. 1822.
,, *sambucifo'lia* (elder-leaved). See F. NIGRA.
,, ,, *cri'spa* (curled). 30. May.
,, *sogdia'na* (Sogdian). Leaflets 5, coarsely toothed. Turkestan. 1887.
,, *tamarisci fo'lia* (tamarisk-leaved). See F. PARVIFOLIA.
,, *turkesta'nica* (Turkestan). See F. SOGDIANA.
,, *Velthei'mi* (Veltheims). Leaflets 1–3, deeply cut Garden origin.
,, *veluti'na* (velvety). Western United States.
,, *vi'ridis* (green). See F. PENNSYLVANICA LANCEOLATA.
,, *xanthoxyloi'des* (achee-tree-like). N. of India. 1845.

** ORNUS. FLOWERING OR MANNA ASH.

F. bractea'ta (large-bracted). Central China.
,, *bungea'na* (Bungean). 10. Northern China and Japan. 1894.
,, ,, *microphy'lla* (small-leaved).
,, *dipe'tala* (two-petaled). California. "Fringe-flowered Ash."
,, *floribu'nda* (free-flowering). 30. Himalaya. 1822.
,, *longicu'spis* (long-toothed). Japan. 1869.
,, *Marie'sii* (Maries'). Flowers small, white. China. 1883.
,, *O'rnus* (Ornus). 20. Greenish-white. May. Mediterranean region. Orient. 1730. "Manna Ash."
,, ,, *angustifo'lia* (narrow-leaved).
,, ,, *latifo'lia* (broad-leaved).
,, ,, *variega'ta* (variegated).
,, *raiboca'rpa* (crooked-fruited). Fruit sickle-shaped. Turkestan. 1892.
,, *rotundifo'lia* (round-leaved). 16. May. S. Europe. 1697.
,, *sieboldia'na* (Sieboldian). Japan.
,, *spæthia'na* (Spæthian). Leaves large, pinnate, bright green. 1907.
,, *striga'ta* (rigid-haired). 30. April. Orient. 1818.

FREE'SIA. (A commemorative name. Nat. ord. Iridaceæ.)
Beautiful and highly popular greenhouse bulbs. Seeds and offsets. Fibrous loam with one-fourth part leaf-mould and a little cow-dung, dried and rubbed up finely. May be grown in pots or planted out.
F. Armstro'ngii (Armstrong's). 1½. White and rich rose. Cape Colony. 1898.
,, *refra'cta* (bent-back). Yellow, orange, white. S. Africa. 1815.
,, ,, *a'lba* (white). Pure white. S. Africa. 1881.
,, ,, *Chapma'nii* (Chapman's). 1. Soft yellow. (*F. refracta* × *refracta alba.*) 1906.
,, ,, *Leichtli'nii* (Leichtlin's). 1½. Yellow and white, with orange blotch. S. Africa. 1875.
,, ,, *Leichtli'nii ma'jor* (larger). Cream, orange. 1882.
,, ,, *odora'ta* (scented). White, yellow. S. Africa. 1880.
,, ,, *xanthospi'la* (yellow-blotched). Throat with an orange blotch.

FREE-STONE peaches and nectarines are those with fruit, the flesh of which parts freely from the stone.

FREEZING. See FROST.

FREMO'NTIA. (Named in compliment to *Colonel Fremont* of America. Nat. ord. Sterculiaceæ.)
A nearly hardy, deciduous shrub, that requires a greenhouse in cold districts. Cuttings in spring or autumn, covered with a hand-light in a cool greenhouse. Loam, leaf-mould, and sand.
F. califo'rnica (Californian). 4–6. Yellow. April. California. 1851.

FRENCH BEAN. See KIDNEY BEAN.

FRENCH MARIGOLD. *Tage'tes pa'tula.*

FRENE'LA. See CALLITRIS.

FREYCINE'TIA. (In commemoration of *Admiral Freycinet*, a French navigator. Nat. ord. Pandanaceæ.)
Greenhouse and stove evergreen climbers. Offsets or short, lateral branches. Light loam, with a little peat.
F. angustifo'lia (narrow-leaved). Malaya.
,, *Ba'nksii* (Banks's). Green. New Zealand.
,, *baueria'na* (Bauerian). Pink. Norfolk Island.
,, *cumingia'na* (Cumingian). Leaves short, spreading, not arching.
,, *insi'gnis* (remarkable). Java and Andamans.

FREZIE'RA. (Named after *A. F. Frezier*, a French traveller in South America. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia.*)
Stove evergreen shrub. Cuttings of young shoots getting firm in April and May, in sand, under a bell-glass. Sandy, fibrous loam and sandy, turfy peat. Summer temp., 60° to 85°; winter, 55° to 60°.
F. seri'cea (silky). 4. White. Ecuador. 1823.
,, *theoi'des* (Thea-like). See CLEYERA THEOIDES.

FRIDERI'CIA. (Named after *Frederick III.*, King of Bavaria. Nat. ord. Bignoniaceæ.)
Stove climbing shrub. Cuttings of short, half-matured side-shoots, in sand, in a propagating case. Fibrous loam and peat.
F. Guilie'lma (William). Yellow. Brazil.

FRIE'SIA. (Named after *Dr. Fries*, of Lund. Nat. ord. *Lindenblooms* [Tiliaceæ]. 11-*Dodecandria*, 1-*Monogynia.* Allied to Elæocarpus.)
F. peduncula'ris (peduncled). See ARISTOTELIA PEDUNCULARIS.

FRINGE-TREE. *Chiona'nthus.*

FRITILLA'RIA. Fritillary. (From *fritillus*, a chessboard; referring to the chequered flowers of some species. Nat. ord. *Lilyworts* [Liliaceæ]. Hardy bulbs, in close affinity with the true Lilies. Linn. 6-*Hexandria*, 1-*Monogynia.*)
F. acmope'tala (pointed-petaled). 2. Green, purple. May. Asia Minor. 1875.
,, *a'lba* (white. *American*). 1. White. May. N. Amer.
,, *arme'na* (Armenian). ½. Flower solitary, lurid purple, not chequered. Armenia. 1878.
,, ,, *fu'sco-lu'tea* (fuscous-yellow). Copper-brown, inside yellow. Smyrna. 1887.

F. askabade'nsis (Askabad). 2–3. Pale yellow-green. Central Asia. 1902.
„ *atropurpu'rea* (dark purple). 1–2. Dark purple. N.W. Amer.
„ *au'rea* (golden). ½. Yellow, chequered black. Asia Minor. 1876.
„ *Bornmue'lleri* (Bornmueller's). ½. Golden-yellow, richly chequered black. 1896.
„ *bucha'rica* (Bucharan). 1. Greenish-white. April. Bokhara. 1884.
„ *Burne'ti* (Burnet's). See F. DELPHINENSIS BURNETI.
„ *camschatce'nsis* (Kamtschatkan). 1–1½. Purple-maroon. N. Asia.
„ *canalicula'ta* (channelled). Purplish. Kurdistan. 1890.
„ *cirrho'sa* (tendrilled). 1½. Solitary, claret, chequered green. Himalaya.
„ *citri'na* (lemon). Greenish-yellow, inside clear yellow. Asia Minor. 1893.
„ *co'nica* (conical). Claret, greenish-yellow within. Greece.
„ *conto'rta* (twisted). Petals united, nodding, white. 1886.
„ *crassifo'lia* (thick-leaved). 1. Brownish-purple, slightly chequered. Armenia.
„ *cu'prea* (copper-coloured). 1½. Copper. July. Mexico. 1834.
„ *dasyphy'lla* (thick-leaved). ½. Purple, pale yellow. Lycia. 1875.
„ *delphine'nsis* (Delphinan). ½–1. Vinous purple, spotted yellow. S. Europe.
„ „ *Burne'ti* (Burnet's). Livid, brownish-claret, chequered with white. S. Europe. 1879.
„ „ *Moggri'dgei* (Moggridge's). Yellow, chequered with brown inside. S. Europe. 1880.
„ *Ehrha'rtii* (Ehrhart's). ½. Dark dull purple, tipped yellow. Grecian Archipelago.
„ *Elwe'sii* (Elwes's). Green, with 6 brown blotches outside. Lycia.
„ *escule'nta* (esculent). See F. LANCEOLATA.
„ *gibbo'sa* (bulged-out). Flowers 4–12, lilac, with purple veins. Persia; Afghanistan. 1854.
„ *græ'ca* (Grecian). Lurid-purple, not chequered. Greece.
„ *hericæ'lis* (spring-stem). ½. Dark purple, not chequered. Asia Minor. 1889.
„ *Hooke'ri* (Hooker's). See LILIUM HOOKERI.
„ *imperia'lis* (*crown*-imperial). 4. Dark yellow. April. Persia. 1596.
„ „ *chitrale'nsis* (Chitral). Rich yellow. Chitral. 1910.
„ „ *fla'va* (yellow-*flowered*). 4. Yellow. April. Persia. 1596.
„ „ *flo're ple'no* (double-flowered). Orange-red.
„ „ *inodo'ra* (scentless). Yellow. Bokhara. 1886.
„ „ *inodo'ra purpu'rea* (purple-scentless). Dark crimson. Bokhara. 1886.
„ „ *ru'bra* (red-*flowered*). 4. Red. April. Persia. 1596.
„ „ *sca'ndens* (climbing). See F. VERTICILLATA.
„ *involucra'ta* (involucrated). 1½. Yellow-green, chequered brown-purple. Italy.
„ *Kareli'ni* (Karelin's). See F. GIBBOSA.
„ *kotschya'na* (Kotschy's). ½. April. Asia Minor. 1844.
„ „ *affi'nis* (allied). See F. NOBILIS.
„ *lanceola'ta* (spear-head-*leaved*). ½. Dark purple. May. N.W. Amer. 1759.
„ *latifo'lia* (broad-leaved). 1. Red. May. Caucasus. 1604.
„ *leuca'ntha* (white-flowered). See F. VERTICILLATA.
„ *libano'tica* (Lebanon). 1–3. Pale purple, lined green or purple within. Syria.
„ *lilia'cea* (Lily-like). ½–1½. Whitish, with green veins. California.
„ *lusita'nica* (Portuguese). 1. Brown, purple. June. Portugal. 1825.
„ *lu'tea* (yellow-*flowered*). 1. Yellow. May. Caucasus. 1812.
„ *ly'cia* (Lycian). See F. ACMOPETALA.
„ *macra'ndra* (large-anthered). See F. EHRHARTI.
„ *macrophy'lla* (long-leaved). See LILIUM ROSEUM.
„ *Melea'gris* (Guinea-fowl-like). 1. Purple. May. Britain.
„ „ *a'lba* (white). White. England.
F. meleagroi'des (Meleagris-like). 1. Purple. May. Siberia. 1824.
„ *messane'nsis* (Messina). 1. Brown, purple. June. Italy. 1825.
„ *mi'nor* (smaller). See F. MELEAGROIDES.
„ *Moggri'dgei* (Moggridge's). See F. DELPHINENSIS MOGGRIDGEI.
„ *nervo'sa* (nerved-*leaved*). See F. PYRENAICA.
„ *ni'gra* (black). See F. PYRENAICA.
„ *no'bilis* (noble). Dark crimson outside, paler within, with yellow markings. Armenia. 1895.
„ *obli'qua* (twisted-*leaved*). 1. Brown, purple. April. Greece.
„ *Olive'ri* (Oliver's). 1–2. Pale green, suffused purple within. Persia. 1874.
„ *oly'mpica* (Olympian). See F. PONTICA.
„ *orane'nsis* (Oranian). Brownish claret, pale green within. Algeria. 1874.
„ *orsinia'na* (Orsinian). See F. TENELLA.
„ *oxype'tala* (sharp-petaled). 1½. Purple. June. Himalaya.
„ *pallidiflo'ra* (pale-flowered). Pale greenish-yellow, dotted purple within. Siberia. 1883.
„ *parviflo'ra* (small-flowered). 1–1½. Flowers 2–20, greenish-yellow. California.
„ *pe'rsica* (Persian). 1½. Brown. May. Persia. 1596.
„ „ *mi'nima* (least. Persian). ½. Brown. May. Persia. 1596.
„ *planiflo'ra* (flat-flowered). 1½–2. Green, spotted purple on both sides. Origin uncertain.
„ *pluriflo'ra* (many-flowered). 1. Reddish-purple, nodding. California. 1897.
„ *po'ntica* (Pontic). Claret purple, suffused greenish-yellow. Asia Minor.
„ *præ'cox* (early-*white*). 1. White. May. Europe.
„ *pu'dica* (chaste). 1. Purple, yellow. May. N. Amer. 1824.
„ *pyrena'ica* (Pyrenean). 1½. Dark purple. June. Pyrenees. 1596.
„ *racemo'sa* (racemed) of Smith. Caucasus. (B. M., t. 952.)
„ *racemo'sa* (racemed) of Kunth. See F. PYRENAICA.
„ *racemo'sa mi'nor* (smaller) of Ker-Gawl. See F. TENELLA.
„ *raddea'na* (Raddean). Greenish-yellow. Central Asia. 1887.
„ *recu'rva* (recurved). ½–2. Bright scarlet, yellow within, spotted scarlet. California. 1870.
„ *ruthe'nica* (Russian). 1. Purple. May. Caucasus. 1826.
„ *Sewerzo'wi* (Sewerzow's). Yellow-green and purple. Turkestan. 1873.
„ „ *bi'color* (two-coloured). Light olive-green, with brown V-shaped mark on each segment. Alatau Mountains. 1873.
„ *sibthorpia'na* (Sibthorpian). ½. Yellow. Greece.
„ *siehea'na* (Siehean). 1½. Green, striped red. Asia Minor. 1897.
„ *tene'lla* (slender). 1. Purple. May. Europe. 1826.
„ *thomsonia'na* (Thomsonian). See LILIUM ROSEUM.
„ *Thunbe'rgii* (Thunberg's). See F. VERTICILLATA.
„ *tri'stis* (sad). ½–1. Funnel-shaped, livid purple on both sides. Greece.
„ *tubæfo'rmis* (tube-formed). See F. DELPHINENSIS.
„ *tulipifo'lia* (tulip-leaved). 1. Brown, purple. May. Caucasus. 1822.
„ *tunta'sia* (small-cupped). 1–2. Dark maroon. Country unknown. 1902.
„ *verticilla'ta* (whorled). 1. Purple. April. Siberia. 1823.
„ *Walujé'wi* (Walujew's). 1. Lead-coloured, inside purple-brown, spotted white. Turkestan. 1897.
„ *Whitta'llii* (Whittall's). Similar to *F. Meleagris*, but nectaries orbicular. Asia Minor. 1893.
„ *Wolue'wi* (Walujew's). See F. WALUJEWI.
„ *za'grica* (Zagrican). Lurid purple, not chequered. Persia. 1893.

FRITILLARY AS A FLORIST'S FLOWER.—*Propagation: by Offsets.*—The offsets are produced round the old bulbs; these should be detached every third year when the bulbs are taken up, and be planted in a bed of light, rich earth, each variety by itself, where they may remain till they are large enough to flower. Then take them up, and plant them in October, either in 5½-inch

pots, three or four bulbs in a pot, or plant them in patches near the front of the mixed flower-border. The above remarks apply only to the smaller kinds of *Fritilla'ria*. The noble *F. imperia'lis*, when the bulbs attain a certain size, produces two flower-stems, and each stem perfects a bulb. They may then be taken up, divided, and re-planted. This species, on account of flowering early, may be planted when divided into beds in the grouped flower-garden, which they will highly ornament, and will die down early enough to be succeeded by summer flowers. This species is too large for pots.

Soil.—The Crown Imperial, with its varieties, should be planted in a deep, rich soil, well drained. If the soil is not rich, it must be made so by the addition of a good dressing of well-decomposed manure. The stems send out, just above the bulbs, a large number of young strong roots. The plants will be benefited in that stage by a top-dressing of very decayed dung placed close to the stems.

If the smaller species be cultivated in pots, the proper soil for them will be a compost of turfy loam, peat, and vegetable mould, in equal parts.

Growing Season.—All the smaller kinds of the Fritillary will flower beautifully in pots. Pot them in October in 5½-inch pots, four bulbs in each, in a light, rich compost. Plunge the pots in coal-ashes in a bed, and protect them through the winter with hoops and mats. There they may remain till they flower, and then be removed into the greenhouse. When intended to bloom in the open ground, plant them in patches in the mixed flower-border.

Resting Season.—As soon as the blooming season is over and the leaves decayed, take the bulbs up, and keep them in a cool, rather moist place, till the season for planting arrives again.

FROG ORCHIS. *Habena'ria vi'ridis.*

FROST. If a plant be frozen (and though some defy the attacks of frost, others are very liable to its fatal influence), death is brought upon them as it is in the animal frame, by a complete breaking down of their tissue; their vessels are ruptured, and putrefaction follows.

The following contingencies render a plant especially liable to be frozen:—

First.—Moisture renders a plant susceptible of cold. Every gardener knows this. If the air of his greenhouse be dry, the plants within may be submitted to a temperature of 32° without injury, provided the return to a higher temperature be gradual.

Secondly.—Gradual decrements of temperature are scarcely felt. A myrtle may be forced and subsequently passed to the conservatory, to the cold-pit, and even thence to an open border, if in the south of England, without enduring any injury from the cold of winter; but it would be killed if passed at once from the hot-house to the border.

Thirdly.—The more saline are the juices of a plant, the less liable are they to congelation by frost. Salt preserves vegetables from injury by sudden transitions in the temperature of the atmosphere. That salted soil freezes with more reluctance than before the salt is applied, is well known, and that crops of turnips, cabbages, cauliflowers, &c., are similarly preserved, is equally well established.

Fourthly.—Absence of motion enables plants to endure a lower degree of temperature. Water may be cooled down to below 32° without freezing; but it solidifies the moment it is agitated.

The seeds of some plants are benefited by being frozen, for those of the rose and the hawthorn never germinate so freely as after being subjected to the winter frosts.

Freezing is beneficial to soils, not only by destroying vermin within its bosom, but by aiding the atmosphere to pervade its texture, which texture is also rendered much more friable by the frost. A soil in our climate is rarely frozen to a depth of more than four inches, and in extremely hard winters it does not penetrate more than six inches in light soils, and ten inches in those that contain more clay, or an excess of moisture.

If a plant be frozen, dip it into the coldest water, or syringe it, and put it into a dark, cold cellar, so that it may thaw gradually.

FROST, DEGREES OF. When a gardener uses this phrase, he means degrees of cold below 32° Fahrenheit, the freezing-point of water.

FROTH-FLY. See TETTIGONIA.

FRUIT-ROOM. Fruit for storing should be gathered before it is quite mature; for the ripening process, the formation of sugar, with its attendant exhalation of carbonic acid and water, goes on as well in the fruit-room as in the open air at the season when the functions of the leaves have ceased, and the fruit no longer enlarges. In gathering fruit, every care should be adopted to avoid bruising; and, to this end, in the case of apples, pears, quinces, and medlars, let the gathering basket be lined throughout with sacking, and let the contents of each basket be carried at once to a floor covered with sand, and taken out one by one, not poured out, as is too usual, into a basket, and then again from this into a heap; for this systematic mode of inflicting small bruises is sure to usher in decay, inasmuch as that it bursts the divisional membranes of the cells containing the juice, and this being extravasated, speedily passes from the stage of spirituous fermentation to that of putrefaction. To avoid this is the principal object of fruit storing, whilst, at the same time, it is necessary that the fruit shall be kept firm and juicy. Now it so happens that the means required to secure the one also effects the other.

The following, we think, will be found safe principles to guide the inexperienced:—

Site.—A somewhat low level, with a sub-soil, perfectly dry, or rendered so. We have said low, because we feel assured that by keeping the floor, if possible, even a little below the ground level, less fluctuation of temperature will be experienced. Sooner, however, than be liable to much damp, we would go as much above the level as is necessary in order to avoid it. Concrete should be used for the flooring, and a portion of the foundation walls done in cement, to prevent the transmission of damp upwards by capillary attraction. The rats and mice are great annoyances; the cement and concrete would keep them at arm's-length. A preventive drainage may be applied also round the exterior if the locality be damp.

Aspect.—An easterly or northerly one; any point but south or south-west.

Frost.—The house to be rendered perfectly secure against this. We would never have the general store-room sink below forty or rise above fifty degrees. To create an artificial warmth, and merely to keep out the cold, or rather, to procure, as much as possible, the amount of warmth which the interior possesses, are two very different affairs. The preservation of the natural interior warmth in winter is best effected by double walls, possessing a cavity of some three inches in width; and if the walls are of wood, the space between them should be filled with sawdust. The sides and roof should be heavily thatched with reeds. The power of what are termed hollow walls, as non-conductors of heat, is well known. Neither can exterior damps be readily transmitted; and, moreover, such are cooler in summer; for the sluggish agency of such walls in transmitting heat is as much in keeping out summer heats as the colds of winter. If the roof is an exterior one it should either be double, or other means taken to keep out the summer heat.

Air.—The power of thorough ventilation when necessary, and equally the power of rendering it almost hermetically sealed is necessary. Of course, a very liberal ventilation is needed when much fruit is housed in the autumn. There should, therefore, be a special provision for both the egress of moisture, and for the ingress of fresh and dry air. The higher the level at which the latter enters, the brisker will, in general, be the circulation.

Light.—Windows to admit light, of course, for the sake of operations in the room; generally speaking, however, a fruit-room cannot be kept too dark. Most good practitioners agree in the necessity of excluding light as much as possible. Scientific men say that the surface skin of fruits perspires exactly as the surface of leaves, and that light is a prime agent in inducing such perspiration: hence, heat and light are conjoint causes of shrivelling. The windows or other apertures, therefore, must be pro-

vided with close-fitting shutters, and these should be double, even as the walls. During severe weather, mats enclosing hay may be fastened over the exterior.

As to artificial heat, we think every good general fruit store-room should open into a small closet, which should be so fitted up as to produce an artificial warmth when necessary. If adjoining a mushroom-house on the one side, or any place where a surplus of heat was available, such would be readily accomplished without extra expense in fuel. Some persons have advocated the placing piping to convey heat inside the cavity of the exterior walls: this sounds somewhat philosophical, inasmuch as in such a situation, with a slight amount of controllable ventilation, the non-conducting cavities might be kept dry and warm. The situation of pipes or other apparatus, however, should depend on the arrangement made for the fruit; the heating source, pipes, &c., being as far removed from them as possible, and certainly not immediately beneath them. Such a little closet might possess merely a stand for drawers down the centre; which stand should be an exact counterpart of a stand in the centre of the general store-room; and the best pears, or other tender fruits, being placed in parcels in the general store, might be removed in portions to this ripening room, a whole drawer at once, without moving the fruit.

FU'CHSIA. (Named after *Leonard Fuchs*, a German botanist. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Hardy, half-hardy and greenhouse shrubs of easy culture and great ornamental value. For cultivation, see below.

F. acynifo'lia (acute-leaved). See F. PARVIFLORA.
„ *alpe'stris* (mountain). 20. Crimson. August. Brazil. 1841.
„ *amæ'na* (lovely). See F. ARBORESCENS.
„ *amplia'ta* (enlarged). 4–5. Scarlet. June. Colombia. 1877.
„ *ape'tala* (no-petaled). 10. Purple. September. Chili. 1824.
„ *arbore'scens* (tree-like). 16. Pink. October. Mexico. 1824.
„ *bacilla'ris* (rod-*branched*). 5. Rose. July. Mexico. 1829.
„ *bolivia'na* (Bolivian). 2–4. Deep scarlet. Bolivia. 1876.
„ *cocci'nea* (scarlet). 6. Scarlet, purple. August. Chili. 1788.
„ *cocci'nea* (scarlet) of Curtis. See F. MACROSTEMMA.
„ *co'nica* (conical). See F. MACROSTEMMA CONICA.
„ *coralli'na* (coral-red). See F. MACROSTEMMA CORALLINA.
„ *cordifo'lia* (heart-leaved). 5. Orange. August. Mexico. 1840.
„ *corymbiflo'ra* (cluster-flowered). 6. Scarlet. August. Peru. 1840.
„ „ *a'lba* (white). White.
„ *Cottingha'mi* (Cottingham's). Gardens.
„ *cylindra'cea* (cylindrical-*flowered*). See F. PARVIFLORA.
„ *decussa'ta* (*decussate*). 3. Scarlet, purple. Peru.
„ *denticula'ta* (toothed). Crimson. August. Peru.
„ *depe'ndens* (pendent-*flowered*). 4. Crimson. June. Colombia. 1848.
„ *di'scolor* (two-coloured). See F. MACROSTEMMA DISCOLOR.
„ *e'legans* (elegant). See F. MACROSTEMMA GLOBOSA.
„ *Euclia'ndra* (Eucliandra). 2. Rose. July. Mexico. 1842.
„ *excorlica'ta* (barked). 3. Green, purple. July. New Zealand. 1824.
„ *fu'lgens* (glowing). 4. Vermilion. July. Mexico. 1830.
„ *globo'sa* (globose). See F. MACROSTEMMA GLOBOSA.
„ *gra'cilis* (slender). See F. MACROSTEMMA GRACILIS.
„ „ *multiflo'ra* (many-flowered). See F. MACROSTEMMA GRACILIS MULTIFLORA.
„ *Hartwe'gii* (Hartweg's). Colombia.
„ *integrifo'lia* (whole-leaved). Red. June. Brazil. 1841.
„ *Ki'rkii* (Kirk's). New Zealand.
„ *macra'ntha* (large-flowered). 2. Red. April. Colombia. 1845.
„ *macrophy'lla* (large-leaved).
„ *macroste'mma* (long-stamened). 3. Scarlet, purple. July. Chili. 1823.
F. macroste'mma co'nica (conical). 4. Scarlet. Purple. August. Chili. 1825.
„ „ *coralli'na* (coral-red). 2. Crimson-red. August. 1883.
„ „ *di'scolor* (two-coloured). 3. Purple, red. August. Port Famine. 1830.
„ „ *globo'sa* (globose). 2–3. Scarlet, purple. Mexico.
„ „ *gra'cilis* (slender). 5–6. Scarlet, purple. August. Chili. 1823.
„ „ *gra'cilis multiflo'ra* (many-flowered). 6. Scarlet. Purple. Chili. 1824.
„ „ *pu'mila* (dwarf). 1½. Scarlet, purple.
„ „ *Riccarto'ni* (Riccarton). 3–10. Scarlet, purple. July to September. 1871.
„ „ *variega'ta* (variegated). 3–6. Scarlet, purple. Leaves edged with white.
„ *magella'nica* (Magellan). See F. MACROSTEMMA.
„ *microphy'lla* (small-leaved). 6. Scarlet, purple. August. Mexico. 1828.
„ *minia'ta* (vermilion). Red. August. Colombia. 1852.
„ *ni'gricans* (dark). Dark crimson. Venezuela. 1848.
„ *panicula'ta* (panicled). See F. ARBORESCENS.
„ *parviflo'ra* (small-flowered). Rose, splashed with white. Mexico.
„ *procu'mbens* (procumbent). Yellow-green; berries large, red. New Zealand. 1874. Trailer.
„ *pulche'lla* (pretty). Gardens.
„ *radi'cans* (rooting). See F. INTEGRIFOLIA.
„ *recurva'ta* (recurved). See F. MACROSTEMMA.
„ *Riccarto'ni* (Riccarton). See F. MACROSTEMMA RICCARTONI.
„ *ro'sea* (rosy). Rose. Chili.
„ *serratifo'lia* (saw-edge-leaved). 5. Scarlet, green. August. Peru. 1844.
„ *sessilifo'lia* (sessile-leaved). Green, crimson. Colombia. 1866.
„ *simplicicau'lis* (simple-stemmed). Crimson. July. Peru.
„ *specta'bilis* (showy). 4. Scarlet. August. Andes of Cuenca. 1847.
„ *sple'ndens* (splendid). 6. Scarlet, green. August. Mexico. 1841.
„ *syringæflo'ra* (Lilac-flowered). See F. ARBORESCENS.
„ *tene'lla* (delicate). See F. MACROSTEMMA.
„ *tetrada'ctyla* (four-fingered-*stigma*). See F. EUCLIANDRA.
„ *thymifo'lia* (thyme-leaved). 2–6. Rose to red. Mexico.
„ *triphy'lla* (three-leaved). 1–2. Bright scarlet. September. Mexico. 1842.
„ *venu'sta* (beautiful). 6. Purple. October. Colombia. 1825.
„ *virga'ta* (twiggy). 4. Scarlet, purple. August. Mexico. 1825.

FUCHSIA CULTURE.—*Propagation: by Cuttings.*—The best time for this is in February and March. The plants require a little heat to stimulate them into growth. The best kinds of cuttings are the young shoots taken off close to the old wood as soon as they are an inch long. Fill a sufficient number of 5-inch pots with a compost of loam and leaf-mould, in equal parts, to within an inch of the top; fill the remaining space up with silver sand; water it gently to make it firm, then put in the cuttings after trimming off the lower leaves, give another gentle watering, and place them in a mild hotbed, or in a propagating house. If in the latter, place hand-glasses over them. The cuttings will soon strike root, and should then be potted off into the smallest pots; shade them from the sun for a time, and then repot them in pots two sizes larger.

By Seed.—They are as easily raised from seeds as by cuttings. The object of raising them in this way is not so much to increase the plants as to raise improved varieties. There are two divisions, in regard to colour, that should be aimed at—light and dark varieties, and the colours in each ought to be well defined. The light ones should have the sepals pure white, and the corolla rich purple. Size is also a necessary quality, and a good form is also indispensable. The sepals should be stout and broad and well reflexed; that is, turned upwards, to show off the corolla to the greatest advantage. The corolla should be large, and protrude boldly out from the sepals. It should be round and cup-shaped.

The flower-stalk should be not less than three inches long, which will allow the flower to hang down gracefully. The flowers should be produced abundantly, and the foliage not too large or coarse. The same points should appear in the dark varieties, except the colour of the sepals, which should be of the brightest scarlet or crimson. Though a fine self-coloured flower, with every good point, is not to be despised, yet a purple corolla, with the scarlet or dark crimson tube, all other points being present, is the perfection of a good dark Fuchsia.

Saving the Seed.—Any variety possessing one or more of the above qualities (form being indispensable) is one to save seed from. Supposing a fine-shaped flower, with a tolerably pure white tube, but deficient in a good corolla of the right form and colour; then take the pollen of a variety that has a good corolla, and apply it to the stigma of the one with a good tube and sepals, and save the seed. The same principle must be followed to improve the dark varieties. When the seed is ripe, gather the berries, crush them with the fingers, and wash away all the pulp; then spread the seed on a sheet of paper, and expose it to the sun till it is dry. Then put it up in brown paper, and store it away till March; sow it then in shallow pots, potting off the plants as soon as they can be handled, and grow them on till they flower. Seedlings will flower in 4-inch pots, so that a great number of them may be grown in a small space. As soon as they flower, choose such as have good points; and give them a good shift into larger pots.

Summer Culture.—Pot the old plants early in the spring. Commence by shaking off the greater part of the old soil, reducing the roots and trimming in the branches, so as to leave them in a pyramidal form; pot in the proper soil, and place them in a heat of 55° by day, and 50° by night. Water moderately, and syringe overhead frequently. When the plants are freely growing, give weak liquid-manure every other time. Young plants should have a good shift from 5-inch to 8-inch pots. The tops should be nipped off, to force out the lower branches, the great object being the pyramidal form. One of the upper shoots should be removed as soon as the lower ones have pushed a few inches, and the other tied to a stick, to be again stopped when it has advanced about a foot. Proceed in this way with both old and new plants, till the desired height is attained. The side-shoots, if not sufficiently numerous, should be stopped also, to cause the right number of side branches to be produced. The potting should finish in 12-inch pots, which are sufficiently large to make fine plants fit for the exhibition tables.

Winter Culture.—As soon as the bloom is over set the young plants out of doors in some open place in the garden. The older plants may either be thrown away, or be planted out in the borders, it not being worth while to keep them the third year. When the frost begins to appear take the plants under cover, either under the stage of the greenhouse, or in a back shed, or even a cellar, where the severe frost cannot reach them; here they may remain without water till the potting time comes round again.

Soil.—Mellow, strong, yellow loam one-half, well-decomposed hotbed manure one-quarter, and one year old decayed tree leaves one-quarter, all thoroughly mixed, will form a suitable compost.

Insects.—The green fly and red spider are very apt to find their way to the young shoots. See APHIS and ACARUS.

Open Border Culture.—The whole of those having the habit of the old *cocci'nea*, *virga'ta*, *co'nica*, *gra'cilis*, *globo'sa*, &c., are well fitted for flower-garden purposes; requiring no attention but cutting them down after the first frost, and covering the stools with moss, coal-ashes, or other litter, to exclude the frost, removing it in April, and thinning the shoots in May. When it is desirable to keep such kinds as *macrostemma* as dwarf as *globo'sa*, raising the plants out of the ground in May, and shaking the soil from them before transplanting them, will be effectual. This, also, furnishes a good means for increasing the stock. Good stout cuttings of the stems, planted at the end of October, in the open ground, will furnish nice little plants in spring, if the ground is covered with moss or litter; for though what is above ground will be killed, what is below the moss will be safe. Those like *fu'lgens* in their habit must be kept dry if left out; it is better to take them up, and house them in a shed where frost will not reach them. *Standards of any kinds* for the lawn may be thus inserted in dry earth in a shed, and transplanted again in April or May. Most of the hybrids will stand the winter in the open garden, and push strongly in the spring, if, in addition to being kept from frost, they are also kept dry. Though thus able to endure cold, they will, also, stand a high temperature and a moist atmosphere when growing, and, in these circumstances, grow with great rapidity. *F. corymbiflo'ra* must have the wood well ripened, and not be pruned too close. *Specta'bilis* and *serratifo'lia* are late blowers, and must be treated accordingly. All sorts in pots look best trained to a simple stem.

FUEL is no small item in the annual expenditure of the stove, greenhouse, and conservatory departments, and therefore deserves consideration. The cheapest of all fuel is the *breeze*, or small coke, procurable at gas-works.

The heating qualities of the different coals known in Great Britain are in the following proportions:—

Scotch Cannel	199
Lancashire Wigan	196
Yorkshire Cannel	188
Newcastle (best Wallsend)	169
Gloucestershire (Forest of Dean)	108
Welsh (common)	25

Hence, if the Scotch Cannel coal cost 19*s.*, when the Gloucestershire could be had for 10*s.* per chaldron, the latter would be no cheaper; for the heating powers of the first are as 199 to 108 of the latter. In other words, 108 chaldrons of Scotch would afford as much heat as 199 chaldrons of Staffordshire.

The following are the quantities of the fuels named required to heat eight gallons of water, from 52° to 112°.

	lbs.
Caking coals	1.2
Splint or hard coal, Cannel coal	3.13
Cherry or soft coal	1.5
Wood of lime	3.10
——— beech	3.16
——— elm	3.52
——— oak (chips)	4.20
——— ash	3.50
——— maple	3.00
——— service	3.00
——— cherry	3.20
——— fir	3.52
——— poplar	3.10
——— hornbeam	3.37
Peat (average, not compressed)	7.6
Charcoal of wood	1.52
——— peat	3.28

It is essential to good and profitable fuel that it should be free from moisture; for unless it be dry, much of the heat which it generates is consumed in converting that moisture into vapour: hence the superior value of old dense, dry wood, to that which is porous and damp. A pound of dry will heat thirty-five pounds of water from 32° to 212°; but a pound of the same wood in a moist or fresh state will not similarly heat more than twenty-five pounds. The value, therefore, of different woods for fuel is nearly inversely, as their moisture; and this may be readily ascertained by finding how much a pound weight of the shavings of each loses by drying during two hours, at a temperature of 212°.

FUGO'SIA. (Named after *Bernard Cien-Fuegos*, a Spanish botanist. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Malvaviscus.)

Stove evergreen shrubs. Cuttings of the points of shoots in April or May, in sand, under a bell-glass, and placed in a mild bottom-heat; peat and loam, with a little silver sand. Summer temp., 60° to 75°; winter, 45° to 55°.

F. cuneifo'rmis (wedge-shaped). White, purple. August. Australia. 1856.

„ *hakeæfo'lia* (Hakea-leaved). 5. Lilac, red. August. Swan River. 1846.

„ *heterophy'lla* (various-leaved). Yellow, red. August. St. Martha. 1845.

FULL-FLOWER. See DOUBLE-FLOWER.

FUMA'RIA. Fumitory. (From *fumos*, smoke; referring to the disagreeable smell of the plant. Nat. ord. *Fumeworts* [Papaveraceæ]. Linn. 17-*Diadelphia*, 2-*Hexandria*. Allied to Corydalis.)

Hardy annuals. If once sown in March or April, on rock-work or undisturbed banks, they will sow themselves annually, and maintain themselves without care or trouble.

F. capreola'ta (tendrilled). 4. Flesh. July. Europe. Climber.
,, *leuca'ntha* (white-flowered). 1½. White. August. Corsica. 1836.
,, *me'dia* (intermediate). 3. Flesh. July. Europe.

FUMIGATING is employed for the destruction of certain insects; the inhaled vapour or smoke arising from some substances being fatal to them. *Tobacco* is the usual substance employed; and it may be ignited, and the smoke impelled upon the insect by *bellows*; or the ignited tobacco may be placed under a box, or within a frame, together with the affected plant. The vapour of *spirit of turpentine* is destructive to the scale and other insects, employed in this mode. Mr. Mills has stated the following as the best mode of fumigating with tobacco. According to the size of the place to be fumigated, one or more pieces of cast iron, one inch thick, and three inches over, are made red-hot (pieces of old tiles, such as are used for covering smoke flues, would probably answer equally well); one of these is placed in a twenty-four sized pot, on which is put the quantity of tobacco considered necessary to charge the structure with smoke sufficient to destroy insect life. To fumigate an ordinary sized eight-light house, use three heaters, and three twenty-four sized pots, which are best placed on the front flue or walk; one pound of strong tobacco is put on the three heaters in equal parts, and this is found sufficient to fill the house, so as to destroy all the kinds of insects that perish by fumigation. The system has these advantages: the tobacco is so quickly consumed, that the house is completely filled in a very short time, and but little smoke can escape before the insects are destroyed; the pure heat from the iron heaters prevents injury from gas, and as no blowing is required there is no dust, it being only necessary to put the tobacco on the heaters and leave the house. A better mode is to soak the tobacco in a strong solution of saltpetre, and when dry to ignite it. The combustion is so complete and instantaneous that a smaller quantity is sufficient. The best of all instruments for fumigating with tobacco is *Brown's Fumigator*.

To fumigate with *sulphur*, paint the hot-water pipes with some sulphur mixed with whitewash; or put this mixture against the side of the flue farthest from the furnace; or put some sulphur on a hot-water plate, and keep the water in this boiling by means of a lamp.

FUMITORY. *Fuma'ria.*

FUNGI. The word fungus is applied to a large number of plants belonging to many orders or families, and very varied in size and structure, but all agreeing in consisting of a single cell, various combinations of cells, or simple or branching cells, free or interlacing, and destitute of chlorophyll or leaf green, and seeds. They are reproduced in a great variety of ways, and live upon dead matter (saprophytical fungi) or on living plants or animals (parasitical fungi). Unicellular or one-celled fungi are microscopical in size and require considerable magnification to be seen. The mildews and moulds, consisting of webs or threads, are observable by the naked eye. The Mushroom (*Agaricus campestris*) is one of the most familiar of fungi to the gardener, and the giant Puff Ball (*Lycoperdon giganteum*) is many times larger, weighing several pounds. These two are saprophytes. Familiar examples of parasitical fungi are the rust and brand of Roses, the scab of Apples and Pears and the Potato disease. When plants are apparently suffering from the effects of some parasitical fungus, unknown to the gardener or grower, he should submit specimens to some expert or competent authority for identification and the best means of destroying the same.

FU'NKIA. (After *H. Funk*, a German botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Hemerocallis.)

Hardy herbaceous perennials, from Japan; dividing the roots; sandy loam, and a dry situation.

F. a'lbo-margina'ta (white-margined). See F. LANCIFOLIA ALBO-MARGINATA.
,, *cæru'lea* (sky-blue). See F. OVATA.
,, *corda'ta* (heart-shaped). See F. SIEBOLDIANA.
,, *cuculla'ta* (hooded). See F. FORTUNEI.
,, *Fortu'nei* (Fortune's). 1. White. Leaves glaucous, hooded. 1876.
,, *glauca* (glaucous). Leaves glaucous. Japan.
,, *grandiflo'ra* (large-flowered). See F. SUBCORDATA.
,, *lanciflo'lia* (lance-leaved). 1. Lilac. August. 1829.
,, ,, *a'lba* (white). White.
,, ,, *a'lbo-margina'ta* (white-edged). 1½. Lilac. July. 1837.
,, ,, *tardiflo'ra* (late-flowering). 1½. Lilac. August.
,, ,, *undula'ta* (wavy). 1½. Lilac. July. 1834.
,, ,, *variega'ta* (variegated). Leaves much variegated with creamy-white. 1834.
,, *lo'ngipes* (long-stalked). Leaves broader than in *F. lancifolia*, running down petiole. 1903.
,, *ova'ta* (egg-shaped). 1½. Pale blue. May. 1790.
,, ,, *au'rea* (golden). Leaves golden in spring.
,, ,, *margina'ta* (margined). Leaves edged with white.
,, *sieboldia'na* (Sieboldian). 2. Lilac. June. 1830.
,, *sine'nsis* (Chinese). See F. SIEBOLDIANA.
,, *subcorda'ta* (nearly-heart-shaped). 1½. White. August. 1790.
,, *undula'ta* (waved). See F. LANCIFOLIA UNDULATA.
,, *variega'ta* (variegated). See F. LANCIFOLIA VARIEGATA.

FURCRÆ'A. (In compliment to the noted French chemist, *M. Fourcroy*. Nat. ord. Amaryllidaceæ.)

Stove plants, resembling Agave. Seeds or offsets. Fibrous loam, leaf-mould, and finely broken bricks.

F. albispi'na (white-spined). 6. Greenish-white. Central Amer. 1893.
,, *Barille'ii* (Barillet's). 3. Trop. Amer. 1867.
,, *Bedinghausii* (Bedinghaus's). 6. Mexico. 1860.
,, *Commely'ni* (Commelyn's). 25. Trop. Amer.
,, *cube'nsis* (Cuban). 6. Creamy-white, green. November. Trop. Amer.
,, ,, *ine'rmis* (unarmed). Leaves spineless.
,, ,, *Linde'ni* (Linden's). Colombia. 1869.
,, *demoulinia'na* (Demoulinian). 10. Mexico. 1866.
,, *depaupera'ta* (stunted). 5. Trop. Amer.
,, *Desidera'ntii* (Desiderant's). 8. Trop. Amer.
,, *e'legans* (elegant). 20. Pale green. Winter. Mexico. 1868.
,, *fla'vo-vi'ridis* (yellow-green). 14. Yellow-green. Mexico. 1846.
,, *geminispi'na* (twin-spined). 4. Trop. Amer.
,, *Ghiesbre'ghtii* (Ghiesbreght's). See F. ELEGANS.
,, *gigante'a* (gigantic). 20–40. Greenish-white. August. Trop. Amer. 1690.
,, ,, *variega'ta* (variegated). Leaves variegated with creamy-white.
,, ,, *willemeetia'na* (Willemeetian).
,, *Linde'ni* (Linden's). See F. CUBENSIS LINDENI.
,, *lipsie'nsis* (Lipsian). 4. Trop. Amer. 1868.
,, *longæ'va* (long-lived). 40. White. May. Mexico. 1833.
,, *macrophy'lla* (long-leaved). Bahamas.
,, *pube'scens* (downy). Trop. Amer.
,, *Rœ'zlii* (Rœzl's). See F. BEDINGHAUSII.
,, *Sello'a* (Selloa). 20. Green-white. Mexico and Guatemala. 1865.
,, *stri'cta* (upright). 8–9. Trop. Amer. 1868.
,, *tubero'sa* (tuberous). 6. Light yellow. 1739.
,, *tubiflo'ra* (tube-flowered). See BESCHORNERIA TUBIFLORA.
,, *undula'ta* (waved). 10. Green. Mexico. 1868.
,, *watsonia'na* (Watsonian). 15–20. Leaves bluish-green, banded with cream-yellow. 1898.

FURZE. *U'lex.*

FUSTIC. *Maclu'ra tincto'ria.*

G

GÆRTNERA. (Named after *Dr. Gærtner*, a celebrated botanist. Nat. ord. *Loganiads* [Loganiaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Al Loganiads are to be suspected, as no order is more venomous. Stove evergreen twiners; cuttings of firm young shoots in April, in sand, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 60° to 75°; winter, 48° to 55°.

G. obtusifo'lia (blunt-leaved). 20. White. China. 1810.
„ *racemo'sa* (racemed). 15. White, yellow. April. India. 1793.

GA'GEA. (Named after *Sir Thomas Gage*. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to the Tulip.)

All hardy little yellow-flowering bulbs. They should occupy the front row of a light-soiled border, like Crocuses; offsets in spring or autumn.

G. arve'nsis (field). ½. Yellow. S. Europe.
„ *bohe'mica* (Bohemian). ½. April. Bohemia. 1825.
„ *bracteola'ris* (small-bracted). ½. April. Europe. 1817.
„ *bulbi'fera* (bulb-bearing). May. Tauria. 1829.
„ *chlora'ntha* (yellow-flowered). ½. April. Siberia. 1819.
„ *circina'ta* (rounded). See G. RETICULARIS.
„ *fascicula'ris* (bundle-flowered). See G. LUTEA.
„ *glau'ca* (milky-green). See G. BRACTEOLARIS.
„ *Liota'rdi* (Liotard's). May. S. Europe. 1825.
„ *lu'tea* (yellow). ½. April. Britain. "Yellow Star of Bethlehem."
„ *mi'nima* (smallest). ½. May. Europe, N. Asia. 1826.
„ *podo'lica* (Podolian). May. Podolia. 1827.
„ *pusi'lla* (small). ½. April. Bohemia. 1825.
„ *pygmæ'a* (pigmy). ½. April. Spain. 1825.
„ *reticula'ris* (netted). ½. May. Orient, Western Asia. 1789.
„ *sero'tina* (late). See LLOYDIA ALPINA.
„ *spatha'cea* (sheathed). ½. May. Germany. 1759.
„ *stella'ris* (starry). ½. May. Sweden. 1759.
„ *stenope'tala* (narrow-petaled). See G. BRACTEOLARIS.
„ *Sternbe'rgii* (Sternberg's). See G. MINIMA.
„ *stria'ta* (streaked). See LLOYDIA ALPINA.
„ *sylva'tica* (wood). See G. LUTEA.
„ *uniflo'ra* (one-flowered). See TULIPA UNIFLORA.
„ *villo'sa* (shaggy). See G. STELLARIS.

GAGNEBI'NA. (Probably the native name of one of the species. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Mimosa.)

Stove evergreen, from Mauritius. Seeds in hotbed, in spring, after being moistened for several hours in warm water; cuttings of half-ripened shoots in sand, in April, under a bell-glass, and in mild bottom-heat; peat and loam, both turfy and fibrous. Summer temp., 60° to 75°; winter, 48° to 55°.

G. axilla'ris (axillary). See G. TAMARI'SCINA.
„ *tamari'scina* (tamarisk-like). 6. Yellow. 1824.

GA'HNIA. (Named after the botanist, *Dr. H. Gahn*. Nat. ord. Cyperaceæ.)

Stove plant of the sedge family, of easy culture. Division. Loam, leaf-mould, and sand.

G. a'spera (rough). Pale yellowish; fruit red-yellow. Pacific Islands. 1887.

GAILLA'RDIA. (Named after *M. Gaillard*, a French patron of botany. Nat. ord. *Composites* [Compositæ]. Linn 19-*Syngenesia*, 3-*Frustranea*.)

This, like many other composite genera, is inclined to sport from seeds, and, therefore, may be expected to yield double flowers some day. Hardy herbaceous plants, with the exception of *corona'ta* and *amblyodon*, which require a cold pit in winter. In cold, damp situations, cuttings of *bi'color* and *pi'cta* may also be saved in a similar manner. Cuttings under a hand-light in summer, and division of the root in spring; sandy loam.

G. ambly'odon (blunt-toothed). Blood-red. September. Texas. 1873. Annual.
„ *arista'ta* (awned). 1. Orange. August. N. Amer. 1812.
G. arista'ta grandiflo'ra (large-flowered). 1884.
„ *bi'color* (two-coloured). See G. PULCHELLA.
„ *corona'ta* (crowned). See G. PULCHELLA CORONATA.
„ *Drummo'ndii intege'rrima* (Drummond's whole-*leaved*). See G. PULCHELLA DRUMMONDII INTEGERRIMA.
„ *lanceola'ta* (lance-shaped.) 1½. N. Amer.
„ *pi'cta* (painted). See G. PULCHELLA PICTA.
„ *pulche'lla* (pretty). 1½. Crimson, tipped yellow. N. Amer.
„ „ *corona'ta* (crowned). Red-brown. July.
„ „ *Drummo'ndii intege'rrima* (very entire). 2. Carnation, yellow. August. Louisiana. 1833.
„ „ *lorenzia'na* (Lorenzian). Florets tubular, 4-lobed. Colour variable. 1881.
„ „ *pi'cta* (painted). 1½. Yellow. August. Louisiana. 1833.
„ „ *Richardso'ni* (Richardson's). 1½. Orange. July. N. Amer. 1829.
„ *Richardso'ni* (Richardson's). See G. PULCHELLA RICHARDSONI.

GALA'CTIA. (From *gala*, milk; in reference to the milky juice of some of the species. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Glycine.)

Deciduous, by division of the plant, and grown in sandy loam. Stove, by cuttings of short, stubby side-shoots in sand, in April, under a bell-glass, and plunged in a hotbed; sandy loam and peat. Summer temp., 60° to 75°; winter, 48° to 55°.

HARDY DECIDUOUS TWINERS.

G. glabe'lla (smoothish). 3. Purple. July. N. Amer.
„ *mo'llis* (soft). 3. Purple. July. N. Amer. 1827.

STOVE EVERGREEN TWINERS.

G. cube'nsis (Cuban). Rose. July. Cuba. 1826.
„ *filifo'rmis* (thread-like). 3. Purple. July. Trop. Amer. 1820.
„ *jussiæa'na* (Jussiæan). 4. Purple. Venezuela.
„ *longifo'lia* (long-leaved). 4. Purple. W. Ind. 1818.
„ *pe'ndula* (pendulous). 6. Red. July. Trop. Amer. 1794.
„ *pinna'ta* (pinnate). See BARBIERIA POLYPHYLLA.
„ *scarlati'na* (scarlet). Scarlet. May. Brazil. 1840.
„ *seri'cea* (silky). 6. July. Bourbon. 1824.
„ *stria'ta* (striped). See GLYCINE STRIATA.

GALACTI'TES. (From *gala*, milk; referring to the juice and to the milk-white veins on the leaves. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Silybum.)

Hardy annuals, requiring to be sown in the flower-borders in March or April.

G. austra'lis (southern). 1. Purple. July. Australia. 1824.
„ *tomento'sa* (woolly). 1½. Purple. July. S. Europe. 1738.

GALACTODE'NDRON. Cow-tree. (From *gala*, milk, and *dendron*, a tree. We introduce this name as being in common use; but the true name of the Cow-tree is *Bro'simum Galactode'ndron*, to which refer.)

GALANGALE. *Kæmpfe'ria.*

GALA'NTHUS. Snowdrop. (From *gala*, milk, and *anthos*, a flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy bulbs. Offsets; division of masses of bulbs; common garden-soil; should be lifted every four or five years.

G. Alle'ni (Allen's). 1. White. Leaves short, broad, glaucous. March. Caucasus. 1891.
„ *byzanti'nus* (Byzantine). Between *G. plicatus* and *G. Elwesii*. Constantinople. 1893.
„ *cauca'sicus* (Caucasian). White, large. Leaves broad, glaucous, snipped. Caucasus. 1887.
„ *cili'cicus* (Cilician). White. Cilician Taurus. 1897.
„ *corcyre'nsis* (Corfu). See G. NIVALIS CORCYRENSIS.
„ *Elwe'sii* (Elwes's). 1. Inner segments green on both faces, with white edges. Asia Minor. 1875.
„ „ *globo'sus* (globular). Flowers and ovary globular. Smyrna. 1887.

G. Elwe'sii ochrospei'lus (yellow-blotched). Ovary greenish-yellow.
„ „ *robu'stus* (robust). Robust, with large bulbs and thick, glaucous leaves. Asia Minor. 1893.
„ „ *unguicula'tus* (clawed). Segments with long claws. Asia Minor. 1894.
„ „ *Whitta'llii* (Whittall's). Flowers larger, earlier. Asia Minor. 1898.
„ *Foste'ri* (Foster's). 1. White. Leaves bright green, 1 in. wide. Asia Minor. 1889.
„ *gra'cilis* (slender). Inner segments with a large green blotch at the base. Bulgaria. 1893.
„ *græ'cus* (Grecian). 1. White. Isle of Chios. 1894.
„ *grandiflo'rus* (large-flowered). Flowers like *G. nivalis*, very large. Plant robust. 1893.
„ *Ika'riæ* (Nikarian). Flowers of *G. nivalis* and inner segments of *G. Elwesii*. Nikaria. 1893.
„ *latifo'lius* (broad-leaved). 1. White. Leaves broad, bright green. Caucasus. 1868.
„ *niva'lis* (snowy). ½. White, green. February, March. Britain. "Common Snowdrop."
„ „ *Atki'nsii* (Atkins's). Flowers large. 1891.
„ „ *corcyre'nsis* (Corfu). Small variety of *G. nivalis*. December. Corfu. 1888. (Syn. *G. n. præcox.*)
„ „ *E'lsæ* (Elsa's). Flowers larger; leaves stouter than *corcyre'nsis*. November. 1891.
„ „ *flave'scens* (yellowish). Markings of inner segments and ovary brighter than var. *lutescens*. 1906.
„ „ *Impera'ti* (Imperato's). Flowers larger and leaves broader than *G. nivalis*. Naples and Genoa.
„ „ *lute'scens* (yellowish). Inner segments tipped yellow; ovary yellow.
„ „ *Melvi'llei* (Melville's). Close to *G. n. Imperati*.
„ „ *octobre'nsis* (October). White, green. October. Albania.
„ „ *poculifo'rmis* (bowl-shaped). White; segments nearly equal.
„ „ *Rache'liæ* (Rachel's). Larger, more robust than var. *Elsæ*. October. Mount Hymettus. 1891.
„ „ *refle'xus* (reflexed). White. February. Mount Gargarus. 1818.
„ „ *Scharlo'ki* (Scharlok's). Flowers with two long spathes, and three large green blotches. 1879.
„ „ *sero'tinus* (late). White. Autumn. 1888.
„ *O'lgæ* (Olga's). Plain white, without blotches on the inner segments. Greece. 1888.
„ *Perry'i* (Perry's). Between *G. caucasicus* and *G. latifolius*. Caucasus. 1893.
„ *plica'tus* (plaited). 1. White. Leaves plaited. Caucasus. 1818. "Plaited Snowdrop."
„ *Regi'næ-O'lgæ* (Queen Olga's). See G. OLGÆ.
„ *u'mbricus* (Umbrian). See G. NIVALIS IMPERATI.

GALATE'LLA. (A diminutive of *gala*, milk, literally, *milky*; referring to the colour of the leaves. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Referred to Aster.)

G. puncta'ta (dotted-*leaved*). See ASTER ACRIS.

GA'LAX. (From *gala*, milk; referring to the milk-white flowers. Nat. ord. *Wintergreens* [Diapensiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Little bog-earth plants. Divisions in spring; moist, sandy peat; may be treated as an alpine, as it is subject to casualties in the border.

G. aphy'lla (leafless). ½. White. July. N. Amer. 1786.

GALA'XIA. (From *galaktido*, to abound in milk; referring to the juice. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Triandria*. Allied to Patersonia.)

Greenhouse bulbs, from the Cape of Good Hope. Offsets; sandy peat, with a little fibrous loam. In a state of rest keep in the greenhouse or cold pit. If planted in a sheltered place, out of doors, the roots must be protected from frost.

G. grami'nea (grass-*leaved*). ½. Light yellow. July. 1795.
„ *grandiflo'ra* (large-flowered). See G. OVATA.
„ *mucronula'ris* (hard-pointed). See G. OVATA MUCRONULARIS.
„ *ova'ta* (egg-*leaved*). ½. Dark yellow. July. 1799.
„ „ *mucronula'ris* (hard-pointed). ½. Purple. July. 1799.
„ „ *versi'color* (various-coloured). ½. Purple. July. 1799.

GALEA'NDRA. (From *galea*, a helmet, and *anər*, a stamen; referring to the crested male organ on the top of the column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Eulophia.)

Stove terrestrial orchids. Fibrous peat, and a little turfy loam, with some broken pots, and pieces of charcoal. Summer temp.. 60° to 85°, with moisture; winter, 48° to 55°. and rather dry.

G. Baue'ri (Mr. Bauer's). ½. Pink. August. Guiana. 1840.
„ *Clæ'sii* (Clæs's). 1. Brown; lip rosy. Brazil.
„ *crista'ta* (crested-*anthered*). See G. BAUERI.
„ *descagnollea'na* (Descagnollean). Ochreous-brown, sulphur-white. Para. 1887.
„ *devonia'na* (Duke of Devonshire's). 2. Purple, white. May. S. Amer. 1840.
„ „ *Delphi'na* (Delphina). Reddish-brown, white, purple. Venezuela. 1887.
„ *flave'ola* (yellow). ½. Yellow-brown, yellow. Venezuela. 1887.
„ *gra'cilis* (slender). See EULOPHIA GRACILIS.
„ *harveya'na* (Harveyan). Brown, light yellow. 1883.
„ *ju'ncea* (rush-like). Rose-purple; darker on edge of lip. Guiana; Brazil. 1847.
„ *lagoe'nsis* (Lagos). Greenish, rose-crimson. Brazil. 1894.
„ *mi'nax* (projecting). Yellow-copper, white-purple. Colombia. 1874.
„ *niva'lis* (snowy). Olive, white, purple. Trop. Amer. 1882.

GALEDU'PA. See PONGAMIA.

GALE'GA. Goat's Rue. (From *gala*, milk; referring to an old idea that the herbage was superior for milk-cows, goats, &c. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

Hardy herbaceous, rather rambling perennials. Seeds sown in spring; division of the plant at the same time; common soil.

G. bi'loba (two-lobed). See G. OFFICINALIS.
„ *Harlla'ndii* (Hartland's). See G. PATULA HARTLANDII.
„ *officina'lis* (shop). 4. Blue. July. Spain. 1568.
„ „ *a'lba* (white-*flowered*). 4. White. July. Spain.
„ *orienta'lis* (eastern). 4. Blue. July. Caucasus. 1801.
„ *pa'tula* (spreading). 3–4. Blue and white. Tauria.
„ „ *Harlla'ndii* (Hartland's). Young leaves variegated. 1903.
„ *pe'rsica* (Persian). See G. OFFICINALIS.
„ *tri'color* (three-coloured). See G. OFFICINALIS.

GALEO'BDOLON LU'TEUM. See LAMIUM GALEOBDOLON.

GA'LEOLA. (The diminutive of *galea*, a helmet. Nat. ord. Orchidaceæ.)

Epiphytical stove Orchid. See ORCHIDS FOR TREATMENT.

G. cassythoi'des (Cassytha-like). Yellow. September. Australia. 1839.

GALEO'TTIA. (Named in compliment to *M. H. Galeotti*, a Belgian collector. Nat. ord. Orchidaceæ. Now referred to Zygopetalum.)

G. Beaumo'ntii (Beaumont's). Green, brown. Brazil. 1850.
„ *fimbria'ta* (fringed). See ZYGOPETALUM FIMBRIATUM.

GALINSO'GA. (Commemorative of the botanist *Don M. de Galinsoga*. Nat. ord. Compositæ.)

Hardy annuals. Seeds.

G. brachyste'phana (short-crowned). 1–2. White, with yellow disc. S. Amer.
„ *parvifio'ra* (small-flowered). 1–2. White, with yellow disc. Summer and autumn. S. Amer. An escape from Kew and a troublesome weed in N. Surrey, and found in neighbouring counties.
„ *triloba'ta* (three-lobed). See TRIDAX TRILOBATA.

GALIPE'A. (The Indian name in South America. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Almeidea.)

The Angostura bark is that of *trifolia'ta*. Stove evergreen shrubs. Cuttings of ripened shoots in sand, under

a bell-glass, in April, and in heat; peat and loam. Summer temp., 60° to 75°; winter, 48° to 55°.

G. macrophy'lla (large-leaved). 2. Pink. Trop. Amer. This is *Cusparia macrophylla*.
„ *multiflo'ra* (many-flowered). 20. Brazil. 1827.
„ *odorati'ssima* (most fragrant). See CUSPARIA ODORATISSIMA.
„ *trifolia'ta* (three-leaved). 4. Green. Guiana. 1816.

GA'LIUM. Bed Straw. (From *gala*, milk; referring to the flowers of *G. ve'rum* having been used to curdle milk. Nat. ord. *Stellates* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Rubia.)

Few of these plants are interesting to the gardener, except to cover rock or root-work. They possess, in a more or less degree, the dyeing qualities of Madder. Of the following selected species all are herbaceous perennials, except *G. suave'olens*, which is an annual. Annuals merely require to be sown in the common border, in March; and the perennials divided at the same time.

G. campanula'tum (bell-*flowered*). See ASPERULA GALIOIDES.
„ *capi'llipes* (hairy-*stalked*). See G. SYLVATICUM.
„ *corona'tum* (crowned). ½. Yellow. July. Greece, Orient. 1818.
„ *græ'cum* (Grecian). ½. Purple. July. Candia. 1798.
„ *longifo'lium* (long-leaved). 1. Red. July. Bizantium; Asia Minor. 1820.
„ *pe'rsicum* (Persian). See G. CORONATUM.
„ *purpu'reum* (purple). 1. Purple. July. Switzerland. 1831.
„ *ru'brum* (red). 1. Purple. July. Italy. 1597.
„ *suave'olens* (sweet-scented). See G. TRIFLORUM.
„ *sylva'ticum* (wood). 1. White. September. Europe. 1838.
„ *tau'ricum* (Taurian). See G. CORONATUM.
„ *trifo'rum* (three-flowered). 1. White. July. N. temperate regions. 1821.
„ *Vailla'ntii* (Vaillant's). 2. Green. May. England.

GALL is a tumour formed in consequence of the part being punctured by an insect, the tumour becoming the nidus of the insect brood. The Oak-apple caused by the *Cynips querci* is a familiar example; as, also, are the branches of leaves, not unlike a rose, on the Rose Willow, and the mossy tufts on the twigs of the Wild Rose, and erroneously called *Bedeguar*. These tufts are caused by the *Cynips rosæ*, another species of Gall-fly.

GALPHI'MIA. (An anagram of *Malpighia*, to which it is nearly allied. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)

Stove evergreens, from Mexico, with yellow flowers, Cuttings of young shoots, firm but not too old, in sand, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 60° to 75°; winter, 40° to 55°.

G. glandulo'sa (glanded). April. 1824.
„ *glau'ca* (milky-green). 8. 1829.
„ *gra'cilis* (slender). 8. Yellow. 1848.
„ *hirsu'ta* (hairy). September. 1824.

GALTO'NIA. (Commemorative of *Francis Galton*, who wrote a *Narrative of an Explorer in South Africa*. Nat. ord. Liliaceæ. Related to Hyacinthus.)

Hardy bulbs of a highly ornamental character, especially *G. candicans*. Seeds, offsets. Light, rich soils in sunny situations.

G. ca'ndicans (white). 3–5. Pure white. S. Africa.
„ *clava'ta* (clubbed). Greenish-white, smaller. S. Africa.
„ *pri'nceps* (chief). 2–3. Greenish-white. S. Africa.

GAMMA MOTH. Just after sunset, in summer and autumn, and hovering round flowers, may be seen this moth (*Plusia gamma*). It is called the Gamma Moth, because about the middle of the upper wings, but towards their inner border, there is a silvery shining mark, like the Greek letter gamma (γ). The shape of this mark has acquired to this insect another name, the Y-Moth. The outspread wings are about an inch across; the upper ones grey-coloured, marbled with brown, and shining; the under wings pale ash, with a brown edge; the head and throat brownish, edged with grey lines; the belly, or abdomen, yellowish-grey, tufted with brown hairs. In October they deposit their eggs; and it would be an aid to the warfare against them to ascertain what plants they select for this purpose. The eggs hatch at various times from May to September, but chiefly during July. The caterpillars proceeding from them are green, beset with greenish single hairs; head brownish-green; on the back and sides three or four yellowish-white lines; feet twelve in number, and marked with a yellow stripe. These caterpillars commit great ravages, especially in the south of England, upon our peas and other garden vegetables, the best remedy for which is hand-picking.

GAMOCHLA'MYS HETERA'NDRA. See *Spathantheum heterandrum*.

GAMO'GYNE. (From *gamos*, union, and *gune*, the ovary. Nat. ord. Araceæ.)

A stove perennial herb. Offsets; divisions. Fibrous loam, lumpy peat, some charcoal and sand.

G. pu'lchra (beautiful). Bright crimson. Johor, Malaya. 1910.

GAMOLE'PIS. (Derived from *gamos*, marriage or union, and *lepis*, a scale; in allusion to the scales of the flower-head being united, forming a cup. Nat. ord. Compositæ.)

Greenhouse shrub of an ornamental character. Seeds when obtainable; cuttings of shoots about half ripe, in sand, in a close case with a mild heat. Fibrous loam, a little leaf-mould and sand.

G. a'nnua (annual). 1. Yellow. May. S. Africa. 1823.
„ *euriopoi'des* (Euryops-like). 1–2. Bright yellow. S. Africa. 1863.

GANGRENE. See CANKER.

GARCI'NIA. Mangosteen. (Named after *Dr. Garcia*, an Eastern traveller. Nat. ord. *Guttifers* [Guttiferæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Mammea.)

Of all the fruits in the East, that of *G. Mangosta'na* is the most highly extolled by Europeans; and the Gamboge from Siam is furnished by *G. Cambo'gia*. Stove evergreen trees. Cuttings of ripened shoots in sand, in a close propagating case, with strong bottom-heat; peat and loam. Summer temp., 60° to 90°, with moist atmosphere; winter, 60° to 65°.

G. brasilie'nsis (Brazilian). Brazil.
„ *Cambo'gia* (Gamboge). 30. Yellow. India and Ceylon. 1820.
„ *cochinchine'nsis* (Cochinchinese). China.
„ *co'rnea* (horny). 30. Yellow. E. Ind. 1823.
„ *Co'wa* (Cowa). 20. Yellow. E. Ind. 1822.
„ *du'lcis* (sweet). 20. Creamy-white. February. Andamans. 1820.
„ *hombronia'na* (Hombronian). Singapore.
„ *i'ndica* (Indian). India. "Kokum Oil."
„ *Ko'la* (Kola). W. Trop. Africa.
„ *Livingsto'nei* (Livingstone's). Trop. Africa.
„ *Mangosta'na* (Mangosteen). 20. Purple. Moluccas. 1789. "Mangosteen."
„ *More'lla* (Morella). India and Malaya. "Ceylon Gamboge."
„ *ovalifo'lia* (oval-leaved). White. Summer. Trop. Africa.
„ *puncta'ta* (punctate). Trop. Africa.
„ *terpnophy'lla* (pleasing-leaved). Ceylon.
„ *Xanthochy'mus* (Xanthochymus). 40. White. Summer. India and Malaya.
„ *zeyla'nica* (Cingalese). See G. CAMBOGIA.

GARDEN. Any enclosed piece of ground for the cultivation of fruits, flowers, or vegetables, separately or all together, may be termed a garden. Usually it is near the dwelling-house, but not always, and need not be. It may or may not include shrubberies. When grounds are wholly devoted to lawns, ornamental trees, and shrubs, they are usually termed pleasure-grounds. Larger and less well-kept areas, with or without sheep, cattle, or deer, but lying in grass and occupied more or less thinly with large trees, are termed parks. Fruit gardens, flower gardens, and vegetable gardens are more or less wholly devoted to one or other of those subjects, and may be more or less separated from one another. Rose gardens, Iris gardens, and Pæony gardens are larger or smaller areas, more or less devoted to those subjects, and may be screened from other parts of the grounds by trees, shrubs, or walls. It is desirable that

they should be so, because, being in the nature of a surprise, when the eye comes upon them the pleasure of contemplating them is increased, and their beauty enhanced. The rock garden or alpine garden is more or less wholly devoted to the cultivation of plants from high alpine regions, or to low-growing plants and shrubs from lowland or upland, provided they are in keeping with the general surroundings. Even large trees may come in appropriately in the background or near neighbourhood, when the extent of the garden permits. They often furnish the means of shading certain plants, which would fail to thrive if fully exposed to sunshine during the heat of summer. The bog garden is intended for the cultivation of bog and marsh plants, and even others which come from upland and moist situations, or from rocky ledges, where they are continually subjected to the ooze or drip from the higher grounds or from melting snows. Rills of water and pools are appropriate in the bog garden, which is usually associated with rockeries and rock gardens. The most striking feature of the latter, apart from the plants, is the various constructions of stone, such as mounds, ledges, pockets for the accommodation of plants, more or less perpendicular walls, rocks, or boulders. Rockeries are often constructed with more or less plausible imitations of stratified rocks, but natural stone is better, when built and arranged with skill and taste.

GARDEN BALSAM. *Justi'cia pectora'lis.*

GARDEN BEETLE. In June and July, a small, pretty beetle very often may be found among the petals of white roses. It is nearly half an inch long, and rather less than a quarter of an inch broad. Its wing-cases are reddish-brown, shining, and shorter than the body; the body and head are dark green, and the antennæ reddish, having at their ends a dark green club. This is the garden beetle (*Phyllopertha horticola* and *Melolontha horticola* of some). It feeds on the leaves of apples, pears, and roses, gnawing them full of small holes, and even transferring its attacks to the young fruit of the apple. During the latter part of July the female retires into the earth for the purpose of there depositing her eggs, from which the grubs are speedily produced, and feed upon the roots of plants. The only mode of reducing the number of these beetles is by searching for them during the evening, when, if detected, they stiffen their outstretched legs, and feign death; but in the day they fly about swiftly, and are captured with great difficulty.

GARDEN PEBBLE-MOTH (*Scopula forficularis*). The perfect insect, says Mr. Curtis, measures rather more than an inch across when its wings are expanded. The upper pair are hazel-coloured, with four stripes, two of which are distinct, and the other faint; the under wings as well as the body are whitish; and on the former, near the centre, there is a curved brown streak, and another black on the margin. The first brood of caterpillars occurs in May, and the second in the autumn; and when very numerous they do considerable injury to cabbages and plantations of horse-radish. The caterpillar is eight or ten lines long, with the head of a light brown colour, and the body is yellowish-green, with black longitudinal stripes. Like other caterpillars, it may be destroyed by being dusted with white hellebore powder.

GARDENER. The day is gone when the spade and the blue apron were the only appropriate devices for the gardener. He must now not only have a thorough practical knowledge of his art, but he must also have an intimate acquaintance with its sciences. No man can have stored in his mind too much knowledge; but there are always some branches of information of more value than others. Of these, to the gardener, there are none so important as botany and chemistry—botany, physiological as well as systematic—chemistry, especially as applied to the examination of organic nature. The relative duties between the gardener and his master are embodied in that universal rule—Do as you would be done by. The head gardener is the superior of the valet or butler; for his education and knowledge are of a higher order. The under gardeners, though necessarily hardy, and the open air is their appropriate whereabouts, should have work assigned to them suitable to the clemency or inclemency of the season; for no men are more liable to suffer early in life from rheumatism. There are two golden sentences which we would have always kept in mind by the gardener:—

1. Let all things be done orderly.
2. Be always ready to give an account of your stewardship.

GARDENER'S GARTER. *Pha'laris arundina'cea variega'ta.*

GARDE'NIA. (Named after *Dr. Garden*, an American. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Sweet-scented evergreen shrubs. Cuttings of shoots half ripe, in sand, under glass, and in a moist bottom-heat. This moist heat, when growing and when starting into bloom, is the very life of all the stove species. Even the greenhouse kinds do best when pruned after flowering, grown rapidly afterwards; if in a moist atmosphere from decomposing material, such as dung and leaves, all the better; hardened off and ripened by exposure to light and air in autumn, rested in a cool and dryish atmosphere in winter, and started into bloom in a moist heat again, and then removed to the greenhouse; peat and loam. Summer temp. 60° to 85°; winter, 45° to 55°.

GREENHOUSE.

G. amœ'na (pleasing). 4. Pink. July. China.
„ *angustifo'lia* (narrow-leaved). 3. White. 1823.
„ *citriodo'ra* (lemon-scented). See MITRIOSTIGMA AXILLARE.
„ *flo'rida* (flowery). 5. Pale yellow. August. China and Japan. 1754.
„ „ *fortunea'na* (Fortune's *double-flowered*). 5. White. July. N. China. 1844.
„ „ *ple'na* (double-*flowered*). 5. Pale yellow. August. China. 1754.
„ „ *radi'cans* (rooting). 1. White. June. China. 1804.
„ „ *si'mplici* (single). 5. White. January. China. 1831.
„ „ *variega'ta* (variegated). Leaves blotched with cream.
„ *Fortu'nei* (Fortune's). See G. FLORIDA FORTUNEANA.
„ *globo'sa* (globe-*fruited*). White. June. Caffraria.
„ *jasminoi'des* (Jasminum-like). White. China. 1866.
„ *Maru'ba* (Maruba). See G. JASMINOIDES.
„ *radi'cans* (rooting). See G. FLORIDA RADICANS.
„ *Rothma'nnia* (Rothmann's). 10. Pale yellow. July. Cape of Good Hope. 1774.
„ *spino'sa* (spiny). See RANDIA DUMETORUM.
„ *Thunbe'rgia* (Thunberg's). 6. White. February. Cape of Good Hope. 1773.

STOVE.

G. arma'ta (armed). See RANDIA ARMATA.
„ *campanula'ta* (bell-*flowered*). Himalaya and Burma. 1815.
„ *devonia'na* (Duke of Devonshire's). 6. White. September. Sierra Leone. 1845.
„ *dumeto'rum* (thicket). See RANDIA DUMETORUM.
„ *floribu'nda* (free-flowering). See RANDIA DUMETORUM.
„ *fra'grans* (fragrant). See RANDIA MALABARICA.
„ *grandiflo'ra* (large-flowered). White. Cochin-China.
„ *hexago'na* (six-angled). White. Brazil. 1868.
„ *Hie'rnii* (Hiern's). White. W. Trop. Africa.
„ *latifo'lia* (broad-leaved). 7. Pale yellow. E. Ind. 1787.
„ *longiflo'ra* (long-flowered). See RANDIA MACRANTHA.
„ *longisty'la* (long-styled). See MACROSPHYRA LONGISTYLA.
„ *lu'cida* (shining). 4. White. India. 1819.
„ *mallei'fera* (clapper-bearing). See RANDIA MALLEIFERA.
„ *monta'na* (mountain). See G. TURGIDA.
„ *ni'tida* (shining-*leaved*). 3. White. October. Sierra Leone.
„ *octo'mera* (eight-parted). See RANDIA OCTOMERA.
„ *Pave'tta* (Pavetta-like). See STYLOCORYNE WEBERA.
„ *Sherbou'rniæ* (Mrs. Sherbourne's). See SHERBOURNIA FOLIOSA.
„ *stanleya'na* (Stanley's. *Earl of Derby's*). See RANDIA MACULATA.
„ *tubiflo'ra* (tube-flowered). See OXYANTHUS TUBIFLORUS.
„ *tu'rgida* (swollen). 8. White. India and Burma. 1819.

GARDENING is the art of cultivating and arranging plants, so as to obtain from them the greatest amount of produce and of beauty.

GARDEN ROCAMBOLE. *A'llium sati'vum.*

GARDEN SWIFT. (*Hepialus lupulinus.*) The caterpillar of this moth is more indiscriminate in its attacks upon our plants than any other ravager of the garden. The roots of the auriculas, snowdrops, bear's-ear, parsnips, lettuces, celery, potatoes, and strawberries, have all been observed destroyed by this larva. The moth, usually, is chalky-brown, head and throax woolly, and its upper wings dark, bright brown, with a broad line of white; but sometimes this is absent, and at other times the upper wings are chalky-white. These moths appear about the end of May, and are very abundant in the evening in meadows and other grassy places. They deposit their eggs apparently without discrimination, which soon hatch, and the caterpillars produced are cylindrical, and yellowish-white, with black dots and hairs on the upper part and sides of their segments. The caterpillar changes to an ochreous, shining, cylindrical pupa.—*Gard. Chron.*

GARDO'QUIA. (Named after *Gardoqui*, a Spaniard. Nat. ord. *Labiates*, or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Melissa.)

Of all the Lipworts, there is not a greenhouse rival to *G. Hooke'ri* when well grown. Greenhouse evergreens, except *G. betonicoi'des*, which is herbaceous. Cuttings of half-ripened shoots in June, in sand, under a hand-glass; peat and loam, with a fair portion of sand, and pieces of broken bricks and charcoal. Winter temp., 40° to 48°; a shady place in summer. They should be tried against a wall, with a slight protection in winter.

G. betonicoi'des (betony-like). See CEDRONELLA MEXICANA.
„ *di'scolor* (two-coloured). Purple. June. Chili. 1827.
„ *elli'ptica* (elliptic). 4. Scarlet. July. Peru. 1839.
„ *Gillie'sii* (Gillies's). 2. Lilac. June. Chili. 1828.
„ *Hooke'ri* (Hooker's). See CALAMINTHA COCCINEA.
„ *multiflo'ra* (many-flowered). 1. Purple. April. Chili. 1837.

GARLAND FLOWER. *Pleura'ndra Cneo'rum.*

GARLICK. (*A'llium sati'vum.*) Grows best in a light, rich soil.

Planting.—It is generally propagated by parting the root, but may be raised from the bulbs produced on the stems. Plant any time in February, March, and early in April; but the middle of March is the usual time. A single clove to be placed in each hole, made six inches apart, and one deep, in straight lines, six inches distant from each other, care being taken to set the roots downwards. To do this, it is the best practice to thrust the finger and thumb, holding a clove between them, to the requisite depth without any previous hole being made. Keep them frequently hoed, and in June the leaves are to be tied in knots, to prevent the plants running to seed. A few roots may be taken up as required in June and July; but the whole must not be lifted until the leaves wither at the close of July, or in the course of August. It is usual to leave a part of the stalk attached, by which they are tied into bundles, being previously well dried for keeping during the winter.

GARLIC PEAR. *Crata'va.*

GA'RRYA. (Named after *Mr. Garry*, of the Hudson's Bay Company, who facilitated Douglas's botanical researches in North-West America. Nat. ord. *Garryads* [Cornaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria*.)

Hardy evergreen shrubs. Layers in the autumn, and cuttings toward the end of summer, in sandy soil, under a hand-light; sandy loam.

G. elli'ptica (oval-*leaved*). 6. Green. November to February. California. 1828.
„ *Fadye'nii* (Fadyen's). 6. Green. Jamaica. 1842.
„ *flave'scens* (yellowish). Greenish-yellow. Western N. Amer.
„ *Fremo'ntii* (Fremont's). North-Western Amer. 1881.
„ *laurifo'lia* (laurel-leaved). 6. White. Mexico. 1839.
„ *macrophy'lla* (large-leaved). 6. Green. Mexico. 1846.
„ *macfadyenia'na* (MacFadyen's), See G. FADYENII.

GARU'GA. (Its East Indian name. Nat. ord. *Burserads* [Burseraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Boswellia.)

One of the frankincense-trees so celebrated in the East. Stove evergreen trees, with yellow flowers; cuttings of half-ripened shoots in sand, under a bell-glass, and set in a little bottom-heat; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

G. madagascarie'nsis (Madagascar). 50. May. Madagascar. 1824.
„ *pinna'ta* (leafleted). 60. E. Ind. 1808.

GARU'LEUM. (Derivation not obvious. Nat. ord. Compositæ.)

Greenhouse evergreen. Seeds; cuttings of half-ripe shoots in sand, under a bell-glass. Sandy loam and a little fibrous peat.

G. visco'sum (clammy). 3. Blue. July. S. Africa. 1774.

GAS-HEATING. If the flame is supplied with air by the aid of a small pipe communicating with the outside of the house, is enclosed in a small iron stove, and has the gases produced carried away by a pipe, gas may be employed for protecting greenhouse plants in winter. We have known a small greenhouse, 16 feet by 12, thus protected by a single Argand burner.

GASTE'RIA. (From *gaster*, a belly; alluding to the swollen base of the flowers. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Greenhouse evergreen succulents, from South Africa, and all with red flowers, except where otherwise specified. This genus is allied to ALOE, which see for culture.

G. acinacifo'lia (scimitar-leaved). 3. Orange. July. 1819.
„ „ *mi'nor* (smaller). 2. Scarlet. July. 1820.
„ „ *ni'tens* (shining). 2. Scarlet. July. 1820.
„ „ *ni'tens bre'vior* (shorter). 2. Scarlet. July. 1820.
„ „ *pluripuncta'ta* (many-dotted). 2. Scarlet. July. 1820.
„ „ *venu'sta* (lovely). 2. Scarlet. July. 1820.
„ *angula'ta* (angled). See G. DISTICHA ANGULATA.
„ *angustifo'lia* (narrow-leaved). See G. DISTICHA ANGUSTIFOLIA.
„ *apicroi'des* (Apicra-like). 2. S. Africa. 1879.
„ *Bayfie'ldii* (Bayfield's). ½. S. Africa.
„ *bi'color* (two-coloured). 1. 1824.
„ *brevifo'lia* (short-leaved). 3. July. 1809.
„ „ *pervi'ridis* (very green). 1½. Scarlet. July. 1820.
„ *ca'ndicans* (*rough-marble*, white). 1. July. 1822.
„ „ *lini'ta* (smeared). 2. Scarlet. July. 1820.
„ *carina'ta* (*rough*-keeled). 2. July. 1731.
„ *cheilophy'lla* (tongue-leaved). S. Africa. 1879.
„ *colubri'na* (serpent-like). 2–4. Coral-red, green. 1877.
„ *conspurca'ta* (dirtied). See G. DISTICHA CONSPURCATA.
„ *crassifo'lia* (thick-leaved). See G. NIGRICANS.
„ *Crouche'ri* (Croucher's). 2. Red, white. August. S. Africa. 1870.
„ *deci'piens* (deceiving). 2. Scarlet. July. 1820.
„ *di'cta* (word). 1½. Coral-red. 1876.
„ *di'sticha* (two-rowed). 2. Scarlet. July. 1820.
„ „ *angula'ta* (angled). 2. July. 1791.
„ „ *angula'ta mi'nor* (smaller). 1½. August. 1820.
„ „ *angustifo'lia* (narrow-leaved). 1½. June. 1731.
„ „ *conspurca'ta* (dirtied). 2. June. 1796.
„ „ *denticula'ta* (finely-toothed). 2. Scarlet. July. 1822.
„ „ *longifo'lia* (long-leaved). 1½. July. 1796.
„ „ *ma'jor* (larger). 2. Scarlet. July. 1820.
„ „ *natale'nsis* (Natal). Natal. 1879.
„ *elonga'ta* (elongated). S. Africa.
„ *ensifo'lia* (sword-leaved). See G. ACINACIFOLIA.
„ *excava'ta* (excavated). 1½. 1824.
„ „ *obli'qua* (twisted-*leaved*). 1½. July. 1759.
„ *exce'lsa* (tall). S. Africa.
„ *fascia'ta* (banded). See G. NIGRICANS FASCIATA.
„ *formo'sa* (beautiful). See G. PICTA.
„ *fu'sco-puncta'ta* (brown-spotted). 2. S. Africa. 1860.
„ *gla'bra* (smooth-*keeled*). 3. July. 1796.
„ „ *mi'nor* (smaller). 2. Scarlet. July. 1820.
„ *gra'cilis* (slender). S. Africa. 1860.
„ *Hutto'niæ* (Mrs. Hutton's). 4–5. Rose-cinnabar. S. Africa. 1908.
„ *interme'dia* (middle-*tongued*). See G. VERRUCOSA and varieties.

G. lætepuncta'ta (lively-spotted). 2. Scarlet. July. 1820.
„ *denticula'ta* (small-toothed). See G. DISTICHA DENTICULATA.
„ *læ'vis* (smooth). See ALOE LÆVIS.
„ *lini'ta* (smeared). See G. CANDICANS.
„ *macula'ta* (spotted). 2. Scarlet. July. 1759.
„ „ *fa'llax* (fallacious). 2. Scarlet. July. 1820.
„ *marmora'ta* (marbled). 1½. S. Africa. 1820.
„ *mo'llis* (soft-*muddy-leaved*). 1. July. 1823.
„ *ni'gricans* (dark). 2. July. 1790.
„ „ *fascia'ta* (bundled). 1½. July. 1820.
„ „ *hy'strix* (hedgehog). Very bristly.
„ „ *polyspi'la* (many-spotted). S. Africa.
„ „ *platyphy'lla* (broad-leaved). S. Africa.
„ „ *subni'gricans* (slightly-dark). 2. Scarlet. July. 1820.
„ „ *subni'gricans gla'brior* (smoother). 2. Scarlet. July. 1826.
„ *ni'tens* (shining). See G. ACINACIFOLIA NITENS.
„ *ni'tida* (shining). 1. July. 1820.
„ „ *grandipuncta'ta* (large-dotted). 1. July. 1822.
„ *obli'qua* (oblique). See G. MACULATA.
„ *obtu'sa* (blunt). 1½. July. 1820.
„ *obtusifo'lia* (blunt-leaved). 1½. July. 1796.
„ *palle'scens* (pale). 1. S. Africa. 1860.
„ *pa'rva* (small). See G. CARINATA.
„ *parvifo'lia* (small-leaved). S. Africa. 1860.
„ *pi'cta* (painted). 3. Scarlet. July. 1820.
„ *planifo'lia* (flat-leaved). Red, pale green. August. S. Africa. 1860.
„ *pluripuncta'ta* (many-dotted). See G. ACINACIFOLIA PLURIPUNCTATA.
„ *porphyrophy'lla* (purple-leaved). S. Africa. 1873.
„ *pu'lchra* (fair). 3. Scarlet. July. 1759.
„ *radulo'sa* (rasp-like). S. Africa.
„ *re'pens* (creeping-*rooted*). 1. July. 1821.
„ *reta'ta* (netted). 2. Scarlet. July. 1820.
„ *spira'lis* (spiral). Leaves arranged spirally.
„ *squarro'sa* (spreading). 2–3. S. Africa. 1879.
„ *striga'ta* (rigid). See G. CARINATA.
„ *subcarina'ta* (obscure-keeled). 2. Orange. July. 1818.
„ „ *unda'ta* (waved). 2. Scarlet. July. 1820.
„ „ *viri'dior* (greener). 2. Scarlet. July. 1820.
„ *subni'gricans* (blackish). See G. NIGRICANS SUBNIGRICANS.
„ *subverruco'sa* (small-warted). 2. July. 1820.
„ „ *parvipuncta'ta* (small-dotted). 2. July. 1820.
„ *sulca'ta* (furrowed). 2. Scarlet. July. 1820.
„ *transvaale'nsis* (Transvaal). S. Africa.
„ *triangula'ris* (triangular). See G. TRIGONA.
„ *trigo'na* (triangular). 1½. July 1820.
„ *unda'ta* (waved). See G. SUBCARINATA UNDATA.
„ *variolo'sa* (variable). 1–2. S. Africa. 1860.
„ *venu'sta* (lovely). See G. ACINACIFOLIA VENUSTA.
„ *verruco'sa* (warty). 2. July. 1731.
„ „ *aspe'rrima* (very rough).
„ „ *læ'vior* (smoother).
„ „ *latifo'lia* (broad-leaved).
„ „ *lo'ngior* (longer-leaved).

GASTO'NIA. (After *Gaston de Bourbon*, son of Henri IV. of France. Nat. ord. *Ivyworts* [Araliaceæ]. Linn. 11-*Dodecandria*, 5-*Pentagynia*. Allied to Aralia.)

Stove evergreen shrub. Cuttings of shoots getting firm, in April, in sand, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 55° to 75°; winter, 48° to 55°.

G. Cando'llei, *G. denta'ta*, and *G. longifo'lia*. See BRASSAIOPSIS SPECIOSA.
„ *cutispo'ngia* (spongy-skinned). Mauritius.
„ *palma'ta* (hand-*leaved*). See TREVESIA PALMATA.
„ *sunda'ica* (Sundaic). See TREVESIA SUNDAICA.

GASTRI'DIUM. (From *gastridion*, the diminutive for *gaster*, the belly; in allusion to the swollen, or gibbous, empty glume. Nat. ord. Gramineæ.)

Hardy ornamental grass. Seeds. Ordinary soil.

G. austra'le (southern). 1. Green, shining. Europe (England). "Nit-grass."
„ *lendi'gerum* (lens-bearing). See G. AUSTRALE.

GASTROCA'RPHA RUNCINA'TA. See MOSCHARIA PINNATIFIDA.

GASTROCHI'LUS. (From *gaster*, belly, and *cheilos*, lip; in reference to the swollen lip. Nat. ord. *Ginger-worts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Alpinia.)

Must not be confounded with Don's *Gastrochi'lus*, a synonym of *Saccola'bium*. Stove herbaceous perennials. Divisions of the plant as fresh growth is commencing; sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

G. a'lbo-lu'tea (white-yellow). White, yellow. Malaya. 1894.
„ *bi'loba* (two-lobed). Malaya.
„ *Curti'sii* (Curtis's). White; lip yellow, with red margin. Malay Peninsula.
„ *Jenki'nsii* (Jenkins's). See G. LONGIFLORA.
„ *longiflo'ra* (long-flowered). 2. Yellow, red. July. India, Malaya. 1843.
„ *pulche'rrima* (prettiest). 2. Yellow, pink. August. Rangoon. 1828.

GASTROGLO'TTIS. See LIPARIS.

GASTROLO'BIUM. (From *gaster*, belly, and *lobos*, a pod; inflated seed-pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Eutaxia.)

Greenhouse evergreens, from Swan River, and all with yellow flowers, except where otherwise mentioned. Seeds sown in a hotbed in spring, after being soaked in warm water; cuttings of half-ripened shoots in May, in sand, under a bell-glass; peat and loam, both fibrous, with a portion of silver sand, and small pieces of charcoal; impatient of sour, stagnant soil. Winter temp., 40° to 45°.

G. acu'tum (sharp-pointed). See OXYLOBIUM ACUTUM.
„ *bi'lobum* (two-lobed). 2. May. 1803.
„ *calyci'num* (*large*-calyxed). April.
„ *corda'tum* (heart-shaped-*leaved*). See OXYLOBIUM SPECTABILE.
„ *epacridioi'des* (Epacris-like). 1847.
„ *obova'tum* (reversed-egg-*leaved*). April.
„ *ovalifo'lium* (oval-leaved). Australia.
„ *oxylobioi'des* (Oxylobium-like). April. 1840.
„ *pyramida'le* (pyramidal). 2. Yellow. Australia.
„ *retu'sum* (blunt-*leaved*). See OXYLOBIUM RETUSUM.
„ *spathula'tum* (spathulate-*leaved*).
„ *specta'bile* (showy). Orange, crimson. 1859.
„ *spino'sum* (spined). 3. April. 1840.
„ *tri'lobum* (three-lobed-*leaved*).
„ *veluti'num* (velvety). Orange. April. 1852.
„ *villo'sum* (shaggy). 3. Red, crimson. May. 1845.

GASTRONE'MA. (From *gaster*, belly, and *nema*, a filament; in reference to the filaments seen below the point of insertion. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Cyrtanthus.)

Dr. Burchell discovered the pretty bulb, *clava'tum*, and flowered it in an open border along with other Cape rarities; its native place at the Cape is in "fields beyond *Camtours* river." Offsets; sandy loam, fibrous peat, and dried leaf-mould; plenty of water when growing, and dry when at rest. Winter temp., from 35° to 45°; or in border, protected in winter.

G. clava'tum (club-*leaved*). See CYRTANTHUS UNIFLORUS.
„ *sangui'neum* (blood-red). See CYRTANTHUS SANGUINEUS.

GATEN or **GATER-TREE.** *Co'rnus sangui'nea.*

GATHERER. The hand is the best instrument for collecting fruit into the basket; but to avoid the danger and breakage of branches incidental to using long ladders, certain instruments have been designed. One of them is for apples and other single fruit; another for grapes, the stalk of which it severs and retains in its grasp.

GATHERING. See FRUIT-ROOM.

GAUDICHAU'DIA. (Named after *C. Gaudichaud*, a French naturalist. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen. Cuttings of ripe shoots in summer, in sand, under a bell-glass, and in bottom-heat; peat and loam, with sand, and pieces of charcoal to keep it open. Summer temp., 60° to 75°; winter, 50° to 55°.

G. cynanchoi'des (dog's-bane-like). 10. Yellow. Mexico. 1824.
„ *schiedea'na* (Schiedean). 6. Yellow. S. Amer. 1823.

GAULTHE'RIA. (Named after *Dr. Gaulther*, a Canadian. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Pernettya.)

The oil of Wintergreens used to flavour drugs, and also by perfumers, is obtained from the berries of *G. procu'mbens*. Chiefly by layers and seeds. *Procu'mbens* requires a moist peat-soil; *Sha'llon* will grow in any soil. The fruit is prized for its flavour so much by the natives, that they make it into bread for winter use. The greenhouse kinds require peat, and similar treatment, with the exception of a temperature from 35° to 45° in winter.

HARDY.

G. anti'poda (Antipodal). 6. White. New Zealand. 1820.
„ *Myrsini'tes* (Myrsinites). ¼. White. N.W. Amer. 1827.
„ *nummularioi'des* (Nummularia-like). ½. White or pink. Himalayas.
„ *procu'mbens* (procumbent). ½. White. July. N. Amer. 1762.
„ *pyrolæfo'lia* (Pyrola-leaved). Himalaya.
„ *Sha'llon* (Shallon). 4. White. May. N. Amer. 1826. "Shallon; Salal."
„ *trichophy'lla* (hairy-leaved). ½. Pink. Himalaya and Western China. 1899.

GREENHOUSE.

G. bractea'ta (bracted). Red. July. Ecuador. 1848.
„ *cocci'nea* (scarlet). 1. Pink. Venezuela. 1849.
„ *corda'ta* (heart-*leaved*). See MACLEANIA CORDATA.
„ *di'scolor* (two-coloured). See DIPLYCOSIA DISCOLOR.
„ *ferrugi'nea* (rusty). Pink. June. Brazil. 1852.
„ *fra'grans* (fragrant). See G. FRAGRANTISSIMA.
„ *fragranti'ssima* (most-fragrant). White. India and Malaya. 1869.
„ *gla'bra* (smooth). Peru.
„ „ *caracasa'na* (Caracasan). White. Colombia. 1874.
„ *hi'spida* (roughly-hairy). White. Australia and New Zealand.
„ *insi'pida* (tasteless). 6–8. White. Mexico. 1873.
„ *lindenia'na* (Lindenian). White. Venezuela.
„ *serpyllifo'lia* (thyme-leaved). See CHIOGENES SERPYLLIFOLIA.

GAU'RA. (From *gauros*, superb; referring to the beauty of some of the species. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Stenosiphon.)

G. frutico'sa may be propagated either by seeds or cuttings; the others—annuals, biennials, and perennials—are all hardy, and may also be sown in April, and the perennials may also be divided. Sandy, rich loam suits them all.

G. angustifo'lia (narrow-leaved). 2. Pink. August. N. Amer. Perennial.
„ *bie'nnis* (biennial). 5. Red, white. September. N. Amer. 1762.
„ *cocci'nea* (scarlet). ½. Scarlet. September. Louisiana. 1811. Perennial.
„ *frutico'sa* (shrubby). See G. ANGUSTIFOLIA.
„ *Lindheime'ri* (Lindheimer's). 2–3. White, red. Summer. Texas. 1850. Perennial.
„ *muta'bilis* (changeable). 2. Yellow. July. Mexico. 1795. Biennial.
„ *œnotheræfo'lia* (Œnothera-leaved). 1½. Purple. July. S. Amer. 1816. Biennial.
„ *parvifio'ra* (small-flowered). 4. Yellow. August. N.W. Amer. 1835. Biennial.
„ *sinua'ta* (twisted). Blush. July. N.W. Amer. 1826. Biennial.
„ *tripe'tala* (three-petaled). 1½. Pink. August. Mexico. 1804. Annual.

GAU'SSIA. (A commemorative name. Nat. ord. Palmaceæ).

Stove Palms. See PALMS FOR CULTURE.

G. Ghiesbre'ghtii (Ghiesbreght's). W. Ind.
„ *pri'nceps* (chief). Cuba.

GAYLUSSA'CIA. (Named after *M. Gay Lussac*, a celebrated French chemist. Nat. ord. *Cranberries* [Vacciniaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Vaccinium.)

Cranberry-like half-hardy evergreens. Seed and layers; sandy peat, a little loam, and leaf-mould; require the protection of a pit or the greenhouse in winter.

G. brachy'cera (short-horned). 1. White. May. Pennsylvania to Virginia. "Box Huckleberry."
„ *dumo'sa* (bushy). 2–3. White or rosy. June. N. Amer. 1774. "Dwarf Huckleberry."
„ *frondo'sa* (leafy). 2–5. Green-purple. May. N. Amer. 1761. "Dangleberry."
„ „ *venu'sta* (lovely). 3. Pink. June. 1770.
„ *lindenia'na* (Lindenian). White. Caraccas. 1850.
„ *ni'tida* (shining). Scarlet. Brazil. 1853.
„ *Pseu'do-vacci'nium* (bilberry-like). 1½. Rose, red. May. Brazil. 1843.
„ *resino'sa* (resinous). 1–3. Pale red. May. N. Amer. 1782.
„ „ *lute'scens* (yellowish). 2. Reddish-yellow. June. 1804.
„ „ *rube'scens* (reddish). 3. Yellow, green. May. 1773.
„ *ro'sea* (rosy-*flowered*). Rose. May. Peru. 1843.
„ *ursi'na* (bear). Mountains of North and South Carolina.

GAZA'NIA. (From *gaza*, richness; in reference to the large, gaudy flowers. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Gorteria.)

Natives of South Africa. Cuttings of side-shoots, produced in abundance near the base of the plant, in August; more sparingly in spring, in sandy soil, under a hand-light; peat and loam, with a portion of sand. Winter temp., 38° to 45°.

G. bractea'ta (large-bracted). ½. Ray white, purple beneath; disc yellow. Natal. 1894.
„ *heterophy'lla* (variable-leaved). ½. Orange. July. 1812.
„ *longisca'pa* (long-scaped). ½. Orange-yellow. July. S. Africa.
„ *monta'na* (mountain). ½. Pale yellow. Natal. 1899.
„ *ni'vea* (snowy). White. S. Africa.
„ „ *latiflo'ra* (broad-flowered). Flowers large, white or cream. 1897.
„ *Pavo'nia* (peacock). 1½. Yellow. July. 1804.
„ *pinna'ta integrifo'lia* (entire-leaved). Yellow. 1881.
„ *pygmæ'a* (pigmy). Yellow. S. Africa.
„ „ *lu'tea* (yellow). Chrome-yellow, with light yellow zone. 1904.
„ *ri'gens* (stiff). 1. Orange. June. 1755.
„ *splе'ndens* (splendid). ½. Orange, black, white. Origin unknown.
„ *subula'ta* (awl-leaved). 1. Yellow. July. 1792.
„ *uniflo'ra* (one-flowered). 1. Yellow. July. 1816.

GAZANIO'PSIS. (Gazania, and *opsis*, resemblance; the plant resembles a Gazania. Nat. ord. Compositæ.)

A garden hybrid requiring similar treatment to Gazania.

G. stenophy'lla (narrow-leaved). Leaves varying from bronze to golden-yellow. 1882.

GEIGE'RA. (A commemorative name. Nat. ord. Rutaceæ.)

A stove shrub. Cuttings of nearly ripe wood in sand, in a moist, warm case. Fibrous loam and a little peat, with sand.

G. parviflo'ra (small-flowered). 3. Red. June. Australia. 1823.

GEISSO'IS. (From *geisson*, a tile; in allusion to the flattened, winged, overlapping seeds. Nat. ord. Saxifragaceæ.)

A handsome stove shrub, producing its crimson flowers on old branches. Cuttings of ripe wood in sand, in a close case, with bottom-heat. Fibrous loam and peat.

G. racemo'sa (racemed). Crimson-red; young stems and leaves purple-red. New Caledonia. 1880.

GEISSOME'RIA. (From *geisson*, a tile, and *meris*, a part; referring to the way the bracts are imbricated, or fall over each other as tiles on a roof. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Barleria.)

Stove evergreen shrubs. Cuttings of shoots getting

firm, any time in summer, in sand, under a bell-glass, and a sweet bottom-heat; loam and peat, with sand, and a little old cow-dung.

G. auranti'aca (orange-coloured). 2. Orange, red. Autumn. 1848.
„ *cocci'nea* (scarlet). 3. Scarlet, rose. Autumn. W. Ind. 1844.
„ *fu'lgida* (brilliant). Scarlet. August. W. Ind. 1804.
„ *longiflo'ra* (long-flowered). 3. Scarlet. July. Brazil. 1826.
„ *ni'tida* (shining). Brazil.

GEISSORHI'ZA. Tile Root. (From *geisson*, a tile, and *rhiza*, a root; referring to the dry coats which cover the fleshy roots like tiles on a roof. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Romulea.)

Half-hardy bulbs, from South Africa. Except when planted out on a border, in front of a greenhouse, the roots should be planted in a handful of white sand; offsets; sandy peat, with a little loam; must be kept from the frost in winter.

G. Bellende'ni (Bellenden's). S. Africa.
„ *cilia'ris* (hair-fringed). 1. May.
„ *ere'cta* (upright). Yellow, blue. May. 1824.
„ *exci'sa* (abrupt-*leaved*). ½. White. May. 1789.
„ *gra'ndis* (grand). 1. Straw-yellow, red. May. 1866.
„ *hi'rta* (hairy). 1. White. May. 1825.
„ *hu'milis* (humble). Yellow, rose. May. 1822.
„ *imbrica'ta* (imbricated). 1. Variegated. May. 1825.
„ *infle'xa* (inflexed). 1½. Yellow, blue. May. 1824.
„ *ju'ncea* (rush-like). 1. White. July. 1822.
„ *obtusa'ta* (blunted). 1. Yellow. May. 1801.
„ *quadra'ngula* (four-angled). ½. Blue. June. S. Africa. 1825.
„ *roche'nsis* (de la Roche's). ½. Violet. May. 1790.
„ *secu'nda* (side-*flowering*). 1. White. May. 1795.
„ „ *albe'scens* (whitish). 1. White. May. 1795.
„ „ *cæru'lea* (blue). 1. Blue. May. 1795.
„ *seta'cea* (bristle-*leaved*). 1. Sulphur. July. 1877.
„ *sublu'tea* (yellowish). See ROMULEA SUBLUTEA.
„ *vagina'ta* (sheathed). See G. INFLEXA.

GEITONOPLE'SIUM. (Derived from *geiton*, a neighbour, and *plesion*, near; not very widely distinct from Luzuriaga and Eustrephus. Nat. ord. Liliaceæ.)

Greenhouse climber. Cuttings of nearly ripe wood in late summer in sand, in a close case. Peat and sand with a little loam.

G. cymo'sum (cymose). Green. Australia and Pacific Islands. 1832.

GE'LA. (From *geleo*, to shine; referring to the surface of the leaves. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in May, under a hand-light, in sandy soil; sandy peat. Winter temp., 38° to 45°.

G. lanceola'ta (spear-head-*leaved*). See ACRONYCHIA LAURIFOLIA.
„ *oblongifo'lia* (oblong-leaved). See XIMENIA OBLONGIFOLIA.

GELASI'NE. (From *gelasinos*, a smiling dimple; referring to the flowers of these pretty bulbs. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Trichonema.)

A bulb, from the Rio Grande in South America, almost, if not altogether, hardy; but we fear it has been lost at the dispersion of Dr. Herbert's collection, who had dry specimens of five more species of Gelasine. Nuttall's *Nemosty'lis* is the nearest genus to it; but *Romulea*, so well known, will give a good idea of it; light, sandy soil suits them best; they seed freely, and seedlings flower the second season from the sowing, and, like most Irids, they increase by offset-bulbs.

G. azu'rea (blue). 1. Blue. May. S. Amer. 1838.

GELSE'MIUM. (From *gelsemius*, an Italian name for Jasmine. Nat. ord. Loganiaceæ.)

A hardy, or nearly hardy, woody climber, often called "False Jessamine" in N. America. Cuttings in a cold frame in early autumn. Well-drained soil.

G. sempervi'rens (evergreen). Yellow. June. N. Amer. 1640. Syn. *G. nitidum*.

GENETY'LLIS. (From *genetyllis*, protective of birth; alluding to the form and position of the flowers. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. All referred to Darwinia.)

Greenhouse evergreens. Cultivated like the Myrtle.

G. fimbria'ta (fringed). See DARWINIA FIMBRIATA.
„ *fuchsioi'des* (Fuchsia-like). See D. HOOKERIANA.
„ *macroste'gia* (large-involucred). See DARWINIA MACROSTEGIA.
„ *tulipi'fera* (tulip-bearing). See DARWINIA MACROSTEGIA.

GENIOSPO'RUM. (From *genos*, *geneos*, a race, and *sporos*, a seed. Nat. ord. Labiatæ.)

A stove annual. Seeds. Loam, leaf-mould, and sand.

G. prostra'tum (prostrate). 1. Purple. India.

GENI'PA. Genip-tree. (From *Genepapa*, the native name. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Gardenia.)

The Genipap, a South American fruit, is produced by *G. america'na*; it is as large as an orange, and much esteemed. Stove evergreen trees. Cuttings of shoots just getting a little firm, in May, in sand, under a bell-glass, and in bottom-heat; peat and loam, with a little sand and cow-dung. Summer temp., 60° to 80°; winter, 45° to 50°.

G. america'na (American). 30. Pale yellow. S. Amer. 1779.
„ *edu'lis* (eatable). 30. White. Guiana. 1824. See ALIBERTIA EDULIS.
„ *escule'nta* (eatable). See RANDIA EDULIS.
„ *Meria'næ* (Merian's). 10. White. Cayenne. 1800.
„ *oblongifo'lia* (oblong-leaved). 20. Yellow. Peru. 1821.

GENI'STA. (From the Celtic, *gen*, a small bush. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Spartium.)

Low shrubs, all with yellow flowers, good for making quickly an ornamental appearance in a shrubbery. The greenhouse and half-hardy kinds like peat and loam, with a little sand and leaf-mould, and are propagated by cuttings of the young shoots in summer, in sand, under a bell-glass. The hardy kinds are easily propagated by seed, and the most rare by cuttings under a hand-light, after April, in a shady place. Whatever plan is adopted, they should be frequently transplanted, or at once removed to their position in the shrubbery, as they make long, naked roots. *Canarie'nsis* is about the best of the greenhouse ones, and that in a dry place requires only a little protection out of doors. *Lusita'nica* and *radia'ta* look interesting, even in winter, when the leaves are gone. *A'nglica* is the rough-looking spiny dwarf-bush that blooms so freely in our moist moors. *Tincto'ria* is used in all its parts for producing a yellow dye; and on a rock-work, or on the top of a mound, with its branches allowed to creep downwards, few things in spring and the beginning of summer are more splendid than the trailing *triqué'tra*, and its next-door neighbour, *triangula'ris*. Common, loamy soil suits all the hardy ones.

GREENHOUSE DECIDUOUS.

G. conge'sta (close-*branched*). 4. June. Teneriffe.
„ *monospe'rma* (single-seeded). 4. July. S. Europe. 1690.
„ *sphæroca'rpa* (round-podded). 4. July. S. Europe. 1731.

GREENHOUSE EVERGREENS.

G. bracteola'ta (small-bracted). See G. STYLOSA.
„ *canarie'nsis* (Canary). See CYTISUS CANARIENSIS.
„ *clava'ta* (club-*leaved*). 3. June. Mogadore. 1812.
„ *e'legans* (elegant). See CYTISUS FRAGRANS ELEGANS.
„ *fe'rox* (fierce). 1½. July. Barbary. 1800.
„ *fra'grans* (fragrant). See CYTISUS FRAGRANS.
„ *linifo'lia* (flax-leaved). 3. June. Spain. 1739. See CYTISUS LINIFOLIUS.
„ *spachia'na* (Spach's). 2. Canaries.
„ *stylo'sa* (long-styled). 2. May. Portugal. 1823.
„ *umbella'ta* (umbelled). 3. June. Barbary. 1799.
„ *virga'ta* (twiggy). 5. June. Madeira. 1777.

Hardy Deciduous.

G. aphy'lla (leafless). See Eremosparton aphyllum.
„ *humifu'sa* (trailing). 1. July. France. 1819. Trailer.
„ *Sco'rpius* (scorpion). 4. April. S. Europe. 1570.
„ *tetrago'na* (four-angled-*branched*). 1. July. Podolia. 1822. Trailer.

Hardy Evergreens.

G. ætkné'nsis (Etna). 3–8. July. Sicily. 1816.
„ *amsa'nctica* (Amsanctic). See G. anxantica.
„ *andrea'na* (Andrean). See Cytisus scoparius andreanus.
„ *a'nglica* (English. *Pettywhin*). 2. July. Britain.
„ *angula'ta* (angled). See G. parviflora.
„ *anxa'ntica* (Anxantic). 4. July. Italy. 1818.
„ *aspalathoi'des* (Aspalathus-like). S.W. Europe.
„ *ca'ndicans* (whitish). See Cytisus candicans.
„ *capita'ta* (headed). See G. clavata.
„ *cine'rea* (greyish). 4. July. S. Europe.
„ *dalma'tica* (Dalmatian). ½–¾. Bright yellow. Balkan Peninsula. 1906.
„ *decu'mbens* (decumbent). See Cytisus procumbens.
„ *diffu'sa* (spreading). See Cytisus decumbens.
„ *fe'rox* (fierce). N. Africa.
„ *flo'rida* (flowery). 6. July. Spain. 1752.
„ *germa'nica* (German). 2. July. Germany. 1773.
„ „ *iné'rmis* (*nearly*-unarmed). 2. July. Germany.
„ *hispa'nica* (Spanish). 2. July. Spain. 1759.
„ *ho'rrida* (horrid). 3. July. Pyrenees. 1821.
„ „ *erina'cea* (prickly). Near Lyons.
„ *ita'lica* (Italian). 3. July. Italy.
„ *lusita'nica* (Portuguese). 2. May. Portugal. 1771.
„ *ma'ntica* (Mantic). See G. tinctoria mantica.
„ *nyssa'na* (Nyssan). 2. Yellow. Servia. 1906.
„ *ova'ta* (egg-*leaved*). 3. July. Hungary. 1816.
„ *parviflo'ra* (small-flowered). 3. July. Asia Minor. 1739.
„ *pa'tens* (spreading). See Cytisus patens.
„ *pa'tula* (wide-open). 3. July. Caucasus. 1818.
„ *pilo'sa* (downy. *Green weed*). 6. June. England.
„ *polygalæfo'lia* (Polygala-leaved). 3. July. Portugal. 1820.
„ *procu'mbens* (lying-down). See Cytisus procumbens.
„ *pu'rgans* (purging). See Cytisus purgans.
„ *radia'ta* (rayed). 1½. July. Italy. 1758.
„ *sagitta'lis* (arrow-*jointed*). ½. June. Germany. 1570.
„ „ *mi'nor* (less). May. Trailer.
„ *scario'sa* (membranous). See G. triangularis.
„ *seri'cea* (silky). 3. June. Austria. 1812.
„ *sibi'rica* (Siberian). 2. July. Siberia. 1785.
„ *silve'stris* (wood). 2. July. Hungary. 1818.
„ *tincto'ria* (dyer's. *Green weed*). 3. July. Britain.
„ „ *ela'tior* (taller). 3.
„ „ *flo're-ple'no* (double-flowered). 2. July.
„ „ *hirsu'ta* (*somewhat* hairy). 2. July. Britain.
„ „ *latifo'lia* (broad-leaved). 2. July. Auvergne. 1824.
„ „ *ma'ntica* (Mantic). 3. July. Italy. 1816.
„ „ *prate'nsis* (meadow). 2. July. Italy.
„ *triaca'nthos* (three-spined). 2. July. Spain.
„ „ *interru'pta* (interrupted). 2. May. Tangier.
„ *triangula'ris* (three-angled-*stemmed*). 2. June. Hungary. 1815.
„ *trique'tra* (three-cornered-*stemmed*). 3. June. Corsica. 1770.
„ *visco'sa* (clammy). See Adenocarpus anagyrus.

GENTIA'NA. Gentian. (Named after *Gentius*, king of Illyria, who first experienced the virtue of Gentian. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

The root of *G. lu'tea* is the true Gentian of the druggists, an intense bitter, only exceeded by that of *Ale'tris farino'sa*, a little North American Bloodroot, the most intense bitter known, and by *Qua'ssia ama'ra*. The smaller kinds may be treated as alpines; and whether grown in pots or not, a little heat and sandy leaf-mould should be given them. All may be propagated by seed sown as soon as ripe; the perennials, also, by division in spring. Some of the creeping, low-growing kinds, as *acau'lis*, make nice edgings to walks and borders.

Hardy Annuals.

G. Amare'lla (Amarella). ½. Purple. August. Britain.
„ „ *lu'tea* (yellow). ½. Yellow. August.
„ *angustifo'lia* (narrow-leaved). ½. Purple. July. N. Amer. 1812.
„ *campe'stris* (field). ½–1½. Pale purple. Britain.
„ *carinthi'aca* (Carinthian). See Pleurogyne carinthiaca.
„ *germa'nica* (German). ½. Blue. August. Germany. 1818.
„ *glacia'lis* (icy). See G. tenella.
„ *hu'milis* (humble). ½. Purple. April. Caucasus. 1824.
„ *moorcroftia'na* (Moorcroftian). ½–1. Blue. Himalaya. 1884.
„ *niva'lis* (snowy). ½. Blue. August. Scotland.
„ *obtusifo'lia* (blunt-leaved). ½. Yellow. July. Switzerland. 1826.
„ *prate'nsis* (meadow). See G. Amarella.
„ *prostra'ta* (prostrate). ½. Blue. Northern and Southern Regions. 1888.
„ *tene'lla* (slender). ½. Blue. July. Northern and Arctic Regions. 1819.

Hardy Biennials.

G. barba'ta (bearded). See G. detonsa.
„ *cauca'sica* (Caucasian). ½. Violet. July. Caucasus. 1804.
„ *confe'rta* (crowded). Blue. August. Altaia. 1827.
„ *crini'ta* (*long*-haired). ½. Blue. July. N. Amer. 1804.
„ *deto'nsa* (clipped). ½. Blue. August. Northern Regions. 1764.
„ *uligino'sa* (marshy). See G. Amarella.
„ *unifio'ra* (one-flowered). See G. germanica.

Hardy Herbaceous Perennials.

G. acau'lis (stemless. *Gentianella*). ½. Blue. May. Wales.
„ „ *a'lbida* (whitish). Creamy-white.
„ „ *angustifo'lia* (narrow-leaved). ½. Blue. May. Alps. 1819.
„ „ *kochia'na* (Kochian). Dark blue, with five black-green spots. Alps. 1888.
„ *adsce'ndens* (ascending). See G. decumbens.
„ *æsti'va* (summer). See G. verna.
„ *affi'nis* (allied). See G. Bigelovii.
„ *a'lba* (white). White. N. Amer.
„ *a'lgida* (cold). ½. White. July. Siberia. 1808.
„ *alpi'na* (alpine). See G. acaulis.
„ *alta'ica* (Altaic). 1. Purple. May. Siberia. 1824.
„ *Andre'wsii* (Andrews'). 1–1½. Blue. N. Amer. 1776. "Closed Gentian."
„ *angulo'sa* (angled). See G. verna.
„ *arverne'nsis* (Arvernan). 1. Dark blue. Country unknown. 1882.
„ *asclepia'dea* (swallowwort-like). 1. Blue. July. Austria. 1629.
„ „ *a'lba* (white). White.
„ „ *ma'jor* (greater). 2. Blue. July.
„ „ *ochroleu'ca* (yellowish-white). 1. Cream. July.
„ *au'rea* (golden). ½. Yellow. August. Norway. 1823.
„ *bava'rica* (Bavarian). ½. Blue. July. Germany. 1775.
„ *Bigelo'vii* (Bigelow's). 1. Violet. New Mexico.
„ *bi'loba* (two-lobed). 2½. Yellow. July. Alps. 1820.
„ *brachyphy'lla* (short-leaved). Europe.
„ *bre'videns* (short-toothed). Japan.
„ *Burse'ri* (Burser's). 2. Yellow. July. Pyrenees. 1820.
„ *calyco'sa* (large-calyxed). ½–¾. Deep blue, dotted white. N.W. Amer. 1883.
„ *campanula'ta* (bell-*flowered*). 2. Sulphur. July. Switzerland. 1819.
„ *carpa'thica* (Carpathian). Carpathian Mountains. 1888.
„ *Catesbæ'i* (Catesby's). See G. Andrewsi.
„ *ce'rnua* (nodding). Ecuador.
„ *Charpentie'ri* (Charpentier's). 2. Yellow, dotted red. Switzerland. 1888.
„ *cilia'ta* (hair-fringed). ½. Blue. Germany. 1759.
„ *clava'ta* (clubbed). See G. ochroleuca.
„ *Clu'sii* (Clusius'). ½. Dark blue. Switzerland. 1888.

G. corymbi'fera (corymb-bearing). 1–1½. White. New Zealand. 1909.
,, *Crucia'ta* (crossed). 1. Dark blue. July. Austria. 1596. "Crosswort."
,, *dahu'rica* (Dahurian). ¼. Bright blue. Dahuria. 1902.
,, *decu'mbens* (lying-down). ¼. Blue. July. Himalaya. 1799.
,, *dina'rica* (Dinaric). See G. EXCISA.
,, *exci'sa* (cut-out). Europe.
,, *Fetiso'wi* (Fetisow's). ½. Deep blue. Turkestan. 1882.
,, *fimbria'ta* (fringed). See G. CRINITA.
,, *fi'rma* (firm). See G. ACAULIS.
,, *flo'rida* (flowery). Yellow. Argentina.
,, *folio'sa* (leafy). Lilac. Andes of Peru.
,, *Fortu'nei* (Mr. Fortune's). See G. SCABRA.
,, *freynia'na* (Freynian). ½. Larger, more inflated flowers than *G. septemfida*. Asia Minor. 1909.
,, *fri'gida* (frigid). ½. White. July. Syria. 1817.
,, *Frœli'chii* (Frœlich's). ½. Blue. Carinthia. 1888.
,, *gaudinia'na* (Gaudinian). 2–3. Lurid purple. Switzerland. 1888.
,, *Ge'bleri* (Gebler's). See G. DECUMBENS.
,, *ge'lida* (ice-cold). 1. Yellowish. July. Asia Minor. 1807.
,, *hy'brida* (hybrid). 2½. Yellow, purple. July. Switzerland. 1817.
,, *imbrica'ta* (imbricated). ½. Blue. July. Switzerland. 1819.
,, *incarna'ta* (flesh-coloured). See G. OCHROLEUCA.
,, *interme'dia* (intermediate). See G. OCHROLEUCA.
,, *Kesselri'ngi* (Kesselring's). ½. Whitish, with dotted violet lines. Turkestan. 1882.
,, *kochia'na* (Kochian). See G. ACAULIS KOCHIANA.
,, *kummeria'na* (Kummerian). Purple, yellow. N. Tyrol. 1888.
,, *Kurroo'* (Kurroo). ½. Blue and white spots. Himalaya. 1880.
,, ,, *bre'videns* (short-toothed). See G. DAHURICA.
,, *Lawre'ncei* (Lawrence's). Light blue, with darker lines. Lake Baikal District. 1905.
,, *linea'ris* (narrow-*leaved*). 1. Blue. August. Carolina. 1816.
,, *lu'tea* (yellow). 4. Yellow. July. Alps. 1596.
,, *macrophy'lla* (large-leaved). 1. Blue. July. Siberia. 1796.
,, *ochroleu'ca* (cream-*flowered*) 2. Yellowish. N. Amer. 1803.
,, *Olivie'ri* (Olivier's). See G. DECUMBENS.
,, *orega'na* (Oregon). 1–2. Bright blue. N.W. Amer. 1892.
,, *orna'ta* (adorned). ½. Turquoise blue. Himalaya. 1880.
,, *panno'nica* (Pannonian). 1. Purple. July. Alps.
,, *Pa'rryi* (Parry's). N. Amer.
,, *phlogifo'lia* (Phlox-leaved). Transsylvania.
,, *plebe'ia* (vulgar). See G. AMARELLA.
,, *Pneumona'nthe* (wind-flower). ½. Blue. August. England.
,, ,, *flo're-a'lbo* (white-flowered). ½. White, green. August. Germany. 1834.
,, ,, *gutta'ta* (spotted). ½. Blue. August.
,, *Przewa'lskii* (Przewalsky's). China.
,, *Pseu'do-pneumona'nthe* (bastard-wind-flower). See G. LINEARIS.
,, *pu'mila* (dwarf). ½. Blue. May. Switzerland. 1817.
,, *puncta'ta* (spotted-*flowered*). 3. Yellow. July. Alps. 1775.
,, *purpu'rea* (purple). 3. Blue. July. Alps. 1768.
,, ,, *flo're-a'lbo* (white-flowered). 2. White. July. European Alps. 1823.
,, *pyrena'ica* (Pyrenean). ½. Blue. July. Pyrenees. 1825.
,, *quadrifo'lia* (four-leaved). See CHLORA QUADRIFOLIA.
,, *quinquefio'ra* (five-flowered). ½. Blue. August. N. Amer. 1824.
,, *ru'bra* (red). Yellow, purplish outside. Switzerland. 1888.
,, *Sapona'ria* (soapwort-*leaved*). 2. Blue. August. N. Amer. 1776. "Soapwort Gentian."
,, ,, *flo're-a'lbo* (white-flowered). ½. White. September. N. Amer. 1826.
,, *sca'bra* (rough). Lilac. Eastern Asia.
G. septe'mfida (seven-cleft). ½. Blue. July. Persia. 1804.
,, ,, *gutta'ta* (spotted). ½. Blue. June. Levant. 1804.
,, ,, *cauca'sica* (Caucasian). Blue. August. Caucasus.
,, ,, *cordifo'lia* (heart-leaved). Blue. Leaves heart-shaped. Asia Minor.
,, *siphona'ntha* (tube-flowered). China.
,, *strami'nea* (straw-coloured). China.
,, *stylo'phora* (style-bearing). Sikkim.
,, *Thoma'sii* (Thomas's). See G. RUBRA.
,, *tianscha'nica* (Tianschanic). Central Asia.
,, ,, *glomera'ta* (clustered).
,, *tibe'tica* (Tibetan). Himalaya.
,, *triflo'ra* (three-flowered). ½. Blue. July. Siberia. 1807.
,, *umbella'ta* (umbelled). See G. AUREA.
,, *utriculo'sa* (bladdery). ½. Purple. April. S. Europe. 1822.
,, *Veitchio'rum* (The Veitches'). Intense blue. W. China. 1909.
,, *ve'rna* (spring). ½. Blue. May. England.
,, ,, *flo're-a'lbo* (white-flowered). ½. White. April.
,, *Walujе'wi* (Walujew's). White, dotted with blue. Turkestan. 1884.
,, *Weschniakow'i* (Weschniakow's). Turkestan.

GEODO'RUM. (From *ge*, the earth, and *doru*, a spear; the flower-spikes arise from rhizomes in the soil. Nat. ord. Orchidaceæ.)

Terrestrial Orchids requiring the warmth and moisture of a stove.

G. ca'ndidum (white). 1. White. Burma.
,, *citri'num* (citron-scented). 1. Yellow. Autumn. E. Ind. 1800.
,, *dilata'tum* (broadened). 1. Flesh-coloured. Summer. India.
,, *duperrea'num* (Duperrean). ½–1. White; lip white, veined purple. Cochin-China. 1882.
,, *fuca'tum* (brownish). 1. Pink. July. Ceylon. 1832.
,, *purpu'reum* (purple). White, dotted with purple. Himalaya. 1908.

GEOFFRÆ'A. Bastard Cabbage-tree. (Named after *Dr. Geoffroy*, of Paris, author of *Materia Medica*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. *17-Diadelphia, 4-Pentagynia*. Allied to Andira.)

Stove evergreen trees. Cuttings of ripened shoots in sand, in peat, and under a bell-glass; peat and loam. Summer temp., 60° to 75°; winter, 48° to 55°.

G. Bredeme'yeri (Bredemeyer's). See G. SUPERBA.
,, *ine'rmis* (unarmed). See ANDIRA INERMIS.
,, *racemo'sa* (racemed). See ANDIRA EXCELSA.
,, *spino'sa* (spined). 30. Yellow. W. Ind. 1818.
,, *supe'rba* (superb). Yellow. July. Caraccas. 1824.
,, *viola'cea* (violet). 20. Violet. Guiana. 1823.

GEOFFRO'YA. See GEOFFRÆA.

GEOMETRA. The *Amphidasis* and *Hybernia* of some entomologists is a genus of moths including *G. Pilosaria*, Pale Brindled Beauty-Moth, which appears in March; eggs deposited in bands round a twig, as done by the Lackey-Moth. Caterpillars appear with the opening leaves of the elm, lime, lilac, and apple-tree. They are, at first, a light green.

Hybernia defoliaria, Lime-Looper, or Mottled Umbre-Moth, feeds on the leaves of the lime and apple. Moth appears in November. Caterpillar reddish, with a bright yellow stripe on each side. Female moth has no wings, so that a piece of stiff brown paper smeared over with cart grease, and bound round a tree's stem, prevents its ascent, as in the case of the Winter Moth.

Fidonia piniaria attacks the pine and fir tribe.

GEO'NOMA. (From *geonomos*, skilled in agriculture; as much as to say that only a skilful planter could increase these palms. Nat. ord. *Palms* [Palmaceæ]. Linn. *22-Diœcia, 6-Hexandria*. Allied to Borassus.)

Stove palms. Seed; rich, sandy loam. Summer temp., 60° to 80°; winter, 55° to 60°.

G. acau'lis (stemless). 5. Brazil. 1823.
,, *acutiflo'ra* (acute-flowered). See G. BACULIFERA.

G. baculi'fera (small-berry-bearing). 8. Guiana. 1846.
„ *bine'rvia* (two-nerved). Costa Rica.
„ *Carde'ri* (Carder's). See PRESTŒA CARDERI.
„ *coralli'fera* (coral-bearing). See CHAMÆDOREA ERNESTI-AUGUSTI.
„ *deco'ra* (handsome). Dwarf, with pinnate leaves and reddish-brown stalks. 1894.
„ *deve'rsa* (turned-downwards). 3. Guiana. 1846.
„ *fenestra'ta* (windowed). See MALORTIEA GRACILIS.
„ *fra'gilis* (fragile). Guiana. 1849.
„ *ghiesbreghtia'na* (Ghiesbreghtian). See CALYPTROGYNE GHIESBREGHTIANA.
„ *gra'cilis* (slender). Costa Rica. 1874.
„ *He'rbstii* (Herbst's). Leaf segments broader than in *G. gracilis*. 1889.
„ *imperia'lis* (imperial). Colombia. 1868.
„ *interme'dia* (intermediate). Leaves pinnate; petioles reddish-brown. 1882.
„ *interru'pta* (interrupted). 6. Brazil. 1849.
„ *lacera'ta* (lacerated). Central Amer. 1869.
„ *macro'stachys* (large-spiked). 5. Brazil. 1823.
„ *magni'fica* (magnificent). Mexico. 1856.
„ *martia'na* (Martian). Brazil.
„ „ *Seema'nni* (Seeman's). See G. SEEMANNI.
„ *ma'xima* (largest). 12. Guiana.
„ *pinna'tifrons* (leaflet-leaved). 15. Caraccas. 1821.
„ *pohlia'na* (Pohl's). Brazil.
„ *portea'na* (Port's). Brazil. 1853.
„ *pri'nceps* (chief). Colombia.
„ *pulche'lla* (pretty). Colombia. 1853.
„ *pu'mila* (dwarf). Colombia.
„ *pynærtia'na* (Pynærtian). See IGUANURA DIFFUSA.
„ *schottia'na* (Schott's). Brazil. 1820.
„ *Seema'nni* (Seemann's). Nicaragua. 1873.
„ *siesmayeria'na* (Siesmayerian). Leaves tinged with red when young. 1896.
„ *simpli'cifrons* (simple-leaved). 5. Trinidad. 1818.
„ *spixia'na* (Spix's). 15. Brazil. 1824.
„ *Swa'rtzii* (Swartz's). 50. Cuba. 1878.
„ *tenuifo'lia* (slender-leaved). Leaves glaucous, tinted rose when young. Eastern Peru. 1895.
„ *unda'ta* (waved). Colombia. 1850.
„ *Verschaffe'ltii* (Verschaffelt's). See CALYPTROGYNE GHIESBREGHTIANA.
„ *zamore'nsis* (Zamoran). Ecuador. 1869.

GEO'RCHIS. See GOODYERA.

GEORGI'NA. Attempts were made some years since to substitute this name for that of Dahlia; but the law of priority settles the question. Dahlia was named by the Spanish botanist Cavanilles in 1791; and neither Wildenow nor Sprengel's Georgina appeared for more than eighty years subsequently.

GERA'NIUM. A popular name for Pelargonium, but liable to cause ambiguity, because many of those who use the name are referring to Pelargonium, without knowing the difference. The principal differences are as follows:—

Gera'nium.—Flowers regular, without a tubular nectary. Stamens ten. Plants mostly quite hardy.

Pelargo'nium.—Flowers irregular, the upper two petals being different from the three lower. The posterior sepal has a spur or nectary running down the stalk of the flower. Stamens ten, but three, four, or eight of them may be without anthers. All require greenhouse protection except a few, which are half-hardy.

GERA'NIUM. Crane's Bill. (From *geranos*, a crane; referring to the beak-like torus, or projection beyond the seeds. Nat. ord. *Cranesbills* [Geraniaceæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

A very few require the pit or greenhouse in winter, and these should have equal portions of peat, loam, leaf-mould, and sand. Almost all are hardy, and flourish in common ground; many grow under the shade of trees and hedges, and thus secure a portion of vegetable earth. There are worse things than the common weed *robertia'num* for twining itself round the sides of a rustic basket, or crawling over a rock-work. The following are a few of the best for gardens:—*arme'num*, *stria'tum*, *sylva'ticum*, *Endre'ssi*, *ibe'ricum*, *sangui'neum*, *lancastrie'nse*, *wallichia'num*, *prate'nse*, *prate'nse flo're-ple'no*, *dahu'ricum*, *pilo'sum*, and *crista'tum*.

HALF-HARDY HERBACEOUS.

G. aconitifo'lium (aconite-leaved). See G. RIVULARE.
„ *arge'nteum* (silvery-*leaved*). ¼. Striped. July. S. Europe. 1699.
„ *atla'nticum* (Atlantic). 1½. Purple. Algeria. 1878.
„ *ca'ffrum* (Caffrarian). ½. Lilac. S. Africa. 1862.
„ *cane'scens* (hoary). ½. Pink. June. S. Africa. 1787.
„ *inca'num* (hoary-*many-cleft*). ½. Pink. June. S. Africa. 1701.
„ *mexica'num* (Mexican). 1. Pale purple. August. Mexico. 1832.
„ *ornitho'podum* (bird's-foot). White.

HARDY ANNUALS.

G. asphodeloi'des (Asphodel-like). Pale. June. Greece, Asia Minor. 1821.
„ *carolinia'num* (Carolinian). Rose. July. N. Amer. 1817.
„ *lanugino'sum* (woolly). See G. CAROLINIANUM.
„ *lu'cidum* (shining). 1. Pink. June. Britain.
„ *pa'llens* (pale). See G. ASPHODELOIDES.
„ *robertia'num* (Robertian). 1. Red. May. Britain.
„ „ *flo're-a'lbo* (white-flowered). 1. White. Summer. Britain.

HARDY HERBACEOUS.

G. affi'ne (related). 1. Blue. June. Altaia. 1832.
„ *alba'num* (Alban). 1½. Red. July. Caucasus; Persia. 1820.
„ *albiflo'rum* (white-flowered). See G. RICHARDSONI.
„ *alta'icum* (Altaic). 1½. Pale red. July. Altaia. 1818.
„ *anemonefo'lium* (Anemone-leaved). 3. Red. August. Madeira. 1788. Greenhouse evergreen.
„ *angula'tum* (angular-*stalked*). 1. Purple. June. Thrace. 1789.
„ *arme'num* (Armenian). 2. Red, with black centre. Armenia. 1874.
„ *balka'num* (Balkan). See G. MACRORRHIZUM.
„ *batrachioi'des* (Batrachium-like). See G. SYLVATICUM.
„ *bohe'micum* (Bohemian). Bohemia.
„ *cæru'leum* (blue). See G. PRATENSE.
„ *cine'reum* (grey). 1. Red. August. Pyrenees.
„ „ *a'lbum* (white). White.
„ *colli'num* (hill). 1. Purple. July. Siberia. 1815.
„ *crista'tum* (crested). See G. ALBANUM.
„ *dahu'ricum* (Dahurian). 1. Purple. June. Dahuria. 1820.
„ *Endre'ssii* (Endress'). 1½–2. Deep rose. Pyrenees.
„ *eria'nthum* (woolly-flowered). 2. Crimson. June. California. 1839.
„ *erioste'mon* (woolly-stamened). 1½. Blue. July. Siberia. 1822.
„ „ *pa'llidum* (pale). 1½. Pale blue. August. Nepaul. 1822.
„ *Fremo'ntii* (Fremont's). 1–1½. Purple-lilac, with dark veins. N. Amer. 1909.
„ *fu'scum* (brown). See G. PHÆUM.
„ *gra'cile* (slender). 1½. Purple. Caucasus.
„ *grandiflo'rum* (large-flowered). Dwarfer, with larger flowers than *G. pratense*. Himalaya. 1902.
„ *grevillea'num* (Grevillean). Blue. Himalaya. 1905.
„ *gymnocau'lon* (naked-stemmed). See G. IBERICUM.
„ *ibe'ricum* (Iberian). 1½. Blue. July. Levant. 1802.
„ *inci'sum* (cut). 2. Purple. N.W. Amer. 1901.
„ *Lambe'rti* (Lambert's). 1½. Red. July. Nepaul. 1824.
„ *lancastrie'nse* (Lancaster). See G. SANGUINEUM LANCASTRIENSE.
„ *Londe'sii* (Londes's). 2. Purple. Siberia.
„ *lo'ngipes* (long-stalked) See G. COLLINUM.
„ *Lo'wei* (Lowe's) See G. ANEMONÆFOLIUM.
„ *macrorrhi'zum* (large-rooted). 1½. Purple. June. Italy. 1576.
„ *macula'tum* (spotted). ¾. Purple. July. N. Amer. 1732.
„ *malvæflo'rum* (mallow-flowered). 1½. Purple. Spain and Morocco.
„ *margarita'ceum* (pearly). White. Origin unknown.
„ *multi'fidum* (much-cut). 1. Red. August. S. Africa. 1817.
„ *nemoro'sum* (grove). See G. ASPHODELOIDES.
„ *nepale'nse* (Nepaulese). ½. Red. June. Nepaul. 1818.

G. nodo'sum (thick-jointed). 1. Purple. Europe.
,, *palma'tum* (palmate). See G. ANEMONÆFOLIUM.
,, *palu'stre* (marsh). 2. Purple. July. Germany. 1732.
,, *parvifio'rum* (small-flowered). ½. Purple. June. Van Diemen's Land. 1816.
,, *phæ'um* (dusky). 1½. Black. May. England.
,, *pilo'sum* (shaggy). 3. Purple. July. New Zealand. 1821.
,, *platya'nthum* (flat-flowered). 2–3. Rose-purple. Central and Western China. 1906.
,, *prate'nse* (meadow. *Crowfoot-leaved*). 1½. Blue. June. Britain.
,, ,, *flo're-a'lbo* (white-flowered). 1½. White. June. Britain.
,, ,, *flo're-a'lbo-ple'no* (double-white-flowered). 2. White. May. Britain.
,, ,, *flo're-ple'no* (double-flowered). 2. Blue. June. Scotland.
,, ,, *flo're-variega'ta* (variegated-flowered). 1½. Variegated. July. Britain.
,, *pyrena'icum* (Pyrenean). 1. Purple. June. Britain.
,, *refle'xum* (bent-back-*flowered*). 1½. Red. July. Italy. 1758.
,, *Richardso'nii* (Richardson's). 1½. Whitish. July. N.W. Amer. 1827.
,, *rivula're* (river-bank). 1. White. June. Europe.
,, *rubifo'lium* (bramble-leaved). See G. PRATENSE.
,, *sangui'neum* (bloody). 1. Crimson. July. Britain.
,, ,, *lancastrie'nse* (Lancastrian). ¾. Pink, red veined. June. Lancashire. Trailer.
,, ,, *villosi'ssimum* (hairiest). ¼. Blood. July. Europe. Trailer.
,, *sessilifio'rum* (stalkless-flowered). 1. White and purple. Australia; Chili. 1894.
,, *sibi'ricum* (Siberian). 1. White. July. Siberia. 1758.
,, *stria'tum* (channelled). 1. Striped. August. Italy. 1629.
,, *subcaule'scens* (short-stemmed). ½. Europe.
,, *sylva'ticum* (wood). 1–2. Purple. July. Britain.
,, *Trave'rsii* (Travers's). ½. Light purple, lined carmine. New Zealand. 1898.
,, *tubero'sum* (tuberose-*rooted*). 1. Pink. July. Italy. 1596.
,, ,, *Charle'sii* (Charles's). Afghanistan. 1887.
,, ,, *ramo'sum* (branching). 1. Purple. July. S. Europe.
,, *umbro'sum* (shaded). See G. PYRENAICUM.
,, *vlassovia'num* (Vlassov's). 1. Red. July. Siberia. 1821.
,, *wallichia'num* (Wallich's). ¾. Striped. July. Nepaul. 1819.
,, *Wilfo'rdi* (Wildford's). Mandshuria.
,, *yedoe'nse* (Yedo). Japan.

GERA'RDIA. (Named after *Gerard*, the English herbalist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

All but *delphinifo'lia* from North America. Annuals, biennials, and perennials by seed, in sandy peat; perennials and biennials also by cuttings in sandy peat, under a hand-light; such as *quercifo'lia* by divisions in spring; sandy, fibrous loam, if peat is not to be had; the stove species requires similar treatment, but extra heat.

STOVE HERBACEOUS.

G. delphinifo'lia (larkspur-leaved). See SOPUBIA DELPHINIFOLIA.

HARDY ANNUALS AND BIENNIALS.

G. aphy'lla (leafless-*stemmed*). 3. Rose. July. 1834. Annual
,, *mari'tima* (sea-side). 2. Yellow. July. 1823.
,, *Pedicula'ria* (Pedicularis-like). Yellow. June. 1826.
,, *purpu'rea* (purple). 1½. Purple. July. 1772.
,, *tenuifo'lia* (slender-leaved). 1½. Pale violet. July. Mexico. 1812.

HARDY HERBACEOUS.

G. fla'va (yellow). 1½. Yellow. July. 1796.
,, *quercifo'lia* (oak-leaved). 1. Yellow. July. 1812.

GE'RBERA. (Named after *Gerber*, a German naturalist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Greenhouse or half-hardy perennials; seeds or cuttings of the side-shoots, and preserved over the winter; sandy loam and a little peat. Winter temp., 40° to 45°.

G. Ana'ndria (Anandria). 1. Siberia; Japan.
,, *auranti'aca* (orange). 1½. Brilliant red. Natal and Transvaal. 1905.
,, *Bellidia'strum* (Bellidiastrum). See G. ANANDRIA.
,, *crena'ta* (scollop-*leaved*). See MAIRIA CRENATA.
,, *E'lsæ* (Mrs. Elsa's). See G. AURANTIACA.
,, *Jameso'ni* (Jameson's). 1–2. Orange-scarlet. S. Africa. 1889.
,, ,, *transvaale'nsis* (Transvaal). Flowers larger and lighter. S. Africa. 1901.
,, *kunzea'na* (Kunzean). 1. Himalaya.
,, *ni'vea* (snowy). 1. White. Himalaya.
,, *viridifo'lia* (green-leaved). 1. White. S. Africa. 1896.

GERMAN CATCHFLY. *Ly'chnis Visca'ria.*

GERMANDER. *Teu'crium.*

GERMINATION is the sprouting or first step in vegetation of a seed. To enable it to germinate it must have a perfectly developed embryo, and be ripe, or nearly ripe. It must not be too old, and there must be present a certain degree of heat, moisture, and oxygen gas, the latter being furnished by the air.

GEROPO'GON. Old Man's Beard. (From *geron*, old man, and *pogon*, a beard; referring to the hair-like pappus which crowns the calyx in this order. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia* 1-*Æqualis*. See TRAGOPOGON.)

G. calycula'tus (*large*-calyxed). See SCORZONERA HIRSUTA.
,, *gla'ber* (smooth). See TRAGOPOGON CROCIFOLIUS.
,, *hirsu'tus* (hairy). See TRAGOPOGON CROCIFOLIUS.

GERRARDA'NTHUS. (Commemorative of *Gerrard*, a botanical collector, and *anthos*, a flower. Nat. ord. Cucurbitaceæ.)

Stove climber. Seeds. Fibrous loam and plenty of sand.

G. tomento'sa (felted). Yellow. August. S. Africa. 1874.

GE'SNERA. (Named after *Conrad Gesner*, a celebrated botanist of Zurich. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Gloxinia.

A most interesting family of plants that, by regulating their rest period, may be brought into bloom at almost any time. All scarlet-flowered, except where otherwise stated.

G. acau'lis (stemless). See PENTARHAPHIA SLOANEI.
,, *aggrega'ta* (aggregate). 3. June. Brazil. 1816.
,, *allagophy'lla* (shifting-leaved). 1½. Orange. July. Brazil. 1834.
,, *Arno'ldi* (Arnold's). 1. July. Brazil. 1841.
,, *barba'ta* (bearded). See LIGERIA BARBATA.
,, *Bla'ssii* (Blass'). 1. Brazil.
,, *breviflo'ra* (short-flowered). See ISOLOMA BREVIFLORUM.
,, *bulbo'sa* (bulbous). 2. June. Brazil. 1816.
,, *calyci'na* (*large*-calyxed). See PENTARHAPHIA CALYCINA.
,, *caracasa'na* (Caracas). 2. July. Caracas. 1842.
,, *cardina'lis* (scarlet). 1. Scarlet.
,, ,, *purpu'rea* (purple). ½. Purple. August. 1847.
,, *chelonoi'des* (Chelone-like). Colombia.
,, *cinnabari'na* (cinnabar). See NÆGELIA CINNABARINA.
,, *cochlea'ris* (shell-like). 2. Scarlet. May. Brazil.
,, *Coope'ri* (Mr. Cooper's). 2. May. Brazil. 1829.
,, *corda'ta* (heart-*leaved*). ¾. Pale scarlet. July.
,, *corymbo'sa* (corymbed). 2. July. Jamaica. 1822.
,, *Digita'lis* (foxglove-like). June. Brazil. 1842.
,, *di'scolor* (two-coloured). Red, yellow. September. S. Amer. 1843.
,, *Donkla'rii* (Donklar's). 2. Red. June. Colombia.
,, *Dougla'sii* (Douglas's). 1½. Red, yellow. September. Rio Janeiro. 1826.
,, ,, *verticilla'ta* (whorled-*flowered*). 2. Crimson. May. Rio Janeiro. 1835.

G. Duva'lii (Duval's). Gardens.
„ *elli'ptica* (oval). Colombia.
„ „ *lu'tea* (yellow-*flowered*). 1. Yellow. May. Santa Martha. 1844.
„ *elonga'ta* (elongated). 2. Scarlet. September. S. Amer. 1830.
„ „ *frutico'sa* (shrubby). 2. August.
„ *faucia'lis* (wide-mouthed). 2. July. Brazil. 1833.
„ *Gardne'ri* (Gardner's). See HOUTTEA LEPTOPUS.
„ *gerardia'na* (Gerard's). 2. Red, yellow. September. S. Amer. 1843.
„ *gloxiniæflo'ra* (Gloxinia-flowered). Pink. 1860.
„ *gollmeria'na* (Gollmerian). Scarlet, yellow. Venezuela.
„ *gra'cilis* (slender). See G. PUNCTATA.
„ *herbertia'na* (Herbertian). See NÆGELIA GEROLTIANA.
„ *hirsu'ta* (hairy). See ISOLOMA RUBRICAULE.
„ *hondé'nsis* (Honda). See PENTARHAPHIA LIBANENSIS.
„ *Hooke'ri* (Hooker's). Scarlet. Colombia.
„ *hu'milis* (humble). See PENTARHAPHIA HUMILIS.
„ *lasia'ntha* (woolly-flowered). See ISOLOMA DEPPEANUM.
„ *lateri'tia* (brick-red). 2. July. Brazil. 1834.
„ *latifo'lia* (broad-leaved). August. Brazil.
„ *Leopo'ldii* (Leopold's). Red. Brazil.
„ *libane'nsis* (Lebanon. *Many-flowered*). See PENTARHAPHIA LIBANENSIS.
„ *Lindle'yi* (Lindley's). Scarlet, yellow. July. Brazil. 1825.
„ *longiflo'ra* (long-flowered). See ACHIMENES LONGIFLORA.
„ *longifo'lia* (long-leaved). See ISOLOMA LONGIFOLIUM.
„ *macra'ntha* (large-flowered). See G. CARDINALIS.
„ „ *purpu'rea* (purple-*flowered*). See G. CARDINALIS PURPUREA.
„ *macrosta'chya* (large-spiked). See G. LATIFOLIA.
„ *macula'ta* (spotted). Purple, spotted. Brazil.
„ *magni'fica* (magnificent). Purple. August. Brazil.
„ *Ma'rchii* (March's). 3. Scarlet. Brazil. 1844.
„ *multiflo'ra* (many-flowered). See NÆGELIA MULTIFLORA.
„ *nægelioi'des* (Nægelia-like). A race of garden hybrids.
„ *oblonga'ta* (oblong). See G. ELONGATA.
„ *palu'stris* (marsh). See G. SCEPTRUM IGNEA.
„ *pardi'na* (leopard-*spotted*). See HOUTTEA PARDINA.
„ *penduli'na* (drooping-*flowered*). 2. June. S. Amer. 1825.
„ *pi'cta* (painted). See ISOLOMA PICTUM.
„ *polya'ntha* (many-flowered). 2. June. Brazil. 1839.
„ *prasina'ta* (leek-green). See RHYTIDOPHYLLUM PRASINATUM.
„ *puncta'ta* (spotted). Purple spotted. Colombia (?). 1848.
„ *purpu'rea* (purple). See G. MACULATA.
„ *refle'xa* (bent-back). April. Valparaiso. 1837.
„ *Regi'næ* (Queen's). Bluish-purple. 1903.
„ *rubricau'lis* (red-stemmed). See ISOLOMA RUBRICAULÆ.
„ *rupe'stris* (rock-inhabiting). See G. TUBEROSA.
„ *rupi'cola* (rock). ½. May. Brazil. 1835.
„ *ru'tila* (brilliant). 2. Scarlet, yellow. August. Brazil. 1825.
„ „ *a'tro-sangui'nea* (dark red). 2. Crimson. August. Brazil. 1826.
„ *sca'bra* (rough). See PENTARHAPHIA SCABRA.
„ *Sce'ptrum* (sceptred). 4. July. Brazil. 1836.
„ „ *i'gnea* (fiery). 3. Reddish-yellow. September. Brazil. 1835.
„ *schiedea'na* (Schiede's). See ISOLOMA SCHIEDEANUM.
„ *Seema'nnii* (Seemann's). See ISOLOMA SEEMANNII.
„ *Sello'vii* (Sellow's). 2. July. Brazil. 1835.
„ *Sello'i* (Sellow's) of G. Don. See G. LATERITIA.
„ *spica'ta* (spiked). Grenada. 1831.
„ *sple'ndens* (splendid). Scarlet. Brazil.
„ *stri'cta* (upright). 5. July. Brazil. 1835.
„ *Sutto'nii* (Captain Sutton's). 2. July. Rio Janeiro. 1833.
„ „ *a'lba* (white). July. Brazil. 1840.
„ „ *pi'cta* (painted). See G. SPLENDENS.
„ *tetraphy'lla* (four-leaved). See G. LEOPOLDII.
„ *tomento'sa* (felted). See RHYTIDOPHYLLUM TOMENTOSUM.
„ *triflo'ra* (three-flowered). See ISOLOMA TRIFLORUM.
„ *tubero'sa* (tuberous). ½. Autumn. Brazil. 1834.
„ *tubiflo'ra* (tube-flowered). See ACHIMENES TUBIFLORA.
G. verticilla'ta (whorled). See G. MACULATA.
„ *vesti'ta* (clothed). See ISOLOMA VESTITUM.
„ *zebri'na* (zebra-*striped*). See NÆGELIA ZEBRINA.

Propagation: by Cuttings.—They may be propagated by cuttings of three kinds: 1st, the young shoots, as soon as they are three inches long, springing from the old tubers (these are the best); 2nd, leaves taken off with a bud at the base; and 3rd, by the leaves only, without buds. The first mode may be used when the kind or variety is plentiful, and the tubers so strong as to send out more shoots than are wanted for flowering; the second mode, when the variety is new and more scarce; and the last when it is more rare still. There is an advantage in the first and second mode, that the cuttings, if struck early in the year, will, with moderate care and attention to re-potting, flower the same year; whereas those struck from leaves, or parts of leaves, will only form small tubers that season. Each kind of cutting requires to be put in sand, under bell or hand-glasses, in bottom-heat, to strike them quickly. A moist, warm heat is necessary; a moist, cold place would rot the cuttings immediately. Such species as do not make tubers must be propagated by the first kind of cuttings.

By Seed—To raise new varieties it is necessary to save seed. Choose the finest and brightest-coloured to save it from. As soon as it is ripe, gather it and dry it; keep it very dry till the March following; then sow the seed on the surface of a light, sandy compost, place it in a warm, moist atmosphere, and as soon as the seedlings are up, and the plants have attained a leaf or two, transplant them thinly on the surface of shallow pots, and let them grow there during the summer. Allow them to go to rest in the autumn, and keep them in the same pots through the winter, giving but little water. As soon as life appears again in the spring, pot them off singly into small pots, watering and re-potting the same as the cuttings; but it is more than probable they will not flower till the second year.

Soil.—Light, fibrous loam, turfy peat, and half-decayed leaves, in equal parts, with a due portion of sand, well-mixed, but not sifted.

Summer Culture.—To have a succession of bloom, pot a portion of the tubers in January, and place them in heat, giving a little water. Temp., 60° to 80°. Pot a second batch about the middle of February, and another towards the end of March. These will supply flowers for several months. Put them in pots, according to the size of the tubers; keep them regularly watered, but never very wet. They may be syringed occasionally previously to flowering, but not much; for the leaves are so woolly that they hold moisture too long if syringed severely. When the blooming season is over they may be set out of doors during summer, but should be sheltered from heavy rains. They will then gradually go to rest.

Winter Culture.—All that they require is to be kept in their pots in a place where neither frost nor wet can reach them; yet the place should never be below 45°, nor above 55°. If the cold is much lower they will be apt to rot; and if higher, to start into growth.

Diseases.—The only disease that these plants are subject to is a kind of dry rot in the bulbs, which changes the substance into a soft pulp, destroying the buds, and so causing them to perish. There is no cure for it.

GETHY'LIS. (From *getheo*, to rejoice; referring to the sweetness of the flowers of some of them. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Sternbergia.)

Here the Amaryllids reach their minimum stature; *G. ciliaris*, if not the smallest, is as dwarf as any in the order. Greenhouse bulbs, from South Africa, with white flowers. Offsets and seeds; sandy loam and peat; kept nearly dry in winter. Winter temp., 35° to 45°.

G. a'fra (African). ½. July. 1820.
„ *cilia'ris* (hair-fringed). ½. July. 1788.
„ *lanceola'ta* (spear-head-*leaved*). See APODOLIRION LANCEOLATUM.
„ *spira'lis* (spiral-*leaved*). ½. July. 1780.
„ *villo'sa* (shaggy). ½. July. 1787.

GETO'NIA. (Probably the native name. Nat. ord. *Myrobalans* [Combretaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Calycopteris.)

Stove evergreen climber. Cuttings of ripened shoots

in sand, under a glass, in bottom-heat; sandy peat and fibrous loam. Summer temp., 60° to 80°; winter, 50° to 55°.

G. floribu'nda (bundle-flowered). See CALYCOPTERIS FLORIBUNDA.

„ *nu'tans* (nodding). See CALYCOPTERIS FLORIBUNDA.

GE'UM. Avens. (From *geyo*, to stimulate; the roots of some of them, and of allied species, have the same properties as Peruvian bark. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*. Allied to Potentilla.)

Hardy herbaceous perennials. *G. chiloënse grandiflorum* is very showy. Seeds, and dividing the plants in spring; sandy loam, with a little leaf-mould.

G. agrimonioi'des (agrimony-like). 1½. White. July. N. Amer. 1811.

„ *a'lbum* (white). 1. White. July. N. Amer. 1730.

„ *ale'ppicum* (Aleppian). See G. STRICTUM.

„ *anemonoi'des* (Anemone-like). ½. July. Kamtschatka. 1820.

„ *atla'nticum* (Atlantic). See G. SYLVATICUM.

„ *brachype'talum* (short-petaled). 1. Yellow. July. 1818.

„ *calthifo'lium* (Caltha-leaved). 1. Yellow. July. Arctic America. 1820.

„ *canade'nse* (Canadian). 1½. Yellow. July. Canada. 1810.

„ *chilo'nse* (Chili). 2. Copper. July. Chili. 1826.

„ „ *a'tro-sangui'neum* (dark-blood-coloured). 2. Dark blood.

„ „ *flo're-ple'no* (double-flowered). Bright scarlet.

„ „ *grandiflo'rum* (large-flowered). 1½. Scarlet. July.

„ „ *minia'tum* (cinnabar). 1½. Orange-salmon.

„ *cilia'tum* (hair-fringed). See G. TRIFLORUM.

„ *cocci'neum* (scarlet). 1½. Orange-scarlet. Greece; Asia Minor.

„ *cocci'neum* (scarlet) of Lindley. See G. CHILOËNSE.

„ *ela'tum* (tall). 1–2. Golden-yellow. Himalaya. 1879.

„ *Ewe'ni* (Ewen's). 1½. Orange-scarlet, semi-double. Gardens. 1906.

„ *glaci'ale* (glacial). ½. July. Siberia. 1819.

„ *Heldrei'chi* (Heldreich's). 1–1½. Deep orange-red. Gardens. 1896.

„ *heterophy'llum* (various-leaved). See G. VIRGINIANUM.

„ *hi'spidum* (roughly-hairy). Spain.

„ *hy'bridum* (hybrid). 1. Red, brown. July. Europe.

„ *inclina'tum* (inclined). 1. Yellow. Switzerland.

„ *interme'dium* (intermediate). 1½. Yellow. July. Europe (Britain). 1794.

„ *japo'nicum* (Japanese). 2. Yellow. July. Japan. 1804.

„ *kolbia'num* (Kolbian). See G. RHÆTICUM.

„ *Laxma'nni* (Laxmann's). Yellow. April. Siberia.

„ *macedo'nicum* (Macedonian). See G. COCCINEUM.

„ *macrophy'llum* (large-leaved). See G. JAPONICUM.

„ *magella'nicum* (Magellan). See G. PARVIFLORUM.

„ *mo'lle* (soft). Servia.

„ *monta'num* (mountain). ½. Yellow. July. Europe. 1597.

„ „ *grandiflo'rum* (large-flowered). Yellow, larger.

„ *niva'le a'lbum* (snowy-white). White. June.

„ *nu'tans* (nodding). 1½. Yellow. July. N. Amer. 1825.

„ *parviflo'rum* (small-flowered). Antarctic regions.

„ *Pe'chii* (Peck's). See G. RADIATUM.

„ *portenschlagia'num* (Portenschlagian). 1½. Yellow. July. 1820.

„ *pyrena'icum* (Pyrenean). 1½. Yellow. July. Pyrenees. 1804.

„ *Que'llyon* (Quellyon). See G. CHILOËNSE.

„ *radia'tum* (radiated.) 1. Yellow. July. N. Amer. 1815.

„ *ranunculoi'des* (Ranunculus-like). See G. STRICTUM.

„ *re'ptans* (creeping). ½. July. Europe. 1597.

„ *rhæ'ticum* (Rhætic). ½–¾. Bright yellow. Engadine, Switzerland. 1882.

„ *riva'le* (river-bank). 1–2. Purple-brown. May to July. Britain. "Water Avens."

„ *Ro'ssii* (Ross's). N. Amer.

„ *rotundifo'lium* (round-leaved). See G. CALTHIFOLIUM.

„ *Roy'lei* (Royle's). Himalaya.

„ *specio'sum* (showy). 1½–2. Orange-yellow. Caucasus. 1897.

G. stri'ctum (upright). 1. Striped. June. N. Amer. 1778.

„ *sylva'ticum* (wood). 1. Yellow. July. Portugal; N. Africa. 1810.

„ *Tournefo'rtii* (Tournefort's). See G. PYRENAICUM.

„ *trifio'rum* (three-flowered). 1. Yellow. July. N. Amer. 1818.

„ *tyrole'nse* (Tyrolese). Tyrol.

„ *virginia'num* (Virginian). 1½. White. July. N. Amer.

GIANT FENNEL. *Fe'rula.*

GIBRALTAR MINT. *Me'ntha Pule'gium gibralta'ricum.*

GIGANTOCHLO'A. (From *gigas*, giant, and *chloa*, young grass; in reference to the fresh green colour. Nat. ord. Gramineæ.)

Stove evergreen Bamboos. Seeds, when obtainable; suckers. Fibrous loam, with a little peat.

G. a'tra (dark). Java.

„ *verticilla'ta* (whorled). 20. Java. 1803.

GI'LIA. (Named after *Gilio*, a Spanish botanist. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy annuals, except *G. aggrega'ta* and *G. coronopifo'lia*. Sown in September, and slightly protected during winter, they bloom early in the summer; sow in the end of March in open border; common soil. The greenhouse biennials, sown in August, potted, and kept over the winter, will bloom freely the following summer.

G. achillæfo'lia (milfoil-leaved). 1½. Pink. August. California. 1833.

„ *aggrega'ta* (crowded). Scarlet. July. America. 1822. Greenhouse biennial.

„ *androsa'cea* (Androsace-like). 1. Blue, white. August. California. 1833.

„ „ *ro'sea* (rosy). Rose.

„ *arena'ria* (sand-*inhabiting*). See G. INCONSPICUA.

„ *Brande'gei* (Brandege's). ½. Pale yellow. N.W. Amer. 1878.

„ *califo'rnica* (Californian). 3. Pink. July. California. 1854.

„ *capita'ta* (*round*-headed). 2½. Blue. July. N.W. Amer. 1826.

„ „ *coro'lla a'lba* (white-corollaed). 2. White. June. Gardens. 1829.

„ *cilia'ta* (eyelashed). Pink, yellow. N.W. Amer. 1853.

„ *coronopifo'lia* (Coronopus-leaved). 2½. Scarlet. July. Carolina. 1726. Greenhouse biennial.

„ *cotulæfo'lia* (Cotula-leaved). ½. White. June. California. 1833.

„ *crassifo'lia* (thick-leaved). 2. Yellowish. June. Chili. 1832.

„ *densiflo'ra* (dense-flowered). 1. Purple. June. California. 1833.

„ „ *a'lba* (white). 1. White. June. California. 1833.

„ *dianthoi'des* (Dianthus-like). ¾. Lilac. July. California. 1855.

„ *dicho'toma* (forked). 1½. Pink. California. 1838.

„ *eryngioi'des* (Eryngium-like). See G. NAVARETTIA.

„ *flocco'sa* (woolly). ¾. Yellow. June. N.W. Amer. 1833.

„ *gra'cilis* (slender). See COLLOMIA GRACILIS.

„ *grandiflo'ra* (large-flowered). 1½. Blue, yellow. August, September. California.

„ *inconspi'cua* (inconspicuous). 2. Blue. August. N. Amer. 1793.

„ *interte'xta* (interwoven). 1½. Blue. June. N.W. Amer.

„ *lacinia'ta* (cut-*leaved*). ½. Purple. July. Chili. 1831.

„ *Leptosi'phon* (Leptosiphon). See G. DENSIFLORA.

„ *liniflo'ra* (flax-flowered). ½. White. June. California. 1833.

„ *lu'tea* (yellow). See G. MICRANTHA LUTEA.

„ *micra'ntha* (small-flowered). ½. Rose. California. 1870.

„ „ *aur'ea* (golden). ½. Golden-yellow. California.

„ „ *lu'tea* (yellow). ½. Yellow. California. 1852.

„ „ *pal'lida* (pale). ½. Pale yellow. California. 1833.

„ *multicau'lis* (many-stemmed). 2. Blue. California. 1833.

G. Navaré'tia (Navarettia). 1. Blue. Chili. 1833.
„ *parviflo'ra* (small-flowered). 2. Blue. October. N.W. Amer. 1793.
„ *pharnaceoi'des* (Pharnaceum-like). See G. LINIFLORA.
„ *pube'scens* (downy). ½. Blue. June. California. 1833.
„ *pulche'lla* (pretty). See G. AGGREGATA.
„ *pu'ngens* (prickly). See G. SQUARROSA.
„ *pusi'lla* (dwarf). ½. June. Chili. 1833.
„ *squarro'sa* (squarrose). 1½. Pink. July. N.W. Amer. 1827.
„ *tenuiflo'ra* (thin-flowered). 2. Rose, violet. August. California.
„ *tri'color* (three-coloured). 1. Purple, orange. August. California. 1833.
„ „ *a'lba* (white). ½. White. July. California. 1833.
„ *virga'ta* (twiggy). ½. Blue. Summer. California. 1833.

GILIBE'RTIA. (Named after *Gilibert*, a German botanist. Nat. ord. *Ivyworts* [Araliaceæ]. Linn 5-*Pentandria*, 1-*Monogynia*. Allied to Cussonia.)

Stove evergreen shrubs. Cuttings of the young shoots in sand, under a bell-glass, and in heat; sandy peat and fibrous loam. Summer temp., 60° to 80°; winter, 48° to 55°.

G. brasilie'nsis (Brazilian). 4. Pale green. Brazil.
„ *palma'ta* (hand-leaved). See TREVESIA PALMATA.
„ *umbella'ta* (umbelled). Pale green. Peru. 1854.

GILLE'NIA. (Named after one *Gillenius*. Nat. ord. *Roseworts* [Rosaceæ]. Linn 12-*Icosandria*, 2-*Pentagynia*. Allied to Spiræa.)

Hardy herbaceous perennials, with red and white flowers, from North America. Division of the plant; common soil.

G. stipula'cea (*large*-stipuled) 2. July. 1805. "American Ipecacuanha."
„ *trifolia'ta* (three-leaved). 2. July. 1713. "Indian Physic."
„ „ *ma'jor* (greater). 3. July.

GILLIE'SIA. (Commemorative of *Dr. Gillies* of Mendoza. Nat. ord. Liliaceæ.)

Greenhouse or half-hardy bulb. Offsets. Fibrous loam, a little peat, and a sufficiency of sand.

G. grami'nea (grass-like). 1. Greenish. September. Chili. 1825.

GILLIFLOWER. By some supposed to be a corruption of July flower, because the carnation (*Dia'nthus Caryophy'llus*) flowers in July. Other spellings are Garryophillis, Gelovers, Gelouers, Gelyflours, Gilleflowre, Gilloflowre, and Gilloflower. The French form of the word is Giroflée. These names are evidently all corruptions of Caryophyllus, the specific name of the Carnation, and that is derived from the Greek *karuon*, a nut, and *phullon*, a leaf, applied by the old Dutch to *Caryophy'llus aroma'ticus*, now *Euge'nia caryophylla'ta*, the clove of commerce. The name became applied to the Carnation on account of its clove scent, and by the French also to the Stock and Wallflower. In this country Gilliflower means the Carnation only.

GINGER. (*Zi'ngiber officina'le.*) Green ginger may be easily cultivated two ways, either in pots, or in a deep pit. If in pots, take the plants, shake them out of the pots when at rest in February, divide them, and pot each piece into a pot six inches across; plunge them, as soon as the heat is temperate, in a bark-pit, or a frame heated with dung like a cucumber-bed, the surface being covered with tan deep enough for the pots. As soon as the plants come up give a small supply of water, gradually increasing the quantity as the plants advance in growth. By August they will be fit to take up and preserve. If a large quantity is required, a deep pit of two or three lights will be necessary, the bottom to be filled with rich soil to the depth of a foot; plant the roots in this soil, and line the pit with hot dung, renewing it as the heat declines. The time for planting in the pit is February or March. Water whilst growing, give air in hot weather, and in September you will have a large supply of fine ginger-roots, equal to foreign.

GINGER BEER PLANT. A minute fungus capable of setting up alcoholic fermentation, and in different forms known as *Saccharomy'ces cerevi'siæ* and *S. mycode'rma*.

GINGER BREAD PALM. *Hyphæ'ne theba'ica.*

GINGER BREAD PLUM. *Parina'rium macrophy'llum.*

GINGI'DIUM. See ACIPHYLLA.

GI'NKGO. (The Japanese name of the Maidenhair Tree. Nat. ord. Coniferæ.)

Hardy ornamental trees suitable for town as well as country. Seeds. Ordinary, well-drained soil.

G. bi'loba (two-lobed). 60–80. Spring. China. 1754.
„ „ *fastigia'ta* (upright). Gardens. 1888.
„ „ *lacinia'ta* (cut). See G. BILOBA MACROPHYLLA LACINIATA.
„ „ *macrophy'lla lacinia'ta* (large cut-leaved).
„ „ *pe'ndula* (drooping). A weeping variety.
„ „ *pyramida'lis* (pyramidal). See G. BILOBA FASTIGIATA.
„ „ *tri'loba* (three-lobed). Leaves three-lobed.
„ „ *variega'ta* (variegated). Leaves variegated with yellow.

GIPSY MOTH. *Hypogy'mna di'spar.*

GITHA'GO SE'GETUM. See LYCHNIS GITHAGO.

GITHO'PSIS (From *Githago*, and *opsis*, resemblance; the plant resembling Githago or *Lychnis Githago*. Nat. ord. Campanulaceæ.)

A hardy annual, resembling "Venus' Looking Glass" (Specularia). Seeds. Garden soil.

G. specularioi'des (Specularia-like). 1. Blue. California. 1894.

GLA'DIOLUS. Corn Flag. (From *gladius*, a sword; referring to the shape of the leaves. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Bulbs, from the Cape of Good Hope, except where otherwise mentioned. The hardiest merely require border-room, and are propagated by seeds, and by taking up and dividing the bulbs before growth has commenced. Those generally designated frame and greenhouse species will thrive very well in dry, sandy loam and peat out of doors, if planted from six to ten inches deep, according to the strength of the bulbs. The earliest-flowering, such as *bla'ndus*, &c., may be planted in the end of October; *ramo'sus*, *formosi'ssimus*, &c., in December; and *gandave'nsis*, *floribu'ndus*, *psittaci'nus*, and *sple'ndens* from February to March, when they will keep blooming all the autumn. The whole make fine pot-plants, potted in autumn and spring, and kept in a cold pit until they show flower. They may also be forced for the greenhouse after the roots have filled the pots.

G. abbrevia'tus (shortened). See ANTHOLYZA QUADRANGULARIS.
„ *Adla'mi* (Adlam's). 1½. Dull yellow, spotted with red. Transvaal. 1889.
„ *æquinoctia'lis* (equinoctial). See ACIDANTHERA ÆQUINOCTIALIS.
„ *ala'tus* (wing-*flowered*). ¾. Scarlet, yellow. June. 1795.
„ „ *algoe'nsis* (Algoa Bay). ¾. Orange. July. 1824.
„ *a'lbidus* (whitish). See G. BLANDUS ALBIDUS.
„ „ *pi'ctus* (painted). 1. Red, white. July. 1794. See G. BLANDUS PICTUS.
„ *ale'ppicus* (Aleppan). See G. ATROVIOLACEUS.
„ *angustifo'lius* (narrow-leaved). See BABIANA TUBIFLORA.
„ *angu'stus* (narrow-*leaved*). 2. Yellow. June. 1756.
„ *arena'rius* (sand). S. Africa.
„ *armeni'acus* (Armenian). Deep purple. Armenia. 1892.
„ *atroviola'ceus* (dark-violet). Purple-black, blue, white. Palestine. 1889.
„ *auranti'acus* (orange). Orange. Natal.
„ „ *ru'bro-ti'nctus* (red-tinted). Orange-yellow, dotted red. 1894.
„ *biflo'rus* (two-flowered). S. Africa.
„ *bla'ndus* (fair). 1½. Flesh. June. 1774.
„ „ *a'lbidus* (whitish). 1. White. June. 1774.
„ „ *campanula'tus* (bell-shaped). Pale purple.
„ „ *pi'ctus* (painted). 1. Red, white. July. 1794.
„ *brachya'ndrus* (short-anthered). 1½. Pale scarlet. S. Trop. Africa. 1879.
„ *brevifo'lius* (short-leaved). 1½. Pink. June. 1802.

G. byzanti'nus (Byzantine). 2. Red. July. Turkey. 1629.
„ *campanula'tus* (bell-*flowered*). See G. BLANDUS CAMPANULATUS.
„ *cardina'lis* (cardinal). 2. Red. July. 1789.
„ *carmi'neus* (carmine). 1½. White, carmine, with two blotches. 1906.
„ *ca'rneus* (flesh-coloured). 2. Flesh. June. 1796.
„ *cauca'sicus* (Caucasian). See G. SEGETUM.
„ *cochlea'tus* (spoon-*lipped*). 1½. White, red. March. 1829.
„ *Colvi'llei* (Colville's). 1½. Bright red, with three purple blotches. Gardens.
„ „ *a'lbus* (white). 1½. White.
„ *commu'nis* (common). 2. Red. July. S. Europe. 1596.
„ „ *a'lbus* (white-*flowered*). 2. White. June. S. Europe.
„ „ *ca'rneus* (flesh-coloured). 1½. Flesh. July. S. Europe. 1596.
„ *co'ncolor* (one-coloured). See G. TRISTIS CONCOLOR.
„ *Coope'ri* (Cooper's). See G. PSITTACINUS.
„ *crassifo'lius* (thick-leaved). S. Africa.
„ *crispiflo'rus* (curled-flowered). See G. IMBRICATUS.
„ *cri'spus* (crisped). See TRITONIA CRISPA.
„ *crue'ntus* (blood-red). Blood-red, white. September. 1868.
„ *cuspida'tus* (pointed). 1½. White, brown. May. 1795.
„ „ *pa'llidus* (pale). 1. Pink. May. 1760.
„ *de'bilis* (weak). 1½. White. May.
„ *decora'tus* (decorated). 3. Bright scarlet, with three yellow blotches. E. Africa. 1890.
„ *dracoce'phalus* (dragon's-head). 3. Greenish-yellow, densely streaked purple. Natal. 1871.
„ *Ecklo'ni* (Ecklon's). Densely spotted purple-red on pale ground. Autumn. 1862.
„ *edu'lis* (eatable-*rooted*). 1½ White. June. 1816.
„ *Ello'ni* (Ellon's). White, tipped purple. 1890.
„ *elonga'tus* (elongated). See BABIANA TUBIFLORA.
„ *festi'vus* (festive). See G. BREVIFOLIUS.
„ *fistulo'sus* (hollow). See WATSONIA SPICATA.
„ *flexuo'sus* (zigzag). See ACIDANTHERA TUBULOSA.
„ *floribu'ndus* (bundle-flowered). 1. Citron. July. 1788.
„ *fra'grans* (fragrant). See BABIANA PLICATA.
„ *fu'sco-vi'ridis* (brown-green). 2. Greenish, finely striped claret-brown. 1897.
„ *gandave'nsis* (Ghent). Garden race (*psittacinus* × *cardinalis*).
„ *glau'cus* (sea-green). 1. Bluish-red, striped white and red. Greece. 1906.
„ *gra'cilis* (slender). 2. Blue, white. April. 1800.
„ *gra'ndis* (grand). 1½. Brown. June. 1794.
„ „ *bine'rvis* (two-nerved). 1½. Pink. June. 1806.
„ „ *tenu'ior* (slenderer). 1. Variegated. June. 1779.
„ *hasta'tus* (halbert-shaped). 1. Flesh. May. 1816.
„ *hirsu'tus* (hairy). 1½ Pink. June. 1795.
„ *hyali'nus* (grass-like). 1. Yellow, red. June. 1825.
„ *illy'ricus* (Illyrian). 2½. Red. Mediterranean Region.
„ *imbrica'tus* (imbricated). 1. Red. June. Russia. 1820.
„ *inclina'tus* (inclined). See BABIANA TUBIFLORA.
„ *involu'tus* (rolled-inward). 1½. Pink. June. 1757.
„ *iridifo'lius* (Iris-leaved). See WATSONIA MERIANA.
„ *ita'licus* (Italian). See G. SEGETUM.
„ *Ki'rkii* (Kirk's). 3. Rose. Grahamstown. 1890.
„ *kotschya'nus* (Kotschyan). 1–2. Light violet, with three dark lines. Afghanistan.
„ *Leichtli'nii* (Leichtlin's). Scarlet, yellow. Transvaal. 1889.
„ *Lemoi'nei* (Lemoine's). Garden race (*gandavensis* × *purpureo-auratus*).
„ *linea'tus* (lined). See TRITONIA LINEATA.
„ *longiflo'rus* (long-flowered). See BABIANA TUBIFLORA.
„ *Lu'cidor* (Lucidor). S. Africa.
„ *macowania'num* (Macowanian). See G. ANGUSTUS.
„ *Mackinde'ri* (Mackinder's). 2. Yellow, scarlet. British E. Africa. 1902.
„ *Meriane'llus* (Merianellus). S. Africa.
„ *Mille'ri* (Miller's). 1½. Violet. May. 1751.
„ *monta'nus* (mountain). 1. Brown. June. S. Africa. 1759.
„ *Morto'nius* (Morton's). See G. BLANDUS ALBIDUS.
„ *mucrona'tus* (hard-pointed). See BABIANA MUCRONATA.
G. namaque'nsis (Namaqua). See G. ALATUS.
„ *nanciea'nus* (Nancy). Garden race (*Saundersii* × *Lemoinei*).
„ *na'nus* (dwarf). See BABIANA NANA.
„ *natale'nsis* (Natal). See G. PSITTACINUS.
„ *ochroleu'cus* (yellow-white). 3. Pale yellow. Transvaal.
„ *oppositiflo'rus* (opposite-flowered). April. 1843.
„ *orchidiflo'rus* (Orchid-flowered). ½. Green, white. May. 1787.
„ *Papi'lio* (Papilio). 3. Purple, yellow. 1866.
„ „ *atra'tus* (darkened). Dark purple. 1885.
„ *permea'bilis* (penetrable). ½. Orange. June. 1825.
„ *platyphy'llus* (broad-leaved). 3–4. Deep yellow, veined red. Natal. 1893.
„ *plica'tus* (plaited). See BABIANA STRICTA.
„ *Po'ttsii* (Potts's). See TRITONIA POTTSII.
„ *præ'cox* (early). See G. WATSONIUS.
„ *primuli'nus* (primrose-coloured). 3. Primrose-yellow. E. Africa. 1890.
„ „ *co'ncolor* (one-coloured). Naples-yellow. 1910.
„ „ *ere'ctus* (erect). Intense chrome-yellow. 1910.
„ *psittaci'nus* (parrot-like). 3½. Scarlet, yellow. S. Africa.
„ *puncta'tus* (spotted). Greenish-yellow, spotted purple. 1889.
„ *purpu'reo-aura'tus* (purple-golden). 3–4. Yellow, with large purple blotches. Natal. 1872.
„ *quadrangula'ris* (four-angled). See ANTHOLYZA QUADRANGULARIS.
„ *quartinia'nus* (Quartinian). 3–4. Yellow, spotted scarlet. Trop. Africa. 1884.
„ „ *supe'rbus* (superb). Larger, yellow, flushed crimson. 1898.
„ *ramo'sus* (branching). See MELASPHÆRULA GRAMINEA.
„ *recu'rvus* (rolled-back). 2. Striped. May. 1758.
„ *refra'ctus* (broken-back). See FREESIA REFRACTA.
„ *ri'ngens* (gaping). See G. RECURVUS.
„ *ro'seus* (rosy). See TRITONIA ROSEA.
„ *sambu'cinus* (elder-scented). See BABIANA SAMBUCINA.
„ *Saunde'rsii* (Saunders's). 3. Scarlet, white, speckled. August. 1871.
„ *se'getum* (corn-field). 2. Purple. July. S. Europe. 1596.
„ *seri'ceo-villo'sus* (silky-woolly). 3. Yellow. 1864.
„ *stria'tus* (striped). 1. Whitish, streaked red and yellow. S. Africa. 1825.
„ *stri'ctus* (upright). See BABIANA STRICTA.
„ *sulphu'reus* (sulphur). See BABIANA STRICTA SULPHUREA.
„ *tene'llus* (slender). ½. Yellow. June. 1825.
„ *tenuiflo'rus* (slender-flowered). See G. SEGETUM.
„ *te'nuis* (slender). See G. IMBRICATUS.
„ *trichonemifo'lius* (Trichonema-leaved). 1½. Yellow. June. 1800.
„ *trimacula'tus* (three-spotted). See G. ANGUSTUS.
„ *triphy'llus* (three-leaved). Cyprus.
„ *tri'stis* (sad). 1. Brown, red. July. 1745.
„ „ *co'ncolor* (one-coloured). 1. Yellow. June. 1790.
„ *tuba'tus* (tubed). See BABIANA TUBATA.
„ *tubiflo'rus* (tube-flowered). See BABIANA TUBIFLORA.
„ *Tyso'ni* (Tyson's). S. Africa.
„ *undula'tus* (waved-*flowered*). See G. CUSPIDATUS.
„ „ *pa'llidus* (pale). See G. CUSPIDATUS PALLIDUS.
„ *versi'color* (various-coloured). See G. GRANDIS and varieties.
„ *villo'sus* (woolly). S. Africa.
„ *vi'nulus* (wine-coloured). See G. VITTATUS.
„ *vipera'tus* (viper-like). See G. ORCHIDIFLORUS.
„ *vitta'tus* (striped). 1½. Creamy-white, feathered crimson. 1888.
„ *watsonioi'des* (Watsonius-like). 3. Scarlet-red. Mount Kilimanjaro. 1887.
„ *Watson'ius* (Watson's). 1. Red. March. 1791.
„ „ *variega'tus* (variegated). 1½. Red, white. April. 1801.
„ *xanthospi'lus* (yellow-blotched). See FREESIA REFRACTA.

Propagation: by Offsets.—The offsets are produced plentifully round the base of each bulb. When the bulbs are taken up, separate the flowering bulbs from the offsets, and then again divide the latter into two lots, one of the larger roots and one of the smaller. Towards the end of August prepare a bed for them in an open

situation, and drain the ground well if damp. Place a layer of brick-rubbish under the soil, not less than a foot deep, and not more than fifteen inches; upon the drainage place a layer of stable-litter, then throw in the soil, mixing it freely with well-decomposed manure; let it settle about a fortnight, then plant the larger offsets in one bed and the smaller ones in another; the larger sized four inches apart in the row, six inches from row to row, and three inches deep. Plant by drawing drills across the beds with a triangular-shaped hoe, and put in the bulbs with the hand, pressing each pretty firmly down into the soil. When all are planted, level the soil with a rake. The small-sized offsets may be planted much thicker, but in every other respect the same as the larger sized. The reason for planting them in two sizes is, because the larger sized produce such large leaves as smother the smaller ones; besides, the larger sized will produce, after one year's growth, flowering bulbs, which, when taken up after the growth is perfected, may be sorted to plant with the older flowering ones. The smaller size had better remain in the bed for two years, then be taken up, sorted, and replanted in two sizes again, till they are large enough to flower.

By Seed new varieties are obtained. All that is wanted are a few square yards of ground, a few roots of the best kinds, but as dissimilar in habit as possible, and then, when in bloom, to exercise a little taste and discernment in hybridising, by impregnating the finest form as the breeder of seed, with the pollen of the highest and most distinct coloured male parent, removing the pollen of the breeder before it bursts, and applying the pollen of the male parent as soon as the anthers open. When the seed is ripe gather it, and keep it dry till spring; then sow it in shallow pots or boxes; place them in a gentle heat, and when the seedlings are up give plenty of air, and very moderate supplies of water. As soon as the weather will permit, set them in the open air, and as the leaves advance in size give more water, and allow gentle showers to fall upon them, but shelter them from heavy rain. When the leaves are all decayed, take the soil and carefully sift it through a fine sieve, picking out every bulb, however small. Prepare a bed in the same manner, and of the same materials, as is described above for offsets. Plant the seedling bulbs in it the first week in September, in the same way as the small offsets. Let them remain in this bed for two years; then take them and replant them in a bed fresh prepared. It is likely that some of the strongest will then flower, and the very worst will be worth planting in the borders.

Summer Culture.—The bulbs want very little attention during summer. Keep them clear of weeds, and when the flower-stems are a foot high place a stick to support them, as the winds are apt to twist them off close to the bulbs. When the bloom is over, and the leaves turn yellow, take them up dry, and sort them, separating the bulbs that are large enough to flower from the offsets; put them away in drawers marked with the name of each variety, keeping them dry and cool till the planting season arrives again.

Winter Culture.—In September prepare the beds by throwing out all the soil to the depth of fifteen inches; if in the same situation as beds were before, examine the drainage. If it is open and ready to work well, it will need nothing doing to it, but if it be choked up, remove it entirely; sift it, throwing in the rough, and removing the fine earthy part; add some fresh rubble, and then cover it with litter; mix a goodly portion of thoroughly decayed dung with the soil, or, which is better, renew it entirely; level the bed, leaving it a few inches higher. Plant the first week in October, three inches deep, giving each of the bulbs six inches square to grow in. Place a thin layer of half-rotten dung upon the bed, to protect the bulbs in severe frost. They will require no other care during this season.

Vermin.—Mice, wireworms, and the red spider prey upon them. *Wireworms* may be caught with slices of potatoes buried in the soil, and taken up occasionally. The *red spider*, happily, only appears when there is a long continuance of dry weather. Watch for its first appearance, and as soon as it is perceived, causing the leaves to appear spotted, let every leaf be sponged over with water impregnated with flowers of sulphur. If dry weather prevails much, syringe the plants every evening severely.

Diseases.—The bulbs sometimes are attacked by a kind of dry rot, which turns them into a powdery substance, prevents them sending forth roots, and then the tops, if they have made any, turn yellow, and the whole plant perishes. There is no known remedy. To prevent its spreading, remove the infected bulbs, and a portion of the soil near them.

GLASS is the best agent employed by the gardener to exclude the cold, whilst the light is admitted to his plants which are natives of hotter climates than that in which he cultivates them. Now that the excise-duty is removed from glass, the gardener is enabled to employ the best, and a thicker kind than formerly, when the duty was high in proportion to the good quality and weight. Anxiety to obtain the best glass for hothouses, &c., is every way laudable; but the benefit sought for is frustrated if it be not constantly well cleansed. The best glass, if dirty, allows fewer rays of light to pass through than inferior glass kept bright. A thorough cleansing should be given both to the outside and inside twice annually, during the first weeks of February and of October, and a third cleansing, on the outside only, at the end of June. In proportion to the deficiency of light does the plant under glass become, in the gardener's phraseology, *drawn;* that is, its surface of leaves becomes unnaturally extended, in the vain effort to have a sufficient elaboration of the sap effected by means of a large surface exposed to a diminished light, for which a less surface would have been sufficient if the light were more intense. Taking into consideration the consequences of breakage, and other contingencies to be avoided as well as secured, we consider glass of 21 ounces to the square foot, and in panes of 18 inches by 12 inches, the substance and size most desirable. Rough plate-glass is desirable, because, without diminishing the light, it reduces the danger of scorching the leaves.

GLASS CASES are of various kinds. One is formed of glazed wooden frames, fitting together, to protect espaliers, wall-trees, or shrubs too large to be covered with a hand-glass.

Another glass case is made for protecting a single branch. It is thus described by Mr. Maund, the author of that most useful periodical the *Botanic Garden*:—

"Grapes grown on open walls in the midland counties are rarely well ripened; therefore I provide a small glazed frame, a sort of narrow hand-glass, of the shape of a house-top] in miniature, to fix against the wall, and enclose one branch of the vine, with its fruit and foliage. The open part, which rests against the wall, is thirteen inches wide, and may be of any length required to take in the fruit. The sides are formed of single panes of glass, seven inches wide, and meet on a bar which may represent the ridge of a roof, the ends enclosed by triangular boards, and having a notch to admit the branch. This is fixed on the branch a month before the vine is in flower, and brings it a week earlier than the exposed. The frame is not fitted closely to the wall, but in some places may be a quarter of an inch from it. The lateral branches being shortened before it is fixed, it does not require removal even for pruning, because I adopt the long-rod mode of training, which is peculiarly adapted to my *partial protection system.* The temperature within the frame is always higher than without, sometimes at midday even from 20° to 30°. By this simple protection I find grapes may be ripened from three weeks to a month earlier than when wholly exposed, and this saving of time will, I believe, not only secure their ripening well every year in the midland counties, but also that such advantage will be available in the north of England, where grapes never ripen on the open walls."

Lastly, there is the *Wardian-case*, to cover plants growing in rooms, preserving to them uniform moisture, and excluding dust. To prevent the dew which is occasionally deposited inside the glass, it is only necessary to open the case frequently, for a few minutes, to render the temperature within similar to that outside. They are not intended to exclude the air, and are now made very ornamental.

GLASSWORT. *Salico'rnia.*

GLASTONBURY THORN. See CRATÆGUS OXYCANTHA PRÆCOX.

GLAU'CIUM. Horned Poppy. (From *glaukos*, greyish-green; referring to the colour of the leaves. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Eschscholtzia.)

Seeds in common borders, in March or April.

HARDY BIENNIALS.

G. fla'vum (yellow). 2. Yellow. August. Britain.
„ „ *fu'lvum* (tawny). 2. Orange. August. S. Europe. 1802.
„ „ *tri'color* (three-coloured). 1½–2. Coppery-orange, with black centre. Asia Minor. 1900.
„ *lu'teum* (yellow). See G. FLAVUM.

HARDY ANNUALS.

G. ara'bicum (Arabian). Red. June. Arabia. 1837.
„ *cornicula'tum* (horned). 2. Purple. July. Europe.
„ „ *flaviflo'rum* (yellow-flowered). 2. Yellow. July. Tauria. 1823.
„ „ *ru'brum* (red). 1. Red. July. Greece. 1818.
„ *fu'lvum* (tawny). See G. FLAVUM FULVUM.
„ *lactuco'des* (lettuce-like). See CHELIDONIUM FRANCHETIANUM.
„ *leioca'rpum* (smooth-fruited). 1½. Orange-scarlet, with four black blotches. Asia Minor. 1907.
„ *lepto'podum* (slender-stalked). See CHELIDONIUM FRANCHETIANUM.
„ *pe'rsicum* (Persian). 1. Red. August. Volhynia. 1829.
„ *phœni'ceum* (purple). See G. CORNICULATUM and varieties.
„ *ru'brum* (red). See G. CORNICULATUM RUBRUM.
„ *Serpie'ri* (Serpier's). Yellow. Greece. 1873.
„ „ *flo're-ple'no* (double-flowered). Yellow. Greece. 1873.
„ *squami'gerum* (scale-bearing). Yellow. Altai Mountains. 1879.
„ *tri'color* (three-coloured). See G. FLAVUM TRICOLOR.

GLAUCOUS. Greyish, milky-green, or sea-green.

GLAU'X. (From *glaukos*, greyish-green. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Anagallis.)

Hardy British perennial trailers, found in marshes near the sea. Sandy, moist soil; seeds.

G. mari'tima (sea). Flesh. June.
„ „ *a'lba* (white-*flowered*). ½. White. May.

GLAZING. See GREENHOUSE and STOVE.

GLECHO'MA. See NEPETA GLECHOMA.

GLEDI'TSCHIA. (Named after *Gleditsch*, a German botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 2-*Diœcia*. Allied to Ceratonia.)

Ornamental hardy deciduous trees. Seed imported from America and the South of France, where *triaca'nthos*, &c., ripen their seeds. *Sine'nsis na'na*, &c., are generally grafted on the other. The seed should be sown in March, after being soaked twelve hours in warm water. Common soil.

G. aqua'tica (aquatic). 20. Green. July. S. United States. 1723.
„ „ *eleganti'ssima* (most-elegant). Spineless, with finer leaves than the type. 1905.
„ *austra'lis* (southern). S. China.
„ *Delava'yi* (Delavay's). Yunnan.
„ *fla'va* (yellow). See G. TRIACANTHOS.
„ *ho'rrida* (horrid). See G. SINENSIS.
„ *ine'rmis eleganti'ssima* (most-elegant). See G. AQUATICA ELEGANTISSIMA.
„ *japo'nica* (Japanese). Shoots brown-purple. Japan.
„ *læ'vis* (smooth). See G. TRIACANTHOS INERMIS.
„ *macraca'ntha* (large-spined). 20. Green. July. China.
„ *micraca'ntha* (small-spined). 10. Green. July.
„ *monospe'rma* (one-seeded). See G. AQUATICA.
„ *sine'nsis* (Chinese). 20. Green. China. 1812.
„ „ *ine'rmis* (unarmed). See G. SINENSIS NANA.
„ „ *ma'jor* (larger). 30. Green. June. China.
„ „ *na'na* (dwarf). 12. Green. June. China.
„ „ *pe'ndula* (weeping). Green. June.
G. sine'nsis purpu'rea (purple). 20. Green. July. China. 1774.
„ *texa'na* (Texan). Texas. 1901.
„ *triaca'nthos* (three-spined. *Honey Locust*). 30. Green. N. Amer. 1700.
„ „ *fo'liis variega'tis* (variegated-leaved).
„ „ *ine'rmis* (unarmed). 30. Green. July.

GLEICHE'NIA. (Named after *Gleichen*, a German botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns, with brown spores. Division of the plant; peat and loam. Winter temp., 45° to 65°.

G. bifurca'ta (two-forked). See G. FLAGELLARIS.
„ *circina'ta* (coiled). July. Australia, Tasmania, Malacca. 1823.
„ *cryptoca'rpa* (hidden-fruited). 3. Chili and Chiloe. 1865.
„ *dica'rpa* (two-fruited). Australia, Tasmania.
„ „ *alpi'na* (alpine). Smaller, more compact. Tasmania, New Zealand.
„ „ *longipinna'ta* (long-pinnaed). Pinnæ 4–5 in. long. Australia. 1879.
„ *dicho'toma* (twice-forked). Tropical and subtropical regions. 1839.
„ *exce'lsa* (lofty). See G. LONGISSIMA.
„ *flabella'ta* (fan-*leaved*). July. N. Holland. 1823.
„ *flagella'ris* (whip-like). Mauritius, Madagascar, &c.
„ *furca'ta* (forked). See G. PUBESCENS.
„ *gigante'a* (gigantic). See G. LONGISSIMA.
„ *hecistophy'lla* (least-leaved). See G. DICARPA ALPINA.
„ *Herma'nni* (Hermann's). See G. DICHOTOMA.
„ *longi'ssima* (longest). China, Japan, Malay Islands.
„ *Mende'lii* (Mendel's). Fronds bluish-green, metallic above. Australia. 1879.
„ *microphy'lla* (small-leaved). See G. CIRCINATA.
„ *mucrona'ta* (sharp-pointed). Mindora.
„ *pectina'ta* (comb-like). 3. August. Trinidad. 1824.
„ *pube'scens* (downy). 3. August. S. Amer. 1822.
„ *ri'gida* (stiff). June. Isle of Luzon. 1839.
„ *rupe'stris* (rock). N.W. Australia. 1860.
„ *semivesti'ta* (half-clothed). See G. CIRCINATA.
„ *Spelu'ncæ* (cavern). See G. CIRCINATA.

GLO'BBA. (A native name. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Colebrookia.)

Stove herbaceous plants. Parting the roots; sandy loam.

G. a'lba (white). See G. A'LBO-BRACTEA'TA.
„ *a'lbo-bractea'ta* (white-bracted). 2½. White, yellow. Sumatra. 1882.
„ *atrosangui'nea* (dark blood-red). 1–2. Yellow, crimson. Borneo. 1882.
„ *brachyca'rpa* (short-fruited). Perak.
„ *bractea'ta* (large-bracted). See G. BULBIFERA.
„ *bulbi'fera* (bulb-producing). 2. Yellow. July. E. Ind. 1820.
„ *carey'na* (Dr. Carey's). See G. SESSILIFLORA.
„ *cocci'nea* (scarlet). See G. ATROSANGUINEA.
„ *ere'cta* (upright). See ALPINIA CALCARATA.
„ *maranti'na* (Maranta-like). 1½. Yellow. July. E. Ind. 1800.
„ *orixe'nsis* (Orixian). 2. Pink. July. E. Ind. 1819.
„ *pallidiflo'ra* (pale-flowered). Malaya.
„ *pe'ndula* (weeping). 1. Yellow. July. E. Ind. 1822.
„ *racemo'sa* (racemed). 1. Yellow. July. Ceylon. 1812.
„ *Schombu'rgkii* (Schomburgk's). ½–1. Golden-yellow, orange-red. Siam. 1864.
„ *sessiliflo'ra* (stalkless-flowered). 1½. Yellow. August. Pegu. 1807.
„ *strobili'fera* (cone-bearing). See G. BULBIFERA.
„ *varia'bilis* (variable). Malaya.
„ *versi'color* (changing-coloured). Malaya.
„ *Walli'chii* (Wallich's). Penang.

GLOBE AMARANTH. *Gomphre'na.*

GLOBE FLOWER. *Tro'llius.*

GLOBE MALLOW. *Sphæra'lcea.*

GLOBE THISTLE. *Echi'nops.*

GLOBULA'RIA. (From *globulos*, a small round head; referring to the flower-heads. Nat. ord. *Selagids* [Selaginaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Selago.)

Seeds in spring; cuttings of young shoots in summer, in sandy soil, under a hand-light; sandy loam and peat. The greenhouse species require similar treatment; *longifo'lia* will do against a conservatory wall; and *Aly'pum* should be tried in a dry, sheltered place, on a rock-work, with a spruce-branch over it in winter.

GREENHOUSE HERBACEOUS.

G. Aly'pum (Alypo). 2. Pale. August. S. Europe. 1640.
" " *integrifo'lia* (entire-leaved). 2. Pale. August. S. Europe.
" *longifo'lia* (long-leaved). See G. SALICINA.
" *salici'na* (willow-like). 3. White. July. Madeira. 1775.

HARDY HERBACEOUS.

G. bellidifo'lia (daisy-leaved). See G. NANA.
" *cordifo'lia* (heart-leaved). ½. Blue. July. Germany. 1633.
" *incane'scens* (hoary). Purple. June. Italy. 1828.
" *linifo'lia* (flax-leaved). See G. VULGARIS.
" *na'na* (dwarf). ½. Blue. July. France. 1824.
" *nudicau'lis* (naked-stalked). ½. Blue. July. Europe. 1629.
" *spino'sa* (prickly-*leaved*). ½. Blue. June. Spain. 1640.
" *trichosa'ntha* (hair-flowered). ½. Blue. Asia Minor, &c.
" *vulga'ris* (common). ½. Blue. June. Europe. 1640. "Blue Daisy."

GLOBU'LEA. (From *globulos*, a small globe; referring to glands on the petals. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*. United to Crassula.)

G. a'tro-purpu'rea (dark purple). See CRASSULA PORTULACEA.
" *cane'scens* (hoary). See CRASSULA CANESCENS.
" *capita'ta* (*flower*-headed). See CRASSULA CAPITATA.
" *cultra'ta* (sharp-*leaved*). See CRASSULA CULTRATA.
" *hi'spida* (bristly-*flat-leaved*). See CRASSULA HISPIDA.
" *impre'ssa* (flattened). See CRASSULA IMPRESSA.
" *mo'llis* (soft). See CRASSULA MOLLIS.
" *nudicau'lis* (naked-stemmed). See CRASSULA NUDICAULIS.
" *obvalla'ta* (guarded-*leaved*). See CRASSULA OBVALLATA.
" *panicula'ta* (panicled). See CRASSULA PANICULATA.
" *sulca'ta* (furrowed). See CRASSULA SULCATA.

GLONE'RIA JASMINIFLO'RA. See PSYCHOTRIA JASMINIFLORA.

GLORIO'SA. (From *gloriosus*, glorious; referring to the flowers. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to the Lily.)

Stove bulbs, except *nepale'nsis*. Divisions of the roots and seeds; if by the former, take a pot that has been kept dry all the winter, say in March, turn it out, and separate the bulbs carefully, without bruising them. Place each bulb, with the end farthest from the old tuber, uppermost in the centre of a clean pot, covering it with an inch or two of soil, the pot being five or ten inches, or any intermediate size, in diameter, according to the size of the bulb; peat, loam, leaf-mould, old cow-dung, and sand in equal proportions, with good drainage. Give no water until the bud appears above ground, then water and place in a strong, moist heat, growing vigorously, and training as the plant proceeds. When done flowering, and the leaves turn yellow, refrain from watering, and shortly after turn the plants on their broadsides in a dry place, and allow them to rest until next season.

G. abyssi'nica (Abyssinian). Segments twice as broad as those of *G. superba*. Abyssinia. 1894.
" *Carso'ni* (Carson's). 8. Brownish-red, then dull red, yellow edge. British Central Africa. 1904.
" *lu'tea* (yellow). Wholly yellow. 1901.
" *nepale'nsis* (Nepaul). See G. SUPERBA NEPALENSIS.
" *Pla'ntii* (Plant's). See G. VIRESCENS.
" *rothschildia'na* (Rothschildian). Bright crimson, with purple mark at base. Uganda. 1903.
G. rothschildia'na citri'na (citron-yellow). Citron-yellow, with claret band. Uganda. 1905.
" *si'mplex* (simple). 2. Blue. July. Senegal. 1756.
" *supe'rba* (superb). 6. Orange. July. E. Ind. 1690.
" " *grandiflo'ra* (large-flowered). Orange. Tropical Africa.
" " *leopoldia'na* (King Leopold's). 6. Yellow. July. 1847.
" " *nepale'nsis* (Nepaulese). 2. Yellow. June. Nepaul. 1825.
" *vire'scens* (greenish). 4. Orange. August. Mozambique. 1823.
" " *grandiflo'ra* (large-flowered). Yellow. Natal. 1905.

GLORY PEA. *Clia'nthus.*

GLOSSA'NTHUS MALABA'RICUS and **G. NOTONIA'NUS.** See KLUGIA NOTONIANA.

GLOSSA'NTHUS ZEYLA'NICUS. See KLUGIA ZEYLANICA.

GLOSSOCO'MIA CLEMATI'DEA and **G. OVA'TA.** See CODONOPSIS OVATA.

GLOSSOCO'MIA LU'RIDA. See CODONOPSIS ROTUNDIFOLIA.

GLOSSO'DIA. (From *glossa*, a tongue, and *eidos*, like; referring to the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. Allied to Limodorum.)

Greenhouse, Australian, terrestrial orchids. Offsets; sandy loam and peat; dryish in winter. Winter temp., 45° to 50°.

G. ma'jor (larger). Blue. June. 1810.
" *mi'nor* (smaller). Blue. June. 1810.

GLOSSO'GYNE. (From *glossa*, a tongue, and *gune*, a female; the rays, when present, are always female. Nat. ord. Compositæ. Allied to Bidens.)

Stove perennial herb. Seeds; divisions; cuttings in sand in a close frame, with bottom-heat. Fibrous loam, leaf-mould, and sand.

G. pinnati'fida (pinnately-cut). 1–1½. Yellow. India; Malaya. 1875.

GLOSSOPE'TALON. (From *glossa*, a tongue, and *petalon*, a petal. Nat. ord. Celastraceæ.)

A hardy, thorny shrub. Cuttings in sand under a hand-light. Ordinary soil.

G. meiona'ndrum (small-anthered). Whitish. Colorado. 1894.

GLOTTI'DIUM FLORIDA'NUM. See SESBANIA PLATYCARPA.

GLOXI'NIA. (Named after *P. B. Gloxin*, a botanist of Colmar. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove herbaceous perennials. For culture see GE'SNERA.

G. caule'scens (stemmed). See SINNINGIA SPECIOSA.
" *digitalifloʼra* (foxglove-flowered). ½. Pale crimson. June. Mexico. 1843.
" *di'scolor* (two-coloured-*leaved*). 1½. Lilac, blue. March. Brazil. 1843.
" *fimbria'ta* (fringed). See G. GLABRATA.
" *glabra'ta* (smooth). 1½. White, yellow. Mexico.
" *hirsu'ta* (hairy). ½. Blue. July. S. Amer. 1824.
" *hypocyrtifloʼra* (curved-under-flowered). Argentina.
" *immacula'ta* (spotless). See SINNINGIA SPECIOSA.
" *macrophy'lla* (large-leaved). Violet. September. Brazil. 1844.
" *macula'ta* (spotted-*stalked*). 1. Purple. September. S. Amer. 1739.
" *menziesia'na* (Menziesian). See SINNINGIA SPECIOSA.
" *Me'rkii* (Merk's). See SINNINGIA SPECIOSA.
" *pallidifloʼra* (pale-flowered). 1. Purple. October. Colombia. 1845.
" *Passingha'mi* (Passingham's). See SINNINGIA SPECIOSA.
" *pi'cta* (painted-*leaved*). See TYDÆA PICTA.
" *ru'bra* (red). See SINNINGIA SPECIOSA.
" *specio'sa* (showy). See SINNINGIA SPECIOSA.
" *tubifloʼra* (tube-flowered). See ACHIMENES TUBIFLORA.
" *varia'bilis* (variable). White, spotted with violet-purple. 1877.

GLY'CE MARI'TIMA. See ALYSSUM MARITIMUM.

GLY'CINE. (From *glukus*, sweet; referring to the taste of the roots of some. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

The well-known Chinese twiner, popularly called *Gly'cine sine'nsis*, belongs to *Wista'ria*. Seeds in a hot-bed, in spring; cuttings of young side-shoots in spring, in sand, under a bell-glass; peat and loam, with silver sand.

STOVE EVERGREEN TWINERS.

G. backhousia'na (Backhouse's).
„ *hedysaroi'des* (Hedysarum-like). 1½. Purple. July. Guinea. 1823. Shrub.
„ *mo'llis* (soft). See RHYNCHOSIA MOLLIS.
„ *ro'sea* (rosy). 1. Rose. Ceylon. 1848.
„ *stria'ta* (streaked). 4. Yellow. July. S. Amer. 1818.

GREENHOUSE EVERGREEN TWINERS.

G. A'pios (Apios). See APIOS TUBEROSA.
„ *bi'loba* (two-lobed). 20. Purple. Mexico. 1827.
„ *bimacula'ta* (two-spotted). See HARDENBERGIA MONOPHYLLA.
„ *bitumino'sa* (bituminous). See FAGELIA BITUMINOSA.
„ *clandesti'na* (hidden). 2. Purple. July. Australia. 1818.
„ *cocci'nea* (scarlet). See KENNEDYA PROSTRATA.
„ *complonia'na* (Comptonian). See HARDENBERGIA COMPTONIANA.
„ *filo'sa* (thready). See AMPHICARPÆA MONOICA.
„ *heterophy'lla* (various-leaved). See RHYNCHOSIA GLANDULOSA.
„ *humifu'sa* (spread on ground). See ROTHIA TRIFOLIATA.
„ *ligno'sa* (woody). See SWEETIA LIGNOSA.
„ *mi'nima* (smallest). See G. CLANDESTINA.
„ *monoi'ca* (monœcious). See AMPHICARPÆA MONOICA.
„ *monophy'lla* (one-leaved). See HALLIA CORDATA.
„ *puncta'ta* (spotted). See POIRETIA PUNCTATA.
„ *rubicu'nda* (red). See KENNEDYA RUBICUNDA.
„ *sarmento'sa* (trailing). See AMPHICARPÆA MONOICA.
„ *So'ja* (Soja). 3. Violet. July. Trop. Asia. 1790. "Soy Bean." Annual.
„ *vincenli'na* (St. Vincent). See CHÆTOCALYX VINCENTINA.

GLYCO'SMIS. (From *glukusma*, sweetness. Nat. ord. Rutaceæ.)

Evergreen stove shrub. Seeds; cuttings in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

G. pentaphy'lla (five-leaved). 6. White. China.

GLYCYRRHI'ZA. Liquorice. (From *glukus*, sweet, and *rhiza*, a root; referring to the sweet juice of the roots of the liquorice. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Closely allied to Astragalus.)

Hardy herbaceous perennials. The true liquorice is the root of *G. gla'bra*; but those of *echina'ta* and *glandulifera* are equally esteemed as a pectoral. Dividing the roots, taking care that there is one or several buds on each piece; deep, sandy loam.

G. aspe'rrima (roughest). 2. Blue. July. Siberia. 1795.
„ *echina'ta* (prickly-headed). 3. Pale. July. Italy. 1596.
„ *fœ'tida* (stinking). 3. Pale yellow. July. Africa. 1817.
„ *gla'bra* (*common*-smooth). 3. Pale blue. July. Italy. 1562.
„ *glandulifera* (glanded). 3. Pale. July. Hungary. 1805.
„ *hirsu'ta* (hairy). See G. GLABRA.
„ *lepido'ta* (scaled-*silky-leaved*). 3. Pale. July. Missouri. 1811.
„ *urale'nsis* (Ural). 3. Pale blue. July. Siberia. 1818.

GLYCYRRHI'ZA GLA'BRA CULTURE. Common Liquorice or Spanish Liquorice.

Soil and Situation.—It thrives best in a rich, light soil, two or three feet deep, which should be trenched completely to the bottom before planting, and a little well-decomposed manure turned in with the bottom spit. In shallow or poor ground it will not succeed: the situation cannot be too open.

Planting.—It is propagated by cuttings of the side-roots, which spring from the crown of the plants, and run horizontally just beneath the surface. Plant in January, February, or early in March. Each set, having a bud or two, should be about two inches beneath the surface. The only cultivation they require is to be frequently hoed, and in autumn the decayed stalks to be cut down, and the earth stirred between the rows.

The roots are not fit for use until of three or four years' growth. The season for taking them up is December, January, or February. A trench must be dug up regularly along each row, quite down to the extremity of the principal roots, which descend two feet and more.

GLYPHÆ'A. (From *glupho*, to carve. Nat. ord. Tiliaceæ.)

Stove shrub. Cuttings of side-shoots in a close case, with bottom-heat. Fibrous loam, a little leaf-mould, and sand.

G. Monteï'roi (Monteiro's). Yellow. Trop. Africa. 1866.

GLYPHOSPE'RMA. (From *gluphe*, sculpture, and *sperma*, a seed; in allusion to the markings on the seed. Nat. ord. Liliaceæ.)

Half-hardy or nearly hardy herb. Seeds and divisions. Light, rich soil.

G. Palme'ri (Palmer's). 1½–2. White. Northern Mexico. 1881.

GLYPTOSTRO'BUS COLUMNA'RIS. See TAXODIUM DISTICHUM FASTIGIATUM.

GMELI'NA. (Named after *G. Gmelin*, a German naturalist. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Tectona.)

Evergreen trees. Seeds; cuttings of firm young shoots in sand, and in heat; rich, fibrous loam. Summer temp., 60° to 80°; winter, 50° to 55°.

G. arbo'rea (tree). 14. Orange. May. India and Malaya.
„ *asia'tica* (Asiatic). 10. Yellow. E. Ind. 1792. Stove.
„ *Hy'strix* (hedgehog). Yellow. Bracts red-purple. Philippine Islands. 1894. Climber.
„ *Rhee'dii* (Rheede's). See G. ARBOREA.
„ *speciosi'ssima* (showiest). See WIGHTIA GIGANTEA.

GNAPHA'LIUM. Cudwort, or Everlasting. (From *gnaphalon*, soft down; in reference to the woolly covering of the leaves. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Helichrysum.)

Seeds of the hardy and tender annuals and biennials in the open ground, and in heat respectively; shrubs, by cuttings under a hand-light; and perennials, by divisions; sandy loam and leaf-mould. *Alba'scens* requires a cool stove, and the addition of a little peat.

G. acumina'tum (long-pointed). 3. White. July. S. Africa. 1823. Greenhouse.
„ *alba'scens* (whitish). 2. White. Jamaica. 1793. Stove evergreen.
„ *apicula'tum* (finely-pointed). See HELICHRYSUM APICULATUM.
„ *arena'rium* (sand). See HELICHRYSUM ARENARIUM.
„ *conge'stum* (crowded). See HELICHRYSUM FELINUM.
„ *co'nicum* (conical). 2. Yellow. July. S. Europe. 1824.
„ *dioi'cum* (dicœcious). See ANTENNARIA DIOICA.
„ *exi'mium* (choice). See HELIPTERUM EXIMIUM.
„ *grandiflo'rum* (large-flowered). See HELICHRYSUM GRANDIFLORUM.
„ *involucra'tum* (involucred). See G. JAPONICUM.
„ *japo'nicum* (Japanese). 1. Brown, yellow. July. Cosmopolitan. 1699. Hardy herbaceous.
„ *lasiocau'lon* (woolly-stemmed). 3. White. July. S. Africa. 1823.
„ *Leontopo'dium* (lion's-foot). See LEONTOPODIUM ALPINUM.
„ *lu'teo-a'lbum* (yellow-white). 1½. Pale yellow. August. Cosmopolitan. "Jersey Livelong."
„ *margarita'ceum* (pearly). See ANAPHALIS MARGARITACEA.
„ *mode'stum* (modest). See HELIPTERUM GNAPHALIOIDES.
„ *obtusifo'lium* (blunt-leaved). 1. Yellow. July. N. Amer. 1732. Hardy annual.
„ *pennsylva'nicum* (Pennsylvanian). See G. PURPUREUM.
„ *purpu'reum* (purple-*flowered*). 1½. Purple. July. N. Amer. 1732. Greenhouse biennial.

G. sangui'neum (bloody). See HELICHRYSUM SANGUINEUM.
,, *undula'tum* (waved). 1. Yellow, white. July. S. Africa. 1732. Hardy annual.

GNI'DIA. (An ancient name for laurel. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Pimelea.)
Greenhouse evergreens, with pale yellow flowers, from South Africa. Young shoots, when two or three inches long, in sand, above sandy peat, well drained, under a bell-glass; stagnant water quickly destroys them. Winter temp., 40° to 48°; rather shaded in summer.
G. arge'ntea (silvery). 2. June. 1826.
,, *bifio'ra* (two-flowered). 2. June. 1800.
,, *capita'ta* (*round*-headed). See LASIOSIPHON LINIFOLIUS.
,, *carina'ta* (keeled). 1. July. 1786.
,, *denuda'ta* (denuded). 1½. Pale yellow. 1820.
,, *filamento'sa* (thready). 2. May. 1800.
,, *fla'va* (yellow). 2. Dark yellow. June. 1825.
,, *imbrica'ta* (imbricated). 2. June.
,, *juniperifo'lia* (juniper-leaved). 2½. June. 1810.
,, *læviga'ta* (polished). See G. OPPOSITIFOLIA.
,, *linoi'des* (Linum-like). 3. White. May. 1820.
,, *oppositifo'lia* (opposite-leaved). 1. June. 1783.
,, *pinifo'lia* (pine-leaved). 2. June. 1768.
,, *polysta'chya* (many-spiked). 1–6. Yellow. 1905.
,, *seri'cea* (silky). 1½. July. 1786.
,, *si'mplex* (simple). See G. CARINATA.
,, *stri'cta* (upright). 2½. June. 1818.
,, *tomento'sa* (felted). 4. Pale yellow. March.

GOAT MOTH. See COSSUS LIGNIPERDA.

GOAT'S BEARD. *Spiræ'a Aru'ncus.*

GOAT'S FOOT. *O'xalis capri'na.*

GOAT'S RUE. *Gale'ga.*

GOAT'S THORN. *Astra'galus Tragaca'ntha.*

GOBBO. See ARTICHOKE.

GODE'TIA. (Named after *M. Godet*, a foreigner. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. United to Œnothera.)
G. albe'scens (whitish). See ŒNOTHERA ALBESCENS.
,, *decu'mbens* (leaning-down). See ŒNOTHERA DECUMBENS.
,, *grandiflo'ra* (large-flowered). See ŒNOTHERA WHITNEYI.
,, *le'pida* (pretty). See ŒNOTHERA DECUMBENS.
,, *Lindle'yii* (Lindley's). See ŒNOTHERA AMŒNA.
,, *pu'mila* (dwarf). See ŒNOTHERA PUMILA.
,, *purpu'rea* (purple-*flowered*). See ŒNOTHERA PURPUREA.
,, *quadrivu'lnera* (four-spotted-*petaled*). See ŒNOTHERA QUADRIVULNERA.
,, *Romanzo'vii* (Romanzow's). See ŒNOTHERA ROMANZOWII.
,, *ro'seo-a'lba* (red and white). 1. Red, white. May. Nepaul. 1827.
,, *rubicu'nda* (ruddy). See ŒNOTHERA AMŒNA.
,, *Scha'mini flo're ple'no* (Schamin's double-flowered). 2. Pink, double. 1906.
,, *tene'lla* (delicate). See ŒNOTHERA TENELLA.
,, *tenuifo'lia* (fine-leaved). See ŒNOTHERA TENUIFOLIA.
,, *vimi'nea* (twiggy). See ŒNOTHERA VIMINEA.
,, *vino'sa* (wine-coloured-*flowered*). See ŒNOTHERA AMŒNA.
,, *Whi'teyi* (Whitney's). See ŒNOTHERA WHITNEYI.

GODO'YA. (Named after *E. Godoy*, whose Spanish title was the Prince of Peace. Nat. ord. Ochnaceæ. Linn. 13-*Polyandria*, 1-*Monogynia*.)
Stove evergreen tree. Cuttings of ripened shoots in sand, under a glass, and in strong bottom-heat. Summer temp., 60° to 80°; winter, 50° to 55°.
G. gemmiflo'ra (bud-flowered). 8. Yellow. Brazil. 1820.
This is *Blastemanthus gemmiflorus*.
,, *sple'ndida* (splendid). 10. White. Colombia. 1869.

GODWI'NIA GI'GAS. See DRACONTIUM GIGAS.

GOE'THEA. (In honour of the poet *Goethe*. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)
Stove evergreen. Cuttings in sand in a close case, with bottom-heat. Fibrous loam and sand.
G. cauliflo'ra (stem-flowering). Brazil.
,, *makoya'na* (Makoyan). 2. Maroon, rose. Brazil. 1878.
,, *multiflo'ra* (many-flowered). See PAVONIA MULTIFLORA.
,, *strictiflo'ra* (upright-flowering). 1½. Crimson, white. August. Brazil. 1852.

GOLDEN APPLE. *Æ'gle.*

GOLDEN HAIR. *Chryso'coma Co'ma-au'rea.*

GOLDEN ROD. *Solida'go.*

GOLDEN SAXIFRAGE. *Chrysosple'nium.*

GOLDEN THISTLE. *Sco'lymus* and *Pro'tea Sco'lymus.*

GOLDFU'SSIA ANISOPHY'LLA. See STROBILANTHES ANISOPHYLLUS.

GOLDFU'SSIA GLOMERA'TA. See STROBILANTHES GLOMERATUS.

GOLDFU'SSIA ISOPHY'LLA. See STROBILANTHES ISOPHYLLUS.

GOLDFU'SSIA THOMSO'NI. See STROBILANTHES WALLICHII.

GOLDSCHMI'DTIA. See DENDROBIUM VEXANS.

GOLDYLOCKS. *A'ster Lino'syris.*

GOME'ZA. (Commemorative of *Bernhard A. Gomez*, a Portuguese surgeon, who wrote about Brazilian plants. Nat. ord. Orchidaceæ.)
Cool stove or intermediate house Orchids. See ORCHIDS FOR CULTURE.
G. Barke'ri (Barker's). Green. January. Brazil. 1836.
,, *Bino'tii* (Binot's). Orange, white. Brazil. 1904.
,, *chryso'stoma* (golden-mouthed). Light green. Brazil. 1834.
,, *cri'spa* (crisped). Greenish-yellow. October. Brazil. 1839.
,, *folio'sa* (leafy). Yellow, red. Brazil. 1825.
,, *Glazio'vii* (Glaziov's). Light green. Brazil. 1906. Climbing.
,, *laxiflo'ra* (lax-flowered). See G. CHRYSOSTOMA.
,, *planifo'lia* (flat-leaved). Yellow, white. Brazil.
,, *recu'rva* (recurved). 1. Yellow. June. Brazil. 1824.
,, *sca'ndens* (climbing). See G. GLAZIOVII.

GO'MPHIA. Button Flower. (From *gomphos*, a club; said to be the shape of the fruit. Nat. ord. *Ochnads* [Ochnaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
Stove evergreen shrubs, with yellow flowers. Cuttings of young shoots getting firm, in sand, under a bell-glass, and in heat; sandy loam and a little peat. Summer temp., 60° to 85°; winter, 50° to 55°.
G. angustifo'lia (narrow-leaved). 4. India and Malaya. 1823.
,, *cuspida'ta* (short-pointed). 3–6. Yellow, crisped. Brazil. 1907.
,, *deco'ra* (becoming). 2–3. Golden-yellow. Brazil. 1879.
,, *guyanne'nsis* (Guiana). 4. Yellow. Trop. Amer. 1803.
,, *Jabota'pita* (Jabotapita). 5. Jamaica. 1820.
,, *læviga'ta* (smooth-*leaved*). See G. OBTUSIFOLIA.
,, *laurifo'lia* (laurel-leaved). 5. Jamaica. 1823.
,, *ni'tida* (glossy-*leaved*). See G. GUYANNE'NSIS.
,, *obtusifo'lia* (blunt-leaved). 3. Madagascar. 1803.
,, *olivæfo'rmis* (olive-shaped). Yellow. Brazil. 1861.
,, *Theophra'sta* (Theophrasta). 10. Orange. Brazil. 1859.
,, *zeyla'nica* (Ceylon). See G. ANGUSTIFOLIA.

GOMPHOCA'RPUS. (From *gomphos*, a club, and *karpos*, a fruit; shape of the seed-pods. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Asclepias.)
Greenhouse evergreens, from South Africa. Seeds sown in a hotbed in spring. Cuttings of the points of shoots, and better still, small side-shoots, when growth is commencing, in sand, under a bell-glass. Sandy loam and fibrous peat. Summer temp., 55° to 75°; winter, 40° to 48°.

G. arbore'scens (tree-like). 5. White. December. 1714.
,, *cri'spus* (curled-*leaved*). 1. Yellow. July. 1714.
,, *frutico'sus* (shrubby). 5. White. July. Mediterranean regions. 1714.
,, *navicula'ris* (boat-shaped). White. July.
,, *padifo'lius* (Padus-leaved). S. Africa.
,, *physoca'rpus* (bladder-fruited). S. Africa.
,, *seto'sus* (bristly). Greenish-yellow. S. Arabia. 1897.
,, *sina'icus* (Sinai). See G. FRUTICOSUS.
,, *te'xtilis* (textile). 3. White, violet. Tropics. 1902.

GOMPHOLO'BIUM. (From *gomphos*, a club, and *lobos*, a pod; shape of seed-vessel. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse evergreens, from Australia. Cuttings of young shoots, about two inches in length, in sand, under a bell-glass, in a shaded place, in April or May; peat and loam in little fibrous pieces, with rubbly charcoal, potsherds, and silver sand; drainage must be well attended to, as saturated soil is their ruin. Winter temp., 40° to 48°. All have yellow flowers, except where otherwise mentioned.

G. adu'ncum (hooked). May. 1837.
,, *angustifo'lium* (narrow-leaved). May. 1825.
,, *arista'tum* (awned). May. 1837.
,, ,, *mu'ticum* (snipped). August. 1839.
,, *barbi'gerum* (bearded-*keeled*). See G. LATIFOLIUM.
,, *capita'tum* (round-head-*flowered*). 2. July. 1830.
,, *Drummo'ndii* (Drummond's). See G. ARISTATUM MUTICUM.
,, *glabra'tum* (smooth). 1½. June. 1820.
,, *gauce'scens* (milky-green). See G. GRANDIFLORUM.
,, *grandiflo'rum* (large-flowered). 2. June. 1803.
,, ,, *setifo'lium* (bristle-leaved). 2. June. 1826.
,, *Henderso'nii* (Henderson's). August. 1840. This is *Burtonia Hendersonii*.
,, *Huege'lii* (Huegel's). ½. May. 1824.
,, *knightia'num* (Knight's). ½. August. 1830.
,, *lana'tum* (woolly). See G. TOMENTOSUM.
,, *latifo'lium* (broad-leaved). 2. May. 1803.
,, *margina'tum* (edged). 2. May. 1820.
,, *mi'nus* (lesser). 1½. May. 1824.
,, *mirbelioi'des* (Mirbelia-like). 1½. May. 1823.
,, *peduncula're* (*long*-flower-stalked). See G. HUEGELII.
,, *pinna'tum* (leafleted). ½. May. 1820.
,, *polymo'rphum* (many-formed). 1–1½. Purple, red, or yellow. 1803.
,, *reticula'tum* (netted-*leaved*). 1½. May. 1824.
,, *splе'ndens* (shining). June. 1843.
,, *tene'llum* (delicate). 1½. May. 1824.
,, *te'nue* (slender). See G. POLYMORPHUM.
,, *tetrathecoi'des* (Tetratheca-like). See G. MINUS.
,, *tomento'sum* (shaggy). 3. May. 1803.
,, *venulo'sum* (veiny-*leaved*). See G. POLYMORPHUM.
,, *venu'stum* (beautiful). 3. May. 1803.
,, *versi'color* (changeable-coloured). See G. POLYMORPHUM.
,, ,, *cau'libus purpu'reis* (purple-stalked). 1½. Red. March. 1838.
,, *virga'tum* (twiggy). 1½. May. 1820.

GOMPHRE'NA. Globe Amaranth. (From *gomphos*, a club; the shape of the flowers. Nat. ord. *Amarants* [Amarantaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*).

Stove plants. Perennials, by seed and divisions; the shrubby, by seed and cuttings; the annuals and biennials, by seed in a hotbed. The Globe varieties are very useful for ornament, and should have equal care, potting, soil, heat, &c., as the Cockscombs.

G. brasilie'nsis (Brazilian). See MOGIPHANES STRAMINEA.
,, *cocci'nea* (scarlet). Orange-red. Mexico. 1853. Perennial.
,, *decu'mbens* (decumbent). Rosy-red. Mexico.
,, ,, *obova'ta* (obovate). Rose.
,, *globo'sa* (globe-*flowered*). 1½. Red. July. India. 1714. Annual.
,, ,, *a'lba* (white). 1. White. July. India. 1714. Annual.
,, *pere'nnis* (perennial). 2. Pale yellow. August. S. Amer. 1732. Herbaceous.
,, *pulche'lla* (pretty). 1½. Rosy. July. Brazil. 1843. Annual.
,, *seri'cea* (silky). White. Ecuador. 1820.
,, *villo'sa* (long-haired). Striped. June. Monte Video. 1826. Evergreen shrub.

GOMU'TUS SACCHA'RIFER. See ARENGA SACCHARIFERA.

GONATA'NTHUS. (From *gonu*, a knee, and *anthos*, a flower; the flower spathe is bent. Nat. ord. Araceæ.)

Fine foliage stove plant. Offsets, which are freely produced. Fibrous peat and loam, with some sharp sand.

G. sarmento'sa (trailing). Yellow. Himalayas.

GONA'TOPUS BOIVI'NII. See ZAMIOCULCAS BOIVINII.

GONGO'RA. (Named after a Spanish viceroy of New Grenada. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Batemannia.)

Stove orchids. Divisions; baskets filled and packed with sphagnum, fibrous peat, broken pots, and pieces of charcoal. Summer temp., 60° to 90°, with plenty of atmospheric moisture; winter, 55° to 65°, and dryish.

G. armeni'aca (apricot). Apricot. July. Nicaragua.
,, *a'tro-purpu'rea* (dark purple). 1. Dark purple. June. British Guiana. 1824.
,, ,, *ma'jor* (larger). Purple. May. Demerara. 1834.
,, ,, *pi'cta* (painted). Yellow, purple. May. Demerara. 1836.
,, *beyrodtia'na* (Beyrodtian). Pale yellow, purple-spotted. Colombia. 1906.
,, *bufo'nia* (toad-*coloured*). 1. Variegated. May. Brazil. 1841.
,, ,, *leucochi'la* (white-lipped). Purple, white. May. Brazil. 1840.
,, ,, *ma'jor* (larger) Purple, white. May. Brazil. 1837.
,, ,, *fu'lva* (tawny). ½. Yellow, blue. July. Mexico. 1838.
,, ,, *vitelli'na* (yolk-of-egg). Yellow. May. Mexico. 1841.
,, *cassi'dea* (helmeted). Yellow, purple. Guatemala. 1874.
,, *Charleswo'rthii* (Charlesworth's). White, barred with brownish-purple.
,, *Charo'ntis* (Charontis). Yellow; lip white, spotted with crimson. Colombia. 1877.
,, *flave'ola* (yellowish). Light ochre-yellow, spotted with brown. 1886.
,, *galea'ta* (helmeted). 1. Yellow, spotted with brown. Mexico. 1828.
,, *galeottia'na* (Galeottian). Red. Mexico. 1842.
,, *gratulabu'nda* (congratulating). Yellow, spotted brown. Colombia.
,, *gro'ssa* (large). Yellowish, with blackish-purple spots. Ecuador. 1877.
,, *leucochi'la* (white-lipped). See G. BUFONIA LEUCOCHILA.
,, *macula'ta* (spotted-*flowered*). 2½. Yellow-spotted. May. Demerara. 1832.
,, ,, *a'lba* (white-*flowered*). 2. White. May. Guiana. 1836.
,, ,, *aura'ntia* (orange). Orange. May. Guiana. 1842.
,, ,, *ca'ndida* (white). White. May. Guiana. 1843.
,, ,, *citri'na* (citron). Yellow. May. Guiana. 1837.
,, ,, *fu'lgens* (blazing). Guiana. 1837.
,, ,, *fu'sca* (dark brown). Guiana. 1836.
,, ,, *gra'cilis* (slender). Guiana. 1839.
,, ,, *gri'sea* (grey). Demerara. 1836.
,, ,, *i'gnea* (flame-coloured). 2. Flame. May. Brazil. 1837.
,, ,, *lu'tea* (yellow). Guiana. 1835.
,, ,, *sangui'nea* (blood-coloured). Demerara. 1836.
,, ,, *squa'lens* (mean). Guiana. 1837.
,, ,, *tri'color* (three-coloured). 2. Golden-brown. May. Panama. 1842.
,, *nigri'ta* (blackish). Dark purple. July. Demerara. 1838.
,, *portento'sa* (monstrous). Yellow, violet, purple. Ecuador. 1869.
,, ,, *ro'sea* (rosy). Rose-purple; lip citron-yellow. Colombia.
,, *quinquene'rvis* (five-nerved). Yellow, purple. May. Peru.
,, *sanderia'na* (Sanderian). Yellow, with rosy spots. Peru.
,, *scaphe'phorus* (skiff-bearing).
,, *si'milis* (like). Colombia (?). 1881.
,, *specio'sa* (showy). See CORYANTHES SPECIOSA.
,, *trunca'ta* (blunt-*flowered*). Red, yellow. April. Mexico. 1842.
,, *vi'ridi-purpu'rea* (green-purple). See CIRRHÆA LODDIGESII.

GONIOPHLE'BIUM. (From *gonia*, an angle, and *phlebion*, a vein; alluding to the veins of the fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. All belong to Polypodium, and will be found under that genus.

Stove Ferns. Division in the spring, as fresh growth is commencing; peat and loam. Summer temp., 60° to 85°; winter, 50° to 55°. *Attenua'tum* will do with greenhouse treatment.

G. a'lbo puncta'tum (white-dotted). Brown, yellow. July. S. Amer. 1840.
„ *amœ'num* (lovely). N. India and Formosa.
„ *argu'tum* (sharp). Brown. Nepaul. 1845.
„ *attenua'tum* (thin). ¼. Yellow. June. N. S. Wales. 1823.
„ *Catheri'næ* (St. Catherine's). 1. Brown. Brazil. 1841.
„ *colpo'des* (sinuous). Venezuela.
„ *cuspida'tum* (short-pointed). Near *G. subauricula'tum*. Java.
„ *disss'mile* (unlike). 2. Yellow. June. Brazil. 1820.
„ *di'stans* (distant). N. India, Ceylon, and Java.
„ *fraxinifo'lium* (ash-leaved). Colombia, Brazil, and Peru.
„ *glaucophy'llum* (glaucous-leaved). W. Ind., Colombia, Ecuador.
„ *glau'cum* (glaucous). Philippines.
„ *gra'ndiceps* (large-headed). ½. Formosa. 1886.
„ *harpeo'des* (scimitar-like). See G. LORICEUM.
„ *inca'num* (hoary). W. Ind. 1840.
„ *la'chnopus* (woolly-footed). N. India. 1879.
„ *la'tipes* (broad-footed). Brown. Brazil. 1841.
„ *lori'ceum* (thong-like). Mexico and W. Ind. to Brazil and Chili.
„ *menisciifo'lium* (Meniscium-leaved). Brazil. 1840.
„ *neriifo'lium* (oleander-leaved). 5. Brown. July. Brazil. 1837.
„ *pectina'tum* (comb-*leaved*). 1½. Yellow. July. W. Ind. 1793.
„ *piloselloi'des* (Pilosella-like).
„ *sepu'ltum* (enclosed). 1. Brown. Brazil. 1841.
„ *subauricula'tum* (subauricled). N. India, Malaccas, Philippines.
„ *triloba'tum* (three-lobed). Frond three-lobed. Florida and Mexico to Brazil.
„ *vacciniifo'lium* (bilberry-leaved). Brazil. 1841.
„ *va'cillans* (wavering). See G. LORICEUM.
„ *verruco'sum* (warted). Philippines and Malaccas.

GONIO'PTERIS. (From *gonia*, an angle, and *pteris*, a fern; referring to the leaves. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns. Treatment as for Goniophlebium. The New Zealand and New Holland species will thrive in the greenhouse.

G. a'spera (rough). Brown, yellow. July. Isle of Luzon.
„ *asplenioi'des* (Asplenium-like). Brown, yellow. July. Jamaica. 1841.
„ *costa'ta* (ribbed). Brown, yellow. June. E. Ind.
„ *crena'ta* (scolloped). W. Ind. 1835.
„ *fraxinifo'lia* (ash-leaved). 2. Brown. August. Brazil. 1841.
„ *megalo'des* (picture-like). Brown. July. W. Ind. 1843.
„ *penni'gera* (feathered). Brown, yellow. July. New Zealand. 1835.
„ *proli'fera* (proliferous). 1. Brown, yellow. May. E. Ind. 1820.
„ *ru'bida* (red). Brown. July. Isle of Luzon.
„ *tetrago'na* (four-angled). Brown. W. Ind. 1843.
„ *urophy'lla* (tail-leaved). Brown, yellow. June. E. Ind.

GONIOSCY'PHA. (Derived from *gonia*, an angle or knot, and *skuphos*, a cup. Nat. ord. Liliaceæ.)

Greenhouse perennial. Seeds, division. Loam, leaf-mould, and sand.

G. eucomoi'des (Eucomis-like). 1. Green. Himalaya. 1886.

GONO'CALYX. (From *gonu*, a knee, or angle, and *calyx*; in allusion to the angles on the calyx tube. Nat. ord. Vacciniaceæ. It resembles a species of Ceratostemma, and may belong there.)

Showy greenhouse shrub. Seeds. Sandy, fibrous peat.

G. pu'lcher (beautiful). Rose. Colombia. 1858.

GONO'LOBUS. (From *gonos*, an angle, and *lobos*, a pod; referring to the shape of the seed-vessel. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

The hardy species by seeds and divisions, in dry, sandy soil. The greenhouse and stove species, divisions, by seed in heat, and by cuttings of the young shoots in sand, under a bell-glass. The stove kinds require bottom-heat; peat and loam, with silver sand, and a little dry cow-dung.

HARDY DECIDUOUS TWINERS.

G. di'scolor (two-coloured). See G. OBLIQUUS.
„ *læ'vis* (smooth). 4. Green. July. N. Amer. 1822.
„ *macrophy'llus* (large-leaved). 6. Yellow. July. N. Amer. 1822.
„ *nuttallia'nus* (Nuttall's). See G. LÆVIS.
„ *obli'quus* (oblique). 8. Green. July. N. Amer. 1809.

GREENHOUSE TWINERS.

G. caroline'nsis (Carolina). 6. Purple. July. Carolina. 1824. Deciduous.
„ *prostra'tus* (lying-down). 3. Green. July. Mexico. 1823. Evergreen.

STOVE DECIDUOUS TWINERS.

G. crispiflo'rus (curled-flowered). See FISCHERIA SCANDENS.
„ *grandiflo'rus* (large-flowered). 10. Green. July. Trinidad. 1826.

STOVE EVERGREEN TWINERS.

G. Cundura'ngo (Cundurango). See MARSDENIA CUNDURANGO.
„ *diadema'tus* (adorned). Green. September. Mexico. 1812.
„ *eria'nthus* (woolly-flowered). Mexico.
„ *Ghiesbre'ghtii* (Ghiesbreght's). W. Ind. 1858.
„ *hi'spidus* (bristly). Black. July. Brazil. 1837.
„ *martia'nus* (Martian). See FISCHERIA MARTIANA.
„ *mari'timus* (sea-shore). 6. Green. June. Carthage. 1823.
„ *ni'ger* (black). 6. Blackish-purple. October. Mexico. 1825.
„ *refra'ctus* (broken-back). S. Amer.
„ *re'ptans* (creeping). W. Ind.
„ *scolopendroi'des* (Scolopendrium-like). W. Ind.
„ *serrula'tus* (finely-serrate). W. Ind.
„ *subero'sus* (corky). 6. Green. August. N. Amer. 1732.

GOODE'NIA. (Named after *Dr. Goodenough*, bishop of Carlisle. Nat. ord. *Goodeniads* [Goodeniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

All Australian plants, with yellow flowers, except where otherwise mentioned. Herbaceous, by seeds and divisions in spring; the shrubby, by cuttings in sand, under a bell-glass, in April; peat and loam. Winter temp., 40° to 45°.

G. albe'scens (whitish). Yellow. 1862.
„ *a'lbida* (whitish). See SCÆVOLA MICROCARPA.
„ *bellidifo'lia* (daisy-leaved). ½. July. 1823.
„ *calendula'cea* (Calendula-like). See SCÆVOLA SUAVEOLENS.
„ *cæru'lea* (blue). Blue. June.
„ *decu'rrens* (running-down-*leaved*). 1. May. 1825.
„ *filifo'rmis* (thread-formed). Yellow. 1841.
„ *gra'cilis* (slender). 1½. July. 1822.
„ *grandiflo'ra* (large-flowered). 4. July. 1803.
„ *hedera'cea* (ivy-*leaved*). ½. July. 1813.
„ *heterophy'lla* (various-leaved). 1. Pale red. July. 1826.
„ *inca'na* (hoary). ½. Blue. May. 1842.
„ *læviga'ta* (smooth). See SCÆVOLA MICROCARPA.
„ *ova'ta* (egg-*leaved*). 2. July. 1793.
„ *panicula'ta* (panicled). 1. July. 1823.
„ *ri'gida* (stiff). See G. CÆRULEA.
„ *stelli'gera* (star-*haired*). ½. June. 1823.
„ *tene'lla* (very slender). See VELLEIA TRINERVIS.

GOO'DIA. (Named after *P. Good*, a collector of plants in Australia for Kew Gardens. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Templetonia.)

Greenhouse evergreen shrubs, with yellow blossoms, from Van Diemen's Land. Seeds and cuttings of the young shoots in May, in sand, under a glass; sandy peat and fibrous loam. Winter temp., 40° to 48°. A shady place for the pots in summer. All, and especially *lotifo'lia*, should be tried against a wall, with a little protection in winter.

G. lotifo'lia (lotus-leaved). 3. June. 1793.
„ *polyspe'rma* (many-seeded). See ARGYROLOBIUM ANDREWSIANUM.
„ *pube'scens* (downy). 3. June. 1805.

GOODYE'RA. (Named after *J. Goodyer*, a British botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Neottia.)

Terrestrial orchids. Divisions of the roots; peat and loam, with a little decayed wood and charcoal.

HARDY.

G. Menzie'sii (Menzies'). N. Amer. "Rattlesnake Plantain."
„ *pube'scens* (downy). ½. White. July. N. Amer. 1802. "Adder's Violet."
„ *re'pens* (creeping). ½. White. July. Scotland.
„ *tessella'ta* (chequered). See G. PUBESCENS.

STOVE.

G. corda'ta (heart-shaped). Yellow-brown. September. Himalaya. 1870.
„ *dawsonia'na* (Dawsonian). See HÆMARIA DAWSONIANA.
„ *di'scolor* (two-coloured). See HÆMARIA DISCOLOR.
„ *macra'ntha* (large-flowered). Pink. Leaves edged yellow. Japan. 1867.
„ *macrophy'lla* (large-leaved). White. August. Madeira. 1880.
„ *nu'da* (naked). Whitish, light brown. Mascarene Islands. 1902.
„ *ordea'na* (Ordean). Leaves with silvery veins. Philippines.
„ *pro'cera* (tall). White. June. India and Malaya. 1821.
„ *reticula'ta* (netted). Java.
„ *rodigasia'na* (Rodigasian). Leaves velvety, with whitish rib. New Guinea. 1886.
„ *rubicu'nda* (reddish-*flowered*). Cinnamon. July. Manilla. 1838.
„ *veluti'na* (velvety). Pink. Leaves with white midrib. Japan. 1867.

GOOSEBERRY. *Ri'bes Grossula'ria.*

VARIETIES.—*General Dessert Kinds.*—Champagne, R. and Y.; Early Green Hairy, G.; Golden Drop, Y.; Golden Gem, Y., Pitmaston Greengage, G.; Warrington, or Aston Seedling, R.; Taylor's Bright Venus, W.; Whitesmith, W.; Glenton Green, G.; Walnut, G.; Early Sulphur, Y.; Green Walnut, G.; Langley Gage, W.; Rumbullion, Y.; Whinham's Industry, R.

Late Dessert Kinds (for Retarding on Trellises).—Warrington, R.; Pitmaston Greengage, G.; Coe's Late Red, R.; the Champagnes, R. and Y.

Bottling.—Rumbullion, Y.

Preserving.—Rough Red, Warrington, Champagne.

Large Kinds (Very Good).—Prince Regent, R.; Wonderful, R.; Roaring Lion, R.; Top Sawyer, R.; Rockwood, Y.; No Bribery, Y.; Sovereign, Y.; Wellington's Glory, W.; Queen Charlotte, W.; Greenwood, G.; Glenton Green, G.

Large Kinds for Exhibition.—Conquering Hero, R.; Dan's Mistake, R.; London, R.; Speedwell, R.; Diamond, Y.; Candidate, Y.; Leveller, Y.; Leviathan, Y.; Telegraph, G.; Matchless, G.; Thumper, G.; General, G.; Antagonist, W.; Snowdrop, W.; Freedom, W.; King of Trumps, W.

The letters R., Y., G., W., refer to the colours, red, yellow, green, white.

Propagation: by Cuttings.—Large, straight, and healthy young shoots should be procured at the end of autumn, and these may be shortened to about fifteen inches in length, cutting away the weaker portion—the point. All the eyes or buds must be *cut out*, except the four top ones, in order to prevent the future plant from producing suckers. These should be planted in any ordinary garden-soil, in a light situation, but not too sunny. Plant about four inches deep, and keep them tolerably moist during spring and early summer. Cuttings of young growing shoots, also, strike readily under a glass.

Layering is performed as with other deciduous shrubs; if in the old wood, at the same period as the cuttings, and for the same reasons; if in the young shoots, when they have acquired some strength, about the beginning of July.

Seed.—This is the source whence new varieties may be obtained. The seed being washed out of the pulp when ripe, may be sown immediately; and in the ensuing spring, if the plants can be early subjected to a slight bottom warmth, they will be a foot in height in the first summer, and may, with good management, be brought to bear, some in the second year, and all in the third.

Soil.—A deep, sandy loam is best adapted to the gooseberry. Any free garden-soil, of average quality, will produce them in tolerable perfection, if well manured, and, above all things, freed from excess of moisture. Gooseberries will never thrive in stagnant soil; they will become hide-bound speedily, and their stems covered with moss. Nevertheless, they are very partial to a permanency of surface moisture in the growing season, and for that purpose top-dressings are had recourse to. Wherever fine gooseberries are required, the situation must be totally unshaded; it, however, becomes good policy at times to plant some under the partial shade of small trees. In such situations they will set in a frosty spring, when those exposed are cut off.

Culture in Growing Period.—A due training, especially whilst young, is necessary. Those who grow them for exhibition use two sorts of sticks, viz. forks and hooks. These are cut out of any ordinary brush-wood, about half a yard long, and they must be neatly pointed. Thus the hooks are made to draw down refractory shoots, and the forks to prop up the drooping ones. It is a good practice to apply a top-dressing of half-rotten manure in the beginning of May; and just before the fruit has completed its last swelling, the points of all the longest straggling shoots may be pinched or dubbed. It is well to go over the bushes in the early part of June, and remove much of the waste spray which chokes the interior of the bush. Some of the grosser shoots may be entirely removed, and all others of a doubtful character may have the points pinched. This will throw both size and flavour into the berry, and add to the value of the remaining wood for the ensuing crop.

Culture in the Rest Period.—Pruning is the first point; and the sooner this is performed after the fall of the leaf the better. It consists, mainly, in thinning out. When a bush is well thinned, no two shoots will touch; indeed, they should be, on an average, three inches apart all over the bush. Most good cultivators keep the middle of the bush very open This is especially necessary during the first three years from striking the cutting; and the principle should be attended to, less or more, at every annual pruning afterwards. In selecting wood to remain, choose that which is strong, but not over luxuriant; the latter, with all weakly and inferior wood, may be cut clear away; cutting away, also, all coarse snags in the interior of the branches. Lastly, shorten every point which appears weakly or incomplete in character, just so far as such inferiority is manifest. The root must now receive attention. Some of our show gooseberry growers open a trench around their bushes annually, at about the distance the branches extend, cutting away all coarse roots beyond that line. They then fill in the trench with good fresh loam and cow-dung blended. Whether this be done or not, a top-dressing of half-decayed manure should be annually applied, scraping away the loose surface, and placing the manure next the top fibres, and then soiling the whole over.

Insects.—See ABRAXUS, APHIS, and NEMATUS.

GORDO'NIA. (Named after *Mr. Gordon*, a London nurseryman. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Stuartia.)

Hardy deciduous shrubs, except *Hæmato'xylon*, which is a stove evergreen, and requires peat soil; cuttings of young shoots in sand, under a bell-glass, in heat. The others, though hardy, flowering late, are ornaments for

the greenhouse; layers in autumn, seeds in spring, and cuttings in sandy peat, under a hand-light, in summer, in a shady place. *Pube'scens* and *Frankli'ni* are the hardiest; but *lasia'nthus* is the most beautiful, and blooms chiefly in summer and autumn. Peat, leaf-mould, and sand, with a trifle of loam, deep, and on a retentive sub-soil; if not naturally so, puddled with clay, so that the plant may obtain something of its native position in swampy soil.

G. ano'mala (anomalous). 3. Creamy-white. China. 1816. Greenhouse.
„ *Frankli'ni* (Franklin's). See G. PUBESCENS SUBGLABRA.
„ *gra'ndis* (grand). White. 1880. Stove.
„ *Hæmato'xylon* (red-wood). See LAPLACEA HÆMATOXYLON.
„ *java'nica* (Javanese). See SCHIMA NORONHÆ.
„ *Lasia'nthus* (hairy-flower). 6. Yellow. September. N. Amer. 1739. "Loblolly Bay."
„ *pube'scens* (downy). 4. White. July. Carolina. 1774.
„ „ *subgla'bra* (nearly smooth). White. September. N. Amer. 1774.

GORSE. *U'lex europæ'us.*

GORTE'RIA. (Named after *D. Gorter*, a Dutch botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to GAZANIA.)

Greenhouse annual. Seed in light soil in the greenhouse, in March; or in the open border at the beginning of May.

G. acau'lis (stemless). See HAPLOCARPHA LEICHTLINII.
„ *asteroi'des* (Aster-like). See BERKHEYA FRUTICOSA.
„ *Pavo'nia* (peacock). See GAZANIA PAVONIA.
„ *persona'ta* (masked). ½. Yellow. August. S. Africa. 1774.
„ *ri'gens* (stiff). See GAZANIA RIGENS.

GOSSY'PIUM. Cotton-tree. (From *goz*, Arabic for a soft substance. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

The cotton of commerce is the hairy covering of the seeds of several species of this genus. *Barbade'nse* and *herba'ceum*, especially the former, furnish the best cotton. Stove plants. Annuals and biennials, by seed in moist heat, in spring; perennial herbaceous, by seed and divisions, in similar circumstances; shrubs, by cuttings of young shoots, just getting firm, in sandy soil, under a bell-glass, and in bottom-heat; rich, sandy loam. Summer temp., 60° to 85°; winter, 50° to 60°.

G. arbo'reum (tree). 12. Yellow. July. E. Ind. 1694. Evergreen shrub.
„ *barbade'nse* (Barbadoes). 5. Yellow. September. Barbadoes. 1759. Biennial.
„ *Come'sii* (Comes's). Yellow, blood-red blotch. 1889. Greenhouse shrub.
„ *Davidso'nii* (Davidson's). Yellow. S. United States. 1900.
„ *herba'ceum* (*common*-herbaceous). 3. Yellow. July. E. Ind. 1594. Annual.
„ *i'ndicum* (Indian). See G. HERBACEUM.
„ *Ki'rkii* (Kirk's). Yellow. Trop. Africa. 1881.
„ *latifo'lium* (broad-leaved). 5. Yellow. July. 1800. Evergreen shrub.
„ *mari'timum* (maritime). See G. BARBADENSE.
„ *obtusifo'lium* (blunt-leaved). 5. Yellow. July. E. Ind. Evergreen shrub.
„ *religio'sum* (religious). 3. Yellow. July. India. 1777. Herbaceous perennial.

GOUA'NIA. (Named after *A. Gouan*, once professor of botany at Montpelier. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 23-*Polygamia*, 2-*Dicœcia*. Allied to Trymalium.)

Evergreen stove climbers. Cuttings of half-ripened shoots in sand, under a bell-glass, in bottom-heat; fibrous peat and sandy loam. Summer temp., 60° to 80°; winter, 50° to 58°.

G. cordifo'lia (heart-leaved). See REISSEKIA SMILACINA.
„ *dominge'nsis* (St. Domingo). 10. Yellow. W. Ind. 1739.
„ *integrifo'lia* (entire-leaved). 10. Green, yellow. 1800.
„ *mauritia'na* (Mauritian). 10. Green, yellow. Mauritius. 1823.
G. tiliæfo'lia (lime-tree-leaved). 10. Yellow. July. Mascarene Islands. 1810.
„ *tomento'sa* (woolly). 10. Green, yellow. W. Ind. 1823.

GOURD. *Cucu'rbita.*

GOVE'NIA. (Named after *J. R. Gowen*, a distinguished horticulturist, and cross-breeder of plants. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Batemannia.)

Stove terrestrial orchids. Divisions of the plant; peat and loam, with a little charcoal and silver sand. Summer temp., 60° to 85°; winter, 50° to 55°.

G. Andrieu'xii (Andrieux's). Yellow, white. Mexico. 1884.
„ *delicio'sa* (delicious). White, purple. Mexico. 1884.
„ *fascia'ta* (banded-*flowered*). 1½. Yellow. January. Venezuela. 1843.
„ *Ga'rdneri* (Gardner's). 2. Green, yellow. December. Organ Mountains. 1837.
„ *lageno'phora* (bottle-bearing). 1½. White. January. Mexico. 1844.
„ *lilia'cea* (lily-*flowered*). 1. White. July. Mexico. 1837.
„ *sulphu'rea* (sulphur). Sulphur-yellow. Paraguay. 1885.
„ *supe'rba* (superb). 5. Yellow. March. Mexico. 1828.
„ *ti'ngens* (tinging). 2. Yellowish, with purple lines. Peru. 1910.
„ *utricula'ta* (bladdery-*sheathed*). 1½. Cream. August. Jamaica. 1843.

GRABO'WSKIA. (Commemorative of *H. Grabowsky*, a botanist of Silesia. Nat. ord. Solanaceæ.)

Half-hardy shrubs. Seeds and cuttings in summer. Loam, leaf-mould, and sand.

G. boerhaaviæfo'lia (Boerhaavia-leaved). 4–5. Pale blue. April. Peru. 1780.
„ *duplica'ta* (twice-folded). Pale green. Brazil. 1840.

GRADE'RIA. (Nat. ord. Scrophulariaceæ.)

Greenhouse plant with woody rootstock. Imported roots. Sandy, fibrous loam.

G. subi'ntegra (nearly-entire). Rosy-lilac. S. Africa. 1893.

GRÆ'LLSIA. (A commemorative name. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Cochlearia.)

Hardy herbaceous plant, suited for rock-work; common, sandy soil; divison, and cuttings under a hand-light, in sandy soil in summer.

G. saxifragæfo'lia (saxifrage-leaved). ½. White. July. Persia. 1844.

GRAFF, or **GRAFT.** This, also called the *scion*, is the portion of a branch selected to be inserted or grafted upon a stock or rooted stem, to form the head of the future pant. See GRAFTING and STOCK.

GRAFTING is uniting a scion of one plant to the root, branch, or stem of another. The scion and stock must be of nearly related species.

The objects of grafting are—(1) To increase choice kinds. (2) To increase the vigour of delicate kinds. (3) To reduce the vigour of those which are too gross. (4) To accelerate the period of fruiting. (5) To adapt kinds to soils for which they would be unfitted on their own roots. (6) To renovate old kinds.

We now proceed to give descriptions, illustrative of all the modes which are usual in general horticulture:—

1. *Whip Grafting*, called also *Splice* and *Tongue Grafting*.—This is the most common mode, and is that almost universally adopted in our nurseries; and when the stock and scion are equal in size, is perhaps the handiest. The head of the stock is pruned off at the desired height, and then a slip of bark and wood removed at the upper portion of the stock, with a very clean cut, to fit exactly with a corresponding cut which must be made in the scion. A very small amount of wood must be cut away, and the surface made quite smooth. Care must be taken that no dirt be upon the cuts in this, and, indeed, in all the other modes. The scion must now be prepared. This should have at least three or

four buds, one of which should, where possible, be at the lower end, to assist in uniting it to the stock. A sloping cut must now be made in the scion: this cut must correspond with that on the stock, and a slit made to fit in a cleft made in the stock when heading it. This slit serves to maintain the scion steadily in its place until properly fastened, and is more a matter of convenience than anything else. Care must be taken that the scion fits *bark to bark*, on one side at least; for it is not the old or existing portion of wood that forms the union, but a tissue which has to be produced, just as when the sides of a wound have to be reunited. This power exists in the cambium layer, which lies next the inner bark; and the substance which forms the union, and which is secreted by the returning sap, is termed cambium. Where the stock and scion disagree in point of size, of course only one side can touch, and great care should be taken in this part of the operation; and, in the case of a young scion on an old tree, some allowance must be made for the ruggedness of the bark. The scion being thus adjusted, the whole is bound close, but not too tightly, with a shred of bass mat, care being taken that the inner barks coincide. The clay is now applied, in order to keep the parts moist, and some practitioners pile soil over the grafted part, when near enough the ground. In all the modes of grafting it may here be observed, that *the chief ground of success lies in nicely fitting together some corresponding portions of the inner bark of the scion and stock.*

2. *Crown*, called also *Cleft* or *Wedge Grafting*.—This is applied to various plants as well as fruits, as, for instance, the rose, cactuses, &c. Vines, also, are frequently grafted by this mode. As in whip grafting, it accelerates the union if the bottom of the scion has a bud or two. In the case of the vine, it is considered necessary to let the stock grow a little before grafting; care must be taken, however, to keep some growing portions on the stock, above the graft, or severe bleeding would ensue. As the name indicates, a cleft, or division, is made in the stock to receive the scion, which is cut like a wedge; again taking care, in case of inequality of size, to make one side fit *bark to bark*. When the scion and stock are unequal in size, both sides of the scion may be brought to fit by cutting the cleft nearer to one side of the crown than the other. The wound is bound over, as in the other processes, with bast, and covered over with clay, or grafting-wax. The camellia succeeds well when grafted this way: even a single bud will make a plant, provided the stocks are kept in a damp and shady atmosphere for a few weeks after grafting. The stock here, also, should be slightly in advance, that is, should be forwarder in growing than the graft or scion. The best time is just as the sap is rising.

3. *Cleft Grafting*, as it is carried out in gardens, is only a kind of crown grafting, and is practised on stocks of one or two inches in diameter, and, therefore, too large for whip grafting. Cut or saw off the head of the stock in a sloping form; with a knife or chisel cleave the stock at the top, making the cleft about two inches deep; keep it open by leaving in the chisel; cut the lower end of the scion into the form of a wedge, one inch and a half long, and the side that is to be towards the middle of the stock sloped off to a fine edge; place the bark of the thickest side of the wedge-end of the scion so as to correspond exactly with the bark of the stock; take away the chisel, and then the sides of the stock will pinch and hold fast the scion. Two scions may be inserted, one on each side of the cleft; but in this case the top of the stock must not be cut off sloping. Bast and clay must be put on as in the other modes of grafting.

4. *Saddle Grafting*.—The top of the stock is cut to a wedge shape, and the scion or graft cleft up the middle, and placed astride on the wedge of the stock; hence the name. The binding and claying are performed as in the other modes, care being taken to make at least one of the sides meet *bark to bark*.

A modification of this mode is practised in some of our cider counties, where they do not hesitate to practise it in the middle of summer, when the young wood has become somewhat mature. The scion is chosen smaller than the stock, and is cleft about three inches at the lower end, so that one side is rather thicker than the other. The rind of the stock is then opened on one side, and the thick side of the scion introduced between the bark and wood; the thinner portion is carried astride the stock, and down the opposite side, a slight cutting having been made to receive it, on the principle of making corresponding parts meet. This, though tedious, is a very safe mode of grafting, inasmuch as it presents a greater expanse of cambium for effecting the junction.

5. *Side Grafting*.—This, in general, is performed on trees on which the top is required to remain, and is well adapted for the insertion of new kinds of pears, or other fruits, on established trees, in order to increase the collection, or to hasten fruit-bearing. It is also adapted to furnish naked portions of old shoots. It is, however, not so safe a mode as some of the others. Little description is needed; a slice is removed from the bark of the stock, and a scion made to fit it. A slit is then made at the top of the cut, with a tongue on the scion to insert in the slit, and the graft is bound in the usual way.

6. *Chink or Shoulder Grafting*.—This is not much in use in this country; and, indeed, we see little occasion for its practice. When the stock and scion are equal in size, however, it offers an opportunity of gaining the advantage of an extra amount of cambium in contact.

7. *Root Grafting*.—An old practice; but, with regard to deciduous fruit-trees, it offers no particular advantage over the ordinary whip grafting, when performed near to the ground. It is, perhaps, better adapted for very large scions, for in many trees such may be used when two or three inches diameter. When strongly bound they may be soiled overhead, merely leaving a hole for the bud of the scion to come through, which, in this case, will rise like a sucker.

8. *Peg Grafting*.—This mode is now never practised in England. Of these eight modes there are many modifications; but they are all derived from the eight enumerated. Peg grafting never having been practised by ourselves, we shall only make this extract relative to it: "The scion must be of the exact size of the stock; bore a hole into the centre of the stock, one and a half inch deep; cut the bottom of the scion to fit; the edges of the barks must be very smooth and fit exactly."

General Observations.—For ordinary garden purposes, we think the whip, the cleft, the saddle, and the crown, the most eligible modes by far. These may be said to be the rule, the others are merely exceptional cases.

In all these proceedings a few axioms or main principles must be kept steadily in view. Of such are the following:—

1. The scions of deciduous trees should be taken from the parent tree some weeks before the grafting season, and "heeled" (the lower ends put into the soil) in some cool and shady place. This causes the stock to be a little in advance of the graft, as to the rising of the sap, a condition admitted on all hands to be essential.

2. Let all the processes be performed with a very clean and exceedingly sharp knife, taking care that nothing, such as dirt or chips, gets between the scion and the stock.

3. Let the bandage be applied equally and firmly; not so tight, however, as to cut or bruise the bark. For this reason, *broad* strands of bast are exceedingly eligible.

4. In selecting grafts be careful in choosing the wood, avoiding, on the one hand, exhausted or bad-barked scions, and, on the other, the immature, watery spray which frequently springs from the old trunks of exhausted or diseased trees.

Grafting Clay, to make.—Take some strong and adhesive loam, approaching to a clayey character, and beat and knead it until of the consistence of soft-soap. Take, also, some horse-droppings, and rub them through a riddle, of half-inch mesh, until thoroughly divided. Get some cow-manure (the fresher the better), and mix about equal parts of the three, kneading and mixing them until perfectly and uniformly mixed; some persons add a little road-scrapings to the mass. A vessel with very finely riddled ashes must be kept by the side of the grafter, and after the clay is closed round the scion the hands should be dipped in the ashes: this enables the person who applies the clay to close the hole with a perfect finish. It must be so closed as that no air can possibly enter; and it is well to go over the whole in three or four days afterwards, when, if any have rifted or cracked, they may be closed.

Grafting Wax.—The following recipe has been recommended by a first-rate authority:—Take common sealing-wax, any colour but green, one part; mutton fat, one part; white wax, one part; and honey, one-eighth part.

The white wax and the fat are to be first melted, and then the sealing-wax is to be added gradually, in small pieces, the mixture being kept constantly stirred; and, lastly, the honey must be put in just before taking it off the fire. It should be poured hot into paper or tin moulds, to preserve for use as wanted, and be kept slightly stirred till it begins to harden.

GRAINS OF PARADISE. The pungent seeds of *Amo'mum Melegue'ta.*

GRAMMA'NGIS. (From *gramma*, a letter or writing; in allusion to the spotting of the flowers. Nat. ord. Orchidaceæ.)

Stove Orchids allied to Grammatophyllum. Divisions. Pots or baskets, well drained and filled with fibrous peat and sphagnum.

G. Elli'sii (Ellis's). 1. Sepals yellow, blotched brown; petals and lip nearly white. Madagascar.
„ „ *daya'num* (Dayan). Yellow, without markings. 1880.
„ *Hutto'ni* (Hutton's). See CYMBIDIUM HUTTONI.

GRAMMA'NTHES. (From *gramma*, writing, and *anthos*, a flower; marks like V being on the corolla. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*.)

Greenhouse annuals, from South Africa. Sow thinly in pots, well drained; lime-rubbish and sandy loam, equal parts; plants may be kept in greenhouse, or planted on rock-work in summer.

G. chloræflo'ra (yellow-flowered). See G. GENTIANOIDES.
„ *gentianoi'des* (Gentian-like). ½. Pinkish-red. 1848.
„ *retroflе'xa* (bent-back). See G. GENTIANOIDES.

GRAMMATOCA'RPUS. (From *gramma*, a letter, and *carpos*, a fruit; the fruits being marked. Nat. ord. Loasaceæ.)

Half-hardy, twining annual. Seeds in a gentle heat in March, planting out the seedlings in May.

G. volu'bilis (twining). Deep yellow. July, August. Chili. 1824.

GRAMMATOPHY'LLUM. (From *grammata*, letters, and *phullon*, a leaf; referring to the markings on the leaves. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Brassia.)

Stove orchids. Divisions; basket well raised in it, and packed with sphagnum and fibrous peat. Summer temp., 60° to 90°; winter, 50° to 55°.

G. elegans (elegant). Brown, with yellow edges. Pacific Islands. 1882.
„ *Elli'sii* (Ellis's). See GRAMMANGIS ELLISII.
„ *fenzlia'num* (Fenzlian). 4. Yellow, blotched with brown. Amboyna.
„ *Guilie'lmi II* (William II). See G. RUMPHIANUM.
„ *measuresia'num* (Measuresian). See G. RUMPHIANUM.
„ *multiflo'rum* (many-flowered). 2. Brown, green. May. Manilla. 1838.
„ „ *tigri'num* (tiger-like). Spotted. May. Manilla. 1837.
„ *pantheri'num* (panther-like). Spotted with dark blotches. New Guinea. 1878.
„ *rœmpleria'num* (Rœmplerian). Madagascar. 1877.
„ *rumphia'num* (Rumphian). 4–5. Yellow, blotched with brown. Moluccas.
„ *scri'ptum* (written). Yellow, marked with brown. Moluccas.
„ *seegeria'num* (Seegerian). See G. RUMPHIANUM.
„ *specio'sum* (showy). 6. Yellow, brown. May. Malaya. 1837.

GRAMMI'TIS. (From *gramme*, lettering; in reference to the spore-cases, or seed apparatus. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Some are referred to Polypodium, others to Gymnogramme.)

Chiefly stove Ferns, with brownish-yellow spores. Division; peat and loam. Summer temp., 60° to 80°; winter, 50° to 58°.

G. austra'lis (Australian). July. N. S. Wales. 1822.
„ *cuculla'ta* (hooded). July. Isle of Luzon. 1840.
„ *elonga'ta* (elongated). July. W. Ind. 1824.
„ *furca'ta* (forked-*leaved*). July. Trinidad. 1825.
„ *hi'rta* (hairy). July. Isle of Luzon. 1840.
„ *lanceola'ta* (spear-head-*leaved*). July. Mauritius. 1824.
„ *linea'ris* (narrow-*leaved*). July. Jamaica. 1823.

GRANADI'LLA. This is a name sometimes given to several species of the Passiflora; but one only is the true Granadilla, *Passiflo'ra quadrangula'ris;* but *P. edu'lis* also produces edible fruit, and may be similarly cultivated. We are aware that there are other species of Passiflora, the fruits of which are eatable, such as the *P. malifo'rmis*, or sweet calabash; *P. laurifo'lia*, the laurel-leaved or water-lemon; and *P. incarna'ta*, or the flesh-coloured, &c.

Propagation.—They are nearly all readily propagated by *seeds;* but most cultivators who grow them for table purposes prefer *cuttings;* and they are quite right; for, like most of the Cucurbitaceous group, to which they approximate, they are apt to run much to bine if raised from seed. Plants from cuttings grow more moderately, and blossom sooner. Seedlings will fruit readily at two years old; but cuttings struck very early in the spring, and highly cultivated, will fruit the same autumn, but not produce a full crop.

Soil.—A somewhat light and generous soil is best. The following is an excellent compost:—Decomposed, mellow, turfy loam, two parts; old leaf-soil, two parts; heath-soil, one part; and sand, one part.

Culture in Growing Period.—*P. quadrangula'ris* requires a greater heat than *P. edu'lis*—in fact, a heat equivalent to the Pine stove; whilst *P. edu'lis* will succeed well in an ordinary vinery. Bottom-heat is most essential, especially for the *P. quadrangula'ris;* and, indeed, in this, and a generous soil, consists the chief secret of successful culture. No place can exceed the corner of the bark-bed for the culture of either, provided they can ramble freely overhead, unshaded by vines or other creepers; for light is also essential. The corner of the bark-bed must be separated by bricks, pigeon-holed; a triangular space, which will hold a wheelbarrow of soil, will suffice, putting some bricks below for drainage. The shoots must be carried up to within a foot or so of the roof, and may then be trained in any way most convenient. The *P. edu'lis* will produce many branches; these must be kept thinned out, after the manner of Melons; but no stopping is requisite. The *P. quadrangula'ris* does not so soon crowd itself with spray; nevertheless, it will at times require thinning out. Liberal waterings must be given, and it must be remembered that the roots will extend through the pigeon-holes into the bark-bed, and will principally follow the side of the pit walls. The most important matter, however, is the artificial impregnation of the blossoms; for they will seldom "set" without it. The following is Mr. Appleby's mode of setting *P. quadrangula'ris*:—The whole of the calyx, corolla, and crown must be cut off with a sharp pair of pointed scissors; and this must be done without injuring the flower-stem. When all these are cut away, there only remains the essential parts of the flower; the stamens, five in number, and the three stigmas. Then cut off one or more of the stamens bearing the anthers; and do this without shaking the dust or pollen out of the anthers; then touch each stigma with the anther, covering them with the fertilising powder. Take an opportunity of performing this operation early in the morning, at the very time when the anthers are observed to be bursting. So far Mr. Appleby is, doubtless, right as concerns the *P. quadrangula'ris*, which has an exceedingly succulent calyx, and other appurtenances; but we never took any further pains with *P. edu'lis* than to look over the plants every day about noon; and whatever blossoms might be out, to pluck one of the anthers from it, and touch the face of the stigmas with it. By these means they generally become impregnated.

Culture in Rest Period.—As soon as the bearing season is over, towards October, the plants will sink to rest, and this may be facilitated by withholding water entirely. They will now become partially deciduous, and this will induce a ripeness in the shoots; and in the following February they may be pruned, cutting back all spongy and immature growths.

Fruit.—It is used in the dessert, and is capable of being kept for a fortnight or so in a fruit-room, or other place, if perfectly dry.

Insects.—We have known the Red Spider to attack the *P. quadrangula'ris*. For remedy, see ACARUS.

GRANGE'RIA. (Named from *N. Granger*, a traveller in Egypt and Persia. Nat. ord. *Chrysobalans* [Rosaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

Stove evergreen tree. Cuttings of ripe shoots in sandy soil, in heat, under a glass; peat and loam. Summer temp., 60° to 85°; winter, 55° to 60°.

G. borbo'nica (Bourbon). 40. White. Bourbon. 1823.

GRAPE HYACINTH. *Musca'ri.*

GRAPE PEAR. *Amela'nchier canade'nsis.*

GRAPE VINE. *Vi'tis vini'fera.*

Varieties for Walls.—1. August Muscat. 2. Early Black July. 3. Miller's Burgundy. 4. Esperione. 5. Hatif di Génes. 6. Royal Muscadine, White. 7. Royal Muscadine, Black. 8. Sweet Water, White Dutch. 9. Sweet Water, Black. 10. Black Hamburgh. 11. Black Prince. 12. Claret. 13. Verdelho. 14. Pitmaston White Cluster. 15. Reine Olga.

As superior kinds for a pretty good climate and aspect, we recommend Nos. 2, 4, 6, 8, 10, 11, 15; as kinds for inferior aspects, Nos. 2, 6, 10, 14.

For Greenhouse.—1. Black Hamburgh. 2. Foster's Seedling. 3. Black Prince. 4. West's St. Peter's. 5. Royal Muscadine. 6. Dutch Sweet Water. 7. Chasselas Musqué. 8. Esperione. Of these, Nos. 1, 2, 3, 5, 6 are the most to be relied on.

For Stove.—1. Muscat of Alexandria. 2. Cannon Hall Muscat. 3. White Frontignan. 4. Black Frontignan. 5. Alicante. 6. Gros Colmar. 7. Appley Towers. 8. Lady Downe's Seedling. 9. Black Hamburgh. 10. Foster's Seedling. 11. Madresfield Court. 12. Royal Muscadine. Of these, Nos. 1 to 8 inclusive are varieties of superior merit and require much heat. Nos. 1, 2, 5, 6, 7, 8 are late grapes that hang long and keep well. Nos. 9, 10, 11, 12 are early grapes, and well adapted for forcing.

Propagation.—Layering has almost fallen into disuse, their culture from eyes or single buds having superseded it. Layers will root either from the growing shoot, or from young wood layered in a state of rest. The latter operation is performed any time from November to the beginning of March, and no tongue or slit is requisite. Most of the Vines, in former days, were raised in this way; the nurserymen having old plants, or stocks for the purpose, around which the shoots were layered in pots, generally in February, and they made saleable plants by the autumn. Layering of the growing shoot is a more delicate procedure, and it is well to introduce a portion of the previous year's wood where possible.

Cuttings are best made from shoots in the rest state, and may either be made short or long. Speechly recommends two inches of the two year old, and one bud or eye of the new. These were inserted perpendicularly in pots, the bud just level with the surface. They will, however, strike root from thick shoots, of three or four years old, of a greater length, and these may, if necessary, be planted at once in the border; or if in pots, deep ones must be used, and the cutting may be sloped or bent. In all these cases, the cuttings must be buried nearly their whole length beneath the surface. Bottom-heat will facilitate speedy rooting.

Eyes.—This is the most approved plan, for the plant thus approaches nearest to a seedling state. These are generally planted in pots, a single eye in each, at the end of January, and plunged in a bottom-heat of from 70° to 80°. Prunings are reserved for this purpose in the autumn, and these being cut in convenient lengths, are imbedded in moist soil until winter. About half an inch of wood may be reserved above the eye, cutting it sloping away from the bud, and about an inch or so below the bud; the latter section made horizontally. These, inserted singly in five-inch pots, may be plunged in a bottom-heat of from 70° to 80°, and care must be taken that the worms do not get into the soil. When grown nearly a foot in height, they should be re-potted into pots of about seven inches diameter, using a rich, turfy soil, and draining thoroughly. Many good gardeners reserve a portion of the two years old wood at the base of each eye, and there can be little doubt that it is good practice.

Coils.—Obtain prunings from healthy and fruitful vines on the rod system; these prunings should be from two to four feet in length. Such being plunged in a bottom-heat of from 70° to 80°, and in an atmosphere ranging from 50° to 60°, have a tendency to produce roots before shoots; and this is the object sought. Fruiting-pots of twelve to fifteen inches in diameter should be used, and a compost of turfy loam and half-rotten manure, with the addition of charred material, lime-rubbish, or sand; any or all of them added in the proportion of a sixth of the mass, in order to insure the free passage of moisture. Thorough drainage being secured, the end of the shoot is pressed down against the bottom of the pot, and the shoot bent round, until as many coils or turns as possible are made; leaving, at last, four or five stout eyes above the level of the pot rim. The pot is then filled with the compost, and careful watering, a judicious control of heat, augmenting the amount of atmospheric warmth as the leaves unfold, together with the usual routine of stopping, thinning the berries, &c., as applied to established vines, must be carried out. The turfy compost is filled in as the coiling proceeds.

Grafting is not often practised. As in most other cases of grafting, the stock should be slightly in advance of the scion. Perhaps the stock should have unfolded a few large leaves before the operation is practised. Then the usual whip grafting is the best plan. A couple of eyes on the graft are sufficient. It is good practice to bind moss round the whole at last, even shading the buds of the scion for awhile. The moss may be moistened daily.

Inarching.—This may be performed with either the growing shoot, or with that in a rest state. A plant established in a pot of the kind to be introduced must be procured. With regard to inarching in a rest state, it is proper that the sap should be in motion at the period of operating, and that the stock, if possible, should, as in grafting, be slightly in advance of the scion. Vines which are breaking are in an eligible state, and the kind to be inarched may be just emerging from a rest state. The point of junction being determined, the pot must be so fixed as that no slipping can occur, and that the shoot may be readily bent to meet the parent plant. Nothing is necessary but to pare a thin slice of bark with a little of the wood from the facings of the scion and stock, which are to be fitted, and then to bind them carefully together close, but not too tight, just as in ordinary grafting. A little moss may be fastened round the point of junction, and this frequently moistened. Inarching of the growing shoot is, however, the best practice; but it is an operation that requires nice handling. The shoot of the stock is best at about the middle of its annual growth, when it has begun to acquire some solidity and toughness. The scion may be somewhat younger, and everything being adjusted, a section must be made in each, as before, cutting through the bark and a little into the cambium, and fitting them nicely together. It may be observed, that the ligature must not be so tight as in the old wood. The whole may be covered with moss, and in six weeks the junction will be complete. In the meantime a progressive stopping of the spray on the stock must take place, in order, by degrees, to transfer a portion of the luxuriance of the stock to the scion. When the pruning season arrives, the stock may be cut back in part or wholly. Thus, a vinery possessing inferior kinds may be renovated in a very short period.

Seed.—Perfectly ripe grapes of the kinds intended to be propagated from should be pressed, the seeds washed and thoroughly dried, and then secured, like other seeds, until the following February. They may then be sown in well-drained pots, in a light, rich soil, rather sandy, and plunged in a bottom-heat of from 70° to 80°. In about a month they will vegetate; the seedlings may be potted off, and henceforward reared as plants from eyes, continuing bottom-warmth until Midsummer, and training the shoot (unstopped) fully to the light in a warm situation. They may, in the autumn, be cut back to two or three eyes, and grown through the following summer as before, again pruning back in the autumn. In about four years they will fruit on their own roots; but, perhaps, a year will be gained by inarching them near the extremity of a sound and fruitful old vine.

Wall Culture.—The first essential is a mellow and thoroughly drained soil. An ordinary sandy loam is the best staple; but almost any common garden-soil will suit, if it is capable of receiving and transmitting moisture with facility. Vine roots will descend to a considerable depth if the soil be mellow; but we would rather grant them extra width, especially if the situation is not particularly favourable. Whether borders, or, what are

much more economical, stations, are made, we would first thoroughly drain the site, and then place some imperishable material, as stone, brick, or clinkers rammed close beneath them, leaving only half a yard of soil in depth, unless the roots are securely limited in width. This done, the natural soil must be examined with practical accuracy, and accordingly, as sand or clay predominates, so must be the amount and character of the correcting material. If destitute of organic matter or turfy fibre, something must be introduced to enrich it, such as fresh manure, and abundance of rotten weeds, leaves, &c., indeed anything of a decaying vegetable kind; remembering that a good portion must be such as will endure long, and slowly give out its enriching qualities. Some coarse bone-manure and rubbly charcoal will be a capital addition; and a good deal of charcoal rubbish or brush-wood. If the situation is cool and damp, place half the volume of this material above the ordinary ground level.

Planting.—The end of March is the most eligible time; and strong plants being at hand, if in pots, let the soil be shaken away gently, and every root be carefully uncoiled, and spread out, like a tree fan-trained, and place a little superior compost about the roots, covering the surface with three inches of coarse charred material. This will absorb a great amount of heat from the sun, and admit water freely when necessary. As the plants grow, they must be carefully trained, and no stopping practised the first season. In the autumn, however, they must be pruned back to three or four eyes; and in the next season the shoots from these eyes must be trained to the desired form, which will be regulated by the character of the space they are to occupy, whether on a building or a wall.

Out-door Culture during the Rest Period.—Pruning is a first consideration, and this is done soon after the fall of the leaf. Many conflicting practices as to out-door culture have competed for the palm of victory here, even as with indoor vines; but it is probably best not to attempt to tie the hands of those who try their culture by too severe rules. One safe maxim is, that no two of the principal leaves should so overlap each other as to obstruct the solar light. From about eight to ten inches, therefore, at least, may be given between each of the growing shoots. This, then, will be a guide as to the distance at which the shoots should be trained. As for root culture at this period, nothing will be needed but to preserve the surface fibres from the spade, which is but too apt to approach too close to those on kitchen-garden walls. When vines become somewhat exhausted with much bearing, top-dressings of good soil and manure become necessary.

Out-door Culture during Growth.—We must here be brief, for the main principles will be found somewhat identical with those connected with indoor culture. All superfluous young spray must be thinned away, and the bearing shoots stopped an eye or two beyond the bunch. Where, however, there is walling to be filled, the dresser may leave several eyes or buds beyond the bunch. In due time the bunches must be thinned; one to a square foot of wall will, in general, suffice. The berries, too, must be thinned out at the proper period, and a frequent stopping of the lateral shoots practised, never suffering them to shade the principal leaves. Towards the beginning of September, all the stopped laterals may be entirely removed, in order to permit a free circulation of air, and allow the sun to heat the wall; protection, also, must be afforded to the bunches against wasps, flies, &c.

Greenhouse Culture.—Having attended to the character of the soil requisite for the vine, we have little to report on the subject of border-making, which must, however, be at all times considered the most important point in the whole of the proceedings. A more generous soil is necessary for indoor vines, inasmuch as a greater demand exists at times on their vital powers through the powerful effects of solar light beneath glass; as also owing to a greater amount of dryness at times in the atmosphere. The first point is to elevate the border above the ground level in proportion to the lowness, coldness, or dampness of the situation. Thorough drainage we have before pointed to; it is not possible to drain too much if the soil be of proper texture. As to soil, turfy loam, inclining to sand, should form nearly one-half the volume of soil. To this may be added one quarter part of coarse manure, leaf-mould, &c., rather raw than otherwise; and the other quarter, part of rubbly and imperishable materials, such as lumpy charcoal, old plaster, and the rubbish of old buildings, coarse bone-manure, &c. All these well blended, and filled in when dry, will produce a first-rate compost, taking care to place a layer of turf at the bottom.

Course of Culture.—Whatever combination exists as to a greenhouse vinery, whether it be for vines alone or used in conjunction for pot-plants, an uniform system should be pursued as to the vines, both during the growing season and the rest period. This system consists in the regular pruning, dressing of the wood, in order to the extirpation of all insects, and the usual vine-dressing, during the growing period, the latter being, disbudding, stopping, thinning the berry, and training—principles applicable to the vine in all its positions.

Stove Culture.—Vines in stoves are generally combined with pine culture, and the excitement by heat is therefore at times considerable. In former days it was supposed that vines must be turned outside the house and frozen, in order to restore their energies; but abundant proofs exist that from 50° to 55° may be submitted to, in extreme cases, during the rest season. Whatever culture is combined with that of the vines, it is best to confine these to the rafters on the spurring system. For early forcing, and where the house is specially devoted to vines, it is another affair: here either the long-rod system or the spurring may be used. We need not repeat advice as to border-making, and the usual routine of disbudding, stopping, thinning the berry, and the frequent pinching of the laterals. One remark may be permitted as to borders; let them be *inside* the house if the interior arrangement will permit, and the front wall on arches. When at rest, we would not allow the thermometer to sink below 35°.

Vines in Pots is a mode of culture only to be recommended as an adjunct to late vineries, and where the possessor, not desiring to build a house for early forcing, yet desires to have a few early grapes. The plants should be reared from eyes, and receive very high culture; and at the end of the second summer they should be strong canes, and in high perfection for forcing. They must receive liberal shifts when they need re-potting, and their shoots be constantly trained in a very light situation. The young plants, at the end of the first season's growth, will require pruning back to two buds, from which one may, during their progress, be carefully trained, and the other removed. When the cane has grown about five feet in length, during the second season, it is well to stop it, in order to strengthen the lower leaves, on the healthy action of which the future crop depends. The leader, however, which succeeds, may be laid in full length, well exposed to the light; but the laterals which push from the sides must be pinched back, leaving one bud only, and this pinching must be continued all through the season, when necessary. In the second autumn they will be strong canes, with remarkably plump buds; and they may now, when the leaves are decayed, be pruned back to some five or six eyes, according to the wish of the cultivator. Having received their final shift into pots of about fifteen inches in diameter in the preceding June, they will require nothing but a rich top-dressing. They enjoy a bottom-heat of 70° to 80°; but they may be made to succeed on the kerb-stones or back shelves of the stove, away from cold draughts, and near the flues or piping. Liquid manure must be liberally supplied, and the same course of culture as to disbudding, stopping, thinning the berry, and training, pursued as with the rafter vines. A rich, turfy loam must be used as compost; three parts of this to one of rich, half-decomposed manure, will be found excellent, adding some charcoal and a little lime-rubbish. The turfy loam should be nearly a year old, and must be well chopped with the spade, not sifted. The pots must be most carefully drained nearly one-fifth of their depth: any stagnation whatever will surely prove fatal. If the pots were unplunged, some screen, such as moss or old matting, should be interposed between them and the sand, or they may have double pots.

Diseases.—Shrivelling of the berries of the grape in stoves appears to arise from the roots of the vine not supplying a sufficiency of sap, as well as from its not being duly elaborated in the leaves. This occurs if the roots are in a cold soil, or are vegetating in an outside border, the temperature of which is too low compared with that of the stove. In the first case, thorough

draining and the incorporation of calcareous rubbish, and in the second case, protection to the border and stem, will remove the evil. If the sap be not duly elaborated, it must arise, either separately or conjointly, from the leaves vegetating in an ungenial atmosphere, or from their being too reduced in number.

If the roots of the vines are found to have penetrated the soil deeply, they should be lifted very carefully, brickbats placed beneath the roots, and these trained about nine inches beneath the surface. If drainage of the border has been neglected, let it be put right at the same time. If the loss of the crop which would be occasioned by the lifting of the whole of the vines would be inconvenient, only one or two can be so treated in successive autumns. The most injurious time for an unnatural disparity of temperature in the air and soil to occur is at night; for, as was justly observed by the late Mr. Knight, an ill effect of high temperature during the night is, that it exhausts the excitability of the tree much more rapidly than it promotes the growth or accelerates the maturity of the fruit, which is, in consequence, ill supplied with nutriment at the period of its ripening, when most nutriment is probably wanted. The Muscat of Alexandria, and other late grapes, are, owing to this cause, often seen to wither upon the bunch in a very imperfect state of maturity; and the want of richness and flavour in other forced fruit is often attributable to the same cause. The Frontignans are among the varieties apt to shrivel under great disparity of temperature between the roots and branches.

Somewhat allied in its causes to shrivelling is that unsightly imperfection where the berries do not come to maturity at the point of the bunches, leaving from five to ten quite colourless and sour, though others on the same bunch are fine and large. In such case the remedies are to give more heat and air, keeping the border warmer than before, and to avoid cold damps in the house: leave as much foliage as can be exposed fully to light. The leaves removed must be by little at a time. In thinning, clip off a few berries at the lower extremity of the bunch; the rest will swell better.

Shanking is an ulceration, or gangrene, attacking the footstalks of the bunches, and appears to be occasioned, like shrivelling, by the temperature of the soil being too much below that in which the branches are vegetating; and, consequently, the supply of sap to the grapes is much diminished, and the parts which thus fail of support immediately begin to decay. This is an effect always the consequence of a diminished supply of sap, apparent either in the leaves, flower, or fruit. The disease, like every other putrefaction, does not advance rapidly unless there be much moisture in the atmosphere.

The coldness of the soil causes this torpidity in the action of the root; and this, perhaps, at the very period when the greatest demand is made upon it to sustain the excessive transpiration which is going on in the leaf, and to furnish fresh matter for elaboration, to both which ends it is frequently quite inadequate, owing to drenching rains. If the young fibre be examined at such inclement periods, it will be found somewhat discoloured, and, in some cases, quite rotten. Shanking, we conceive, is generally caused by the unnatural disagreement of temperature between the root and top, independent, in the main, of the question of moisture. It generally occurs with vines which have been somewhat forced; seldom on open walls—seldom with vines forced in pots or tubs. The obvious prevention of shanking is securing a congenial relative temperature to the roots and foliage.

Rust comes upon the berries in the form of a rough, rusty appearance of their skins, which have, in fact, become thick and indurated. Some think it arises from their being handled, or the hair of the head touching them; but the disease is often too general to admit of this topical explanation. We believe it to arise from an overheating of the vinery, however unintentional, whilst the grapes were young, and thus tending to force them to a premature rapidity of growth. Any excessive pressure upon the cuticle, whether from within or from without, causes its thickening. This considerable elevation being succeeded by a sudden reduction of temperature, will almost certainly induce the disease.

The Spot affecting the berries seems to be the same disease as shanking, only affecting a different part. Like this disease, it is a gangrene, and is probably occasioned by an irregularity in the supply of moisture and vicissitudes of temperature, but especially if one of the extremes is much below the degree of heat most favourable to the healthy growth of that plant. Muscats are particularly liable to the spot. Our opinion that sudden vicissitudes of temperature are the causes of this disease, seems to be well sustained by the fact, that the parts nearest the glass, that is, the upper portions of the bunches, and those parts most exposed to the sun's influence, are the first to suffer; and this, also, goes far towards substantiating the assertion, that the shade of the foliage is necessary to the well-doing of grapes.

Want of Colour is often a defect of the Black Grape, but not at all necessarily arising from deficient light. The green colour of leaves depends entirely upon the presence either of light or of uncombined hydrogen gas; but vegetable reds, purples, and other colouring matters of fruits are formed, though less intense, even in a total absence from light. So far from full exposure to light being requisite for the full colouring and ripening of grapes, they never attain these desired qualities so well as when shaded by one thickness of leaf. The colouring matter of all fruit is dependent partly upon the leaves immediately above it, and partly upon the fruit itself, the necessary digestion of the sap being commenced in the one and perfected in the other. If this digestion or elaboration of the sap is checked by ungenial temperature, but more particularly if the crop is too heavy for the vine, or if the leaves, especially above the bunches, are too much thinned, defect of colour will be the very usual consequence to the berries. We have seen the blackest of berries in situations where the sun had never shone on them since they blossomed; indeed, it only requires a little close observation for one season to dispel such a fallacy. It sometimes, however, happens that the principal leaves on the same shoot with the bunch are shaded by other main leaves, or by laterals. Such shading is sure to be prejudicial to the colouring of the berry, as well as to the maturation of the buds connected with the shaded leaves. And here we have one of the reasons for such close stopping as the vine is subjected to. Over-cropping alone will lead to bad colouring; indeed, is one of the most fruitful sources of it. It exhausts the tree of every particle of prepared sap, and produces debility in the root, which renders it readily susceptible to the stagnating rains of an unpropitious season.

In order to promote good colouring, the ripening process should not be hurried. It is evident that very high temperatures are not required for this purpose, for the Black Hamburgh, on common walls, is not deficient in colour, in a good season. Now, the colouring process, in the latter case, occurs in the end of September, when the temperature at night must sometimes be near the freezing-point. It is a common observation of practical men, that the cold nights of autumn hasten maturity in many crops; and this is undoubtedly a fact, and traceable, we presume, to a cessation of the growing principle, causing thereby a concentration of the energies of the plant. We would say, therefore, beware of too high a temperature during the colouring process, unless accompanied with much solar light, and even then avoid extremes. We would more especially avoid night heat at this period, and would promote a circulation of air night and day.

Bleeding.—This only occurs to the vine from the unhealed surfaces of cuts made after the sap has commenced its motion, and before the leaves are well expanded. A red-hot iron, applied to the bleeding surface until it be charred, will stop the effusion of sap for a time, if not permanently; and to effect a complete stoppage at once, coat the charred surface, and rub well into it a paste made of lime newly burnt and grease. This hardens and forms an effectual plaister.

Mr. Knight's plaister we know to be effectual, and is thus composed:—

One-fourth of calcined oyster-shells, beaten to fine powder in a mortar, and three-fourths of cheese, worked together until they form a sort of paste. This mixture, pressed into the pores of the wood, either with the thumb or any other means, will effectually stop the flow of the sap: sometimes a repetition may be necessary, if it is not well forced into the pores. See MILDEW.

Insects.—See ACARUS, APHIS, COCCUS, CURCULIO, and THRIPS.

GRAPE PHYLLOXERA or **VINE LOUSE** (*Phyllo'xera vasta'trix*). Of all the insect enemies that from time to time infest the vine none is more to be dreaded than Phylloxera, intermediate between the Coccideæ and the Aphides, but as the winged stage most resembles the members of the latter family it is retained in that group. Numerous instances of it have been found in vineries in this country, but as they were mostly confined to the larva stage and wingless females, their mode of distribution is limited by comparison with their kind in France and America, where the winged forms serve to scatter the pest far and wide.

A wingless form lives upon the roots, and is characterised by being fleshy, yellow-brown, with tubercles on the back. During the larval stage it moults three times, and the female attains the adult stage in twenty days and lays about thirty eggs. About eight generations are produced in the course of a year.

Another wingless form produces galls upon the leaves, and is somewhat like the root form, but is almost without tubercles on the back, and is fat-looking, with very short legs. The gall form is always female, and lays her eggs in the gall she herself forms.

During July, August, and September, winged male and female forms are developed from the root form, and these are most to be dreaded, because they are concerned in perpetuating and disseminating the pest far and wide. The wingless root forms are the most destructive to the vine in proportion to the number of insects upon the roots, as the latter get destroyed, and the vine succumbs in the course of three or four years.

Remedies.—An immense number of remedies have been tried with very little success in eradicating the pest, without also destroying the Vines. Flooding the border with water, at intervals during the autumn and winter months, for five or six weeks each time, is perhaps the most efficacious method of destroying the root form or hybernating stage. In most, if not all, cases of the pest in this country, only dry and warm inside borders were affected, the outside borders being relatively or entirely free from it. Bi-sulphide of carbon has been employed with success, but found to be expensive. Several gardeners have cleared out the whole of their vines, together with the soil of the borders, and after thoroughly cleaning the interior, introduced fresh soil and planted young vines, with successful results. Grafting European vines upon the roots of American vines has proved beneficial in the vineyards of France, because they can then make fairly satisfactory growth in spite of the louse.

GRAPTOPHY'LLUM. (From *grapho*, to write, and *phullon*, a leaf; referring to the markings on the leaves. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Beloperone.)

Stove evergreen shrubs. Cuttings of young shoots, just getting a little firm, and a heel of the older wood at its base, in sand, under a bell-glass, in heat; peat and loam. Summer temp., 55° to 75°; winter, 50° to 55°.

G. Ea'rlii (Earl's). 10–12. Red. Australia.
„ *horte'nse* (garden). 2–3. Crimson. Trop. Asia. 1815.
„ „ *pictura'tum* (painted). Leaves larger than the type. 1895.
„ *lu'rido-sangui'neum* (lurid-red). Leaves with blood-red veins.
„ *mediaura'tum* (golden-centred). See APHELANDRA MEDIAURATA.
„ *pi'ctum* (painted). See G. HORTENSE.
„ *versi'color* (changing-coloured). Leaves with rose and white blotches. 1861.

GRASSES FOR LAWNS. See LAWNS.

GRA'TIOLA. Hedge Hyssop. (From *gracia*, grace; referring to its medicinal virtues. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Mimulus.)

Hardy herbaceous plants. Division of the plants in spring; rich, moist soil. *Latifo'lia* and *tetrago'na* require the protection of a frame in winter.

G. au'rea (golden). ½. Yellow. June. N. Amer. 1820.
„ *caroliniе'nsis* (Carolinian). See G. VIRGINIANA.
„ *latifo'lia* (broad-leaved). See G. PERUVIANA.
„ *megaloca'rpa* (large-fruited). Pale yellow. July. N. Amer. 1828.
G. officina'lis (*common*-shop). 1. Light blue. July. Europe. 1568.
„ „ *mi'nor* (smaller).
„ *peruvia'na* (Peruvian). 1. White. July. Trop. Amer., Australia, and New Zealand. 1822.
„ *pilo'sa* (hairy). White. July. N. Amer. 1827.
„ *quadridenta'ta* (four-toothed). See G. RAMOSA.
„ *ramo'sa* (branched). ½. White. June. N. Amer. 1821.
„ *sphæroca'rpa* (spherical-fruited). 1. Yellow. August. N. Amer. 1759.
„ *tetrago'na* (square-*stemmed*). See STEMODIA LOBELIOIDES.
„ *veronicæfo'lia* (Veronica-leaved). See BONNAYA VERONICÆFOLIA.
„ *virginia'na* (Virginian). N. Amer.
„ *virgi'nica* (Virginian). See G. SPHÆROCARPA.

GRAVEL WALKS, like all other walks, require a good substratum of drainage, and the facing about five inches deep of gravel. It must have no stones mixed with it larger than good-sized marbles, and about one-fourth of it must be much finer to fill the interstices. Pit-gravel, with a slight admixture of clay, and the more rubbly the better, is the best for binding and forming a solid walk. The more speedily it is laid down after digging from the pit, the more firmly will it bind.

The following is an excellent plan to make or turn gravel walks in dry weather: If of a sandy or gravelly nature, strew a little clay or marl upon the walk. When turned over, take away the large stones and place them at the bottom of the soil. Immediately after you level your walk, apply your iron roller steadily, and let a labourer follow the roller, pouring upon it water regularly as it passes over the ground; in twenty-four hours after, if the weather is dry, it will be as solid as a stone-floor.

The best method of extirpating grass from a gravel walk, is to spread salt in considerable quantities over its whole surface; and if, after the first application, it is found that portions of the grass still exist, let another coating of salt be applied, which will effectually destroy it. Care must be taken, however, if the walk is edged with box, that the salt does not come in contact with it, otherwise it will destroy the edging also.

In the early part of April, gravel walks are usually turned. After the walk has been broken up and levelled, and a facing of new gravel spread over, this ought to be left for three or four days, and until a shower of rain has fallen, before the roller is used. This bleaches the gravel, and washes down the fine particles, so that, immediately after rolling, the walk is solid, and has a clean, bright surface.

The above directions relate to the old system of gravel-walk making; but we strongly recommend the general adoption of CONCRETE WALKS, which see. They are far more durable, and free from weeds.

GRAVE'SIA. (Commemorative of *Mr. Graves*, a plant collector in Madagascar. Nat. ord. Melastomaceæ.)

Fine foliaged stove herbs allied to Bertolonia. Seeds; cuttings in sand in a close case, with bottom-heat. Loam and leaf-mould in equal proportions, with sand. A humid atmosphere must be maintained.

G. gutta'ta (spotted). Lilac. Madagascar. 1864.
„ „ *a'lbo-punctilla'ta* (white-speckled). Madagascar. 1864.
„ „ *margarita'cea* (pearly). Leaves thickly spotted with white. Madagascar. 1862.
„ „ *ro'sea-punctilla'ta* (rose-speckled). Madagascar. 1864.
„ „ *supe'rba* (superb). Leaves with rosy spots. Madagascar. 1879.

GRA'YA. (Commemorative of *Asa Gray*, an American botanist. Nat. ord. Chenopodiaceæ.)

A hardy bush, with whitish twigs and dull green leaves. Seeds; cuttings in sandy soil in a cold frame. Ordinary soil.

G. polygaloi'des (Polygala-like). 2–3. Fruits rose. N.W. Amer. 1894.

GREAT BURNET. *Pote'rium officina'le.*

GREAT CENTAUREA. *Centau'rea Centau'rium.*

GREEN DRAGON. *Arisæ'ma Draco'ntium.*

GREENE'RIA FULIGI'NEA. A fungus causing "bitter-rot" on grapes.

GREEN FLY. See APHIDES.

GREENGAGE. A dessert plum.

GREENHEART. *Necta'ndra Rodiæ'i.*

GREENHOUSE. This is a light, airy structure designed for plants which can sustain a lowish temperature, but cannot withstand the vicissitudes from frost to sunshine, and from damp to dry, of our common winters. It is distinguished from a plant-stove in requiring but little artificial heat; and from a conservatory in having all the plants (with, perhaps, the exception of climbers for the rafters) grown in portable pots or tubs, and these generally set upon a stage to bring them nearer the glass.

The mode of *constructing* such a house must be regulated by the wishes of the proprietor, and the conveniences at his disposal. For general purposes any aspect will do in an emergency, except the north, and that might be selected for those plants that delight in the shade. The more command of light, with the means at hand of reducing its fierceness and heat when too powerful, the better. From due south to south-east and south-west may be considered the best aspects. If it is a lean-to house, having a sloping roof from a back wall, it should always have a considerable amount of upright glass in front to receive the oblique rays of the sun in winter. By the side of a cottage *ornée* the front of the house may thus partake of the same style of architecture, while the shed-like, sloping roof may be exchanged for a ridge-and-furrow one, and that concealed from external observation by a light entablature or frieze work. For a neat detached structure it should stand, less or more, north and south, have a ridge-and-furrow roof, and means for breaking the sun's rays in the morning and afternoon. We are supposing it to be glass all round. When in connection with other buildings a very useful and elegant house is formed, having the front and ends of glass, a hipped roof, and an opaque back wall. Here, likewise, by an ornamental entablature, the roof, if desirable, may be wholly or partially concealed, so as not to interfere with architectural propriety, though we should have no great scruples on this score, as the utility of an object, if apparent, gives its appropriateness.

The size of the *glass* to be used must depend upon the taste and the money wished to be spent by the proprietor. For the roof, especially, it will be desirable to have it at least sixteen ounces to the foot. Small squares can be procured in boxes very cheap; but what you gain in glass you partly lose from requiring so many sash-bars. We should not care about having them much above eighteen inches in length. All things considered, if we were to roof a house most economically, we should obtain strong machinery-cut sash-bars, dispense with rafters, use glass from fifteen to eighteen inches wide, and say a foot in depth, and secure means of ventilation without touching the roof by the upright glass and wooden ventilators at the ridge in the roof and in the back wall.

Stages.—These are generally shelves, arranged in stair-like fashion, partaking less or more of the character of the roof. For a general collection, the stage may be from five to six feet from the glass roof; for insuring dwarf, compact, bushy plants, the distance should be from three to four feet. The lowest shelf of the stage should be a little higher than the shelf that surrounds the house next the front glass. Where the roof is *hipped*, even though the back wall be opaque, if the house faces the south the stage should be hipped too, terminating in a single shelf, broad or narrow in the centre. The north part would be admirable for *keeping* many plants in winter, and exhibiting in summer those that were in full bloom. In a wide house it is always preferable to have several stages, in the shape of circles, ovals, or triangles, whichever is most approved, with walks between them. The expense, and the room apparently lost, are more than compensated by the ease with which all the plants may be examined, and the greater thickness with which they may be safely set, as the pathway will be so many breathing zones. (See FLOWER STAGES.) For low-hipped, roofed, and ridge-and-furrow roofed houses, flat, table-like, trellised stages will be the best; the highest plants being set in the centre, or, if necessary, one being placed now and then on a pot. As an improvement on this, where extreme economy was the object, we would dispense with the wooden trellis, and substitute a bed of earth, kept in its place by brick walls, the earth being first covered with cinders, and then with pure sand, on which to set the pots. The damping of this sand from watering in summer would be a source of health to the plants, and save them from many visitations. Small inclosures in such an earth-pit, if suitable compost were used, would be excellent for the less hardy creepers, which would be likely to maintain a lingering existence if planted, as they sometimes are, in a border close to the front wall.

Temperature.—If merely preserving the plants is the object, then artificial heat may only be applied to maintain a temperature of from 35° to 40°. This low temperature must not, however, be long continued in a stagnant atmosphere. It will, therefore, be necessary to raise the temperature to admit air during the day. Where it is desired slowly to grow the shoots, and to keep a winter display of plants in bloom, the temperature must not sink below 45°. In either case a rise of 10° or 15° may be allowed for sunshine in winter. In summer, the chief difficulty will be to keep the house cool by admitting all the air possible, and having it on night and day. If the plants are turned out into pits and shady places, and even very sunny places if their nature requires it, and their place is supplied with tender annuals, &c., then more closeness and moisture must be obtained—a limitation of air and plenty of moisture giving all the essentials of a plant stove.

Artificial Heat.—The best, because the most equal and the cleanliest, is hot water; and the simplest of all contrivances is the best: a compact little boiler, well set, and a flow and return pipe on the simplest principles. A small boiler and two or three-inch pipes are the most suitable for a greenhouse where only quick and occasional fires are wanted. Flues are far from being despicable conveniences. In some respects, in small houses where a higher temperature is wanted at one end than another, they answer better than hot water. When neatly built they are no eyesore in a house. To insure draught the flue should be at least a third deeper than it is wide, and the mouth of the flue should be eighteen inches above the bottom of the surface. For greenhouses, one foot of four-inch pipe will be necessary for every forty cubic feet of air, making allowance, less or more, according to the surface of glass, or the presence of opaque walls; or, in other words, taking the square foot of glass, it would require a foot of four-inch pipe for every six feet of glass; or a foot of a common flue above the ground for about ten or eleven feet of glass.

Ventilation.—Means should be secured for a thorough circulation of air from the sashes in front, and the highest point in the roof, as there the heat will generally be the greatest. In cold weather in winter, unless there are means for heating the air before it enters, the little given should be at the top of the house, as thus the cold, dry air would be heated and absorb the moisture before reaching the bulk of the plants. When the air is very dry, and the weather very cold, the less air that is given the better. In such circumstances, the heating medium should be cool before the sun strikes upon the house, and then the sun-heat will raise the house the less; and 10° or 20° for a short time, from sun-heat, is a very different affair from having that increase from artificial means. For greenhouse plants, generally, in favourable weather, too much air cannot be given, night or day, from the middle of May to the middle of September. For two months preceding May, and subsequent to September, air should be given early in the morning, even if it should be withdrawn or reduced soon afterwards, or early in the afternoon. In winter, unless the air is very mild, it will be time enough to give air by ten o'clock, and shut up between two and three. When the weather is very severe, one hour, or even less, in the middle of the day must be sufficient. In dull, close weather, air should be given, though a brisk fire should be put on during the day on purpose. When, however, the greenhouse is changed into a vinery, a place for growing tender annuals, &c., the forwarding of the growth of Camellias, Epacris, Azaleas, &c., then the temperature in spring and summer must be higher, and the atmosphere closer and moister. By means of divisions, you may have almost as many temperatures and atmospheres in one house as you please, by regulating

the ventilation of the different compartments. Slight wooden movable divisions we find extremely useful with plants in pots, as we can then give a peculiar treatment to one or any number of lights at pleasure.

Firing.—The heat from the furnace merely extends vegetable tissues; that from the sun expands and concentrates them. No stoker should visit his furnace without knowing the temperature of his house, the temperature of the external atmosphere, the direction of the wind, and the changes that have taken place in a certain number of hours, and thence calculate what will be the most likely to happen. The minimum temperature should never be exceeded by fire-heat during the night. More than sufficient is not only *waste*, the plants are *drawn* and *dried*, while less advantage can be taken of the glorious light and heat which come from the sun. For dispersing damps, &c., use a brisk little fire during the day, and allow it to go out. In very dull, close weather in winter, such a fire often, if even for an hour, would be useful; not for heat, but for enabling us to give more air, and causing a rapid circulation among the plants.

Watering.—The rule is, water so as to reach every fibre of the plant's roots, and then wait until a similar repetition is necessary. A plant may want watering twice a day in summer, and, perhaps, only twice a month in dull weather in winter. From the end of September to the middle of May, let the temperature of the water used be from 5° to 10° higher than the minimum temperature of the house. From the periods mentioned, making, of course, due allowance for peculiar weather, watering should be performed in the morning; in cold weather not too early. Thus the stimulus of sun-heat, diminished though it be, meets the plants when they have received their refresher; the extra moisture is parted with before the evening comes; and there is not that rapid cooling of the soil by evaporation during the night. In the summer we reverse the time of watering, and perform the operation in the afternoon and evening. Anything that tends to cool the soil and the plant is then refreshing. By watering in a bright morning, the moisture is exhaled rapidly from the soil, as well as through the foliage of the plant, which does not, in consequence, receive the full benefit of the watering, and, therefore, soon requires a fresh supply. In the evening the evaporating tendencies are approaching the minimum; the plant has full time to absorb and refresh itself, and thus is more able to stand the brunt of the following day.

Manure Watering.—This should be applied often, but weak and clear; a little quicklime added will effect the clearing, at the expense of driving off a portion of the ammonia. It is applicable in almost any case where luxuriance of plant is the chief object; where size of bloom and compact, rather than slender, growth, are the desideratum, it should not be applied until the flower-buds appear.

Syringing.—This is a most valuable mode of applying water, as it promotes cleanliness, and is as necessary for removing dust and incrustations from the foliage as soap and water are for cleaning our own skins. In winter it should be done at midday, when the sun shines; in spring and autumn, in the morning; in summer, chiefly in the evening, though at that season we frequently give them a dash several times a day.

Pruning.—This is generally done when the plant has finished flowering—when we wish it to start into fresh growth. Of course there are exceptions; without these exceptions the nature of a plant and the mode of its growth must be the basis for a system of pruning. For instance, we cut down the flowering shoots of an Epacris and a Pelargonium; but we act very differently both before and after in the two cases. The Epacris is hard-wooded, and, if tolerably ripened, it requires no preparation. The long branches of most kinds are cut in at once, and the plant is then transferred to a closer and warmer atmosphere, to encourage the formation of new shoots. A cold pit, kept close, is the thing; some people, with great success, keep them a couple of months in a plant stove. Of course they are duly hardened, and the wood ripened by autumn. On the other hand, the stems of the Geranium are soft and spongy; if a very valuable kind, this will have been increased by shading, to preserve the colour of the flower. The plant altogether is at a minimum as respects its possession of organisable material; while, for the sake of the old plant to be kept, and the cuttings for seed from its stems, it is desirable it should be at the maximum. The plants are therefore exposed fully to the sun; not a drop more water is given than just to keep the leaves from flagging; and the stems, instead of being soft and green, become hard and brown, by parting with their watery evaporations, and assimilating fresh solid material. Many other close-headed plants, such as the Azalea, merely require, in general, the stopping of a few of the strongest shoots.

Time of Potting.—This should generally be done after pruning, and when fresh growth has taken place, because it is advisable never to give more checks to a plant at once than can be avoided. When cut down, or pruned, the energies in the stems, and the unmutilated, untouched roots, are at once put forth in the production of fresh shoots. When these are formed and forming, and the plant is kept close for a time after shifting, fresh roots will soon be formed through their agency, upon the same principle that roots are protruded from a cutting of half-ripened wood under a hand-glass.

Time for Cuttings.—Now we speak merely in general terms. Other things being equal, the older and harder the wood of the cutting, the longer will it be in striking. The younger the wood is, provided it is just hard enough at the base to possess a sufficiency of organisable material, the sooner it will strike; if too soft and spongy it will rot and damp off. Hence the general time for propagating is regulated by the general time of pruning and fresh growth taking place. Small side-shoots, from 1½ to 3 inches in length, just getting firm at the base, cut to a point with a clean, sharp knife, or taken off close to the older branch, and a few of the lower leaves removed, will succeed in the great majority of cases. It is desirable to get them in in April or May, in the case of slow-growing plants, to have them established before winter. We shall merely add a few requisites: (1) clean pots; (2) secure drainage by an inverted small pot inside a larger one, or by crocks, so as to fill it three-quarters full; (3) place rough material or moss over the drainage, to prevent the finer soil washing through it; (4) cover it with an inch or so of sandy soil, similar to what the plants delight in, if a little charcoal is added all the better, finishing with a layer of pure sand, watering all well, and then allowing it to drain before inserting the cuttings; (5) insert the cuttings firmly, fill the small holes made by the dibber with sand, dew all over with the fine rose of a watering-pot, allow the foliage to become dry, place each pot under a bell-glass, or a number under a hand-light, and shade from the sun, either in a corner of the greenhouse, or, better still, in a close frame or pit without any artificial heat being applied, at least none before the cutting begins to swell at its base. Some things may have bottom-heat at once, especially those that have been a little forced previously. Though shade be indispensable, yet as much light as the cuttings will endure must be given, increasing the quantity gradually.

Sowing Seeds.—This may be done at any time when the seeds are thoroughly ripe. As it is of importance to have the seedlings potted off and established before winter, April and May are the best periods in several circumstances. Where there is no hotbed the latter period will be the best, and even then, for confining heat and moisture, the pot should be covered with a bell-glass, or a square of glass laid over it. Where there is a hotbed, such as a cucumber frame, the seeds may be sown a month or six weeks earlier, and hardened off as soon as they are fairly up and potted off. In sowing, any light, sandy soil will do; for all fine hairy-rooted plants sandy peat is the best. The pots should be nearly as well drained as for cuttings, watered, and allowed to drain before sowing, as the less water they have afterwards until they are up the better. Hard seeds that have been kept dry over the winter will vegetate all the sooner for being steeped several hours in warm water, say from 13° to 14°. In covering the seeds the thickness should be regulated by the size of the seeds. Hence, for very small dusty seeds, the surface of the fine soil should be made smooth, the seeds evenly scattered over it and slightly pressed in, and then just dusted with a little fine sand; but in unpractised hands it is safer to be content with the slight pressing in with a clean, round board, having a nail in the centre to hold by, and then place a square of glass over the pot, with moss or paper above, to shade until vegetation has taken place.

After-treatment of Cuttings and Seedlings.—This is almost identical. Neither cuttings nor seedlings, if at all thick, will thrive long in the cutting and seedling pot. The sooner they are potted off the better they will thrive. Before that, air must be given to prevent them damping; first at night; next, night, morning, and evening; and lastly, when roots are well formed, during the day, removing the glasses altogether from the cuttings. All this time the little moisture necessary must be carefully given. The less it touches either the stems or leaves, the better. When a little advanced, dust them overhead with a fine rose watering-pot, or a syringe, but be careful to have the foliage dry before shutting up for the night. In potting off tender plants that are very small, three or four may be put round the sides of a four-inch pot; a strong-growing one into such a pot at once. In every such potting, and every time that re-shifting is necessary, a moist, close atmosphere is of importance for a short time afterwards; thus lessening, by means of shading and syringing, the evaporating processes until the roots have begun to work in the new soil, when air must be given, first gradually, and ultimately plentifully.

GREEN MANURE is a mass of recently growing plants dug whilst green and fresh into the soil, for the purpose of enriching it; and it is a rule without any exception that all fresh vegetable matters so turned into the earth do render it more fertile; and if plants are grown upon the soil for this purpose, the greater the amount of the surface of leaves in proportion to that of roots the better, because such plants obtain a large proportion of their chief constituent—the chief constituent of all plants, carbon—from the atmosphere. They therefore return to the soil more decomposing matter than they have taken from it.

The putrefaction of the vegetables, and the gases in that case emitted, says Mr. Cuthbert Johnson, appear to be on all occasions highly invigorating and nourishing to the succeeding crop. During this operation, the presence of water is essentially necessary, and is most probably decomposed. The gases produced vary in different plants; those which contain gluten emit ammonia; onions and a few others evolve phosphorus; hydrogen, carbonic acid gas, and carburetted hydrogen gas, with various vegetable matters, are almost always abundantly formed. All these gases, when mixed with the soil, are very nourishing to the plants growing upon it. The observations of the farmer assure us that they are so. He tells us that all green manures cannot be employed in too fresh a state.

Sea Weed is a species of green manure, for it ought to be employed whilst quite fresh. There are many species, and they differ very essentially in their components. The *Lamina'ria*, those long, tawny-green, ribbon-like algæ, so common on our coasts, contain, besides vegetable matter, a large proportion of the salts of potash in addition to those of soda; whereas the *Fu'ci* contain none of the salts of potash. All, however, are excellent manures; and we know a garden, near Southampton, very productive, that for some years had no other manure. It is particularly good as a manure for potatoes. The *Fu'cus vesiculo'sus*, so distinguishable by the bladders full of air embedded in its stems, is a very excellent manure. It contains, when dry, about eighty-four parts vegetable matter, thirteen parts sulphate of lime and magnesia, with a little phosphate of lime, and three parts sulphate and muriate of soda.

GREENWEED. *Geni'sta pilo'sa* and *tincto'ria.*

GREI'GIA. (Commemorative of *Major-General Greig*, a patron of horticulture in Russia. Nat. ord. Bromeliaceæ.)

Stove evergreen herb. Offsets or suckers. Fibrous loam, peat, some pieces of charcoal and sand.

G. sphacela'ta (scorched). 1–1½. Brownish-red. Chili. 1865.

GRENVI'LLEA CONSPI'CUA. This is *Pelargo'nium conspi'cuum.*

GREVI'LLEA. (Named after *C. F. Greville*, a patron of botany. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Hakea.)

Greenhouse evergreen shrubs, from Australia. Seeds sown in a slight hotbed, in spring, or in the greenhouse, as soon as ripe; cuttings of the young shoots when ripened, in sand, under a bell-glass, and when callused at the base to have a slight bottom-heat; peat and loam, with silver sand and bits of charcoal, to keep the soil open. Winter temp., 35° to 45°. *Rosmarinifo'lia* and *acumina'ta* have stood out in sheltered places, with little or no protection.

G. acanthifo'lia (Acanthus-leaved). 4. Purple. June. 1824.
„ *acumina'ta* (pointed-*leaved*). See G. MUCRONULATA.
„ *alpe'stris* (alpine). See G. ALPINA.
„ *alpi'na* (alpine). 4. Red, yellow. May.
„ *anethifo'lia* (dill-leaved). Australia.
„ *Aquifo'lium* (holly-leaved). 1820.
„ *arena'ria* (sand). 5. Green, tawny. 1824.
„ *a'spera* (rough). 3. Pink. June. 1824.
„ *asplenifo'lia* (Asplenium-leaved). 5. Pink. July. 1806.
„ *Ba'nksii* (Banks's). 12–15. Red. 1868.
„ *Baue'ri* (Bauer's). 4. Red. June. 1824.
„ *berberifo'lia* (barberry-leaved). 4. Red. June. 1821.
„ *bipinnati'fida* (doubly-leafleted). 1837.
„ *brachya'ntha* (short-flowered). See G. QUERCIFOLIA.
„ *buxifo'lia* (box-leaved). 6. Pink. June. 1790.
„ *Cale'yi* (Caley's). 5. Red. June. 1830.
„ *cane'scens* (hoary-*leaved*). See G. ARENARIA.
„ *ceratophy'lla* (horn-leaved). See G. REFRACTA CERATOPHYLLA.
„ *Chrysode'ndrum* (yellow-tree). Yellow.
„ *ciné'rea* (ashy-coloured). 4. Red. June 1822.
„ *colli'na* (hill). See G. BUXIFOLIA.
„ *conci'nna* (neat). 4. Purple. June. 1824.
„ *Drummo'ndii* (Drummond's). 3. White, yellow. June. 1859.
„ *du'bia* (dubious). See G. SERICEA.
„ *e'legans* (elegant). Red, yellow. 1859.
„ *ericifo'lia* (heath-leaved). Red, green.
„ *eriosta'chya* (woolly-spiked). Orange.
„ *falca'ta* (sickle-shaped). Gardens. Spring. 1873.
„ *fascicula'ta* (fascicled). Pale red.
„ *ferrugi'nea* (rusty). See G. FLORIBUNDA.
„ *Flinde'rsii* (Flinder's). 3. Purple. June. N. S. Wales. 1824.
„ *floribu'nda* (free-flowering). 3. 1837.
„ *Forste'ri* (Forster's). Scarlet. 1873.
„ *gibbo'sa* (swollen-*stemmed*). 1821.
„ *Gillivra'yi* (Gillivray's). 4. White. June. New Caledonia. 1854.
„ *glabra'ta* (glabrous). 3–5. White or yellow. April, May. 1836.
„ *heterophy'lla* (variable-leaved). See G. REFRACTA.
„ *hillia'na* (Hillian). 1862.
„ *hookeria'na* (Hookerian). Yellow, crimson.
„ *ilicifo'lia* (holly-leaved). Australia.
„ *intrica'ta* (intricate). 5. White. May. 1871.
„ *juniperi'na* (juniper-like). 4. Pink. June. 1822.
„ „ *sulphu'rea* (sulphur). 4. Pale yellow. June. 1824.
„ *lavandula'cea* (lavender-like). Pink. June. 1850.
„ *lawrencea'na* (Mrs. Lawrence's). White. 1839.
„ *linea'ris* (narrow-*leaved*). 6. White. June. 1790.
„ „ *a'lba* (white-*flowered*). 4. White. June. 1790.
„ „ *incarna'ta* (flesh-coloured). 4. Flesh. June. 1790.
„ *longifo'lia* (long-leaved). See G. ASPLENIFOLIA.
„ *macro'stylis* (long-styled). Crimson and yellow. April. 1868.
„ *Mangle'sii* (Mangles'). See G. GLABRATA.
„ *monta'na* (mountain). 4. Violet. June. 1822.
„ *mucronifo'lia* (pointed-leaved). 3. Violet. June. 1824.
„ *mucronula'ta* (small-pointed-*leaved*). 4. Pink. June. 1809.
„ *occidenta'lis* (western). Australia.
„ *planifo'lia* (flat-leaved). See G. SERICEA.
„ *Prei'ssei* (Preiss's). See G. THELEMANNIANA.
„ *pube'scens* (downy). 1826.
„ *pulche'lla* (pretty). 2. White or yellow. Australia. 1824.
„ *puni'cea* (scarlet). Purple. June. 1822.
„ *quercifo'lia* (oak-leaved). Purple.
„ *refra'cta* (bent-back). 4. White. June. 1821.
„ „ *ceratophy'lla* (horn-leaved). 1839.
„ *robu'sta* (robust, or *silk-oak*). 5. Orange. June. 1829.

G. ro'sea (rosy). See G. LAVANDULACEA.
,, *rosmarinifo'lia* (rosemary-leaved). 4. Red. June. 1824.
,, *seri'cea* (silky). 6. Pink. June. 1790.
,, *stri'cta* (erect). See G. LINEARIS.
,, *stylo'sa* (*long*-styled). 9. Red. June. 1809.
,, *sulphu'rea* (sulphur-coloured). See G. JUNIPERINA SULPHUREA.
,, *thelemannia'na* (Thelemann's). Crimson. 1838.
,, ,, *splе'ndens* (splendid). Flowers larger. 1882.
,, *trifurca'ta* (three-forked). 3. Red. June. 1821.
,, *vesti'ta* (clothed). Purple. May. Australia.

GRE'WIA. (Commemorative of *Dr. Grew*, who studied the histology of plants. Nat. ord. Tiliaceæ.)

Trees and shrubs requiring stove or greenhouse culture according to their native country. Cuttings in sand in a close case with bottom-heat. Loam, leaf-mould, and sand.

G. asia'tica (Asiatic). 10. Yellow. July. E. Ind. 1792.
,, *fla'va* (yellow). Yellow. S. Africa.
,, *occidenta'lis* (western). 8. Purple. S. Africa. 1690.
,, *parvifio'ra* (small-flowered). 2–3. Flowers small, yellow. N. China. 1888.
,, *poly'gama* (polygamous). Yellow. Trop. Asia.
,, *sa'pida* (savoury). Yellow. Warm parts of Himalayas.

GRE'YIA. (Commemorative of *Sir George Grey*, Governor-General of Cape Colony. Nat. ord. Sapindaceæ.)

Large greenhouse shrub. Seeds. Cuttings in sand in a close case, with gentle bottom-heat. To make it flower it should be kept on the dry side at all times, and quite dry for a period after the completion of young growth. Fibrous loam and sand.

G. Sutherla'ndi (Sutherland's). Crimson-scarlet. S. Africa. 1859.

GRI'AS. Anchovy Pear. (From *grao*, to eat; the fruit being eatable. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Gustavia.)

Stove evergreen tree. Cuttings of ripe shoots in sand, under a bell-glass, in peat; rich, sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

G. cauliflo'ra (stem-flowering). 50. White. Jamaica. 1768.
,, *zamore'nsis* (Zamoran). Peru. 1879.

GRIE'LUM. (From *grielum*, old-looking; referring to the grey, hoary aspect of the plants. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 13-*Polyandria*, 4-*Tetragynia*. Allied to Neurada.)

Greenhouse herbaceous perennials, from South Africa, all having yellow flowers. Division of the roots in spring; rough, sandy soil, well drained. Winter temp., 40° to 45°.

G. humifu'sum (trailing). 1. May. 1825.
,, *lacinia'tum* (jagged). See G. HUMIFUSUM.
,, *tenuifo'lium* (slender-leaved). 2. May. 1780.

GRIFFI'NIA. (Named after *W. Griffin, Esq.*, a patron of botany. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Eucrosia in leaf and to Lycorus in the flower.)

Stove bulbs, from Brazil. Seeds in a hotbed, either when ripe or early in spring, and young offset-bulbs; peat and loam, with plenty of sand, and a little dried leaf-mould. Temp., when growing, 60° to 80°, with plenty of moisture; when at rest, 40° to 50°, and dry.

G. Blumena'via (Blumenavia). 1. White, pink. 1866.
,, *drya'des* (dryads). 1. Lilac-blue. 1868.
,, *hyaci'nthina* (violet-coloured). 1. Blue. July. 1815.
,, ,, *micra'ntha* (small-flowered). Smaller. 1880.
,, *interme'dia* (intermediate). ½. Blue. April. 1823.
,, *libonia'na* (Libonian). 1. Blue. March. 1848.
,, *orna'ta* (adorned). 1. Purplish-lilac. 1876.
,, *parvifio'ra* (small-flowered). 2. Pale purple. August. 1815.

GRINDE'LIA. (Named after *H. Grindel*, a German botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Half-hardy plants, all with yellow flowers, and from Mexico, except when otherwise mentioned. *Cilia'ta* is a hardy biennial, by seeds sown in autumn, or early in spring, under protection; herbaceous species by division and cuttings; evergreens, cuttings in April of half-ripened shoots, in sand, under a bell-glass; peat and loam. Winter temp., 40° to 48°.

HERBACEOUS.

G. angustifo'lia (narrow-leaved). 1. August. 1820.
,, *cilia'ta* (hair-fringed). 1½. August. N. Amer. 1821. Biennial.
,, *Duva'lii* (Duval's). See G. ANGUSTIFOLIA.
,, *grandiflo'ra* (large-flowered). 4. Orange. July. Texas. 1851. Biennial.
,, *hirsu'ta* (roughly-hairy). 3–4. N. Amer. 1882.
,, *integrifo'lia* (entire-leaved). 3. N.W. Amer. 1908.
,, *lanceola'ta* (lanceolate). Yellow. N. Amer.
,, *pulche'lla* (pretty). 3. Chili. 1908.
,, *robu'sta* (robust). 1½. California. 1908.
,, *squarro'sa* (spreading). 3–4. August. Missouri. 1811.

EVERGREEN.

G. coronopifo'lia (coronopus-leaved). See XANTHOCEPHALUM CENTAUROIDES.
,, *glutino'sa* (clammy). 2. 1803.
,, *inuloi'des* (Inula-like). 5. August. 1815.
,, *Lambe'rtii* (Lambert's). 2. August. 1816.
,, *pa'tens* (spreading). 1. Pale yellow. California. 1900.
,, *spathula'ta* (spathulate). See G. INULOIDES.

GRISEBA'CHIA. (A commemorative name. Nat. ord. Ericaceæ.)

Heath-like, greenhouse shrub. Cuttings of side-shoots in sandy peat, in moderate heat. Fibrous peat and sand.

G. cilia'ris (eye-lashed). 2. White. June. S. Africa. 1795.

GRISELI'NIA. (A commemorative name. Nat. ord. Cornaceæ.)

Evergreen shrubs, with large, leathery leaves, suitable for maritime situations. Cuttings in sandy soil in a cold frame; layers in August. Ordinary, well-drained soil.

G. littora'lis (sea-shore). 2–20. New Zealand. 1872.
,, *lu'cida* (shining). 2–10. New Zealand. "Kapook."
,, ,, *macrophy'lla* (large-leaved). Leaves larger. 1884.

GRI'SLEA. (Named after *G. Grisley*, a Portuguese botanist. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Cuphea.)

Stove evergreen shrubs. Cuttings in April of firm young shoots, in sandy soil, under a bell-glass, in heat; peat and loam, fibrous and sandy. Summer temp., 60° to 75°; winter, 50° to 55°.

G. secu'nda (side-*flowering*). 4. Pale pink. Cumana. 1820.
,, *tomento'sa* (downy). See WOODFORDIA FLORIBUNDA.

GRO'BYA. (Named after *Lord Grey* of Groby. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Huntleya.)

Stove orchids. Division of the plant; shallow basket, in sphagnum, fibrous peat, and potsherds. Summer temp., 60° to 90°, when growing; winter, when comparatively at rest, 55° to 60°, and dryish.

G. Amhe'rstiæ (Lady Amherst's). ½. Ochre-spotted. September. Brazil. 1829.
,, *galea'ta* (helmeted). Green, purple. July. Brazil. 1836.

GRONO'VIA. (Commemorative of *Dr. J. F. Gronovius* of Leyden. Nat. ord. Loasaceæ.)

Greenhouse twining annuals. Seeds in heat. Loam, leaf-mould, and plenty of sand.

G. pulche'lla (pretty). Purple, white. Brazil. 1866.
,, *sca'ndens* (climbing). Yellow. S. Amer. 1790.

GROTTO is a resting place, formed rudely of rockwork, roots of trees, and shells, and is most appropriately placed beneath the deep shade of woods, and on the margin of water. Its intention is to be a cool retreat during summer.

GROUND CHERRY. *Ce'rasus Chamæce'rasus.*

GROUND CISTUS. *Rhododе'ndron Chamæci'stus.*

GROUND IVY. *Ne'peta Glecho'ma.*

GROUND NUT. *A'pios tubero'sa.*

GROUND SENNA. *Ca'ssia Chamæcri'sta.*

GROUNDSEL-TREE. *Ba'ccharis halimifo'lia.*

GROVE is a moderately extensive association of trees without underwood. The most fitting character of a grove is beauty; for fine trees are lovely objects, and a grove is an assemblage of them, in which every individual retains much of its own peculiar elegance, and whatever it loses is transferred to the superior beauty of the whole. To a grove, therefore, which admits of endless variety in the disposition of the trees, differences in their shapes and their greens are seldom very important, and sometimes they are detrimental. Strong contrasts scatter trees which are thinly planted, and which have not the connection of underwood; they no longer form one plantation; they are a number of single trees. A thick grove is not, indeed, exposed to this mischief; and certain situations may recommend different shapes and different greens for their effects upon the surface. The eye, attracted into the depth of the grove, passes by little circumstances at the entrance: even varieties in the form of the line do not always engage the attention: they are not so apparent as in a continued thicket, and are scarcely seen if they are not considerable.

GRYLLOTA'LPA. See MOLE CRICKET.

GUAI'ACUM. Lignum Vitæ Tree. (The aboriginal name in South America. Nat. ord. *Beancapers* [Zygophyllaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

The Guaiacum bark of *G. officina'le* is well known for its medicinal properties. Stove evergreen trees. Cuttings of ripe shoots in April or May, in sand, under a bell-glass, in brisk bottom-heat; rich, sandy, fibrous loam. Summer temp., 60° to 85°; winter, 50° to 60°.

G. arbo'reum (tree). 30. Blue. Trinidad. 1816.
„ *officina'le* (shop). 40. Blue. August. W. Ind. 1694.
„ *vertica'le* (vertical). 8. Blue. W. Ind. 1820.

GUANO. See DUNGS.

GUA'REA. (The native name. Nat. ord. *Meliads* [Meliaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Carapa.)

Stove evergreen trees. Same culture as for Guaiacum.

G. coffeæfo'lia (Coffea-leaved).
„ *grandiflo'ra* (large-flowered). See G. GRANDIFOLIA.
„ *grandifo'lia* (large-leaved). 20. White. June. W. Ind. 1752.
„ *ramiflo'ra* (branch-flowering). 20. White. Porto Rico. 1822.
„ *Swa'rtzii* (Swartz's). See G. TRICHILIOIDES.
„ *trichilioi'des* (Trichilia-like). 20. White. W. Ind. 1822.

GUATTE'RIA. (Named after *Guatteri*, an Italian botanist. Nat. ord. *Anonads* [Anonaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Anona.)

The flowers of *G. virga'ta* are exceedingly sweet. Stove evergreen trees and shrubs. Cuttings of half-ripened shoots in April, as for Guaiacum.

G. cerasoi'des (cherry-like). See POLYALTHIA CERASOIDES.
„ *Kori'nti* (Korinti). See POLYALTHIA KORINTI.
„ *laurifo'lia* (laurel-leaved). 8. White. Jamaica. 1818.
„ *Ou'regou* (Ouregou). Rusty-velvety. Guiana.
„ *ru'fa* (reddish). See UVARIA MICROCARPA.
„ *subero'sa* (cork-*barked*). See POLYALTHIA SUBEROSA.
„ *virga'ta* (twiggy). 30. White. Jamaica. 1793. "Lancewood."

GUA'VA. (*Psi'dium cattleia'num.*) This evergreen shrub is not generally cultivated for the sake of its fruit; but it is deserving of some encouragement where hothouse room is plentiful. Its fruit, in size and appearance, somewhat resembles a small Orleans plum, and is of a dull purple colour; it is juicy, and in flavour somewhat resembles a strawberry. The common Guava is *P. Guaja'va*, of which there are two forms, namely, the White Guava (*P. Guaja'va pyri'ferum*) and the Red Guava (*P. G. pomi'ferum*), cultivated and naturalised in most tropical countries, for the sake of their fruits, which are eaten as dessert.

Propagation is effected by cuttings, layers, and seeds.

Soil.—Two parts of loam and one part peat.

Culture.—It requires the ordinary culture given to evergreen shrubs in our stoves. As soon as the plants attain a little age they bear abundantly and in a long succession, often producing fruit through the winter. They will succeed very well in a comfortable conservatory, but a climate of an intermediate character will suit them best, as they enjoy a moderate amount of heat. They occasionally require the pruner's assistance in thinning-out crowded or cross shoots, when such occur, and in pinching the tops from those which become over-luxuriant.

Fruit.—It is used for the dessert, and making jelly.

GUAZU'MA. Bastard Cedar. (The aboriginal name in Mexico. Nat. ord. *Bytneriads* [Sterculiaceæ]. Linn. 18-*Polyadelphia*, 1-*Decandria*. Allied to Theobroma.)

The fruit of *G. ulmifo'lia* is full of a sweet, agreeable pulp. Stove evergreen trees. Cuttings of ripened shoots, and general treatment as for Guaiacum.

G. polybo'trya (many-racemed). 12. Yellow. Mexico. 1816.
„ *tomento'sa* (woolly). 20. India, Java, and Trop. Amer. 1820.
„ *ulmifo'lia* (elm-leaved). 40. Yellow. Jamaica. 1739.

GUELDER ROSE. *Vibu'rnum O'pulus.*

GUERNSEY LILY. *Neri'ne sarnie'nsis.*

GUETTA'RDA. (Named after *E. Guettard*, a French botanist. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*.)

Stove evergreen trees. General treatment as for Guaiacum.

G. cocci'nea (scarlet). See ISERTIA COCCINEA.
„ *hirsu'ta* (hairy). 20. Peru. 1820.
„ *lu'cida* (shining). See ANTIRRHŒA LUCIDA.
„ *odora'ta* (sweet-scented). 10. Red. Jamaica. 1818.
„ *rugo'sa* (wrinkly-*leaved*). See G. SCABRA.
„ *tomento'sa* (woolly). See STENOSTOMUM TOMENTOSUM.
„ *sca'bra* (scaly). 20. White. W. Ind. 1818.
„ *specio'sa* (showy-*flowered*). 20. Scarlet. Trop. Asia.

GUEVI'NA. (The name given by the natives. Nat. ord. Proteaceæ.)

A greenhouse tree in most parts of the country, but hardy in such parts as Devon and Cornwall. Cuttings in sand in a cold frame or greenhouse covered with a hand-light. Fibrous loam and peat.

G. Avella'na (Avellana). 30–40. White. Fruit red; edible. Chili. 1826. "Chilian Nut."

GUICHENO'TIA. (Commemorative of *Antoine Guichenot*, a French gardener. Nat. ord. Sterculiaceæ.)

Greenhouse shrubs from the cooler parts of Australia. Cuttings in sand in a close case, with moderate heat. Peat and loam, with sand.

G. ledifo'lia (Ledum-leaved). 3. White. 1868.
„ *macra'ntha* (large-flowered). 3. Purple. March. 1847.

GUILANDI'NA. Nicker-tree. (Named after *M. Guilandina*, a Prussian botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Cæsalpinia in most cases.

Stove evergreen shrubs. Seeds in a hotbed, in spring; cuttings, &c., as for Guaiacum.

G. Bo'nduc (Bonduc). See CÆSALPINIA BONDUC.
„ *Bonducе'lla* (small Bonduc). See CÆSALPINIA BONDUCELLA.
„ *microphy'lla* (small-leaved). E. Ind.
„ *Mori'nga* (Moringa). See MORINGA PTERYGOSPERMA.

GUINEA PEACH. *Sarcocе'phalus.*

GUINEA PLUM. *Parina'rium excе'lsum.*

GUIZO'TIA. (Commemorative of *M. Guizot*. Nat. ord. Compositæ.)

Stove, annual herb. Seeds. Fibrous loam, leaf-mould, and sand.

G. abyssi'nica (Abyssinian). 5–6. Yellow. August. Trop. Africa. 1806.
„ *olei'fera* (oil-bearing). See G. ABYSSINICA.

GUM AMMONIAC. *Dore'ma ammoni'acum.*

GUM ARABIC TREE. *Aca'cia Ara'bica.*

GUM CISTUS. *Ci'stus ladani'ferus.*

GUM ELEMI TREE. *A'myris Plumie'ri.*

GUM LAC TREE. *Bu'tea frondo'sa.*

GUMMING. See EXTRAVASATED SAP.

GUM SENEGAL TREE. *Aca'cia Se'negal.*

GUM-TREE. *Eucaly'ptus robu'sta.*

GUNDE'LIA. (Commemorative of *A. Gundelsheimer*, a German botanist. Nat. ord. Compositæ.)

Half-hardy, perennial, thistle-like plant, with spiny leaves and white veins. Seeds and division. Loam and peat, with sand.

G. gla'bra (smooth). See G. TOURNEFORTII.

„ *Tournefo'rtii* (Tournefort's). 1½. Chocolate and yellow. Syria, Asia Minor, Persia. 1739.

GU'NNERA. (Commemorative of *J. E. Gunner*, a bishop and botanist of Sweden. Nat. ord. Haloragaceæ.)

Hardy herbs, the larger of which are admired for the sake of their bold and striking foliage. The crowns are the better for the protection of some dry leaves over them in winter. Division. Rich, rather deep and moist soil.

G. arena'ria (sand). Flowers small. Berries crimson. New Zealand. 1905. Creeping.

„ *bractea'ta* (bracted). Green. Chili.

„ *brepho'gea* (earth-born). Green. Colombia. 1872.

„ *chile'nsis* (Chilian). 4–6. Green. August. Chili. 1849. Leaves very large.

„ *densiflo'ra* (dense-flowered). Green. New Zealand.

„ *denta'ta* (toothed). Flowers inconspicuous. Plant dwarf, creeping. New Zealand. 1905.

„ *falkla'ndica* (Falklandian). See G. MAGELLANICA.

„ *insi'gnis* (remarkable). Green. Chili. 1898.

„ *magella'nica* (Magellan). Green. Southern Chili.

„ *manica'ta* (sleeved). Green. Brazil. 1867. Leaves very large.

„ *monoi'ca* (monœcious). New Zealand.

„ *perpe'nsa* (carefully-considered). 1½. Green. S. Africa.

„ *sca'bra* (scabrous). See G. CHILENSIS.

GU'NNIA, of Lindley. See SARCOCHILUS.

GURA'NIA. (Nat. ord. Cucurbitaceæ.)

Stove climber. Seeds and cuttings. Fibrous loam, leaf-mould, and sand.

G. eria'ntha (woolly-flowered). See G. MALACOPHYLLA.

„ *makoya'na* (Makoyan). Guatemala. 1847.

„ *malacophy'lla* (soft-leaved). Rose-scarlet. Peru. 1904.

GUSTA'VIA. (Named after *Gustavus III* of Sweden. Nat. ord. *Barringtoniads* [Myrtaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

There are several species of these fine stove evergreens not yet in cultivation. Cuttings of ripe shoots in sandy soil, under a bell-glass, and in bottom-heat; rich, loamy soil. Summer temp., 60° to 90°; winter, 55° to 60°. *G. augu'sta* is a splendid, low, evergreen tree, something like a Myrtle or a Barringtonia.

G. augu'sta (august). 10. White. Guiana. 1794.

„ *brasilie'nsis* (Brazilian). Rosy-white. Brazil. 1866.

„ *fastuo'sa* (disdainful). 20. White. May. Guiana. 1824.

„ *graci'llima* (very-slender). Rose. Colombia. 1874.

„ *insi'gnis* (remarkable) of Willdenow. See G. AUGUSTA.

„ *Leopo'ldii* (Leopold's). See G. PTEROCARPA.

„ *pteroca'rpa* (winged-fruited). White. Guiana. 1861.

„ *Theophra'sta* (Theophrasta). White. S. Amer. 1873.

GUTIERRE'ZIA. (Apparently a commemorative name. Nat. ord. Compositæ.)

Hardy shrubby plant. Cuttings in sandy soil in a cold frame. Well-drained soil.

G. Eutha'miæ (Euthamia's). Golden yellow. Western United States. 1896. Shrubby.

„ *gymnospermoi'des* (Gymnosperma-like). See XANTHOCEPHALUM GYMNOSPERMOIDES.

GUZMA'NIA. (Named after *A. Guzman*, a Spanish naturalist. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Caraguata.)

Stove herbaceous perennials. Suckers; rich soil. Stove temp., 60° to 80°; winter, 55° to 60°.

G. bullia'na (Bullian). See CARAGUATA ANGUSTIFOLIA.

„ *devansaya'na* (Devansayan). See CARAGUATA DEVANSAYANA.

„ *erythroce'phala* (red-headed). Chiriqua. 1883.

G. erythrole'pis (red-scaled). Cuba.

„ *fra'grans* (fragrant). See ÆCHMEA.

„ *fuerstenbergia'na* (Fuerstenbergian). White; bracts red. Ecuador. 1883.

„ *Melino'ki* (Melinok's). See CARAGUATA MELINONIS.

„ *Melino'nis* (Melinon's). See CARAGUATA MELINONIS.

„ *Sallie'ri* (Sallier's). See ÆCHMEA CYATHIFORMIS.

„ *tri'color* (three-coloured). 1. Green, scarlet. April. S. Amer. 1820.

GYMNADE'NIA. (Derived from *gumnos*, naked, and *aden*, a gland; the glands of the pollinia are not in a sac. Nat. ord. Orchidaceæ.)

Stove terrestrial Orchid, closely allied to Habenaria. Imported roots. Fibrous loam and peat, with sand.

G. macra'ntha (large-flowered). 1. Dark brown, purplish-lilac. Sierra Leone. 1870.

GYMNE'MA. (From *gumnos*, naked, and *nema*, a filament; in reference to the stamens. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Stephanotis.)

G. lacti'ferum is the Cow Plant of Ceylon, the milk of which is used as food by the natives. Stove evergreen twiners, with yellow flowers. Cuttings of stiff young side-shoots in May, in sand, under a bell-glass, in heat; fibrous loam and sandy peat, well drained. Summer temp., 60° to 80°; winter, 50° to 58°.

G. sylve'stre (wood). Tropics.

„ *tenaci'ssimum* (most tenacious). See MARSDENIA TENACISSIMA.

„ *ti'ngens* (staining). 8. July. E. Ind. 1823.

GYMNO'CLADUS. Kentucky Coffee-tree. (From *gumnos*, naked, and *klados*, a branch; in reference to the soft young wood, devoid of buds. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 22-*Diœcia*, 9-*Decandria*. Allied to Parkinsonia.)

Hardy deciduous tree. By imported seeds and cuttings of the roots, keeping the part nearest the surface uppermost; deep, mellow loam. The tree has a peculiar dead-like appearance in winter, as the buds are inconspicuous, but has a fine effect in summer with its very large green leaves.

G. canade'nsis (Canadian). 20. White. Canada. 1748.

„ „ *fo'liis variega'tis* (variegated-leaved).

„ *chine'nsis* (Chinese). 12. White. China. 1889. "Soap Tree."

GYMNODI'SCUS. (From *gumnos*, naked, and *discus*, a disc; referring to the naked disc of the achenes or fruits. Nat. ord. Compositæ.)

Half-hardy annual. Seeds at the beginning of April in the open border.

G. capilla'ris (hair-like). Yellow. June. S. Africa. 1822.

GYMNOGRA'MME. (From *gumnos*, naked, and *gramme*, a line; in reference to the spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryprogamia*, 1-*Filices*.)

Beautiful stove Ferns, with brown spores, except where otherwise stated. Division of the plant, and spore-cases from the fronds scattered freely on rough peat, in a pot, and covered with a square of glass, before being placed in a damp, warm, shady place; peat and loam, most of the former, with a little silver sand. Summer temp., 60° to 85°, a little shade; winter, 50° to 60°, and rather dry.

G. asplenioi'des (Asplenium-like). 1–2. Panama to S. Brazil.

„ *calome'lanos* (beautiful-black). 2–4. July. W. Ind. 1790.

„ „ *chrysophy'lla* (golden-leaved). 1–2. Powder yellow.

„ „ *peruvia'na* (Peruvian). 1–1½. Powder grey. Stalks chestnut.

„ *caudifo'rmis* (tail-formed). 1–1½. Burma; Malaya. 1862.

„ *chærophy'lla* (chervil-leaved). ½. June. Brazil. 1825.

„ *chrysophy'lla* (golden-leaved). 1. July. W. Ind. 1824.

„ *corda'ta* (heart-shaped). 1. August. Cape of Good Hope. 1838.

„ *decompo'sita* (decompound). S. Amer. 1873.

„ *diplazioi'des* (Diplazium-like). 1½–2½. Mexico to Peru and S. Brazil.

„ *elegantí'ssima* (very elegant). See G. DECOMPOSITA.

G. falca'ta (sickle-shaped). May. W. Ind.
„ *farini'fera* (farina-bearing). See G. SCHIZOPHYLLA FARINIFERA.
„ *ferrugi'nea* (rusty). Clothed with rusty felt. Peru and Panama.
„ *flexuo'sa* (flexuous). Nicaragua to Peru. 1865.
„ *gra'cilis* (slender). 2–4. Jamaica.
„ *hamiltonia'na* (Hamiltonian). ½–1. Warm East Himalaya.
„ *heteroca'rpa* (various-fruited). 1–1½. June. Java.
„ *hy'brida* (hybrid). May. S. Amer.
„ *japo'nica* (Japanese). Japan. 1863.
„ „ *variega'ta* (variegated). Japan. 1875.
„ *java'nica* (Javanese). May. Java.
„ *lauchea'na gra'ndiceps* (large-headed). Golden, with tasselled apex. 1882.
„ *leptophy'lla* (slender-leaved). 1. July. S. Europe. 1819.
„ *L'Herminie'ri* (L'Herminier's). A form of *G. calomelanos*. Guadeloupe.
„ *macrophy'lla* (large-leaved). 1½–2. Malaya; Philippines.
„ *Marte'nsii* (Martens's). A form of *G. calomelanos*.
„ „ *dobroyde'nsis* (Dobroydan). Fronds covered with golden powder. 1877.
„ *myriophy'lla* (myriad-leaved). 1. Brazil. 1824.
„ *ochra'cea* (yellow). 1. Yellow. March. Buenos Ayres.
„ *Pea'rcii* (Pearce's). 1½. Peru. 1864.
„ „ *robu'sta* (robust). More robust. Peru. 1888.
„ *peda'ta* (doubly-lobed). ½. June. New Spain. 1822.
„ *peruvia'na* (Peruvian). 1. July. Peru. 1822.
„ *polypodioi'des* (Polypodium-like). 1–1½. Brazil.
„ *pulche'lla* (pretty). 1½. Venezuela. Powder white.
„ „ *ramo'sa* (branched). Frond branched.
„ „ *wettenhallia'na* (Wettenhallian). Powder pale sulphur.
„ *ru'fa* (red-*haired*). ½. June. Jamaica. 1793.
„ *rutæfo'lia* (rue-leaved). ½. Australia and New Zealand.
„ *schizophy'lla* (cut-leaved). 1–2. Fronds very finely cut. Jamaica. 1881.
„ „ *farini'fera* (farina-bearing). Fronds powdered on both sides with white. 1886.
„ „ *glorio'sa* (glorious). Leaves larger and longer. 1884.
„ *sulphu'rea* (sulphur-coloured). 1. July. Jamaica. 1808.
„ *tarta'rea* (infernal). 1. August. W. Ind. 1817.
„ „ *aura'ta* (golden). 2. Peru. 1870.
„ *tomento'sa* (downy). Brazil. 1831.
„ *To'tta* (Totta). 1½–2½. Africa; Asia, &c.
„ *triangula'ris* (triangular). 1–1½. Powder varying from orange to white. Oregon. 1874.
„ *trifolia'ta* (three-leaved). 2. July. Jamaica. 1810.
„ *ve'llea* (woolly). Colombia. 1881.
„ *vesti'ta* (clothed). Yellow. May. W. Ind.
„ *villo'sa* (shaggy). 1 to 2. June. Brazil. 1836.

GYMNOLO'MIA. (From *gumnos*, naked, and *loma*, a margin; the edge of the achene or fruit is naked. Nat. ord. Compositæ.)

Perennials, of which *G. multiflora* is hardy, the rest requiring a greenhouse. Seeds and division. Loam, leaf-mould, and sand for the tender ones.

G. conna'ta (united). 4. Yellow. October. Brazil. 1821.
„ *multiflo'ra* (many-flowered). 1. Yellow. Mexico. 1887.
„ *tripline'rvia* (three-nerved). 3. Yellow. October. Colombia. 1825.

GYMNO'PSIS CONNA'TA. See GYMNOLOMIA CONNATA.

GYMNO'PSIS TRIPLINE'RVIA. See GYMNOLOMIA TRIPLINERVIA.

GYMNO'PSIS UNISERIA'LIS. See SCLEROCARPUS UNISERIALIS.

GYMNO'PTERIS. (From *gumnos*, naked, and *pteris*, a fern. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Often united with Acrostichum.)

Stove Ferns. Treatment similar to Gymnogramme.

G. acumina'ta (sharp-pointed). Brown, yellow. July. 1831.
„ *alie'na* (alien). Cuba, Mexico to N. Peru.
G. axilla'ris (axillary-*spored*). Brown, yellow. June. Isle of Luzon.
„ *nicotianifo'lia* (tobacco-leaved). Brown. July. W. Ind. 1843.
„ *norma'lis* (normal). Brown, yellow. June. Samarcand.
„ *ophioglossoi'des* (adder's-tongue). Brown. July. W. Ind.
„ *platyrhy'nchos* (broad-tip). Brown. W. Ind.
„ *quercifo'lia* (oak-leaved). Brown. W. Ind. 1840.
„ *subrepa'nda* (slightly-waved-*leaved*). Brown, yellow. June. Isle of Luzon.
„ *taccæfo'lia* (Tacca-leaved). Brown, yellow. June. E. Ind.
„ *triloba'ta* (three-lobed). Brown, yellow. August. Isle of Luzon.

GYMNOSPHÆ'RA SQUAMULA'TA. See ALSOPHILA SQUAMULATA.

GYMNOSPO'RIA. (From *gumnos*, naked, and *spora*, a seed; the seeds in some of the species are without an aril. Nat. ord. Celastraceæ.)

Stove or greenhouse shrubs. Cuttings in sand in gentle heat and covered with a bell-glass, or in a warm, close case for the stove species.

G. cassinoi'des (Cassine-like). 4. White. August. Canary Islands. 1779.
„ *emargina'ta* (notched). 8. Yellowish. E. Ind. 1820.
„ *monta'na* (mountain). Tropics.
„ *tri'gyna* (three-styled). 5. May. Mauritius. 1824.

GYMNO'STACHYS. (From *gumnos*, naked, and *stachus*, a spike. Nat. ord. *Orontiads* [Oraceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Acorus.)

Greenhouse herbaceous perennial. Suckers and divisions; peat and loam. Summer temp., 55° to 75°; winter, 40° to 50°.

G. a'nceps (two-edged). 1. June. Australia. 1820.

GYMNOSTA'CHYUM. (Derived from *gumnos*, naked, and *stachus*, a spike. Nat. ord. Acanthaceæ.)

Stove plants with beautifully marked leaves. Cuttings in a close case, with bottom-heat. Loam, peat, and sand.

G. ceyla'nicum (Cingalese). Yellow, white. Ceylon.
„ *decu'rrens* (decurrent). ½. White, with purple stalk. Malay Peninsula. 1894.
„ *venu'stum* (charming). ½. Purple. September. Himalayas.
„ *Verschaffe'ltii* (Verschaffelt's). See FITTONIA VERSCHAFFELTII.

GYMNOSTE'PHIUM. (From *gumnos*, naked, and *stephos*, a crown; the ray florets have no pappus. Nat. ord. Compositæ.)

Greenhouse sub-shrub. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.

G. cilia're (eyelashed). 1–2. Rays blue; disc yellow. S. Africa.

GYMNOTHE'CA RADDIA'NA. See MARATTIA CICUTÆFOLIA.

GY'MNOTRIX CAUDA'TA. See PENNISETUM MACROURUM.

GYNANDRO'PSIS. (From *gune*, female, *andros*, a male, and *opsis*, like; referring to the appearance of the stamens as if borne on the style. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 15-*Tetradynamia*. Allied to Cleome.)

Hardy annuals, seed in the open border, in April, or in a slight hotbed, in March, and transplanted; tender annual and biennial in a hotbed in March, potted and flowered in the greenhouse, or planted in the open border; rich, sandy, loamy soil.

STOVE.

G. cocci'nea (scarlet). 6–8. Scarlet. Colombia. 1878. Shrub.
„ *pentaphy'lla* (five-leaved). 2. White. July. Tropics. 1640. Annual.
„ *specio'sa* (showy). 3. White. July. Carthagena. 1818. Biennial.

HARDY ANNUALS.

G. Candela'brum (chandelier). 1. Red. July. S. Amer. 1824. This is *Cleome Candelabrum*.

G. pulche'lla (neat). 1. White. June. Maranhatta. 1825. This is *Cleome pulchella.*
„ *sessiliflo'ra* (stalkless-flowered). 1. White. July. W. Ind. 1820.
„ *triphy'lla* (three-leaved). See G. PENTAPHYLLA.

GYNE'RIUM. (From *gune,* the ovary, and *erion,* wool; the stigmas are covered with long silky hairs. Nat. ord. Gramineæ.)
Highly ornamental grasses, but more particularly those now referred to Cortaderia. Divisions. Deep, rich but light soil, or even sandy peat.

G. arge'nteum (silvery). See CORTADERIA ARGENTEA.
„ *juba'tum* (maned). See CORTADERIA JUBATA.
„ *kermesi'num* (carmine). See CORTADERIA KERMESINA.
„ *saccharoi'des* (sugar-cane-like). 8–12. S. Amer. Seldom flowers.

GYNOPLEU'RA. (From *gune,* the ovary, and *pleura,* a rib; the ovary being ribbed. Nat. ord. Passifloraceæ.)
Hardy, branching, slender annuals. Seeds in heat in March, or in the open border in April. Ordinary, well-drained soil.

G. fascicula'ta (bundled). White. July. Chili. 1832.
„ *hu'milis* (low). ½. White, streaked purple-red. Chili. 1831.
„ *linearifo'lia* (linear-leaved). 1½. Purple, blue. September. Chili. 1831.

GYNO'XYS. (From *gune,* the ovary, and *oxus,* sharp; the style is pointed. Nat. ord. Compositæ.)
Stove evergreen. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, with a little peat and sand.

G. fra'grans (fragrant). See SENECIO SKINNERI.
„ *inca'na* (hoary). 3. Yellow. July. Jamaica. 1823.

GYNU'RA. (From *gune,* the ovary, and *oura,* a tail; the stigmas being long and hairy. Nat. ord. Compositæ.)
Stove perennial herbs. Cuttings in sand in a close case. Loam, leaf-mould, or peat, with some sharp sand.

G. auranti'aca (orange). Orange. Stem, leaves, and bracts covered with purple hairs. Malaya. 1882.
„ *auricula'ta* (eared). 3. Yellow. July. China. 1734.
„ *bi'color* (two-coloured). 3. Yellow. Malaya. 1779.
„ *ce'rnua* (drooping). Trop. Africa.
„ *divarica'ta* (straggling). 1½. Purple. July. China. 1801. Greenhouse biennial.
„ *hæmatophy'lla* (blood-red-leaved). 2. Yellow. April. 1789.
„ *ova'lis* (oval). See G. AURICULATA.
„ *Pseu'do-Chi'na* (false-China). ½. Yellow. July. Trop. Asia and Australia. 1732.
„ *sarmento'sa* (trailing). Dull orange. Stems reddish. Malaya.

GYPSO'PHILA. (From *gupsos,* chalk, and *phileo,* to love; in reference to the soil most suitable for them. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria,* 2-*Digynia.* Allied to Saponaria.)
Both annuals and perennials by seed, and the latter also by division; common garden-soil.

HARDY ANNUALS.

G. carmi'nea (carmine). Pale carmine. 1910.
„ *e'legans* (elegant). 1. White. July. Asia Minor. 1828.
„ *tene'lla* (delicate). 1. White. July. Europe. 1816.
„ *visco'sa* (clammy). 1½. White. June. Levant. 1773.

HARDY PERENNIALS.

G. anato'lica (Anatolian). White. Asia Minor.
„ *Arro'stii* (Arrost's). White. S. Europe, Asia Minor.
„ *cerastioi'des* (Cerastium-like). ¼. White, veined with pink. Himalaya. 1882.
„ *fastigia'ta* (peaked). 1½. White. June. Germany. 1759.
„ *glau'ca* (milky-green). 1½. White. August. Caucasus. 1822.
„ *glomera'ta* (crowded). 1. Pale red. July. Tauria. 1818.
„ *Gmeli'ni* (Gmelin's). 1. White. August. Altai, Siberia. 1831.
„ *illy'rica* (Illyrian). See TUNICA ILLYRICA.
G. liba'notica (Lebanon). ½. White. Asia Minor.
„ *Mangi'nii* (Mangin's). Pale rose. Siberia. 1898.
„ *mura'lis* (wall). White. Europe, N. Asia.
„ *panicula'ta* (panicled). 2. White. Europe.
„ „ *flo're-ple'no* (double-flowered). 2. White. Double by prolification. 1902.
„ *perfolia'ta* (leaf-pierced). 2. Pink. July. Spain. 1732.
„ *prostra'ta* (trailing). 1. Red. August. Siberia. 1759.
„ *raddea'na* (Raddean). ½. Pale rose, with darker veins. Eastern Persia. 1889.
„ *re'pens* (creeping). ½. Striped. August. Siberia. 1774.
„ „ *ro'sea* (rosy). ½. Pink. 1905.
„ *ri'gida* (stiff). See TUNICA SAXIFRAGA.
„ *Roke'jeka* (Rokejeka). 2. White. Egypt.
„ *sabulo'sa* (sandy). See G. TRICHOTOMA.
„ *sali'gna* (willowy). Pink. June. Europe. 1837.
„ *Saxi'fraga* (saxifrage). See TUNICA SAXIFRAGA.
„ *spino'sa* (spiny). Pink. June. Persia. 1837.
„ *Steve'ni* (Steven's). 2. White. July. Iberia. 1822.
„ *Stru'thium* (Struthium). 2. White. July. Spain. 1729.
„ *tenuifo'lia* (fine-leaved). 1. Red. July. Caucasus. 1824.
„ *tomento'sa* (felted). See G. PERFOLIATA.
„ *transsylva'nica* (Transylvanian). White. Eastern Europe.
„ *tricho'toma* (three-forked). 1½. White. July. Tauria. 1817.

GYPSUM, or **PLASTER OF PARIS,** is a sulphate of lime, composed of—Sulphuric acid, 43; lime, 33; water, 24. It has been employed advantageously as a manure to clover, the turnip, and potato, at the rate of 3 cwt. per acre. Potato sets are frequently rolled in it when pulverised. It has been recommended to be sprinkled in stables, and to be mixed with dunghills, "to fix the ammonia," as it is popularly termed. All the ammonia lost in fumes from a dunghill might be more readily and as cheaply restored to it by mixing with it, when dug into the soil, a little of the ammoniacal liquor from the gasworks.

GYRO'MIA VIRGI'NICA. See MEDE'OLA VIRGI'NICA.

H

HABENA'RIA. (From *habena,* a rein; referring to the long, strap-shaped spur. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria,* 1-*Monandria.* Allied to Gymnadenia.)
Some will grow in peaty soil in the open border, if kept a little protected, and somewhat dry in winter; others are stove orchids, requiring peat and loam, and treatment similar to a Bletia. Divisions of the root. Summer temp., 60° to 80°; rest period, in winter, 50°; and when starting into flower, 70°.

HARDY.

H. bifo'lia (two-leaved). White. June. Britain. "Butterfly Orchis."
„ „ *chlora'ntha* (green-flowered). 1½. Greenish-yellow. Britain.
„ *Blephariglo'ttis* (eyelashed-tongued). White, fringed. June. N. Amer. 1820.
„ *bractea'ta* (large-bracted). See H. VIRIDIS BRACTEATA.
„ *chlora'ntha* (green-flowered). See H. BIFOLIA CHLORANTHA.
„ *cilia'ris* (ciliated). Yellow. June. N. Amer. 1796.
„ *cono'psea* (resembling). 1½. Purple. June. Britain.
„ *corda'ta* (heart-shaped). ½. Yellow-green. March. Europe and N. Amer. 1830.
„ *crista'ta* (crested). 1. Yellow. September. N. Amer. 1806.
„ *dilata'ta* (dilated). 1½. White. September. N. Amer. 1823.
„ *fimbria'ta* (fringed). 1. Lilac-purple. June. N. Amer. 1789.
„ *herbi'ola* (little herb). Green. June. N. Amer. 1789.
„ *hookeria'na* (Hookerian). ½–1. Greenish-white. June. N. Amer. 1822.
„ *hyperbo'rea* (northern). Green. June. Europe and N. Amer. 1805.
„ *inci'sa* (incised). Sulphur. June. N. Amer. 1826.

H. inta'cta (spotless). Pale purple. May. Europe and N. Africa.
„ *la'cera* (torn). Yellow. June. N. Amer. 1826.
„ *ni'gra* (black). Europe.
„ *odorati'ssima* (most fragrant). Europe.
„ *orbicula'ta* (orbicular). See H. HOOKERI.
„ *psycho'des* (butterfly-like). ½–¾. Rose to crimson. N. Amer. 1826.
„ *rotundifo'lia* (round-leaved). 2. Rose-purple; lip white. N. Amer.
„ *tridenta'ta* (three-toothed). N. Amer.
„ *vire'scens* (greenish). See H. BIFOLIA CHLORANTHA.

STOVE.

H. ala'ta (winged). ½. Yellow. June. W. Ind. 1823.
„ *Bolto'ni* (Bolton's). S. Africa.
„ *ca'ndida* (white-*flowered*). See H. SUBPUBENS.
„ *ca'rnea* (flesh). ½–1. Flesh. Leaves spotted with grey. Singapore. 1891.
„ „ *nivo'sa* (snowy). White. Leaves not spotted. 1894.
„ *cinnabari'na* (cinnabar). ½. Orange-red. Madagascar. 1893.
„ *deci'piens* (deceiving). 2. White. S. India.
„ *di'ves* (rich). S. Africa.
„ *Ellio'ti* (Elliot's). 1½. Green. Madagascar. 1897.
„ *Elwe'sii* (Elwes's). Allied to *H. digitata*. Nilgiri Hills.
„ *fla'va* (yellow). Yellow. July. Australia. 1823.
„ *galea'ndra* (anther-helmeted). N. India and China.
„ *genicula'ta* (kneed). ½. White; spur green. Himalaya; Burma. 1908.
„ *gigante'a* (gigantic). See H. SUSANNÆ.
„ *goodyeroi'des* (Goodyera-like). 1. White. December. Bombay. 1834.
„ *gra'cilis* (slender). 1½. Yellow. July. E. Ind. 1823.
„ *Hellebori'na* (Helleborine). Green, flesh. September. W. Trop. Africa. 1870.
„ *heynea'na* (Heynean). S. India.
„ *interme'dia* (intermediate). Greenish-white. Himalaya. 1879.
„ *lepto'ceras* (slender-horned). 1½. Green, yellow. October. Brazil. 1824.
„ *Linde'nii* (Linden's). White. August. Caraccas.
„ *longicau'da* (long-tailed). Greenish-white. Demerara. 1830.
„ *longicalcara'ta* (long-spurred). See H. DECIPIENS.
„ *longico'rnu* (long-spurred). S. India.
„ *Luga'rdi* (Lugard's). 2. White. N'gamiland. 1900.
„ *macra'ntha* (large-flowered). Abyssinia.
„ *macro'ceras* (large-horned). See H. MACROCERATILIS.
„ *macrocera'tilis* (long-spurred). 2. White. June. Costa Rica. 1823.
„ *macowania'na* (Macowanian). Green, small. S. Africa. 1889.
„ *maculo'sa* (small-spotted). White. September. Nerida.
„ *margarita'cea* (pearly). Colombia. 1882.
„ *margina'ta* (bordered). ½. Yellow. July. E. Ind. 1822.
„ *Medu'sa* (Medusa). White; lip cut into about forty fringes. Java. 1902.
„ *membrana'cea* (skinny). July. Sierra Leone. 1826.
„ *milita'ris* (military). See H. PUSILLA.
„ *monta'na* (mountain). See H. LONGICORNU.
„ *ochroleu'ca* (yellowish-white). ½. Pale yellow. June. Australia. 1824.
„ *pro'cera* (tall). 2. Green. August. Trop. Africa. 1822.
„ *pusi'lla* (small). 1. Green; lip scarlet. Cochin-China. 1886.
„ *radia'ta* (rayed). Pale green; petals and lip white. Japan. 1880.
„ *rhodochei'la* (red-lipped). 1. Green; lip scarlet; spur yellow. S. China. 1897.
„ *richardia'na* (Richardian). S. India.
„ *salacce'nsis* (Salakian). 1. Green; lip reddish and orange. Mount Salak, Java.
„ *spira'lis* (spiral). Mascarene Islands.
„ *subpu'bens* (somewhat downy). 4. White. July. W. Trop. Africa. 1844.
„ *Susa'nnæ* (Susanna's). 2. Green, white. India and China. 1834.
„ „ *sumatra'na* (Sumatran). Flowers large, white. Sumatra. 1893.
H. tetrape'tala (four-petaled). S. Africa.
„ *trique'tra* (three-grooved). 1–1½. Sepals green; petals and lip white. Shan States. 1906.
„ *vi'ridis* (green). Green. June to August. Britain.
„ „ *bractea'ta* (large-bracted). Green, pink, white.

HABE'RLEA. (Named after *Karl Konstantin Haberle*, a botanist of Pesth. Nat. ord. Gesneraceæ.)

A hardy perennial allied to Ramondia, and a choice subject for the shady part of a rockery. Seeds and divisions. Sandy loam and a little peat or leaf-mould in a cool, moist position.

H. rhodope'nsis (Rhodopean). ½. Pale purple. Greece. 1880.
„ „ *virgina'lis* (virginal). Pure white. 1907.

HABIT is the appearance or mode of growth. Thus a Verbena may be of straggling or shrubby, compact habit. This habit is much influenced by soil and cultivation. Thus *Bu'xus sempervi'rens* in a poor soil is dwarfish, but in a rich soil becomes tree-like. The term *habit* is applied to the power a plant possesses of vegetating earlier or later, when once accustomed to do so. Thus, a vine once forced to break early will retain the habit of doing so the following year, though not forced.

HABITAT. The native place of a plant.

HABLI'TZIA. (Named after *C. von Hablitz*, a traveller of Prussia. Nat. ord. Chenopodiaceæ.)

A hardy, climbing herb. Seeds; division. Ordinary soil.

H. tamnoi'des (Tamnus or Tamus-like). 4–6. Green. September. Caucasus. 1828.

HABRA'NTHUS. (From *habros*, delicate, and *anthos*, a flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Hippeastrum and Zephyranthes.)

H. Anderso'ni (Anderson's). See ZEPHYRANTHES ANDERSONI.
„ *angu'stus* (narrow). See HIPPEASTRUM BIFIDUM.
„ *Bagno'ldi* (Bagnold's). See HIPPEASTRUM BAGNOLDI.
„ *bi'fidus* (two-cleft). See HIPPEASTRUM BIFIDUM.
„ *co'ncolor* (one-coloured-*flowered*). See ZEPHYRANTHES CONCOLOR.
„ *fu'lgens* (shining). Country unknown.
„ *gracilifo'lius* (slender-leaved). See ZEPHYRANTHES GRACILIFOLIA and variety.
„ *hespe'rius* (western). See HIPPEASTRUM ADVENUM.
„ *interme'dius* (intermediate). See HIPPEASTRUM BIFIDUM.
„ *kermesi'nus* (crimson). See HIPPEASTRUM BIFIDUM.
„ *lorifo'lius* (strap-leaved). ½. Pink. July. S. Amer. 1821.
„ *minia'tus* (red-*flowered*). See HIPPEASTRUM ADVENUM MINIATUM.
„ *nemora'lis* (grove). See HIPPEASTRUM BIFIDUM.
„ *no'bilis* (noble). See HIPPEASTRUM BIFIDUM.
„ *pa'llidus* (pale-*flowered*). 1. Pink. June. Valparaiso. 1830.
„ *pedunculo'sus* (long-stalked). See HIPPEASTRUM BIFIDUM.
„ *phycelloi'des* (Phycella-like). See HIPPEASTRUM BIFIDUM.
„ *prate'nsis* (meadow). See HIPPEASTRUM PRATENSE.
„ *pu'lcher* (fair). See HIPPEASTRUM BIFIDUM.
„ *pu'milus* (dwarf). See HIPPEASTRUM ROSEUM.
„ *puncta'tus* (dotted). See HIPPEASTRUM BAGNOLDI.
„ *robu'stus* (robust). 1. Red. June. Buenos Ayres. 1827.
„ *ro'seus* (rosy). See HIPPEASTRUM ROSEUM.
„ *spatha'ceus* (*large*-spathed). See HIPPEASTRUM BIFIDUM.
„ *specio'sus* (showy). See HIPPEASTRUM PRATENSE.
„ *versi'color* (changeable-coloured). See ZEPHYRANTHES VERSICOLOR.

HABROTHA'MNUS. (From *habros*, gay, and *thamnos*, a shrub. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. United to Cestrum, which see.)

Greenhouse evergreen shrubs, from Mexico. *H. fasciculatus* grown against a conservatory wall, on an east or west aspect, is not surpassed by any in the Mexican flora. The sun is too powerful for the flowers on a south aspect; it flowers on last year's wood, and should not

be pruned till after the flowers fade. They may be grown as specimens, or against pillars. Cuttings of firm side-shoots, taken off when the plant is growing, in sand, under a bell-glass, and placed in a mild bottom-heat; loam and peat, lightened with sand and charcoal. Winter temp., 40° to 48°.

H. corymbo'sus (corymbed). See CESTRUM ENDLICHERI.
,, *cya'neus* (blue-*flowered*). See IOCHROMA TUBULOSUM.
,, *e'legans* (elegant). See CESTRUM ELEGANS.
,, *fascicula'tus* (cluster-*flowered*). See CESTRUM FASCICULATUM.
,, *Newe'lli* (Newell's). See CESTRUM NEWELLI.
,, *purpu'reus* (purple-*flowered*). See CESTRUM FASCICULATUM.
,, *tomento'sus* (downy). See CESTRUM BENTHAMI.

HACKBERRY. See CELTIS OCCIDENTALIS.

HACQUE'TIA. (In honour of *B. Hacquet*, a German botanist. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Hardy herbaceous perennial. Division; peat and loam. Does best in a pot among alpines, or on the rockery.

H. Epipa'ctis (Epipactis). ½. Yellow. April. Alps. 1823.

HÆMADI'CTYON. (From *haima*, blood, and *diktyon*, a net; referring to the veins in the leaves. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. This should be united to Prestonia.)

Yellow-flowered, stove, evergreen twiners, from the West Indies. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat; loam and peat, both fibrous and sandy. Summer temp., 60° to 80°; winter, 50° to 55°.

H. margina'tum (margined). 5. Yellow. Guiana. 1888.
,, *nu'tans* (nodding). See H. VENOSUM.
,, *refu'lgens* (refulgent). Leaves highly coloured. Peru. 1871.
,, *subere'ctum* (nearly-erect). July. E. Ind. 1759.
,, *veno'sum* (red-*veined*). 20. July. 1821.

HÆMA'NTHUS. Blood Flower. (From *haima*, blood, and *anthos*, a flower; referring to the colour of the spathe and filaments of some species. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Bulbs from South Africa, except where otherwise mentioned. Chiefly valued for their leaves, and the markings on the flower-scape. The South African species will all live in a border, with a glass covering in winter, protected from frost. Under such treatment they rest in summer, and grow in winter. Offsets; sandy loam, fibrous peat, and a little dried cow-dung.

H. abyssi'nicus (Abyssinian). See H. MULTIFLORUS.
,, *a'lbiflos* (white-flowered). 1. White. June. 1791.
,, ,, *pube'scens* (downy). Leaves downy.
,, *albomacula'tus* (white-spotted). 1. White. 1878.
,, *amaryllo'des* (Amaryllis-like). ¾. Pink. August. 1825.
,, *Arno'ttii* (Arnott's). ½. White. Colesberg, S. Africa. 1879.
,, *Bau'rii* (Baur's). ½. White. Kaffraria.
,, *brevifo'lius* (short-leaved). See H. CARNEUS.
,, *ca'ndidus* (white). ¾. Pure white, in large umbels. Natal. 1894.
,, *carina'tus* (keel-*leaved*). See H. COCCINEUS CARINATUS.
,, *ca'rneus* (flesh-coloured). ½. Pink. June. 1819.
,, *cinnabari'nus* (cinnabar). 1. Cinnabar-scarlet. W. Trop. Africa. 1878.
,, *coarcta'tus* (straitened). See H. COCCINEUS COARCTATUS.
,, *cocci'neus* (scarlet). 1. Red. September. 1629.
,, ,, *carina'tus* (keeled). ½. Pink. August. 1759.
,, ,, *coarcta'tus* (crowded). 1. Pink. February. 1795.
,, *cra'ssipes* (thick-leaf-stalked). ½. Red. June. 1820.
,, *defo'rmis* (deformed). ½. White. March. Natal. 1869.
,, *Diade'ma* (diadem). See H. LINDENI DIADEMA.
,, *Fascina'tor* (fascinator). See H. LINDENI FASCINATOR.
,, *hirsu'tus* (hairy). ½. White; bracts pale red. Transvaal. 1878.
,, *hu'milis* (low). ½. Scarlet. September. 1825.
,, *hyaloca'rpus* (glass-fruited). 1. Red. July. 1822.
,, *imperia'lis* (imperial). 1½. Orange and salmon. Congo. 1902.
H. incarna'tus (flesh-coloured). Pink. S. Africa. 1865.
,, *insi'gnis* (showy). See H. MAGNIFICUS INSIGNIS.
,, *Kalbre'yeri* (Kalbreyer's). See H. MULTIFLORUS.
,, *Katheri'næ* (Mrs. Katherine Saunders's). 1½. Bright red. Natal. 1877.
,, *lanceæfo'lius* (spear-head-leaved). 1. Red. October. 1794.
,, *Laure'ntii* (Laurent's). 1½. Salmon. Congo. 1902.
,, *Lescrauwæ'tii* (Lescrauwæt's). ¾. Rose. Congo. 1904.
,, *Linde'ni* (Linden's). 1½. Rosy-scarlet. Congo. 1890.
,, ,, *Diade'ma* (diadem). Salmon-red. Congo. 1901.
,, ,, *Fascina'tor* (fascinator). Bright red. Congo. 1901.
,, ,, *mira'bilis* (wonderful). Orange-red. Congo. 1901.
,, *lo'ngipes* (long-stalked). ¾. Cinnabar-red. Cameroons. 1897.
,, *macula'tus* (spotted-*leaved*). 1. June. 1790.
,, *magni'ficus* (splendid). 1½. Scarlet. July. 1838.
,, ,, *insi'gnis* (remarkable). Scarlet. August. Natal.
,, ,, *supe'rbus* (superb). Brilliant scarlet. 1898.
,, *Ma'nnii* (Mann's). 1. Crimson-scarlet. W. Trop. Africa. 1877.
,, *mira'bilis* (wonderful). See H. LINDENI MIRABILIS.
,, *moscha'tus* (musk-scented). 1. Red. September. 1816.
,, *multiflo'rus* (many-flowered). 1. Scarlet. June. Sierra Leone. 1783. Warm greenhouse.
,, *natale'nsis* (Natal). 1½. Green, crimson. Natal. 1863.
,, *Nelso'ni* (Nelson's). 1. Red. Transvaal. 1898.
,, *orbicula'ris* (globe-shaped). See H. ROTUNDIFOLIUS.
,, *pube'scens* (downy). 1. White. July. 1774.
,, *Pumi'lio* (dwarf). ½. Pink. August. 1789.
,, *puni'ceus* (scarlet). 1. Scarlet. June. 1722.
,, *quadriva'lvis* (four-valved). See H. PUBESCENS.
,, *rotundifo'lius* (round-leaved). 1. Scarlet. July. 1790.
,, *Roupe'ri* (Rouper's). See H. MAGNIFICUS.
,, *rupe'stris* (rock). ¾. Bright red. Trop. Africa. 1878.
,, *sangui'neus* (bloody). 1. Crimson. August. 1820.
,, *tenuiflo'rus* (slender-flowered). See H. MULTIFLORUS.
,, *tigri'nus* (tiger-like). 1. Flame. April. 1790.
,, *toxica'rius* (poisonous). See BUPHANE DISTICHA.

HÆMA'RIA. (From *haima*, blood; in allusion to the red under surface of the leaves. Nat. ord. Orchidaceæ.)

Terrestrial Orchids allied to Anœctochilus, and requiring similar treatment.

H. dawsonia'na (Dawsonian). India.
,, *di'scolor* (two-coloured). 1. White, with crimson bracts. November. China. 1815.
,, *Otle'tæ* (Mrs. Otleta's). ¾. White; lip yellow. Tongking. 1891.

HÆMATO'XYLON. Logwood. (From *haima*, blood, and *xulon*, wood. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove evergreen tree. Cuttings of young shoots getting firm, in sand, under a bell-glass, in heat; and seeds steeped before sowing, and then placed in a hotbed, in spring; peat and loam. Summer temp., 60° to 85°; winter, 48° to 55°.

H. campechia'num (Campechy). 20. Yellow. S. Amer. 1724.

HÆMODO'RUM. Bloodroot. (From *haima*, blood, and *doron*, a gift; referring to the roots being eaten by the natives of Australia. Nat. ord. *Bloodroots* [Hæmodoraceæ]. Linn. 3-*Triandria*, 2-*Digynia*.)

Greenhouse herbaceous plants, from Australia, with orange flowers. Division of the roots, as growth commences, in spring; peat and loam. Winter temp., 35° to 40°.

H. planifo'lium (flat-leaved). 1½. August. 1810.
,, *teretifo'lium* (round-leaved). 1. August. 1822.

HA-HA is a sunk fence, being placed at the bottom of a deep and spreading ditch, either to avoid any interruption to an expanse of surface, or to let in a desired prospect. As all deceptions are unsatisfactory to good taste, and as, when viewed lengthwise, these fences are formal and displeasing, they ought never to be adopted except in extreme cases.

HAIR. See ANIMAL MATTERS.

HA'KEA. (Named after *Baron Hake*, a German patron of botany. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen, Australian shrubs, all with white flowers, except where otherwise mentioned. Cuttings of young shoots well ripened, in sand, over peat, and under a bell-glass, kept cool until a callus is formed, and then placed in a mild bottom-heat; peat two parts, and one of loam, with sufficiency of sand and broken freestone and pieces of charcoal, to keep the compost open. Winter temp., 35° to 45°. A shady place out of doors in the very height of summer.

H. acanthophy'lla (prickly-leaved). See H. CERATOPHYLLA.
„ *acicula'ris* (needle-*leaved*). 3. June. 1790.
„ *amplexicau'lis* (clasping-leaved). Australia.
„ *Baxte'ri* (Baxter's). 1830.
„ *bipinnati'fida* (bipinnatifid). Australia.
„ *ceratophy'lla* (horn-leaved). 4. Brown. June. 1824.
„ *cine'rea* (grey-*leaved*) 5. June. 1803.
„ *clava'ta* (club-*leaved*). 5. July. 1824.
„ *crassifo'lia* (thick-leaved). Australia.
„ *crista'ta* (crested). 1837.
„ *cuculla'ta* (hooded). 4. White, yellow. June. 1824.
„ *Cunninghа'mii* (Cunningham's). 14. May. 1824.
„ *cyclo'ptera* (orb-winged). Australia.
„ *dactyloi'des* (Dactylis-like). 7. July. 1790.
„ *denticula'ta* (small-toothed). See H. GLABELLA.
„ *echina'ta* (hedgehog). 3. June. 1824.
„ *Epiglo'ttis* (windpipe-valved). 4. May. 1819.
„ *eucalyptoi'des* (Eucalyptus-like). See H. LAURINA.
„ *ferrugi'nea* (rusty). 4. June. 1824.
„ *fle'xilis* (pliant). 4. 1824.
„ *flo'rida* (flowery). 5. 1803.
„ *gibbo'sa* (swollen-*fruited*). 7. May. 1790.
„ *glabe'lla* (smoothish). 1837.
„ *ilicifo'lia* (holly-leaved). See H. VARIA.
„ *Lambe'rti* (Lambert's). 4. 1825.
„ *lani'gera* (woolly). See H. GIBBOSA.
„ *latifo'lia* (broad-leaved). 4. 1825.
„ *lauri'na* (laurel-like). Rosy-lilac. 1885.
„ *leuco'ptera* (white-winged). Australia.
„ *linea'ris* (narrow-*leaved*). 4. May. 1824.
„ *longifo'lia* (long-*leaved*). 3. 1825.
„ *margina'ta* (bordered). 4. July. 1824.
„ *microca'rpa* (small-fruited). Australia.
„ *mi'xta* (mixed). See H. TRIFURCATA.
„ *myricæfo'lia* (gale-leaved). See H. CERATOPHYLLA.
„ *myrtoi'des* (myrtle-leaved). 1½. Red. February. Swan River.
„ *ni'tida* (glossy). 5. June. 1803.
„ *nodo'sa* (knotted). 1824.
„ *obli'qua* (unequal-*flowered*). 6. May. 1803.
„ *oleifo'lia* (olive-leaved). 5. June. 1794.
„ *pectina'ta* (comb-like). See H. SUAVEOLENS.
„ *platyspe'rma* (broad-seeded). Australia.
„ *propi'nqua* (related). June. Australia.
„ *pugionifo'rmis* (dagger-formed). 6. 1796.
„ *pulche'lla* (pretty). Australia.
„ *repa'nda* (wavy-*leaved*). See H. FERRUGINEA.
„ *rostra'ta* (beaked). Australia.
„ *ruscifo'lia* (Ruscus-leaved). 4. July. 1824.
„ *sali'gna* (willow-*leaved*). 7. April. 1791.
„ *scopa'ria* (broom-like). See H. SULCATA.
„ *suave'olens* (sweet-smelling). 4. 1803.
„ *subula'ta* (awl-shaped-*leaved*). 4. May. 1820.
„ *sulca'ta* (furrowed-*leaved*). 4. May. 1820.
„ *trifo'rmis* (three-form). See H. AMPLEXICAULIS.
„ *trifurca'ta* (three-forked). 5. June. 1824.
„ *tubercula'ta* (knotted). See H. VARIA.
„ *ulici'na* (furze-like). 4. 1844.
„ *uligino'sa* (marsh). Australia.
„ *undula'ta* (wavy-*leaved*). 3. June. 1808.
„ *va'ria* (variable). 3. July. 1825.
„ *Victo'riæ* (Queen Victoria's). See. H. CUCULLATA.

HALE'NIA. (Derivation not obvious. Nat. ord. Gentianaceæ.)

Hardy annual or biennial plants. Seeds. Peaty, rather wet soil.

H. defle'xa (deflexed). ½. Green, yellow. July. N. Amer. 1824. Biennial.
„ *sibi'rica* (Siberian). ½. Pale green. August. Siberia. 1817. Annual.

HALE'SIA. Snowdrop-tree. (Named after *Dr. Hales*, author of *Vegetable Statics*. Nat. ord. *Storaxworts* [Styracaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

Hardy deciduous shrubs; by seed in spring, by layers, and cuttings of the roots in spring and autumn; require a deep, sandy, moist soil to grow them to a large, healthy size.

H. corymbo'sa (corymb-flowered). White. Japan.
„ *di'ptera* (two-winged). 6. White. April. N. Amer. 1758.
„ *hi'spida* (roughly-hairy). 8–10. White. China and Japan. 1884. "Asagara."
„ *parvifo'ra* (small-flowered). 8. White. May. Georgia and Florida. 1822.
„ *tetra'ptera* (four-winged). 10. White. May. W. Virginia to Florida. 1756. "Snowdrop or Silver-bell Tree."
„ „ *dialype'tala* (free-petaled). Corolla cut into four petals. 1907.
„ „ *Meeha'ni* (Meehan's). Flowers smaller. 1892.

HALF-HARDY PLANTS are those which require partial shelter, as in a cold pit or frame, during the winter. Here some attention is required to exclude from them dampness and frost, but especially the first.

HALIMODE'NDRON. Salt-tree. (From *halimos*, seacoast, and *dendron*, a tree; referring to its native habitat. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Colutea.)

Hardy deciduous shrubs, natives of Siberia. Grafted standard high on the Laburnum it forms one of the most graceful drooping trees that can adorn a lawn. Seeds, cuttings, and layers of the roots; common soil; if sandy and open all the better.

H. arge'nteum (silvery). 6. Pink. May. 1779.
„ „ *brachyse'ma* (short-standarded). 6. Pink. June.
„ „ *flo're purpu'reo* (purple-flowered). Purple.
„ „ *specio'sum* (showy). Flowers dark. Leaves larger. 1875.
„ „ *subvire'scens* (pale-greenish). 6. Pink. May.

HALLE'RIA. (Named after *Dr. Haller*, a botanist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Collinsia.)

Greenhouse evergreen shrubs, from South Africa. Cuttings of half-ripened shoots in sand, under a bell-glass; rich, sandy loam. Summer temp., 60° to 70°; winter, 35° to 45°, with plenty of ventilation at both seasons.

H. elli'ptica (oval). 6. Scarlet. May. 1816.
„ *lu'cida* (shining-*leaved*). 6. Scarlet. May. 1752.

HA'LLIA. (Named in compliment to *Bergen Martin Hall*, a pupil of Linnæus. Nat. ord. Leguminosæ.)

Greenhouse perennial herbs. Seeds, divisions, or cuttings. Light loam and leaf-soil.

H. corda'ta (heart-shaped). 1. Purple. S. Africa.
„ *imbrica'ta* (overlapping). 1½. Purple. S. Africa. 1812.

HALO'XYLON. (From *hals*, *halos*, salt, and *xulon*, wood; the plant grows in brackish sand. Nat. ord. Chenopodiaceæ.)

Half-hardy, shrubby evergreen. Cuttings in sandy soil. Well-drained, light soil.

H. Ammode'ndron (sand-tree). Yellow. Turkestan. 1888.

HALTICA. See BLACK FLEA.

HAMAME'LIS. Witch Hazel. (From *hama*, together with, and *mela*, fruit; referring to the flowers and fruit being on this tree at the same time. Nat. ord. *Witch Hazels* [Hamamelidaceæ]. Linn. 4-*Tetrandria*, 2-*Digynia*.)

Hardy deciduous shrubs which produce their yellow flowers during the winter, after the leaves have fallen. Cuttings of the roots, layers, and seeds, the latter generally requiring two years to vegetate; soil sandy and moist; male and female flowers generally on separate plants; the female flowers are the most attractive.

H. arbo'rea (tree). 10–15. Bright yellow, purple. Winter. Japan. 1881. "Mansak."
„ *japo'nica* (Japanese). 12–20. Light yellow, claret. Winter. Japan. 1862.
„ „ *zuccarinia'na* (Zuccarinian). Lemon. Winter.
„ *macrophy'lla* (large-leaved). See H. VIRGINICA.

H. mo'llis (soft). 3–8. Bright yellow. Leaves large, felted. Winter. China. 1898.
,, *virgi'nica* (Virginian). 10. May. N. Amer. 1812.

HAMBURGH PARSLEY. *Petroseli'num sati'vum*, var. *latifo'lium*.

Use.—This, known also by the name *broad-leaved* and *large-rooted Parsley*, is cultivated for its root, which attains the size of a middling parsnip, boiling exceedingly tender and palatable. It is eaten both as a sauce to flesh meat, and in soups, &c.

Sowing.—Sow at monthly intervals, from February until the middle of June, thinly in drills nine inches apart. The plants appear in about a month after sowing, and require to be thinned to nine inches asunder. Frequent hoeing is the only cultivation required. By the end of July, or during August, the earliest sowings will have acquired a sufficient size for occasional use; but the roots seldom attain their full growth until Michaelmas; and the latest crops not until the following year. On the arrival of frost, some of them must be taken up, and buried in sand, in a dry situation under cover.

To save Seed.—Some plants must be left where grown, and allowed to run in May. Their produce will ripen in July or August. Then to be cut, dried, beat out, and stored.

HAME'LIA. (Named after the celebrated botanist, *Du Hamel*. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings of half-ripened shoots in the beginning of summer, in sand, under a bell-glass, and in bottom-heat; sandy peat and fibrous loam. Summer temp., 60° to 85°; winter, 50° to 55°.

H. axilla'ris (axillary). 2. Yellow. August. W. Ind. 1822.
,, *chrysa'ntha* (yellow-flowered). 8. Yellow. November. Jamaica. 1822.
,, *chrysa'ntha* (yellow-flowered) of Jacquin. See H. LUTEA.
,, *latifo'lia* (broad-leaved). See H. PATENS.
,, *lu'tea* (yellow). 2. Yellow. August. Trop. Amer. 1822.
,, *pa'tens* (spreading). 5. Yellow. July. Hispaniola. 1752.
,, *sphæroca'rpa* (round-fruited). 10. Orange. July. Peru. 1811.
,, *suave'olens* (sweet-scented). Yellow. S. Amer.
,, *ventrico'sa* (much-swollen). 8. Yellow. September. W. Ind. 1778.

HAMILTO'NIA. (Named after *Mr. Hamilton*, an American botanist. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 22-*Diœcia*, 5-*Pentandria*. Allied to Guettarda.)

Stove evergreen shrubs, with sweet-scented flowers. Cuttings of half-ripened shoots in sand, under glass, and in a moist bottom-heat. Summer temp., when growing, 60° to 80°; in winter, when at rest, 48° to 55°; when in bloom, 55°.

H. frutico'sa (shrubby). See LEPTODERMIS LANCEOLATA.
,, *sca'bra* (scaly). See H. SUAVEOLENS.
,, *specta'bilis* (showy). 4–6. Lilac. Winter. India (?). 1872.
,, *suave'olens* (sweet-scented). 4–6. White. October. India and China. 1818.
,, *suave'olens* (sweet-scented) of Don. See LEPTODERMIS LANCEOLATA.

HAMMATO'PHORA BUCE'PHALA or **BUFF-TIP MOTH.** See PYGÆRA BUCEPHALA.

HAMMERS for gardening purposes are made with a clawed head, for drawing as well as driving in nails. They are made of five different sizes, No. 5 being the largest. Those are best with a stud in the centre of the head, as this acts as a fulcrum in drawing nails, and prevents bruising any branch beneath the hammer during the operation.

HANBURY. See AMBURY.

HAND-BARROW. The most useful and most generally used hand-barrow is like a shallow tray, built on two long shafts, with two handles at either end, so that two men or boys can carry it when loaded. It has legs at the four corners, so that it can be set down when loading and unloading. The most common use to which it is put is carrying pot plants to and from the potting benches, from one house to another, or carrying flowering plants to the conservatory. Plants and pots are liable to damage when put in a wheel-barrow for conveyance. Another form with a cage below is useful for carrying leaves and other litter; and when the close, movable cover is on, it serves as a conveyance for plants in large pots or tubs, which, when in flower or bearing fruit, might be too violently shaken in a wheel-barrow.

HAND-GLASS is a portable glass-case used for sheltering cauliflowers and other plants in winter, and during early spring, or to retain a regular supply of moisture to cuttings, or until they are rooted. The most durable and convenient are made with cast-iron framing of rectangular form.

They are sometimes made with movable tops, fitted with a handle; but the only advantage it affords is, that several of the lower portions may be placed upon each other to protect any tall-growing shrub in severe weather, otherwise they are more troublesome to move, and more liable to breakage than if made entire.

HAND PLANT. *Cheiroste'mon.*

HAND-WEEDING might be banished almost from the garden, if in the kitchen department all crops were inserted in drills. This is most desirable; for the stirring of the surface consequent to hoeing is much more beneficial to the crops, and cannot be repeated too frequently.

HANGING is when a plant is so badly inserted by the dibble, that the lower parts of the roots are in an unfilled hole, while the earth is pressed round their collar, so as to keep them suspended upright in their place.

HAPALI'NE. (From *hapalos*, tender or soft; in allusion to the softness of the spathe. Nat. ord. Araceæ.)

A stove herb, allied to Spathicarpa, from which it differs by having the spadix free from the spathe. Divisions in spring. Loam and peat, in equal parts, both fibrous, sand and some lumps of charcoal.

H. Brow'nii (Brown's). 1. Greenish-white. Malaya.

HAPLA'NTHUS. (From *haploos*, simple, and *anthos*, a flower. Nat. ord. Acanthaceæ.)

Stove perennial herb. Seeds; and cuttings in sand in a close case, with bottom-heat. Loam, leaf-mould, and sand.

H. verticilla'ris (whorled). Lilac. July. India. 1822.

HAPLOCA'RPHA. (From *haploos*, simple, and *karphos*, any light dried substance; in allusion to the simple pappus. Nat. ord. Compositæ.)

Half-hardy or greenhouse perennial herbs of showy appearance. Seeds or cuttings. Light, well-drained soil in a sheltered position, with a greenhouse in winter.

H. Leichtli'nii (Leichtlin's). ½–1. Yellow. S. Africa. 1883.
,, *scapo'sa* (stemless). Yellow. S. Africa. Greenhouse.

HAPLOPA'PPUS. (From *haploos*, simple, and *pappos*, down; the pappus is in one ring. Nat. ord. Compositæ.)

A hardy under-shrub. Seeds or cuttings under a hand-light. Light, sandy soil.

H. spinulo'sus (finely-spiny). 1–2. Bright yellow. Rocky Mountains. 1874.

HARDENBE'RGIA. (Named after the *Countess of Hardenberg*, in Germany, sister to Baron Huegel. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Kennedya.)

Greenhouse evergreen climbers, from Australia, with purple flowers, except where otherwise mentioned. Cuttings of the young side-shoots, a little firm at their base, taken off in April, in sand, under a bell-glass, and placed in a close frame or pit without bottom-heat; peat two parts, loam one part, with sand and a little charcoal, to keep the compost open. They like a little shade in the middle of summer, and a temperature of 40° to 48° in winter.

H. comptonia'na (Compton's). 12. Purple, lilac. March. 1803.
,, *corda'ta* (heart-*leaved*). See H. MONOPHYLLA.
,, *digita'ta* (finger-*leaved*). See H. COMPTONIANA.
,, *longiracemo'sa* (long-racemed). See H. MONOPHYLLA.
,, *macrophy'lla* (large-leaved). See H. COMPTONIANA.
,, *makoya'na* (Makoyan). See H. COMPTONIANA.

H. monophy'lla (one-leaved). 10. Red. April. 1790.
„ „ *audomarie'nsis* (Audomarian). Rosy-red. 1901.
„ „ *ro'sea* (rosy). Rose.
„ *ova'ta* (egg-shaped). See H. MONOPHYLLA.

HARDENING-OFF. By this term gardeners intend the gradual preparation of plants to endure exposure to a colder and more airy situation. Thus, before bedding-out geraniums, or ridging-out cucumbers, in open beds, the plants that have been nursed under glass are, by degrees, exposed to more air and less warmth, by opening the lights wider, and for a greater length of time, not only by day, but by night, until they become inured to so low a temperature as to suffer no check by being placed in the open ground.

HARDWI'CKIA. (Named after *General Hardwicke*, of the East Indian Company. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Cynometra.)
Stove evergreen trees, with yellow flowers, from India. Cuttings of ripe young shoots in sandy soil, and in a brisk heat; rich, sandy loam. Summer temp., 60° to 85°; winter, 50°.
H. bina'ta (twin-*leaved*). 40. March. 1820.
„ *pinna'ta* (leafleted). 40. April. 1818.

HARDY PLANTS are those which endure uninjured our seasons without protection.

HAREBELL. *Campa'nula rotundifo'lia.*

HARES and **RABBITS** are deterred from injuring trees and shrubs, by mixing night-soil and clay in water, and daubing it over the stems, with a brush, in November; and, if the winter proves very wet, in February. The November dressing is, however, generally sufficient. This mixture has stopped their depredations entirely, even when they had commenced operations.

HARE'S-EAR. *Bupleu'rum.*

HARE'S-FERN. *Dava'llia canarie'nsis.*

HARE'S-FOOT. *Ochro'ma Lago'pus.*

HARICOT. See KIDNEY BEAN.

HARI'NA. An Indian name. See WALLICHIA.

HARO'NGA. (From *ronga*, the name in Madagascar. Nat. ord. *Tutsans* [Hypericaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)
Evergreen stove shrub. Cuttings of young shoots getting a little firm, in sandy peat, under a bell-glass, in heat; sandy loam and peat. Summer temp., 60° to 70°; winter, 48° to 55°.
H. madagascarie'nsis (Madagascar). 10. Yellow. July. Madagascar. 1825.

HARPA'LIUM RI'GIDUM. See HELIANTHUS RIGIDUS.

HARRA'CHIA SPECIO'SA. See CROSSANDRA UNDULÆFOLIA.

HARRISO'NIA. (Named in honour of *Mrs. Harrison*, of Liverpool, its introducer. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
H. lonicero'ides (Lonicera-like). See MARSDENIA LONICEROIDES.

HARTO'GIA. (Named after *J. Hartog*, a Dutch naturalist. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Elæodendron.)
Evergreen shrub, from South Africa. Cuttings of the ripe shoots under a bell-glass, or under a hand-light, and protected; sandy loam and peat. Usually grown in the greenhouse, but will stand out of doors in elevated, and yet sheltered places.
H. cape'nsis (Cape). 6. July. 1800.

HART'S TONGUE. *Scolope'ndrium.*

HARTWE'GIA. (Named after *M. Hartweg*, court gardener to the Emperor of Austria, once a botanical collector for the Horticultural Society. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. Division of the plant in spring; very fibrous peat, potsherds, and charcoal. Summer temp., 60° to 85°; winter, 50° to 55°.
H. crassifo'lia (thick-leaved). Purple. April. Guatemala. 1840.

H. Ge'mma (Gemma). Amethyst-purple. Central Amer. 1878.
„ *purpu'rea* (purple). 1. Purple. August. Guatemala and Mexico. 1837.
„ „ *angustifo'lia* (narrow-leaved). 1. Purple. June. Mexico. 1842.

HASSAGAY-TREE. *Curti'sia.*

HASTI'NGIA. See HOLMSKIOLDIA.

HATCHET-VETCH. *Bise'rrula.*

HAUTBOY or **HAUTBOIS.** See STRAWBERRY.

HAWK-FLY. See SCÆVA.

HAWKWEED. *Hiera'cium.*

HAWO'RTHIA. (Named in honour of *A. H. Haworth, Esq.*, a distinguished English botanist.)
For culture, &c., see ALOE, to which it is allied. They are all natives of South Africa, and all have grey flowers.
H. affi'nis (allied). 1875.
„ *a'lbicans* (white-*edged*). 1. July. 1795.
„ „ *mi'nor* (smaller). ½. August. 1819.
„ „ *vire'scens* (greenish). 1. August. 1819.
„ *altiti'nea* (ridged-lined). ½. August. 1824.
„ *angustifo'lia* (narrow-leaved). ½. June. 1824.
„ *arachnoi'des* (cobweb-like). 1. August. 1727.
„ „ *mi'nor* (smaller). 1. August. 1819.
„ *arista'ta* (awned). See H. ALTILINEA.
„ *asperiu'scula* (roughish). ½. June. 1818.
„ *aspe'rula* (slightly-rough). 1. Grey. June. 1824.
„ *a'tro-vi'rens* (dark green). 1. May. 1823.
„ *attenua'ta* (attenuated). 1. July. 1790.
„ „ *claripe'rla* (clear-pearl). ½. June. 1824.
„ *bilinea'ta* (two-lined). White, red. 1875.
„ *Bolu'sii* (Bolus's). Grey-white. 1873.
„ *bre'vis* (short). See H. MARGARITIFERA.
„ *chloraca'ntha* (green-spined). ½. August. 1820.
„ *claripe'rla* (clear-pearled). See H. ATTENUATA CLARIPERLA.
„ *coarcta'ta* (compressed). ½. August. 1821.
„ *columna'ris* (columnar). S. Africa.
„ *conci'nna* (neat). See H. VISCOSA.
„ *Coope'ri* (Cooper's). ½. Grey, red. 1862.
„ *cordifo'lia* (heart-leaved). ½. June. 1817.
„ *cu'rta* (short-*twisted*). See H. TORTUOSA CURTA.
„ *cuspida'ta* (spine-pointed). ½. August. 1819.
„ *cymbifo'rmis* (boat-formed). ½. June. 1795.
„ „ *obtu'sa* (obtuse). ½. June. 1824.
„ „ *planifo'lia* (flat-leaved). ½. April. 1824.
„ *denticula'ta* (small-toothed). ½. August. 1819.
„ *disti'ncta* (distinct). See H. VENOSA.
„ *ere'cta* (erect-*pearl*). See H. MARGARITIFERA.
„ *expa'nsa* (expanded). See H. RIGIDA.
„ *fascia'ta* (banded-*pearl*). ½. August. 1818.
„ „ *ma'jor* (larger). ½. July. 1820.
„ *glabra'ta* (smooth). White, pale red. 1834.
„ „ *co'ncolor* (one-coloured).
„ „ *pervi'ridis* (very-green).
„ *glau'ca* (sea-green). 1879.
„ *grana'ta* (grained). See H. MARGARITIFERA GRANATA.
„ *Gree'nii* (Green's). 1879.
„ *hy'brida* (hybrid). ½. June. 1821.
„ *icosiphy'lla* (twenty-leaved). 1872.
„ *indura'ta* (hard-*branchy*). See H. VISCOSA.
„ *læ'te-vi'rens* (lively-green). ½. August. 1819.
„ *læ'vis* (smooth-*white-edged*). See H. ALBICANS.
„ *li'mpida* (limpid). See H. ALTILINEA.
„ *margariti'fera* (pearl-bearing). 1. July. 1739.
„ „ *coralli'na* (coral-red).
„ „ *grana'ta* (grained). ½. July. 1735.
„ „ *ma'jor* (greater). 1. April. 1819.
„ „ *me'dia* (medium).
„ „ *mi'nor* (lesser). 1. June. 1819.
„ „ *multiperla'ta* (many-pearled). 1. April. 1819.
„ „ *semimargariti'fera* (half-pearl-bearing). 1. April 1819.
„ *mi'nima* (smallest). 1872.
„ *mi'nor* (lesser-*pearl*). See H. MARGARITIFERA MINOR
„ *mira'bilis* (admirable-*cushion*). ½. July. 1795.
„ *mucrona'ta* (sharp-pointed). See H. ALTILINEA.
„ *multifa'ria* (many-sided). See H. MIRABILIS.
„ *mu'tica* (blunt-*cushion*). See H. RETUSA.
„ *ni'gra* (black). ½. Grey. July. 1823.

H. ni'gricans (*granulated*-black). See GASTERIA DECIPIENS.
„ *ni'tida* (shining). See GASTERIA NITIDA.
„ *obtu'sa* (*small*-blunt). See H. CYMBIFORMIS OBTUSA.
„ *pa'llida* (pale-*green*). ½. June. 1820.
„ *papillo'sa* (nippled). 1. June. 1820.
„ „ *semipapillo'sa* (half-nippled). 1½. June. 1820.
„ *pa'rva* (small). See H. TESSELLATA.
„ *Peaco'ckii* (Peacock's). 1879.
„ *Pearso'ni* (Pearson's). ½. Pale flesh, with brown ribs. 1907.
„ *pili'fera* (pile-bearing). ½. Grey, green. 1862.
„ *planifo'lia* (flat-leaved). See H. CYMBIFORMIS PLANIFOLIA.
„ *polyphy'lla* (many-leaved). 1860.
„ *pseu'do-tortuo'sa* (slightly-twisted-*triangular*). See H. VISCOSA.
„ *pu'mila* (dwarf-*cobweb*). See H. ATROVIRENS.
„ *Ra'dula* (file-*surfaced-pearl*). 1½. May. 1805.
„ „ *aspe'rior* (rougher). 1. August. 1820.
„ „ *læ'vior* (smoother). 1. August. 1825.
„ „ *pluriperla'ta* (many-pearled). 1. August. 1820.
„ *rami'fera* (branch-bearing). See H. ALBICANS.
„ *recu'rva* (curled-back-*leaved*). 1. August. 1795.
„ *Reinwa'rdtii* (Reinwardt's *pearl*). ½. June. 1820.
„ „ *ma'jor* (greater).
„ „ *mi'nor* (lesser).
„ *reticula'ta* (netted). ½. June. 1794.
„ *retu'sa* (bent-back-*cushion*). 1. June. 1720.
„ *ri'gida* (rigid). ½–1. August. 1795.
„ *rugo'sa* (wrinkled). 1814.
„ *sca'bra* (rough). ½. June. 1818.
„ *semiglabra'ta* (nearly-glabrous). ½. June. 1811.
„ *semimargariti'fera* (half-pearl-bearing). See H. MARGARITIFERA SEMIMARGARITIFERA and varieties.
„ *sessiliflo'ra* (stalkless-flowered). S. Africa.
„ *seta'ta* (bristle-*leaved*). 1. June. 1820.
„ „ *ma'jor* (larger). 1. July. 1820.
„ „ *me'dia* (mediate). 1. July. 1820.
„ „ *ni'gricans* (blackish). 1. July. 1820.
„ *seto'sa* (bristly). See H. SETATA.
„ *so'rdida* (sordid). ½. July. 1820.
„ *subattenua'ta* (slightly-elongated). 1814.
„ *subfascia'ta* (slightly-bundled). 1814.
„ *subregula'ris* (nearly-regular). ½. Grey, green. 1862.
„ *subri'gida* (somewhat rigid). ½. Grey, tinted with pale red. 1818.
„ *subula'ta* (awl-shaped). 1814.
„ *tessella'ta* (*dark*-checkered). ½. June. 1823.
„ „ *pa'rva* (small).
„ *Tis'leyi* (Tisley's). 1879.
„ *torqua'ta* (collared). See H. VISCOSA.
„ *torte'lla* (slightly-twisted). See H. TORTUOSA.
„ *tortuo'sa* (twisted). 1. July. 1794.
„ „ *cu'rta* (short-twisted). ½. July. 1816.
„ *translu'cens* (transparent). ½. June. 1795.
„ *tu'rgida* (swollen-*cushion*). ½. August. 1819.
„ *veno'sa* (veiny). ½. June. 1820.
„ *vire'scens* (greenish). See H. ALBICANS VIRESCENS.
„ „ *mi'nor* (smaller). See H. ALBICANS MINOR.
„ *visco'sa* (clammy). 1½. June. 1727.
„ *vitta'ta* (striped). ½. Grey, green. 1862.
„ *xiphiophy'lla* (Xiphium-leaved). Leaves narrower and thinner than *H. setata.*

HAWTHORN. *Cratæ'gus.*

HAWTHORN BUTTERFLY. *Aporia Crataegi.*

HAYLO'CKIA. (Named after *Mr. Haylock*, gardener to Dr. Herbert. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Allied to Cooperia.)

A small bulb, with very narrow leaves and one flowered scape. Offsets; sandy loam, with a little peat and leaf-mould; requires the protection of a frame, or to be deeply planted in a dry place in winter.

H. pusi'lla (dwarf). ½. Straw. September. Buenos Ayres. 1829.

HAYNA'LDIA. (A commemorative name. Nat. ord. Campanulaceæ.)

Greenhouse perennial. Divisions; cuttings in sand under a bell-glass. Fibrous loam, leaf-mould, and sand.

H. thapsoi'dea (Thapsus-like). 6. Rosy-purple. Brazil. 1843.

HAZEL. *Co'rylus Avella'na.*

HEADING, or as it is also termed, *Cabbaging* or *Loaving*, is an inaptitude to unfold the central leaves, characterising the various members of the Cabbage tribe. They have their centre or bud composed of a larger number of leaves than usual, and these, in some instances, are so complexly combined that the plant has not sufficient power to force them open to permit the protrusion of the seed-stem. The closeness of the heading is regulated by the exposure to the light. In a shady situation all the leaves are required to elaborate the sap, on account of the deficient light rendering each less active; therefore they open as they are formed. In a free exposure a few leaves are able to effect the requisite assimilation; and hence the reason why cabbages always have "*harder hearts*" in summer than in spring or autumn, when the light is less intense.

HEADING-DOWN, is cutting off entirely, or to a considerable extent, the branches of a tree or shrub—a process not rashly to be resorted to, and adopted only to reduce them when the plant seems declining in vigour, or has attained an undesirable size.

HEART'S-EASE. See PANSY.

HEAT is the prime agent in developing all vegetable life and vegetable form, in effecting all vegetable changes, and in ripening all vegetable produce. All these effects are performed most efficiently, in the case of every plant, at some different temperature or degree of heat; and he who ascertains most correctly those heats has taken a gigantic step towards excellence as a gardener. An uncongenial heat is as pernicious to vegetables as to animals. Every plant has a particular temperature, without which its functions become more feeble, or cease; but the majority of them luxuriate most in a climate of which the extreme temperatures do not much exceed 32° and 90°. No seed will vegetate, no sap will circulate, in a temperature at or below the freezing-point of water. No cultivation will render plants, natives of the torrid zone, capable of bearing the rigours of our winters, although their offspring, raised from seed, may be rendered much more hardy than their parents. Others are capable of resisting the greatest known cold to which they can be exposed; yet all have degrees of temperature most congenial to them, and if subjected to lower temperatures, are less or more injured proportionately to the intensity of that reduction. If the reduction of temperature be only slightly below that which is congenial, it merely causes the growth of the plant to diminish and its colour to become more pale; this effect being now produced by the plant's torpidity, or want of excitement to perform the requisite elaboration of the sap, as it is by over-excitement when made to vegetate in a temperature which is too elevated.

If blossoms are produced at all, they are unfertile, and the entire aspect of the plant betrays that its secretions are not healthy, and its functions are deadened. Mr. Knight says, "That melons and cucumber plants, if grown in a temperature too low, produce an excess of female blossoms; but if the temperature be too high, blossoms of the opposite sex are by far too profuse." The drier the air the greater is the amount of moisture transpired; and this becomes so excessive, if it be also promoted by a high temperature, that plants in hothouses, where it has occurred often, dry up as if burned. The justly lamented Mr. Daniell has well illustrated this by showing, that if the temperature of a hothouse be raised only five degrees, viz. from 75° to 80°, whilst the air within it retains the same degree of moisture, a plant that in the lower temperature exhaled fifty-seven grains of moisture, would, in the higher temperature, exhale one hundred and twenty grains in the same space of time.

Plants, however, like animals, can bear a higher temperature in dry air than they can in air charged with vapour. Animals are scalded in the latter if the temperature is very elevated, and plants die under similar circumstances, as if boiled. MM. Edwards and Colin found kidney-beans sustained no injury, when the air was dry, at a temperature of 170°; but they died in a few minutes if the air was moist. Other plants under similar circumstances would perish probably at a much lower temperature; and the fact affords a warning to the gardener to have the atmosphere in his stoves very dry whenever he wishes to elevate their temperature for the destruction of insects or other purposes.

Certain plants flourish in hot-water springs, of which the temperature varies between the scalding heats of from 150° to 180° of Fahrenheit's thermometer; and others have been found growing freely on the edges of volcanoes, in an atmosphere heated above the boiling-point of water. Indeed, it is quite certain that most plants will better bear, for a short time, an elevated temperature, which, if long continued, would destroy them, than they can a low temperature. Thus a temperature a little above the freezing-point of water, to orchidaceous and other tropical plants, is generally fatal if endured by them for only a few minutes; whereas a considerable elevation above a salutary temperature is rarely injurious to plants. But this is not universally the case; for the elegant *Pri'mula margina'ta* is so impatient of heat, that, although just about to bloom, it never opens a bud if brought into a room in which there is a fire.

The temperature should always be regulated, in our hothouses, with a due regard to the light. At night it should be so low as to put the circulation of the sap into a comparative state of rest; and in dull days the temperature should be full 10° lower than in those of bright sunshine.

HEATHS. See ERI'CA.

Propagation: by Cuttings.—In order to be successful in striking the *hard-wooded heaths*, it is necessary to put a plant of each kind in gentle heat, to cause them to push forth young shoots. Whilst they are growing, the materials for the operation of propagation should be prepared: these are the requisite number of clear *bell-glasses*. It will be advantageous to have them of different sizes; the smallest 3½ inches, and the largest 6 inches diameter, with two sizes between. Also prepare the *drainage* by breaking a quantity of potsherds. These should be in three sizes, the largest about an inch across, the next half an inch, and the smallest the size of marrow-fat peas, with the dust sifted out from amongst them. Next, have the *soil* ready. The best is to be had from some dry moorland where the heather grows wild. Break the turves into a fine state, and pass it through a fine sieve, reserving the rougher pieces to cover the drainage with. The next things to look after are *the pots*. If new, they must be placed in a tub of water for a few hours; if old, they must be well scoured and made perfectly clean. Lastly, procure a sufficient quantity of pure *silver sand*, a pair of *propagating scissors*, and a small ivory-handled *knife* of the very best material. All these being in readiness, see that the cuttings are in a fit state to take off the plants. If they have made fresh shoots an inch long, they are ready for use. Then take a small clean pot, invert it, and place it over the hole at the bottom of the pot for the cuttings, then fill in round a few of the largest potsherds, and cover them with some of the second size, and then, lastly, with a considerable quantity of the smallest size, cover these with a layer of the rough siftings. The whole of these should fill the pot to within two and a half inches of the rim of the pot. Upon that place an inch and a half of the heath mould, with a large admixture of the silver sand; level this last layer with a circular piece of wood, with a nail driven into the centre, to form a handle. Finish with a layer of the pure white sand quite level with the rim of the pot. Give a good watering with a fine rose pot, to settle the same. Then take off the cuttings with the scissors, and dress them with the knife; cut the bottom of the cutting clean off with a level cut, just at the part between the new and the old wood; then cut off the leaves close to the stem, without wounding its bark, about two-thirds of its length from the bottom. As each cutting is made, place it under the bell-glass upon the sand, till a sufficient number are made to fill the pot. Make a mark in the sand to show the size of the glass, and then proceed to put in the cuttings in regular rows across the pot, keeping the leaves just clear out of the sand. When they are all planted, give another gentle watering, to settle the sand firm; allow them to dry partially before the glass is put on. Then place them in a house where they can be shaded from the sun, and keep up a gentle heat of 55°, as near as possible. Wipe the glasses dry every morning, and as soon as the cuttings are rooted, remove them into a cooler house, and give a little air by placing three short pieces of wood, a quarter of an inch thick and two inches long, so as to form a triangle, and let the bell-glass rest upon them. In this house it will still be necessary to shade them from the blazing sun. This is easily done by spreading some sheets of paper over them; but remove this shade instantly when the sun is overclouded. When they have been in this situation for a month, remove the glasses entirely, and a month afterwards commence potting them off in 3-inch pots, four in a pot, stopping them at the same time, to make them bushy. Place them in a cold frame, upon a layer of river-sand on coal-ashes; shade again for a time, and give air moderately. When they have made fresh roots expose them occasionally to gentle showers, but by no means to heavy rain. Give them due supplies of water in dry weather, and keep them clear of weeds. In these pots they must remain till the spring following. During the winter place them on a shelf, near the glass, in a light, airy greenhouse. About March, pot them singly into the same sized pots, shading them again till fresh roots are formed. They are then ready for the usual routine of culture. Heaths, with *soft wood* and free growth, are more easy to propagate, and do not require so much preparation; but in other respects the management is the same.

By Seed.—Several kinds of heaths produce plenty of good seed; even some that are extremely difficult to propagate any other way, such, for instance, as *E. e'legans*, *E. odo'ra ro'sea*, *E. halicaca'ba*, *E. triu'mphans*, and some others of similar habit. Fill the pots in the same way as for cuttings, only mix the top layer of sand with as much heath-mould; make the surface smooth, and sow the seed in spring on the surface, covering it as slightly as possible; water with the finest syringe, so that it may fall upon the seed like the finest dew; place the pots near the glass, shade from bright sun, and keep the surface just moist. The seedlings will soon come up, and require great care, or they will fog off. To prevent this give air daily. As soon as they can be handled transplant them into 5-inch pots rather thickly, but standing clear of each other. In this state they may remain for six or eight months, and then pot them off into 3-inch pots, four in a pot, and manage them afterwards in the same way as the cuttings.

Soil.—This has been already described above, in writing of the soil proper for the cuttings to root into; but for larger plants it must not be sifted so fine. For very large plants do not sift it at all; for such, if a few pieces of sand-stone are mixed amongst the mould, they will be useful to allow the water to penetrate to the centre of the ball.

Potting.—Heaths thrive best if the mould is left below the rim of the pot from half an inch for small plants in 6-inch pots, to two inches in large ones. This space holds a supply of water which gradually sinks through, and effectually moistens the ball to the centre. Drain thoroughly with broken potsherds, half an inch for small plants, to three inches for very large ones.

Culture.—Cold pits or frames, in spring and autumn, are the best protection to place heaths in during their youth, and a good, airy, light, span-roofed greenhouse for them through winter and spring, when they are too large for the frames. In summer they should be set out of doors upon a thick bed of coal-ashes, behind a low wall or hedge. Whilst in this position they must have an abundant and constant supply of water. If the ball ever becomes thoroughly dry, the plants will certainly die; therefore, attend to this point of watering most rigidly and perseveringly. In winter they do not require so much; but even in that season they must be kept moderately, but constantly and thoroughly, moistened.

Diseases.—Heaths are subject to go off at the point where the stem ends and the roots begin. This is caused often by an irregular supply of water, and cannot be cured when it once takes place. The plant may appear green and flourishing, and the roots fresh, and the ends are lively even when the stem is dead. Another fell disease is the *mildew*. This may be sometimes cured by first damping the plants infected, and then dusting them over with flowers of sulphur. This disease is often brought on by a long-continued damp atmosphere; and if that is not dried by a little heat, with abundance of air, the disease will spread rapidly, and soon destroy the plants. If only one or two are infected, they had better be sulphured, and placed by themselves till the mildew fungus is killed,

Insects.—See APHIS for cure, when the Green Fly attacks them.

HEATH-MOULD. See BOG-EARTH.

HEATHER. See CALLU'NA VULGA'RIS.

HEBE'CLADUS. (From *hebe*, downiness, and *klados*, a branch; the young shoots being downy. Nat. ord. Solanaceæ.)

Greenhouse shrub. Cuttings of half-mature wood, in sand, in a close case, with gentle bottom-heat. Fibrous loam, leaf-mould, and sand.

H. ventrico'sus (inflated). 3. Light yellow. Peru. 1869.

HEBECLI'NIUM. See EUPATORIUM.

HEBENSTRE'TIA. (Named after *Professor Hebenstret*, of Leipsic. Nat. ord. *Selagids* [Selaginaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Selago.)

Most of the Cape Selagids are well adapted for planting out in summer, in mixed borders. Greenhouse evergreen shrubs or annuals; all from South Africa, and all white-flowered. Short young shoots in sandy peat, in spring, under a bell-glass; sandy, fibrous loam, and a little peat. Summer temp., 50° to 75°; winter, 38° to 45°. *Denta'ta* by seed in early spring.

H. albiflo'ra (white-flowered). See DISCHISMA CILIATUM.
,, *au'rea* (golden). See H. DENTATA.
,, *capita'ta* (headed-*flowered*). See DISCHISMA CLANDESTINUM.
,, *chamædrifo'lia* (germander-leaved). See DISCHISMA ERINOIDES.
,, *cilia'ta* (hair-fringed). See DISCHISMA CILIATUM.
,, *como'sa* (long-haired). 1. White, with orange spot. 1890.
,, ,, *serratifo'lia* (serrate-leaved). Leaves serrated. 1890.
,, *corda'ta* (heart-*leaved*). 1. July. 1774.
,, *denta'ta* (toothed). 1. July. 1739.
,, *erinoi'des* (Erinus-like). See DISCHISMA ERINOIDES.
,, *frutico'sa* (shrubby). 1½. August. 1816.
,, *integrifo'lia* (entire-leaved). See H. DENTATA.
,, *sca'bra* (rough). 1. June. 1824.
,, *tenuifo'lia* (slender-leaved). 1. White, with orange spot. Annual.

HE'CHTIA. (Commemorative of *M. Hecht.* Nat. ord. Bromeliaceæ.)

Warm and dry greenhouse plants. Offsets and seeds. Fibrous loam, with some finely broken bricks.

H. arge'ntea (silvery). 2. White. Mexico.
,, *cordylinoi'des* (Cordyline-like). See H. STENOPETALA.
,, *Ellemee'ti* (Ellemeet's). See RHODOSTACHYS ANDINA.
,, *Ghiesbre'ghtii* (Ghiesbreght's). See H. GLOMERATA.
,, *glomera'ta* (clustered). White. Mexico. 1863.
,, *longifo'lia* (long-leaved). See BROMELIA FASTUOSA.
,, *pitcarniæfo'lia* (Pitcairnia-leaved). See RHODOSTACHYS PITCARNIÆFOLIA.
,, *stenope'tala* (narrow-petaled). Flowers small, white, panicled. Mexico. 1881.

HEDARO'MA. (From *hedus*, sweet, and *aroma*, perfume. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.) Now referred to Darwinia.

H. latifo'lium (broad-leaved). See DARWINIA CITRIODORA.
,, *pinifo'lium* (pine-leaved). See DARWINIA PINIFOLIA.
,, *thymoi'des* (thyme-like). See DARWINIA THYMOIDES.
,, *tulipi'ferum* (tulip-bearing). See DARWINIA MACROSTEGIA.

HEDE'OMA. (From *hedeoma*, the Greek name of mint. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Micromeria.)

Hardy annuals. Seed in early spring; light, rich garden-soil.

H. pulegioi'des (pennyroyal-like). ½. Blue. July. N. Amer.
,, *thymoi'des* (thyme-like). ½. Red. July. France.

HE'DERA. The Ivy. (*Hedra* is the Celtic word for cord, alluding to the Ivy's stems. Nat. ord. *Ivyworts* [Araliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The common ivy (*H. He'lix*) may be propagated by seeds, but in all its varieties is quickest propagated by slips, inserted in a north border, in sandy soil, kept moist in the autumn. This is a far better plan than inserting it at once where it is intended to remain. Deep, rich soil suits the common ivy; the tender kinds should have lighter soil. For clothing dead trees, covering open fences, giving an air of antiquity, security, and warmth and dryness to buildings, and even producing architectural effects, and covering the ground in shady places with a green carpet, where scarcely anything else would grow, the ivy is invaluable.

GREENHOUSE EVERGREEN SHRUBS.

H. aculea'ta (prickly). See BRASSAIOPSIS ACULEATA.
,, *fra'grans* (fragrant). See PENTAPANAX LESCHENAULTII.
,, *macrophy'lla* (large-leaved). White. N. Holland. 1831.

STOVE EVERGREEN SHRUBS.

H. arbo'rea (tree-like). See DENDROPANAX ARBOREUM.
,, *capita'ta* (headed-*flowered*). See OREOPANAX CAPITATUM.
,, *catalpæfo'lia* (Catalpa-leaved). See OREOPANAX CAPITATUM.
,, *digita'ta* (finger-*leaved*). White. March. E. Ind. 1818.
,, *emargina'ta* (end-notched). See HEPTAPLEURUM EMARGINATUM.
,, *ferrugi'nea* (rusty). See TREVESIA PALMATA.
,, *glomerula'ta* (glomerulated). See BRASSAIOPSIS SPECIOSA.
,, *pe'ndula* (weeping). See DENDROPANAX PENDULUM.
,, *umbraculi'fera* (umbrella-*leaved*). See POLYSCIAS NODOSA.
,, *xalape'nsis* (Xalapan). See OREOPANAX XALAPENSE.

HARDY EVERGREEN CLIMBERS.

H. He'lix (*common*). 40. Green. September. Britain.
,, ,, *algerie'nsis* (Algerian). Leaves large, light green. N. Africa.
,, ,, *amure'nsis* (Amur-land). Leaves large, long, pointed. Amur-land.
,, ,, *arbore'scens* (tree-like). 8. Green. Britain. "Tree Ivy."
,, ,, *arbore'scens fo'liis arge'nteis margina'tis* (silver-edged-tree).
,, ,, *arbore'scens fo'liis au'reis* (golden-leaved-tree).
,, ,, *auranti'aca* (orange). Fruit orange-red. 1884.
,, ,, *au'rea* (golden).
,, ,, *cænwoodia'na* (Cænwoodian). Leaves small, deeply cut.
,, ,, *canarie'nsis* (Canary). 20. Green. October. Canaries. "Irish Ivy."
,, ,, *canarie'nsis arbore'scens* (Irish-tree).
,, ,, *chrysoca'rpa* (yellow-berried). 30. Green. October. India.
,, ,, *chrysophy'lla* (golden-leaved). Leaves golden.
,, ,, *co'lchica* (Colchican). Leaves large, heart-shaped.
,, ,, *co'lchica arbore'scens* (Colchican-tree).
,, ,, *denta'ta* (toothed). Leaves very large, with a few coarse teeth. Giant Ivy.
,, ,, *denta'ta variega'ta* (variegated). Leaves with silvery variegation.
,, ,, *digita'ta* (finger-*leaved*). 20. Green. October. Britain. Shrub.
,, ,, *flave'scens* (light yellow). Foliage of a durable yellow.
,, ,, *fo'liis arge'nteis* (silver-*striped*-leaved). 20. Green. October. Britain.
,, ,, *fo'liis au'reis* (gold-*striped*-leaved). 20. Green. October. Britain.
,, ,, *himala'ica* (Himalayan). Leaves ovate, grey.
,, ,, *margina'ta ma'jor* (larger-edged). Leaves with broad silver margin.
,, ,, *margina'ta ru'bra* (red-edged). Leaves with red edge to the silver margin.
,, ,, *mi'nima* (smallest). Plant dwarf. Leaves very small.
,, ,, *palma'ta* (palmate). Leaves hand-shaped.
,, ,, *Reute'ri* (Reuter's). Leaves long, narrow, Willow-like. 1904.
,, ,, *rho'mbea* (diamond-shaped). Dwarf habit. Japan.
,, ,, *sulphu'rea* (sulphur). Leaves pale yellowish.
,, ,, *tau'rica* (Taurian). Green. October. Tauria. 1841.
,, ,, *tessella'ta* (chequered). Leaves netted with yellow, 1893.

HEDGE properly includes every kind of fence; but the present details apply, for the most part, to growing fences. Abercrombie says, that all outward hedges designed as fences should have a ditch on the outside, three or four feet wide at top, three deep, sloping to one wide at bottom, raising a low bank on the inside on which to plant the hedge. Having lined out the width of the ditch, then along the inner edge lay a row of square spit turves, grass side downwards, to form the beginning of the bank, backing it up with spits of earths from the formation of the ditch, and top it with a little of the fine mould or crumbs; and then upon this proceed to lay the first row of plants. First let the sets be headed to about five or six inches, and the roots trimmed; then lay them upon the bed of turf with their tops outward, in an upward direction, about ten or twelve inches asunder, covering their roots with mould, also out of the ditch; and then lay another row of turf along upon the necks of the plants, and more mould from the ditch upon and behind the turf; and when the bank is thus raised a foot above the row of sets, plant another row in the same manner, placing each set against the spaces of those of the first row, so covering them with more earth from the ditch to the depth of three feet, sloping each side to one foot width at bottom, and trim up all remaining earth, throwing a sufficiency behind the top of the banking to bank up the whole even. But in planting for an outward fence, some form the ditch and bank first as above, and plant the sets in two rows along the top; that is, after having formed the ditch and bank, then levelling the top, forming a foot of border all along a yard wide; plant the sets along its middle upright, in two rows a foot asunder, and six inches distant in each row, observing the same when intended to raise a hedge at once from seed sowed where you design the hedge to be, sowing them along the top in drills a foot asunder. Sometimes, when hedges are designed for middle fences to divide fields, a two-sided bank is raised a yard high, and as broad at top, having a slight ditch on each side; and each side of the bank is formed with square spit turves from the adjoining ground, and the middle filled up with mould from the ditches on each side; so that when finished, it forms a yard-wide border all the way along the top, and along the middle of which plant two rows of hedge-sets or seed, in drills, as before observed. But in places where no ditch nor raised bank is required, as may be the case for middle hedges in the interior parts of grounds, especially in gardens, then the place for the hedge being marked out on the level ground two or three feet broad, dig it along one good spade deep at least, and then plant your sets of any sort in two rows, ranging along the middle; or, if you design to sow seeds, &c., of any sort at once, where you intend to have the hedge, sow them in two drills a foot asunder the whole length.

In respect to general culture of these sorts of hedges, it must be remarked that all such as are exposed to cattle must, as soon as planted, be fenced either with a stake and bush hedge, with hurdles, or with rails and open paling, for four or five years, till the hedge grows up, observing not to place the fence too close to the hedge to interrupt its growth. The hedge must, also, be duly weeded while young, and this should be particularly attended to the first two years.

Evergreen Hedge-shrubs are Holly, Yew, Laurel, Laurustinus, Phillyrea, Alaternus, Bay, Furze, and Evergreen Oak; but the Holly and Yew form the best hedges for general use.

Deciduous Kinds.—Hawthorn, Blackthorn, Crab, Elder, Hornbeam, Beech, Elm, Lime-tree, and Alder are all proper either for middling or tall hedges, as they may be trained up from about six or eight to fifteen or twenty feet high, and the Elm to double that height if required. Privet is also sometimes used for moderately high hedges; and for low hedges, the Rose, Sweet-briar, Syringa, and Barberry.

All full-trained hedges, in order to preserve them in proper form, must be clipped, both on the sides and top, once or twice a year, but never less than once; and the best time of the year for this work is summer, from about the middle or latter end of June to the end of August, for then the hedges will have made their summer shoots, which should always, if possible, be clipped the same season while in leaf, and before the shoots become hard, whereby you will be able to perform the work more expeditiously and with greater exactness, for regular hedges should be cut as even as a wall on the sides, and the top as straight as a line; observing, after the hedge is formed to its proper height and width, always to cut each year's clipping nearly to that of the former year, particularly on the sides; for by no means suffer them to grow above a foot or two wide, nor suffer them to advance upon you too much at top, where it is designed or necessary to keep them to a moderate height. But to keep hedges in perfectly good order, they should be clipped twice every summer; the first clipping to be about Midsummer, or soon after, when they will have made their summer shoots; and as they will shoot again, what may be called the autumn shoot, the second clipping is necessary towards the middle or latter end of August, and they will not shoot again that year. However, when it does not suit to clip them but once in the summer, the clipping should not be performed until the beginning of August; for, if cut sooner, they will shoot again, and appear almost as rough the remainder of the summer and all winter as if they had not been clipped. Very high hedges are both troublesome and expensive to cut. The clipping is sometimes performed by the assistance of a high machine, scaffolding, or stage, twenty or thirty feet high or more, having platforms at different heights for the men to stand upon, the whole made to move along upon wheels. It is composed of four long poles for uprights, well framed together, eight or ten feet wide at bottom, narrowing gradually to four or five at top, having a platform or stage at every seven or eight feet high, and one at the top of all; and upon these the man stands to work, each platform having a rail, waist high, to keep the man from falling, and a sort of ladder formed on one side for the man to ascend, and at bottom for low wheels to move it along. Upon this machine a man may be employed on each stage or platform, trimming the hedge with shears, and sometimes with a garden hedge-bill fixed on a handle five or six feet long, which is more expeditious, though it will not make so neat work as cutting with the shears.

A hedge is not only an imperfect screen, but in other respects is worse than useless, since nothing can be trained to it, and its roots exhaust the soil in their neighbourhood very considerably. As the south fence of a garden, it may be employed; and hawthorn, in some respects, is the worst shrub that could be made use of. It is the nursery of the same aphides, beetles, and caterpillars, that feed upon the foliage of the apple and pear, from whence they often spread to the whole garden. Evergreen are better than deciduous hedges, and more especially those of the holly, which is not so slow a grower as is generally imagined.

In a cloudy day, in April or May, the wind seems to be actually refrigerated in passing through a thick hawthorn hedge; and this may be accounted for on the same principle that cool air is obtained in the houses of India by sprinkling branches of trees with water in their verandas. Holly, laurel, and most evergreens exhale but little moisture from their leaves, except for about a month in June; consequently, in April and May, when we most require warmth, and in September and October, the leaves of these, when fully exposed to the sun, become heated to the touch to 85° or 90°. Added to this, hoar frost, or a deposition of moisture of any kind, never attaches so readily, or remains for so long a time, upon the foliage of evergreens as upon the sprays of deciduous shrubs; consequently, the refrigeratory power is greatly diminished. When the garden is of considerable extent, three or four acres and upwards, it admits of cross-walls or fences for an increase of training surface and additional shelter.

Hedges should always be clipped into a conical form, as the diminution of the branches towards the top increases their development at the bottom.

Furze makes one of the best and handsomest of hedges if kept regularly clipped. Upon the formation of such a hedge, we have the following remarks by Mr. McI., of Hillsborough:—The most ancient, and perhaps the most simple of all fences, are walls made of turf. These walls, however, are much injured by the atmosphere, and the rubbing and butting of the cattle. To guard against this they should be planted or sown with the *U'lex europæ'us*, or Furze. The roots of this plant will soon penetrate the turf, and tend to bind the wall. The plants not only afford shelter as well as food for the cattle, but add to the height of the wall, and give it a formidable

appearance. When walls are made for this, the foundation should be three feet wide, and tapering to fifteen inches at top. As the plants advance in growth, they should be regularly trimmed with the shears: by proper attention to this they will be prevented from growing too tall and thin at the bottom. If this is annually repeated, the plants will be longer preserved in a healthy and vigorous state: clipping has also a good effect in checking the furze from spreading over the field. A good and substantial fence may thus be quickly formed on a soil that will not produce a biding fence of any other kind.

Sweet-briar (*Ro'sa rubigino'sa*) makes a good hedge. Its heps may be sown in the autumn, as soon as ripe, or, which is better, in the month of March, having kept them, in the meantime, mixed with sand. But it is far more convenient to buy young plants, and to plant them a foot apart early in the month of November. Let them grow as they like for the first year, and cut them down to the ground the second; they will then spring up and require no more care than occasionally trimming with the pruning-knife or shears to keep the hedge in shape. When it gets naked to the bottom, it must be again cut down.—*Gard. Chron.*

HEDGE-HOG THISTLE. *Echinoca'ctus.*

HEDGE HYSSOP. *Grati'ola.*

HEDGE MUSTARD. *Ery'simum.*

HEDGE NETTLE. *Sta'chys.*

HEDRÆA'NTHUS NI'VEUS. See WAHLENBERGIA NIVEA.

HEDWI'GIA, of Swartz. (Named after *John Hedgwig*, a botanist. Nat. ord. *Burserads* [Burseraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Closely allied to the Orange tribe. *Beaume a sucrier*, a substitute for Copaiva, is obtained from this Hedwigia. Stove evergreen tree. Cuttings of ripe shoots in sandy soil, and in a good heat; sandy loam and a little peat. Summer temp., 60° to 85°; winter, 50° to 55°.

H. balsami'fera (balsam-yielding). 40. White. August. W. Ind. 1820.

HEDY'CHIUM. (From *hedus*, sweet, and *chion*, snow; in reference to the sweet-scented, snow-white flowers of *H. ma'ximum* and *corona'rium*, the best two garden plants of the genus. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Stove herbaceous plants. Division of the plants before fresh potting them; loam and peat, with a portion of sand and dried cow-dung. They must have plenty of water and light when growing. It should be tried to give them their rest period by keeping them cooler and drier in winter, and, if well grown before, the advancing heat in spring and summer will bring up the beautiful flowers. Summer temp., 60° to 85°, with moist atmosphere when growing, cooler and drier when flowering; winter, 50° to 55°.

H. acumina'tum (long-pointed). See H. SPICATUM ACUMINATUM.
,, *angustifo'lium* (narrow-leaved). See H. COCCINEUM ANGUSTIFOLIUM.
,, *auranti'acum* (orange-coloured). See H. COCCINEUM.
,, *bousigonia'num* (Bousigonian). 3. Pale yellow. Stamens red. Cochin-China. 1905.
,, *ca'rneum* (flesh-coloured). 4. Pink. August. E. Ind. 1823.
,, *chrysoleu'cum* (golden-white). See H. CORONARIUM CHRYSOLEUCUM.
,, *cocci'neum* (scarlet). 6. Scarlet. July. E. Ind. 1815.
,, ,, *angustifo'lium* (narrow-leaved). 5. Scarlet. E. Ind. 1815.
,, ,, *longifo'lium* (long-leaved). 6. Red. June. E. Ind. 1819.
,, *corona'rium* (garland). 5. White. E. Ind. 1791.
,, ,, *chrysoleu'cum* (golden-white). 5. Yellow, white. August. E. Ind.
,, ,, *fla'vum* (yellow). Pale yellow. July. Himalaya. 1822.
,, *ela'tum* (tall). 5. Pale red. E. Ind. 1818.
,, *elli'pticum* (oval). 5. White. August. E. Ind. 1804.
,, *Elwe'sii* (Elwes's). 3–5. Rich golden-yellow. Himalaya. 1894.
H. flave'scens (yellowish). See H. SPICATUM.
,, *fla'vum* (yellow). See H. CORONARIUM FLAVUM.
,, *gardneria'num* (Gardner's). 7. Yellow. July. Himalaya. 1819.
,, *glau'cum* (milky-green). See H. GRACILE GLAUCUM.
,, *gra'cile* (slender). 3. White. June. Bengal. 1823
,, ,, *glau'cum* (milky-green). 4½. White. July. India. 1822.
,, *heteroma'llum* (variable-haired). See H. THYRSIFORME HETEROMALLUM.
,, *Horsfie'ldii* (Horsfield's). Java.
,, *longifo'lium* (long-leaved). See H. COCCINEUM LONGIFOLIUM.
,, *ma'ximum* (largest). See H. CORONARIUM.
,, *peregri'num* (foreign). 3–4. White, yellowish-green. Madagascar. 1883.
,, *specio'sum* (showy). 8. Pale yellow. August. Silhet. 1823.
,, *spica'tum* (spiked). 3. Yellow. June. India. 1810.
,, ,, *acumina'tum* (long-pointed). 4. White. July. Himalaya. 1820.
,, *stenope'talum* (narrow-petaled). 7. White. April. India. 1830.
,, *thyrsifo'rme* (thyrse-formed). 4. White. July. Nepaul. 1818.
,, ,, *heteroma'llum* (variable-haired). 3. Yellow. July. India. 1822.
,, *urophy'llum* (tailed-leaved). See H. CORONARIUM FLAVUM.
,, *villo'sum* (shaggy). 3. Cream. July. E. Ind. 1823.
,, *viridiflo'rum* (green-flowered). 3. Greenish-white. Himalaya. 1881.

HEDYO'TIS CAMPANULIFLO'RA. See COCCOCY'PSELUM CAMPANULIFLO'RUM.

HEDYSA'RUM. (A plant's name adopted from Theophrastus. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Annuals and biennials in the open border, in spring; perennials by division of the plant in spring; common soil. The dwarfer ones are pretty for mantling knolls and rock-works.

HARDY BIENNIALS.

H. carno'sum (fleshy). See H. PALLIDUM.
,, *corona'rium* (garland). 4. Scarlet. June. Italy 1596. "French Honeysuckle."
,, *pa'llidum* (pale). 3. Pale red. June. N. Africa. 1820.

HARDY HERBACEOUS PERENNIALS.

H. Alha'gi (Alhagi). See ALHAGI MAURORUM.
,, *alpi'num* (alpine). See H. NEGLECTUM.
,, ,, *pedicela're* (*long*-flower-stalked). See H. NEGLECTUM PEDICELARE.
,, *alta'icum* (Altaic). See H. POLYMORPHUM.
,, *arge'nteum* (silvery). Purple. June. Siberia. 1827.
,, *argophy'llum* (white-leaved). Purple. June. Altaia. 1827.
,, *borea'le* (northern). N. Amer.
,, *brachyse'mum* (short-standarded). 1½. Purple. July. Siberia. 1817.
,, *canade'nse* (Canadian). See DESMODIUM CANADENSE.
,, *ca'ndidum* (white). ½. Purple. May. Tauria. 1824.
,, ,, *hu'mile* (humble). ½. Purple. June. Tauria. 1817.
,, *capita'tum* (headed). Mediterranean region.
,, *cauca'sicum* (Caucasian). See H. OBSCURUM.
,, *consangui'neum* (closely-allied). See H. OBSCURUM.
,, *corda'tum* (heart-shaped). See HALLIA CORDATA.
,, *creta'ceum* (chalky). 1. Purple. July. Siberia. 1819.
,, *denticula'tum* (toothleted). Turkestan.
,, *elonga'tum* (lengthened). Purple. June. Russia. 1823.
,, *escule'ntum* (esculent). Siberia.
,, *Falcone'ri* (Falconer's). Western Tibet.
,, *flave'scens* (pale-yellow). Turkestan.
,, *flexuo'sum* (flexuous). Spain.
,, *fructico'sum* (shrubby). 4. Purple. June. Siberia. 1782.
,, *grandiflo'rum* (large-flowered). 1½. Purple. June. Tauria. 1821.
,, *gy'rans* (gyrating). See DESMODIUM GYRANS.
,, *ibe'ricum* (Iberian). ½. Purple. July. Iberia. 1818.

H lasioca'rpum (hairy-podded). See H. NEGLECTUM.
,, *latifo'lium* (broad-leaved). See DESMODIUM LATIFOLIUM.
,, *Macke'nzii* (Mackenzie's). Rose-purple. N. Amer. 1878.
,, *microca'lyx* (small-calyxed). 2. Bright purple. N.W. Himalayas. 1888.
,, *multi'jugum* (many-pair-leaved). 2–5. Pink to rosy-purple. S. Mongolia.
,, ,, *apicula'tum* (hard-pointed). Leaves with fewer leaflets.
,, *murica'tum* (warted). See ADESMIA MURICATA.
,, *negle'ctum* (neglected). 2. Purple. June. Siberia. 1798.
,, ,, *pedicela're* (long-stalked). Purple. June. Siberia.
,, *obscu'rum* (obscure). ½. Purple. July. Alps. 1640.
,, *pi'ctum* (painted). See URARIA PICTA.
,, *polymo'rphum* (many-formed). Rose. June. Altaia. 1818.
,, *ro'seum* (roseate). See H. TAURICUM.
,, *rutidoca'rpum* (wrinkled-podded). See H. POLYMORPHUM.
,, *sibi'ricum* (Siberian). 2. Purple. June. Siberia. 1798.
,, *spinosi'ssimum* (very-spiny). Mediterranean region.
,, *sple'ndens* (shining). ½. Cream. July. Siberia. 1819.
,, *tau'ricum* (Taurian). ½. Pale purple. July. Tauria. 1804.
,, *umbella'tum* (umbelled). This is *Desmodium umbellatum.*
,, *uncina'tum* (hooked). This is *Desmodium uncinatum.*
,, *va'rium* (variable). 1. White. July. S. Europe. 1820.
,, *venu'stum* (lovely). See H. POLYMORPHUM.
,, *vespertilio'nis* (bat's). See LOUREA VESPERTILIONIS.

HEDY'SCEPE. (Derived from *hedus*, sweet, and *skepe*, a wrapper. Nat. ord. Palmaceæ.)
Stove Palm. Seeds. Fibrous loam, peat, leaf-mould, and sand.
H. canterburya'na (Canterburyan). 20–32. Pale yellow. Lord Howe's Island.

HEEL. When a cutting is taken off with a small portion of the older wood from which it sprang, that older portion is called the heel.

HEELING-IN. Trees and shrubs that cannot be planted immediately, cuttings that cannot be inserted, and grafts to be kept till grafting time, are heeled-in, or laid temporarily in a trench, and the roots or base covered with soil. Kitchen-garden crops are sometimes treated in a similar way in a cool or shady situation to prolong the supply.

HEE'RIA. (In compliment to *Oswald Heer*, a Swiss botanist. Nat. ord. Melastomaceæ.)
Stove evergreen shrubs. Cuttings of moderately firm shoots in peat and sand in a close, warm case. Loam and peat, both fibrous with sand to make it porous.
H. ro'sea (rosy). 2. Pink. June. Mexico.
,, *subtriplinе'rvia* (three-nerved). 2. White. June. Mexico. 1824.

HEI'MIA. (Named after *Dr. Heim*, a German. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Lythrum.) See NESÆA.

HEI'NSIA. (Named after *M. Heinsius*. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monandria*. Allied to Gardenia.)
Stove evergreen shrub. Cuttings of young shoots in sand, under a bell-glass, and in a brisk bottom-heat; fibrous peat and sandy loam, with a little dried leaf-mould. Summer temp., 60° to 80°; winter, 48° to 53°.
H. jasminiflo'ra (jasmine-flowered). 4. White. March. Sierra Leone. 1824.

HEI'NTZIA. (Complimentary to *M. Heintz*. Nat. ord. Gesneraceæ.)
H. tigri'na (tiger-spotted). See ALLOPLECTUS TIGRINUS.

HEISTE'RIA. Bois Perdrix. (Named after *L. Heister*, a Swedish botanist. Nat. ord. *Olacads* [Olacaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Olax.)
This is the source of the Partridge-pea of Martinique, but not of the Partridge-wood, as has been erroneously asserted. Stove evergreen tree. Cuttings of firm young shoots in a brisk heat; sandy loam and a dash of peat. Summer temp., 60° to 85°; winter, 50° to 55°.
H. cocci'nea (scarlet). 20. Scarlet. Martinique. 1822.

HE'LCIA. (From *helcium*, a horse-collar; in reference to the curious formation of the flowers. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*. United to Trichopilia.)
H. sanguinole'nta (bloody). See TRICHOPILIA SANGUINEOLENTA.

HELE'NIUM. (Named after the beautiful *Helena*, cause of the Trojan war. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy herbaceous perennials, with yellow flowers. By division of the plant in spring; common garden-soil. There are some annuals and biennials, but not deserving cultivation.
H. atropurpu'reum (dark purple). See H. NUDIFLORUM.
,, *autumna'le* (autumnal). 3. September. N. Amer. 1729.
,, ,, *atropurpu'reum* (dark purple). Almost crimson. 1902.
,, ,, *cu'preum* (copper). 3. Coppery-red.
,, ,, *pu'milum* (dwarf). 1. Flowers larger, yellow. 1818.
,, ,, *ru'brum* (red). Crimson and orange. 1912.
,, ,, *stria'tum* (striped). Striped coppery-red.
,, *Bigelo'vii* (Bigelow's). Yellow. California. 1897.
,, *Bolande'ri* (Bolander's). 2. Yellow, with dark brown disc. California. 1891.
,, *califo'rnicum* (Californian). See H. PUBERULUM.
,, *canalicula'tum* (channelled). See H. AUTUMNALE.
,, *grandice'phalum stria'tum* (large-headed-striped). See H. AUTUMNALE STRIATUM.
,, *Hoope'sii* (Hoopes's). 2. Orange. July, August. N.W. Amer.
,, *mexica'num* (Mexican). 3. August. Mexico. 1825.
,, *nudiflo'rum* (naked-flowered). 3. Scarlet, with blackish-purple disc. Texas. 1845.
,, *nudiflo'rum* (naked-flowered) of gardens. See H. *autumnale striatum.*
,, *pube'rulum* (finely-downy). Yellow. California.
,, *pube'scens* (downy). See H. AUTUMNALE.
,, *pu'milum* (dwarf). See H. AUTUMNALE PUMILUM.
,, *quadridenta'tum* (four-toothed). Yellow. May. N. Amer. 1790.
,, *seti'gerum* (bristle-bearing). Yellow. Texas.
,, *tenuiflo'rum* (slender-flowered). 1. Yellow. 1883.
,, *tenuifo'lium* (slender-leaved). 1. Small, rayless, greenish-yellow. N. Amer.
,, *undula'tum* (waved-*leaved*). 3. September. California. 1830.

HELIA'MPHORA. (Derived from *helios*, the sun, and *amphora*, a pitcher. Nat. ord. Sarraceniaceæ.)
Greenhouse herb, with the habit of Sarracenia. Seeds; divisions in spring. Fibrous peat, sphagnum, and broken potsherds.
H. nu'tans (nodding). 1. White; stamens yellow. British Guiana. 1883.

HELIA'NTHEMUM. Sun Rose. (From *helios*, the sun, and *anthemon*, a flower. Nat. ord. *Rock-roses* [Cistaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
If gardeners would turn their attention to these Rock-roses, and cross them judiciously, they might expect in time to produce a race which would rival the Verbenas. Annuals, by seeds in the open border, in April. A few of the best shrubby ones are rather tender, and young plants might be saved in a cold pit. Shrubby evergreens, by inserting little pieces of ripened and half-ripened shoots with the leaves attached, in June, in sandy soil, in a shady place, under a hand-light. Few things can surpass the beauty of these plants when trailing over stones, and banks, and rock-works, in spring and summer. In such positions, the tenderest merely require, at times, an evergreen branch placed over them in winter; sandy loam, with a little peat, suits them well.

ANNUALS.

H. ægypti'acum (Egyptian). ½. White. June. Egypt. 1764.
,, *eriocau'lon* (woolly-stemmed). See H. GUTTATUM.

H. guttā'tum (spotted-*flowered*). ½. Yellow. June. England.
,, *ledifo'lium* (Ledum-leaved). ½. Yellow. June. S. Europe. 1817.
,, ,, *ma'jus* (larger). 1. Yellow. Europe. 1817.
,, *nilo'ticum* (Nile). See H. LEDIFO'LIUM.
,, *plantagi'neum* (plantain-like). See H. GUTTATUM.
,, *puncta'tum* (dotted). See H. SALICIFOLIUM.
,, *salicifo'lium* (willow-leaved). ½. Yellow. July. S. Europe. 1759.
,, ,, *sangui'neum* (bloody-*stemmed*). ½. Yellow. July. Spain. 1826.
,, *villo'sum* (shaggy). ½. Yellow. July. Spain. 1823.

HERBACEOUS PERENNIALS.

H. canade'nse (Canadian). 1. Yellow. June. N. Amer. 1799.
,, *carolinia'num* (Carolina). 1. Yellow. July. Carolina. 1823.
,, *globulariæfo'lium* (globular-leaved). ½. Yellow. June. Portugal. 1826.
,, *rosmarinifo'lium* (rosemary-leaved). See H. CANADENSE.
,, *Tubera'ria* (Tuberaria). ½. Yellow. June. S. Europe. 1752.

EVERGREEN TRAILERS.

H. acumina'tum (long-pointed). See H. VARIABILE.
,, *alpe'stre* (rock). See H. ITALICUM.
,, *angustifo'lium* (narrow-leaved). See H. VARIABILE ANGUSTIFOLIUM.
,, *ca'num* (hoary). ½. Yellow. June. S. Europe. 1772.
,, *cine'reum* (grey). ½. Yellow. May. Spain. 1820.
,, *confu'sum* (confused). See H. POLIFOLIUM.
,, *cro'ceum* (copper-coloured). See H. VULGARE CROCEUM.
,, *dicho'tomum* (twin-branched). 1. Yellow. July. Spain. 1826.
,, *glau'cum* (sea-green). ½. Yellow. June. Spain. 1826.
,, *grandiflo'rum* (large-flowered). See H. VULGARE GRANDIFLORUM.
,, *hi'rtum* (hairy). ½. White. Spain. 1816.
,, *hi'spidum* (bristly). See H. HIRTUM.
,, *hyssopifo'lium* (hyssop-leaved). See H. VULGARE and varieties.
,, *ita'licum* (Italian). 1. Yellow. August. Italy. 1799.
,, ,, *œla'ndicum* (Œland). ½. Yellow. July. Europe. 1816.
,, *Laga'scæ* (Lagasca's). See H. HIRTUM.
,, *leptophy'llum* (fine-leaved). 1. Yellow. Spain. 1818.
,, *lu'cidum* (shining-*leaved*). See H. VARIABILE.
,, *macra'nthum* (large-flowered). See H. VARIABILE MACRANTHUM.
,, ,, *mu'ltiplex* (double-*flowered*). See H. VARIABILE MACRANTHUM MULTIPLEX.
,, *marifo'lium* (marum-leaved). See H. VINEALE.
,, *Mille'ri* (Miller's). See H. VARIABILE.
,, *muta'bile* (changeable). See H. VULGARE MUTABILE.
,, *nudicau'le* (naked-stemmed). See H. GLAUCUM.
,, *nummula'rium* (moneywort-*leaved*). See H. VULGARE.
,, *obova'tum* (reversed-egg-*leaved*). See H. ROSSMÆSSLERI.
,, *œla'ndicum* (Œland). See H. ITALICUM ŒLANDICUM.
,, *œla'ndicum* (Œland) of Wahlenberg. ½. Yellow. June. Europe. 1817.
,, *origanifo'lium* (marjoram-leaved). ½. Yellow. Spain. 1795.
,, *ova'tum* (egg-*leaved*). See H. VULGARE.
,, *penicilla'tum* (pencilled). See H. ŒLANDICUM, of Wahlenberg.
,, *pilo'sum* (hairy). See H. VARIABILE.
,, *polifo'lium* (Polium-leaved). ½. White. June. England.
,, *procu'mbens* (lying-down). ½. Yellow. S. Europe.
,, *pulche'llum* (neat). See H. CINEREUM.
,, *pulveru'lentum* (powdered). See H. POLIFOLIUM.
,, *pulveru'lentum* (powdery) of Willkomm. ½. White. June. S.W. Europe.
,, *rhoda'nthum* (red-flowered). See H. VULGARE RHODANTHUM.
,, *ro'seum* (roseate). See H. VULGARE ROSEUM.
,, ,, *mu'ltiplex* (double-*flowered*). See H. VULGARE ROSEUM MULTIPLEX.
,, *Rossmæssle'ri* (Rossmæssler's). 1. Yellow. Spain. 1826.
H. strami'neum (straw-coloured). See H. VULGARE STRAMINEUM.
,, ,, *mu'ltiplex* (double-*flowered*). See H. VULGARE STRAMINEUM MULTIPLEX.
,, *sulphu'reum* (sulphur-coloured). See H. VULGARE SULPHUREUM.
,, *surreja'num* (Surrey). See H. VULGARE SURREJANUM.
,, *tau'ricum* (Taurian). 1. Yellow. June. Tauria.
,, *tomento'sum* (*white*-downed). See H. VULGARE TOMENTOSUM.
,, *varia'bile* (variable). ½. Yellow. June. Mediterranean region. 1820.
,, ,, *angustifo'lium* (narrow-leaved). ½. Yellow. June. 1800.
,, ,, *linea're* (linear). 1. White. June. S. Europe. 1818.
,, ,, *macra'nthum* (large-flowered). 1. White, yellow. July.
,, ,, *macra'nthum mu'ltiplex* (double). 1. White, yellow. June. Europe.
,, ,, *versi'color* (party-coloured). 1. Red, white. July. S. Europe. 1800.
,, *venu'stum* (beautiful). See H. VULGARE VENUSTUM.
,, ,, *flo're-ple'no* (double-flowered). See H. VULGARE VENUSTUM FLORE-PLENO.
,, *vinea'le* (vineyard). ½. Yellow. May. Europe.
,, *viola'ceum* (violet-*calyxed*). 1. White. Spain. 1826.
,, *vulga're* (common). ½. Yellow. June. Britain. "Rock Rose."
,, ,, *barba'tum* (bearded). 1. Yellow. June. S. Europe. 1820.
,, ,, *croca'tum* (saffron-coloured). ½. Copper. June. Europe.
,, ,, *cro'ceum* (Crocus-coloured). ½. Coppery-yellow. July. Spain. 1800.
,, ,, *cro'ceum flo're-ple'no* (double). ½. Coppery-yellow.
,, ,, *cu'preum* (copper-coloured). ½. Copper. May. Naples.
,, ,, *diversifo'lium* (divers-leaved). ½. Flame. June. Europe.
,, ,, *diversifo'lium mu'ltiplex* (divers-leaved double).
,, ,, *grandiflo'rum* (large-flowered). 1. Yellow. June. Italy. 1800.
,, ,, *hyssopifo'lium* (hyssop-leaved). ½. Yellow. May. Italy.
,, ,, *hyssopifo'lium mu'ltiplex* (hyssop-leaved double). ½. Copper. May. Italy.
,, ,, *muta'bile* (changeable). ½. Red, yellow. July. Spain. 1829.
,, ,, *ple'num* (double). ½. Yellow. June.
,, ,, *rhoda'nthum* (red-flowered). ½. Red. June. Spain. 1800.
,, ,, *ro'seum* (rosy). ½. Pink. June. S. Europe. 1815.
,, ,, *ro'seum mu'ltiplex* (double-rose). ½. Pink. June. 1815.
,, ,, *serpyllifo'lium* (thyme-leaved). ½. Yellow. Leaves roundish or oval, white beneath.
,, ,, *strami'neum* (straw-coloured). ½. Straw. Europe.
,, ,, *strami'neum mu'ltiplex* (double-straw-coloured). ½. Striped. Europe.
,, ,, *sulphu'reum* (sulphur). ½. Pale yellow. Spain. 1795.
,, ,, *surreja'num* (Surrey). ½. Yellow petals lanceolate, irregularly cut. June. England.
,, ,, *tomento'sum* (felted). ½. Yellow. July. Scotland.
,, ,, *venu'stum* (lovely). ½. Red. June. S. Europe. 1800.
,, ,, *venu'stum flo're-ple'no* (double). ½. Red. June. S. Europe. 1800.

EVERGREEN SHRUBS.

H. algarve'nse (Algarve). See H. OCYMOIDES.
,, *alyssoi'des* (Alyssum-like). 3. Yellow. June. South-western Europe. 1775.
,, ,, *cheiranthoi'des* (wallflower-like). 3. Yellow. June. Portugal. 1818.
,, *ambi'guum* (doubtful). Algeria.
,, *apenni'num* (Apennine). See H. POLIFOLIUM.
,, *atriplicifo'lium* (Atriplex-leaved). 3–4. Yellow. June. Spain. 1659.
,, *barba'tum* (bearded-*stipuled*). See H. VULGARE.
,, *Barrelie'ri* (Barrelier's). See H. THYMIFOLIUM.
,, *canarie'nse* (Canary). 1½. Yellow. June. Canaries. 1790.

H. ca'ndidum (white-*leaved*). See H. OCYMOIDES.
,, *cane'scens* (hoary). See H. VARIABILE.
,, *cheiranthoi'des* (stock-like). See H. ALYSSOIDES.
,, *cilia'tum* (hair-fringed). 1. Red. June. S. Europe.
,, *cine'reum* (grey). 1. Yellow. July. Spain.
,, *confe'rtum* (close-*flowered*). See H. CANARIENSE.
,, *crassifo'lium* (thick-leaved). 1. Yellow. June. Barbary. 1818.
,, *diversifo'lium* (various-leaved). See H. VULGARE DIVERSIFOLIUM.
,, *elli'pticum* (oval-*leaved*). See H. LIPPII.
,, *ericoi'des* (heath-like). See H. FUMANA.
,, *farino'sum* (mealy). White. June. Spain.
,, *formo'sum* (beautiful). 4. Yellow. Portugal. 1780.
,, *Fuma'na* (Fumana). 1½. Yellow. June. Mediterranean region.
,, *glau'cum* (milky-green-*leaved*). 2. Yellow. July. Spain. 1815
,, *glomera'tum* (round-*headed*). 1. Yellow. June. Mexico. 1823.
,, *glutino'sum* (clammy). 2. Yellow. July. Mediterranean region.
,, ,, *læ've* (smooth). 1. Yellow. June. Spain. 1826.
,, *halimifo'lium* (sea-purslane-leaved). 4. Yellow. July. Spain. 1656.
,, *hirsu'tum* (hairy). See H. GLUTINOSUM.
,, *hi'rtum* (hairy-*calyxed*). 1. Yellow. June. Spain. 1759.
,, *involucra'tum* (involucred). See H. ALYSSOIDES.
,, *juniperi'num* (juniper-like). See H. THYMIFOLIUM.
,, *kahi'ricum* (Kahirian). 1. Yellow. June. Egypt. 1820.
,, *læ've* (smooth). See H. GLUTINOSUM LÆVE.
,, *læ'vipes* (smooth-stalked). 1. Yellow. Summer. Western Mediterranean region.
,, *lasia'nthum* (hairy-flowered). See H. ALYSSOIDES.
,, *lavandulæfo'lium* (lavender-leaved). 1. Yellow. June. S. France. 1817.
,, *leptophy'llum* (slender-leaved). Spain.
,, *Libano'tis* (rosemary-*leaved*). 1. Yellow. Spain, Portugal. 1752.
,, *ligno'sum* (woody). See H. TUBERARIA.
,, *linea're* (narrow-*leaved*). See H. VARIABILE LINEARE.
,, *Li'ppii* (Lippius's). 1. Yellow. Egypt. 1820.
,, *lunula'tum* (crescent-*leaved*). ½. Yellow. July. Alps of Piedmont. 1826.
,, *majoranæfo'lium* (marjoram-leaved). See H. HIRTUM.
,, *microphy'llum* (small-leaved). See H. OCYMOIDES.
,, *mo'lle* (soft). 1½. Yellow. July. Spain. 1817.
,, *muta'bile ro'seum* (rosy-changeable). See H. VULGARE MUTABILE.
,, *ocymoi'des* (basil-like). 3. Yellow. June. Spain. 1800.
,, *origanifo'lium* (marjoram-leaved) Europe.
,, *panicula'tum* (panicled). ½. Yellow. July. Spain. 1826.
,, *racemo'sum* (racemed). See H. VIRGATUM.
,, *rube'llum* (pale-red). Light red. Western Mediterranean region.
,, *rugo'sum* (wrinkled). See H. ALYSSOIDES.
,, *scabro'sum* (rough). See H. ALYSSOIDES.
,, *scopa'rium* (broom-like). ½. Yellow. May, June. California. 1848.
,, *squama'tum* (scaly). 1. Yellow. June. Spain. 1815.
,, *stri'ctum* (upright). See H. VIRGATUM.
,, *thymifo'lium* (thyme-leaved). 1½. Yellow. July. Spain. 1658.
,, *umbella'tum* (umbel-*flowered*). 2. White. July. S. Europe. 1731.
,, ,, *ere'ctum* (straight-*stemmed*). White. June. S. Europe.
,, ,, *subdecu'mbens* (leaning). White. July. S. Europe.
,, *veluti'num* (velvety). Yellow. Algeria.
,, *versi'color* (party-coloured). See H. VARIABILE VERSICOLOR.
,, *vinea'le* (vineyard). ½. Yellow. Summer. Europe. 1772.
,, *virga'tum* (twiggy). ½. White. Barbary. 1818.

HELIA'NTHUS. Sunflower. (From *helios*, the sun, and *anthos*, a flower; in reference to the opinion that the flowers turn round after the sun. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Hardy herbaceous plants, all yellow-flowered; well fitted for the back of flower-borders and the front of shrubberies, where such modes of planting prevail. The annuals, such as the common Sunflower, should be sown in a slight hotbed, and afterwards transplanted; the perennials must be divided in the spring; common, good soil; a few of the tenderest want a little protection in very cold and wet winters.

ANNUALS.

H. a'nnuus (annual. *Common*). 6. July. N. Amer. 1596.
,, ,, *lenticula'ris* (lenticular). 6–10. Yellow. August. N. Amer. 1827.
,, *argophy'llus* (silver-leaved). 6–10. Yellow. Autumn. Texas. Allied to *H. annuus*.
,, *cucumerifo'lius* (cucumber-leaved). See H. DEBILIS.
,, *de'bilis* (weak). 1½–2½. Yellow. N. Amer. 1882.
,, ,, *plumo'sus* (plumy). Pale to deep yellow, with strap-shaped disc florets. 1908.
,, *e'xilis* (feeble). 1½. Yellow. California.
,, *i'ndicus* (*dwarf*-Indian). See H. ANNUUS.
,, *lenticula'ris* (lenticular). See H. ANNUUS LENTICULARIS.
,, *ova'tus* (egg-*leaved*). See H. ANNUUS.
,, *petiola'ris* (*long*-leaf-stalked). 3. September. Arkansas. 1826.
,, *specio'sus* (showy). See THITHONIA SPECIOSA.
,, *tubæfo'rmis* (tube-formed). See THITHONIA TUBÆFORMIS.

PERENNIALS.

H. alti'ssimus (tallest). See H. GIGANTEUS.
,, *angustifo'lius* (narrow-leaved). 3. September. N. Amer. 1799.
,, *atroru'bens* (dark-red-*eyed*) of Lamarck. See H. LÆTIFLORUS.
,, *atroru'bens* (dark-red) of Michaux. See H. RIGIDUS.
,, *cilia'ris* (eyelashed). 1½–2. Golden-yellow, with brown disc. Mexico. 1907.
,, *cornifo'lius* (Cornus-leaved). 3. August. Mexico. 1825.
,, *decape'talus* (ten-petaled). 6. September. N. Amer. 1759.
,, ,, *multiflo'rus* (many-flowered). See H. MULTIFLORUS.
,, *diffu'sus* (spreading). See H. RIGIDUS.
,, *divarica'tus* (straggling). 6. N. Amer. 1759.
,, *doronicoi'des* (Doronicum-like). 3–6. Yellow. October. N. Amer. 1759.
,, *exce'lsus* (lofty). See VIGUIERA EXCELSA.
,, *gigante'us* (gigantic). 10. N. Amer. 1714.
,, *gro'sse-serra'tus* (coarsely-serrated). 6–8. Yellow. N. Amer.
,, *Hooke'ri* (Hooker's). See H. DORONICOIDES.
,, *hookeria'nus* (Hookerian). See WYETHIA ANGUSTIFOLIA.
,, *lætiflo'rus* (lively-flowered). 3. August. N. Amer. 1810.
,, *linea'ris* (narrow-*leaved*). See VIGUIERA LINEARIS.
,, *longifo'lius* (long-leaved). 6. Georgia. 1812.
,, *longifo'lius* (long-leaved) of Hooker. See WYETHIA ANGUSTIFOLIA.
,, *macrophy'llus* (large-leaved). See H. STRUMOSUS.
,, *Maximilia'ni* (Maximilian's). 8–12. Yellow. October. N.W. Amer.
,, *micra'nthus* (small-flowered). Yellow. Mexico.
,, *missu'ricus* (Missouri). See H. RIGIDUS.
,, *mo'llis* (soft). 4. August. N. Amer. 1805.
,, ,, *corda'tus* (heart-shaped). 3–5. Orange-yellow. Texas. 1889.
,, *multiflo'rus* (many-flowered). 6. N. Amer. 1597.
,, ,, *ple'nus* (double-flowered). 6. N. Amer. 1797.
,, *Nuita'lii* (Nuttall's). 2½. Yellow. Rocky Mountains. 1899.
,, *occidenta'lis* (western). 4–6. Yellow. N. Amer.
,, *orgya'lis* (six-foot). 6–9. Yellow. N.W. Amer. 1879.
,, *parviflo'rus* (small-flowered). 3. July. Mexico. 1826.
,, *pa'tens* (spreading). See H. PETIOLARIS.
,, *pauciflo'rus* (few-flowered). 2. August. Louisiana. 1824.
,, *prostra'tus* (prostrated). See H. TRACHELIIFOLIUS.
,, *pube'scens* (downy). See H. DORONICOIDES and H. TOMENTOSUS.
,, *pu'milus* (dwarf). 2. Yellow. N.W. Amer.

H. Ra'dula (rasp). 2–4. Yellow. August. N. Amer. 1825.
„ *ri'gidus* (rigid). 2–3. Golden yellow. August. N. Amer. "Prairie Sunflower."
„ *strumo'sus* (swollen). 8. N. Amer. 1710.
„ „ *sati'vus* (cultivated). Larger than the type. Tubers edible. N. Amer.
„ *thu'rifer* (incense-bearing). Yellow. Chili.
„ *tomento'sus* (felted). 3. Yellow. N. Amer.
„ *trachelifo'lius* (Trachelium-leaved). 6. September. N. Amer. 1800.
„ *triloba'tus* (three-lobed). 3. September. Mexico. 1824.
„ *tubero'sus* (tuberous. *Jerusalem Artichoke*). 8. September. N. Amer. 1617.
„ *villo'sus* (shaggy). 3. August. N. Amer. 1820.

See JERUSALEM ARTICHOKE and SUNFLOWER.

HELICHRY'SUM. (From *helios*, the sun, and *chrusos*, gold; referring to the beauty of the flowers. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. It includes Aphelexis.)

Many may be raised from seed; others, such as hardy and greenhouse herbaceous, by division and cuttings in spring, in sandy soil, under a hand-glass; evergreen shrubs from the Cape, if small side-shoots are taken off when getting firm at their base, will strike freely in sandy, peaty soil, under a bell-glass; peat and loam, three of the former to one of the latter. Temp. for greenhouse kinds, winter, 40° to 45°. *Stæ'chas* is the hardiest shrubby kind, flourishing in a sheltered place in dry, calcareous soil. *Angustifo'lium*, *feli'num*, and *fru'ticans* are the next in point of hardiness, and probably would do on a south aspect wall.

Hardy Annuals.

H. bractea'tum (bracted). 4. Pale yellow. September. Australia. 1799.
„ „ *bi'color* (two-coloured). 3. Yellow. July. Van Diemen's Land. 1835.
„ „ *au'reum* (golden). Golden-yellow.
„ „ *involu'cro-a'lbido* (whitish-involucred). 3. Yellow. July. 1833.
„ „ *macra'nthum* (large-flowered). Blush. Swan River. 1837.
„ „ *ni'veum* (snowy). 4. White. Yellow. July. Swan River. 1837.
„ *robu'stum* (robust). White, yellow. July. Swan River. 1839.
„ *sangui'neum* (blood-coloured). 1½. Crimson. July. Syria. 1768. Hardy biennial.
„ *specta'bile* (showy). 2. Orange. June. Swan River. 1840.

Hardy Herbaceous Perennials.

H. arena'rium (sand). 1. Yellow. August. Europe. 1739.
„ *candidi'ssimum* (whitest). 2. Pale yellow. June. Caspian. 1823.
„ *plica'tum* (plaited). ½. Yellow. Macedonia; Asia Minor. 1877. Prostrate.
„ *sero'tinum* (late). S.W. Europe.
„ *selo'sum* (bristly). 2. Yellow. S. Africa.

Hardy Evergreen Shrubs.

H. angustifo'lium (narrow-leaved). 2. Yellow. August. Naples. Half-hardy.
„ *bellidioi'des* (Bellis-like). ½–1. White. April, May. New Zealand. 1908. Prostrate.
„ *co'nicum* (conical). See GNAPHALIUM CONICUM.
„ *rupe'stre* (rock-inhabiting). Yellow. June. Naples. 1830.
„ *Stæ'chas* (Stœchas). 2. Yellow. August. Western Mediterranean region. 1629.

Greenhouse Herbaceous Perennials.

H. apicula'tum (small-pointed). 1½. Yellow. Australia. 1804.
„ *arge'nteum* (silvery). 2. White. June. Cape of Good Hope. 1800.
„ *cri'spum* (curled). 6. Pink. Cape of Good Hope. 1809.
„ *cyli'ndricum* (cylindrical). 1. Yellow. June. Cape of Good Hope. 1780.
H. cymo'sum (cymed). 1½. Yellow. June. S. Africa. 1731.
„ *dealba'tum* (whitened). 1½. White. Tasmania. 1812.
„ „ *imbrica'tum* (overlapping). 2. White. August. S. Africa. 1820.
„ *fœ'tidum* (fœtid). 2. Light yellow. S. Africa. 1692.
„ *fra'grans* (fragrant). 2. Pink. July. S. Africa. 1803.
„ *fri'gidum* (frigid). ½. Silvery white. Corsica. 1879. Half-hardy.
„ *grave'olens* (strong-smelling). Yellow. Tauria. 1877. Half-hardy.
„ *Gulie'lmi* (William's). White or rose-red. Eastern Trop. Africa. 1901.
„ „ *Meye'ri* (Meyer's). Flower-heads more loosely arranged. 1902.
„ *lana'tum* (woolly). Asia Minor.
„ *odorati'ssimum* (sweetest-scented). 2. Yellow. June. Cape of Good Hope. 1691.
„ *ru'tilans* (shining-*flowered*). 1. Red, yellow. June. Cape of Good Hope. 1731.
„ *scorpioi'des* (scorpion-like). 1. Brown, bright yellow. Australia. 1838.

Greenhouse Evergreen Shrubs.

H. acumina'tum (sharp-pointed). See GNAPHALIUM ACUMINATUM.
„ *affi'ne* (related). See GNAPHALIUM LUTEO-ALBUM.
„ *antenna'rium* (Antennaria-like). 3. White. Australia. Nearly hardy.
„ *arbo'reum* (tree-like). See ANAXETON ARBOREUM.
„ *Cephalo'tes* (*large*-headed). See METALASIA CEPHALOTES.
„ *cine'reum* (grey). 1. July. Tasmania. 1820.
„ *conge'stum* (close-*headed*). See H. FELINUM.
„ *Coope'ri* (Cooper's). 3–4. Golden-yellow. S. Africa. 1904.
„ *crassifo'lium* (thick-leaved). 1. Yellow. August. Cape of Good Hope. 1774.
„ *cri'spum* (crisped). 3. White. July. S. Africa. 1820.
„ *dasya'nthum* (thick-flowered). See H. MARITIMUM.
„ *de'vium* (devious). 3. White. Canary Islands. 1888.
„ *diosmæfo'lium* (Diosma-leaved). 1½. White. June. Australia. 1812.
„ *divarica'tum* (spreading). See H. CRISPUM.
„ *ericæfo'lium* (Erica-leaved). S. Africa.
„ *ericoi'des* (heath-like). 1½. Pink. June. Cape of Good Hope. 1774.
„ *fascicula'tum* (bundled). See H. SESAMOIDES.
„ *feli'num* (feline). 3. Purple. S. Africa. 1791.
„ *fra'grans* (fragrant). 2. Pink. July. S. Africa. 1803.
„ *fru'ticans* (shrubby). 3. Yellow. July. Cape of Good Hope. 1779.
„ *fu'lgidum* (shining). 2. Yellow. July. Cape of Good Hope. 1774.
„ *glomera'tum* (crowded). 6. White. June. July. New Zealand. 1851. Nearly hardy.
„ *grandifo'rum* (large-flowered). 3. White. July. Cape of Good Hope. 1731.
„ *helianthemifo'lium* (Helianthemum-leaved). See H. SERPYLLIFOLIUM.
„ *hu'mile* (dwarf). 1½–2. Purple. S. Africa. 1810.
„ „ *Bru'cei* (Bruce's).
„ *imbrica'tum* (overlapping). 2. White. August. S. Africa. 1820.
„ *lasiocau'lon* (woolly-stemmed). See GNAPHALIUM LASIOCAULON.
„ *macra'nthum* (large-flowered). See H. HUMILE.
„ *Ma'nnii* (Mann's). 2. White; disc yellow. May. June. Fernando Po. 1863.
„ *mari'timum* (maritime). 4. Yellow. July. S. Africa. 1812.
„ *mucrona'tum* (small-pointed). 2. White. June. S. Africa. 1824.
„ *ni'tens* (shining). Trop. Africa.
„ *orienta'le* (eastern). 1½. Yellow. June. Orient. 1629.
„ *panicula'tum* (panicled). 2. White. July. Cape of Good Hope. 1800.
„ *pa'tulum* (spreading). 3. White. May. Cape of Good Hope. 1771.
„ *proli'ferum* (proliferous). See PHÆNOCOMA PROLIFERA.
„ *reto'rtum* (twisted-back). 1. White. July. S. Africa. 1732.

H. ri'gidum (stiff-*leaved*). See H. STRIATUM.
„ *rosmarinifo'lium* (rosemary-leaved). 1. White. July. Tasmania and Victoria. 1822. "Snow in Summer." Hardy.
„ *sero'tinum* (late). 1. South-western Europe. Hardy.
„ *serpyllifo'lium* (thyme-leaved). 1. White. July. S. Africa. 1774.
„ *sesamoi'des* (Sesamum-like). 2. Purple, yellow. S. Africa. 1799.
„ „ *a'lbum* (white). 2. White. S. Africa. 1799.
„ „ *ru'brum* (red). 2. Red. S. Africa. 1799.
„ *specio'sum* (showy). See H. HUMILE.
„ *splé'ndens* (splendid). See H. SQUAMOSUM.
„ *squamo'sum* (scaly). S. Africa.
„ *stria'tum* (striped). 1½. White. July. S. Africa. 1801.
„ *vesti'tum* (clothed). 2. White. August. Cape of Good Hope. 1774.
„ *Volké'nsii* (Volkens's). Bright rose, whitish. German E. Africa. 1902.

HELICO'DEA ZEBRI'NA. See BILLBERGIA ZEBRINA.

HELICODI'CEROS. (From *helix*, a spiral, *di*, duplication, and *keras*, a horn; in reference to the twisted, erect, and horn-like lateral segments of the leaf. Nat. ord. Araceæ.)

Tuberous perennial, which succeeds best in a cool greenhouse, though it may be grown outside in light sandy soil with protection in winter. Offsets. Loam, leaf-mould, and plenty of sand.

H. crini'tus (bristly). 1½. Deep purple-brown. April. Corsica. 1777.

HELICO'NIA. (From *helicon*, a hill, consecrated to the Muses; in reference to the affinity of this genus to Musa. Nat. ord. *Musads* [Scitaminaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The fleshy roots of *H. psittaco'rum* are eatable. Stove herbaceous perennials. Division of the roots; strong, rich, loamy soil. Summer temp., 60° to 90°, with plenty of moisture; winter, 50° to 60°.

H. angustifo'lia (narrow-leaved). 3. White, crimson. Brazil. 1828.
„ *auranti'aca* (orange). 2. Orange, pale yellow. Mexico. 1862.
„ *au'reo-stria'ta* (golden-lined). Leaves with yellow midrib and veins. New Britain. 1881.
„ *bi'color* (two-coloured). See H. ANGUSTIFOLIA.
„ *Bi'hai* (Bihai). 12. Red. W. Ind. and S. Amer. 1786.
„ *brasilié'nsis* (Brazilian). 8. Scarlet. August. Brazil. 1820.
„ *brevispa'tha* (short-spathed). See H. AURANTIACA.
„ *caribæ'a* (Caribæan). See H. BIHAI.
„ *choconia'na* (Choconian). 3–4. Yellowish; spathes scarlet. Guatemala. 1888.
„ *dealba'ta* (whited). 3.
„ *densiflo'ra* (dense-flowered). 2. Orange-yellow; bracts red. Guiana. 1869.
„ *di'scolor* (two-coloured). See PHRYNIUM VARIANS.
„ *Edwa'rdus Re'x* (King Edward). Leaves crimson. 1902.
„ *glau'ca* (sea-green). 3. Green; bracts red. S. Amer. 1869.
„ *hirsu'ta* (hairy-*flowered*). 5. Orange. S. Amer. 1800.
„ *hu'milis* (humble). 3. Green, scarlet. S. Amer. 1867.
„ *illu'stris* (remarkable). Leaves rose-red, with rose-pink veins. South Sea Islands. 1893.
„ „ *rubricau'lis* (red-stemmed). Leaf-stalks vermilion-red. 1895.
„ *i'ndica* (Indian). See H. BIHAI.
„ *meta'llica* (metallic). Veins and lower surface of leaves bronzy-red. Brazil.
„ *Micholi'tzii* (Micholitz's) 2–3. Dusky brown; bracts edged pink. New Ireland. 1908.
„ *ni'tens* (shining). 2. Leaves satiny green. Mexico. 1883.
„ *psittaco'rum* (parrot-*beaked*). 4. Orange. August. W. Ind. 1797.
„ *pulverule'nta* (dusted-*leaved*). 2. Greenish-scarlet. July. S. Amer. 1830.
„ *Sandé'ri* (Sander's). Leaves marbled rose-red. New Guinea. 1899.
„ *specta'bilis* (showy). Leaves with red midrib, purple beneath. Trop. Amer. 1892.
H. swartzia'na (Swartz's). See H. HIRSUTA.
„ *triu'mphans* (triumphant). Leaves with dark brown primary veins. Sumatra. 1882.
„ *vino'sa* (claret-coloured). Colombia. 1871.
„ *vi'ridis* (green). Polynesia.

HELICOPHY'LLUM. (Derived from *helix*, a spiral, and *phullon*, a leaf. Nat. ord. Araceæ.)

Hardy perennials. Offsets. Light soil in a little shade.

H. Alberti (Albert's). Spathe green without, purple-brown within. Turkestan. 1887.
„ *Auché'ri* (Aucher's). See H. RAUWOLFFI.
„ *Rauwo'lffi* (Rauwolff's). Green and purple-brown. Syria.

HELICTE'RES. (Derived from *helikter*, anything wound round or coiled; the fruits being twisted. Nat. ord. Sterculiaceæ.)

Trees or shrubs for the stove. Cuttings with a heel, inserted in sand, in a close case, with bottom-heat. Fibrous loam and peat, with sand.

H. Iso'ra (Isora). 6. Scarlet. Trop. Asia.
„ *jamaice'nsis* (Jamaican). White. September. W Ind. 1757.
„ *ova'ta* (egg-shaped). Brownish-red. Brazil.
„ *verbascifo'lia* (Verbascum-leaved). See H. OVATA.

HE'LINUS. (Derived from *helinos*, a bough or tendril. Nat. ord. Rhamnaceæ.)

Woody, stove and greenhouse climbers. Seeds; cuttings getting firm at the base, in sand, kept close, with gentle heat. Fibrous loam and sand.

H. Myste'cinus (Mystacinus). 13. White, green November. Trop. Africa. 1775. Stove.
„ *ova'tus* (egg-shaped). Pale green. S. Africa. 1862.
„ *sca'ndens* (climbing). See H. MYSTACINUS.

HELIOCA'RPUS. (From *helios*, the sun, and *karpos*, a fruit; in reference to the fringes on the cells, or carpels, of the fruit. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Sparmannia.)

Stove evergreen shrub. Cuttings of half-ripened shoots in summer, in sand, under a bell-glass, and in heat; sandy loam and fibrous peat. Summer temp., 60° to 80°; winter, 50° to 55°.

H. america'nus (American). 16. Purple. Vera Cruz. 1733.

HELIO'MERIS. See GYMNOLOMIA.

HELIO'PHILA. "Cape Stock." (From *helios*, the sun, and *phileo*, to love; referring to the sunny aspect where they delight to grow. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

All from South Africa. Annuals, by seed in a warm, dry border, in April, or, better still, in a slight hotbed, under a glass, in March, and transplant in May. The under-shrubs require the greenhouse, or cold, dry pit, to winter them in, and are propagated by cuttings of young shoots in sandy soil, under a hand-glass.

GREENHOUSE EVERGREENS.

H. callo'sa (beautiful). 1. Yellow. July. 1802.
„ *cleomoi'des* (Cleome-like). See H. CALLOSA.
„ *linearifo'lia* (narrow-leaved). 1. Blue. June. 1819.
„ *platysi'liqua* (broad-podded). 1. Purple. July. 1774.
„ *sca'ndens* (climbing). White, or tinted with rose. 1887. Twiner.
„ *scopa'ria* (broom-like). 1. Red. June. 1802.
„ *succule'nta* (succulent). See H. PLATYSILIQUA.

HARDY ANNUALS.

H. amplexicau'lis (stem-clasping). ½. White, purple. July. 1774.
„ *araboi'des* (Arabis-like). See H. PILOSA.
„ *coronopifo'lia* (buckhorn-leaved). 1½. Violet. July. 1778.
„ *crithmifo'lia* (samphire-leaved). ½. Violet. July. 1816.
„ *diffu'sa* (spreading). ½. White. June. 1818.
„ *digita'ta* (finger-*leaved*). See H. PILOSA.
„ *disse'cta* (deeply-cut). 1. Blue. June. 1792.
„ „ *pinna'ta* (leafleted). 1. White. June. 1792.
„ *fœnicula'cea* (fennel-like). 1½. Purple. June. 1774.

H. integrifo'lia (entire-leaved). See H. PILOSA INTEGRIFOLIA.
,, *pectina'ta* (comb-*leaved*). 1. White. June. 1819.
,, *pe'ndula* (weeping). 1½. Yellow, white. July. 1792.
,, *pilo'sa* (shaggy). 1. Blue. July. 1768.
,, ,, *integrifo'lia* (entire-leaved). 1. Blue. June. 1823.
,, *rostra'ta* (beaked). See H. PILOSA.
,, *stri'cta* (erect). See H. PILOSA INTEGRIFOLIA.
,, *tri'fida* (three-cut). ¾. Purple. June. 1819.

HELIO'PSIS. (From *helios*, the sun, and *opsis*, like; the appearance of the flowers. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Zinnia.)

Hardy herbaceous perennials, with yellow flowers. By seed and division; common soil; treatment similar to that for Helianthus.

H. cane'scens (hoary). See H. SCABRA.
,, *læ'vis* (smooth). 6. August. N. Amer. 1714.
,, ,, *grandiflo'ra* (large-flowered). 6. Orange. N. Amer.
,, *sca'bra* (rough). 5. August. N. Amer. 1818.
,, ,, *grati'ssima* (most-pleasing). 3. Semi-double, bright pale yellow. 1909.
,, ,, *imbrica'ta* (overlapping). 2½. Golden-yellow, very double. 1909.
,, ,, *pitcheria'na* (Pitcherian). Rich orange. 1897.
,, ,, *zinniæflo'ra* (Zinnia-flowered). 2. Almost double, golden-yellow. 1909.

HELIONO'PSIS. (From *helios*, the sun, and *opsis*, resemblance. Nat. ord. Liliaceæ.)

Hardy herb of tufted habit. Seeds; divisions in spring. Light soil.

H. brevisca'pa (short-scaped). ½. White, bell-shaped. Japan. 1905.

HELIOTRO'PIUM. Turnsole. (From *helios*, the sun, and *trope*, twining; in reference to the curled or twining of the flower-branch. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Hardy annuals, sown in open border, in April; tender annuals and biennials, in hotbed, and transplanted; biennials to be kept on by cuttings; shrubs, by cuttings at any time, but best in spring and autumn: at the first period give a little bottom-heat, at the latter period place them under glass, and shade; rich, light soil.

STOVE ANNUALS AND BIENNIALS.

H. brevifo'lium (short-leaved). See H. STRIGOSUM.
,, *coromandelia'num* (Coromandel). See H. SUPINUM.
,, *i'ndicum* (Indian). 1. White or blue. June. Tropics of Old World. 1820.
,, *parviflo'rum* (small-flowered). 1. White. August. W. Ind. 1732. Biennial.
,, *strigo'sum* (coarsely-hairy). 1. White. Beluchistan. 1824. Biennial.
,, *supi'num* (lying-down). ½. White. S. Europe; Orient. 1812.

HARDY ANNUALS.

H. ægypti'acum (Egyptian). See H. PALLENS.
,, *cape'nse* (Cape). ¼. White. Cape of Good Hope. 1824.
,, *commuta'tum* (changed). See H. EUROPÆUM.
,, *convolvula'ceum* (Convolvulus-like). 2. White. N.W. Amer. 1867. Scented.
,, *europæ'um* (European). ¾. White. July. S. Europe. 1562.
,, *oblongifo'lium* (oblong-leaved). See H. EUROPÆUM.
,, *obova'tum* (reversed-egg-*leaved*). See H. OVALIFOLIUM.
,, *ovalifo'lium* (oval-leaved). ½. Brown. May. Tropics of Old World. 1825.
,, *pa'llens* (pale). White. June. Trop. Africa. 1842.
,, *subcane'scens* (slightly-hoary). See H. EUROPÆUM.
,, *villo'sum* (shaggy). Greece.

GREENHOUSE AND STOVE EVERGREEN SHRUBS.

H. anchusæfo'lium (Anchusa-leaved). 2. Pale lilac. May. Argentina. 1829.
,, *arbaine'nse* (Arbainian). ½. Lilac, brown. July. N. Africa. 1820.
H. corymbo'sum (corymbed). 4. Lilac. July. Peru. 1800.
,, *frutico'sum* (shrubby). 1. White. New Granada. 1752.
,, *hu'mile* (humble). 1. White. June. W. Ind. 1752. Stove.
,, *inca'num* (hoary). 2. White. June. Peru. 1844.
,, ,, *gla'brum* (smooth). Purple. Peru. 1884.
,, *linifo'lium* (flax-leaved). 1½. White. July. Cape of Good Hope. 1815.
,, *marocca'num* (Morocco). 1. White. June. Morocco. 1823.
,, *undula'tum* (waved-*leaved*). See H. ARBAINENSE.

GREENHOUSE DECIDUOUS SHRUB.

H. peruvia'num (Peruvian). 2. Lilac. July. Peru. 1757.

HELI'PTERUM. (Derived from *helios*, the sun, and *pteron*, a wing. Nat. ord. Compositæ.)

Half-hardy annuals and perennials, which may be cut and dried as "Immortelles." Annuals in the open ground in April, or raised in heat and planted out in May. Perennials by seeds and cuttings. Light, sandy soil.

H. atrosangui'neum (dark blood-red). Crimson. Australia. 1861. Half-hardy annual.
,, *cane'scens* (hoary). 2. Purple. S. Africa. 1794.
,, *citri'num* (citron). See H. COTULA.
,, *corymbiflo'rum* (corymb-flowered). 1. White. Australia.
,, *Co'tula* (Cotula). Yellow, white. Australia. 1866.
,, *exi'mium* (choice). Yellow, rose. July. S. Africa. 1793.
,, *ferrugi'neum* (rusty). Red-brown. S. Africa.
,, *fra'grans* (fragrant). See HELICHRYSUM FRAGRANS.
,, *gnaphalioi'des* (Gnaphalium-like). 1½. Red, yellow. S. Africa.
,, *humboldtia'num* (Humboldtian). 1–1½. Yellow. Australia. 1863.
,, *hu'mile* (humble). See HELICHRYSUM HUMILE.
,, *imbrica'tum* (overlapping). See HELICHRYSUM IMBRICATUM.
,, *Mangle'sii* (Mangles's). 1. Rose. July. Australia. 1832. Half-hardy annual.
,, ,, *a'lbum* (white). 1. Bracts white.
,, ,, *macula'tum* (blotched). 1. Rose, with crimson zone. Australia. 1861.
,, ,, *sangui'neum* (blood-red). Violet-red. 1897.
,, *phlomoi'des* (Phlomis-like). 1. Light purple. July. S. Africa. 1802.
,, *ro'seum* (rosy). 1–2. Rose. June, July. Australia.
,, ,, *grandiflo'rum* (large-flowered). Rose.
,, *Sandfo'rdii* (Sandford's). See H. HUMBOLDTIANUM.
,, *sesamoi'des* (Sesamum-like). See HELICHRYSUM SESAMOIDES.
,, *speciosi'ssimum* (showiest). 8. White. August. S. Africa. 1691.
,, *sple'ndidum* (splendid). 1–1½. White. W. Australia. 1904.
,, *Trœde'lii* (Trœdel's). 1. Australia.
,, *variega'tum* (variegated). 2–3. Brown, white. S. Africa. 1801.
,, *virga'tum* (twiggy). Yellow. S. Africa.

HELLE'BORUS. Hellebore. (From *helein*, to kill, and *bora*, food; referring to its poisonous quality. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Eranthis.)

Hardy herbaceous perennials; by seeds, and by division of the plant in spring; common soil, in a shady place.

H. abcha'sicus (Abchasian). 1. Green, purple. February. Caucasus.
,, *antiquo'rum* (ancients'). 1½. White. Bithynia.
,, *a'tro-ru'bens* (dark red). 1. Purple. March. Hungary. 1820.
,, *cauca'sicus* (Caucasian). 1½. Green. Caucasus. 1853.
,, ,, *co'lchicus* (Colchic). See H. COLCHICUS.
,, ,, *gutta'tus* (spotted). See H. GUTTATUS.
,, ,, *ni'gricans* (black). 1. Large, bluish-black. 1896.
,, ,, *pa'llidus* (pale). See H. VIRIDIS PALLIDUS.
,, ,, *puncta'tus* (finely spotted). See H. GUTTATUS SUBPUNCTATUS.

H. co'lchicus (Colchic). 1½. Rich purple. February. Mingrelia.
,, *cu'preus* (copper-coloured-*flowered*). See H. ODORUS.
,, *cyclophy'lus* (round-leaved). Green. Greece.
,, *dumeto'rum* (thicket). See H. VIRIDIS DUMETORUM.
,, *fœ'tidus* (fœtid. *Bear's-foot*). 1½. Green. March. England.
,, *grave'olens* (strong-scented). See H. ODORUS.
,, *gutta'tus* (spotted). 1. Pale rose, spotted with purple. Caucasus.
,, ,, *subpuncta'tus* (dotted). 1. Rose, dotted with purple. 1880.
,, *interme'dius* (intermediate). See H. VIRIDIS INTERMEDIUS.
,, *li'vidus* (livid-*three-leaved*). 1. Purple. March. Corsica. 1710.
,, ,, *integri'lobus* (entire-lobed). 1. Purple. February. Corsica. 1710.
,, *multi'fidus* (much cut). See H. VIRIDIS BOCCONI.
,, *ni'ger* (black. *Christmas-Rose*). 1. Pink. Austria. 1596.
,, ,, *altifo'lius* (tall-leaved). 1. White, pink.
,, ,, *angustifo'lius* (narrow-leaved). 1. White. March. Austria. 1596.
,, ,, *præ'cox* (early). Flowers small. September to February.
,, ,, *Riversio'ni* (Riverston's). 1. White.
,, *odo'rus* (sweet-scented). 1½. Green. March. Hungary. 1817.
,, *officina'lis* (officinal). See H. ORIENTALIS.
,, *oly'mpicus* (Olympian). 2. Green. February. Bithynia. 1840.
,, *orienta'lis* (eastern). 1. Dark. February. India. 1839.
,, ,, *ro'seus* (rosy). Rosy-pink.
,, *orienta'lis* (eastern) of Lindley. See H. ANTIQUORUM.
,, *po'nticus* (Pontic). See H. ORIENTALIS.
,, *purpura'scens* (purplish). See H. VIRIDIS PURPURASCENS.
,, *verna'lis* (spring). ¼. White. March. Austria. 1596.
,, *vi'ridis* (green). 1. Deep green. March, April. Europe (England).
,, ,, *Bocco'ni* (Boccon's). Italy.
,, ,, *dumeto'rum* (thicket). 1½. Green. March. 1817.
,, ,, *interme'dius* (intermediate). Green, purplish.
,, ,, *pa'llidus* (pale). Pale green.
,, ,, *purpura'scens* (purple). 1½. Purple, green. March. Hungary. 1817.

HELLE'NIA. (Named after *C. N. Hellenius*, professor at Abo. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. United to Alpinia.)
H. abno'rmis (irregular). 10. June. China. 1824. Appears to be *Alpinia chinensis*.
,, *cæru'lea* (blue-*berried*). See ALPINIA CÆRULEA.
,, *chine'nsis* (Chinese). See ALPINIA CHINENSIS.

HELMET FLOWER. *Corya'nthes*, *Aconi'tum* and *Scutella'ria*.

HELMHO'LTZIA. (Commemorative of *Hermann Helmholtz*, a Prussian professor. Nat. ord. Philydraceæ.)
Greenhouse perennial herb of tufted habit, like an Iris in foliage. Seeds; divisions in spring. Fibrous loam, peat, and plenty of sand to ensure porosity. Water liberally in summer.
H. glabe'rrima (smoothest). 1½–3. White. May. Pacific Isles. 1873.

HE'LMIA. (Commemorative of *Dr. C. Helm*. Nat. ord. Dioscoreaceæ. Should be united with Dioscorea.)
A woody stove climber, with a tuberous rootstock. Offsets. Loam, with a little peat and sand.
H. racemo'sa (racemed). 8. Yellow and purple. S. Amer. 1850.

HELMINTHO'STACHYS (From *helmins*, *helminthos*, a worm, and *stachus*, a spike; the crested clusters of sori resembling small worms. Nat. ord. *Ferns* [Filices].)
Stove Fern allied to Botrychium, with a creeping rootstock. Divisions. Peat, loam, and sand.
H. zeyla'nica (Cingalese). 1½. Himalayas to Ceylon and Queensland. 1861.

HELO'NIAS. (A diminutive of *helos*, a marsh; small marsh-plants. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Veratrum.)
Hardy herbaceous perennials, from North America. By seeds, and dividing the roots in spring; sandy, fibrous loam and peat, and requiring a moist, somewhat shaded situation.
H. angustifo'lia (narrow-leaved). See ZYGADENUS ANGUSTIFOLIUS.
,, *asphodeloi'des* (asphodel-like). See XEROPHYLLUM ASPHODELOIDES.
,, *bractea'ta* (large-bracted). See ZYGADENUS BRACTEATUS.
,, *bulla'ta* (boss-*garnished*). 1. Purple. April. 1758.
,, *erythrospe'rma* (red-seeded). See ZYGADENUS MUSCITOXICUM.
,, *glabe'rrima* (smoothest). See ZYGADENUS FREMONTI.
,, *grami'nea* (grass-like). See STENANTHIUM ANGUSTIFOLIUM.
,, *læ'ta* (bright green). See ZYGADENUS MUSCITOXICUM.
,, *latifo'lia* (broad-leaved). See H. BULLATA.
,, *lu'tea* (yellow). See CHAMÆLIRIUM CAROLINIANUM.
,, *virgi'nica* (virginian). See MELANTHIUM VIRGINICUM.
,, *vi'ridis* (green). See VERATRUM VIRIDE.

HELONIO'PSIS. (From *Helonias*, and *opsis*, resemblance; the plant being similar and closely allied to Helonias. Nat. ord. Liliaceæ.)
A hardy perennial herb suitable for a peaty bed on the rockery, in a situation shaded from the sun from noon onwards. Seeds; divisions in spring.
H. umbella'ta (umbelled). 1–1½. Rose. Formosa. 1887.

HELWI'NGIA. (In compliment to *G. A. Helwing*, a botanist. Nat. ord. Araliaceæ.)
A rare shrub, more interesting than ornamental, with the flowers attached to the leaves. Cuttings of half-ripe wood in summer in a close, cold frame. Ordinary soil, with the shelter of a wall.
H. rusciflo'ra (Ruscus-flowered). 3. Green. Japan. Syn. *H. ruscifolia*.

HELXI'NE. (*Helxine*, a plant, or Pellitory of the wall; in allusion to the habit of the plant of growing over damp stones. Nat. ord. Urticaceæ.)
A creeping, hardy perennial herb, valued for the dainty character of the dense carpet of small leaves on slender, creeping stems; suitable for the rockery or for pots. Divisions. Moist soil, but well drained in a half shady situation.
H. Soleiro'lii (Soleirol's). 1/12. Green. Corsica and Sardinia. 1905.

HEMEROCA'LLIS. Day Lily. (From *hemero*, a day, and *kallos*, beauty. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Hardy herbaceous perennials. Division in spring; common garden-soil.
H. a'lba (white). See FUNKIA SUBCORDATA.
,, *auranti'aca* (orange). 1½–2. Orange. Japan (?)
,, ,, *ma'jor* (greater). Flowers larger, orange-red. Japan. 1895.
,, *cæru'lea* (blue). See FUNKIA OVATA.
,, *citri'na* (citron). 2. Lemon-yellow, twice as large as those of *H. Dumortieri*. China. 1897.
,, *corda'ta* (heart-shaped). See FUNKIA SUBCORDATA.
,, *di'sticha* (two-rowed). See H. FULVA.
,, *Dumortie'ri* (Dumortier's). 1½. Orange-yellow. Japan. 1833.
,, ,, *Siebo'ldii* (Siebold's). Japan.
,, *fla'va* (yellow). 2. Yellow. June. Siberia. 1596.
,, *fu'lva* (tawny). 4. Tawny. July. Levant. 1596.
,, ,, *angustifo'lia* (narrow-leaved). Orange-yellow.
,, ,, *Cypria'ni* (Cyprian). Coppery-red, with golden centre. Central China. 1906.
,, ,, *flo're ple'no* (double-flowered). 4. Copper. July.
,, ,, *hupehe'nsis* (Hupeh). Bright coppery-red, with yellow throat. Central China. 1906.
,, ,, *Kwa'nso* (Kwanso). 1866.
,, ,, *longitu'ba* (long-tubed). See H. FULVA ANGUSTIFOLIA.
,, ,, *macula'ta* (blotched). Flowers with a reddish-purple blotch inside. N.W. China. 1897.
,, ,, *variega'ta* (striped-leaved). 4. Copper. July.
,, *gra'cilis* (slender). Japan. 1871.
,, *grami'nea* (grassy-*leaved*). See H. MINOR.
,, *japo'nica* (Japanese). See FUNKIA SUBCORDATA.
,, *Middendo'rffii* (Middendorff's). 1½–3. Golden-yellow. July. Amurland.

H. Middendo'rffi ma'jor (greater). Flowers larger.
„ *mi'nor* (lesser). 1. Light yellow. June. China and Japan. 1759.
„ *pi'cta* (painted). 1868.
„ *plantagi'nea* (plantain-like). See FUNKIA SUBCORDATA.
„ *pu'mila* (dwarf). See H. MINOR.
„ *ru'tilans* (red). See H. DUMORTIERII.
„ *Siebo'ldii* (Siebold's). See H. DUMORTIERII SIEBOLDII.
„ *specio'sa* (showy). See HYMENOCALLIS SPECIOSA.
„ *Thunbe'rgii* (Thunberg's). 2. Deep yellow. July, August. Japan.

HEMIA'NDRA. (From *hemi*, half, and *aner*, a man; in reference to the absence of the two upper stamens, being half their number. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Prostanthera.)

Greenhouse evergreen shrub, from Australia. Cuttings of half-ripened shoots in sand, under a bell-glass, in April; loam and peat, lightened with sand and pieces of charcoal. Summer temp., 55° to 75°; winter, 38° to 45°.

H. brevifo'lia (short-leaved). See H. PUNGENS.
„ *emargina'ta* (notch-ended). See H. PUNGENS.
„ *hirsu'ta* (hairy). See H. PUNGENS.
„ *pu'ngens* (sharp-pointed). White, purple. May. 1837.
„ *rupe'stris* (rock). See H. PUNGENS.

HEMICHÆ'NA. (Derived from *hemi*, half, and *chaino*, to gape, to open; in allusion to the form of the flowers. Nat. ord. Scrophulariaceæ.)

A showy, stove shrub, with two-lipped, gaping flowers. Cuttings of half-ripe wood in sand, and placed in a close case, with bottom-heat. Fibrous loam and peat, with sand.

H. frutico'sa (shrubby). 3–5. Yellow. Mexico. 1873.

HEMICLI'DIA BAXTE'RI. See DRYANDRA FALCATA.

HEMIDI'CTYON. (From *hemi*, half, and *diktuon*, a net. Nat. ord. *Polypods* [Polypodiaceæ]. Linn. 24-*Cryptogamia*, 1-*Filices*. United to Asplenium.)

A stove Fern. Division in spring; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

H. margina'tum (bordered). See ASPLENIUM MARGINATUM.

HEMIGE'NIA. (From *hemi*, half, and *genea*, generation; referring to the absence of the two upper stamens, being half their number. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Hemiandra.)

Greenhouse evergreen shrub. Cuttings of short young shoots in sand, under a bell-glass; peat and loam. Winter temp., 40° to 45°; requires good drainage.

H. inca'na (hoary). 2–3. Purple. Australia.
„ *purpu'rea* (purple-*flowered*). Purple. April. N. S. Wales. 1824.

HEMIGO'NIUM. (From *hemi*, half, and *gonos*, angle. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Herbaceous stove Fern. Divisions in spring; peat and loam. Summer temp., 60° to 80°; winter, 45° to 55°.

H. cadu'cum (naked). Brown, yellow. May. W. Ind.

HEMIGRA'PHIS. (Derived from *hemi*, half, and *grapho*, to write. Nat. ord. Acanthaceæ.)

Perennial stove plants. Cuttings of young shoots inserted in sand, and given bottom-heat. Fibrous loam, leaf-mould, and sand.

H. angustifo'lia (narrow-leaved). Java.
„ *austra'lis* (southern). See RUELLIA AUSTRALIS.
„ *colora'ta* (coloured). White. Leaves silvery-grey above, purple beneath. Java. 1885.
„ *e'legans* (elegant). 2. Blue, purple. Burma. 1834.
„ *hi'rta* (hairy). E. Ind.
„ *repa'nda* (scolloped). Java.
„ *stenophy'lla* (narrow-leaved). Java.

HEMIGYRO'SA. (From *hemi*, half, and *guros*, twisted or curved; in allusion to the one-sided character of all parts of the flower and fruit. Nat. ord. Sapindaceæ.)

A stove tree with silky branches and pinnate leaves. Cuttings of half-ripe wood, in sand, placed in a close case, with bottom-heat. Fibrous loam, a little peat and sand.

H. cane'scens (hoary). 16. Ceylon. 1818.

HEMI'MERIS. (From *hemi*, half, and *meris*, a part; referring to the appearance of the flowers as if in two halves. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Alonsoa.)

Stove herbaceous perennial. Cuttings of young shoots in sandy soil, and in bottom-heat; sandy loam and a little peat. Summer temp., 60° to 80°; winter, 48° to 55°.

H. monta'na (mountain). ½. July. S. Africa. 1816.

HEMIONI'TIS. (From *hemionos*, a mule; supposed to be barren. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove herbaceous perennials. Dividing the roots; sandy loam and peat. Summer temp., 60° to 85°; winter, 45° to 55°.

H. corda'ta (heart-*leaved*). Brown, yellow. July. E. Ind.
„ *palma'ta* (hand-*leaved*). ¾. July. W. Ind. 1793.
„ *peda'ta* (pedate). See PTERIS PEDATA.
„ *pinna'ta* (leafleted). Brown, yellow. July. E. Ind.

HEMIO'RCHIS. (From *hemi*, half, and *Orchis*; the flowers resemble those of an Orchid. Nat. ord. Scitaminaceæ.)

A fast-growing perennial herb for the stove. Divisions of the thin rhizomes. Fibrous loam and peat, with plenty of sand to ensure porosity.

H. burma'nica (Burman). 1. Purple and yellow. Burma.

HEMIPHRA'GMA. (From *hemi*, half, and *phragma*, the wall of an enclosure; in allusion to the dividing wall of the seed-vessel. Nat. ord. Scrophulariaceæ.)

A half-hardy perennial herb. Divisions or cuttings in sand under a bell-glass in summer. Light soil.

H. heterophy'llum (various-leaved). ½. Pink. Summer. Himalaya.

HEMIPI'LIA. (From *hemi*, half, and *pilos*, a cap. Nat. ord. Orchidaceæ.)

Terrestrial Orchid for the East Indian house. See ORCHIDS FOR CULTURE.

H. amethysti'na (amethyst). ¾. White and purple. Burma. 1897.
„ *calophy'lla* (beautiful-leaved). White, green, rich purple. Burma. 1887.

HEMIPTELEA DAVI'DII. See ZELKOVA DAVI'DII.

HEMISTE'MMA. See HIBBERTIA.

HEMITE'LIA. (From *hemi*, half, and *mitella*, a mitre; shape of root-stock. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Tree Ferns, except *H. capensis* and *H. Smithii*, which require greenhouse treatment.

H. cape'nsis (Cape). Fronds twice or thrice pinnate. S. Africa, Brazil, &c.
„ *grandifo'lia* (large-leaved). Arborescent. W. Ind., Guiana, &c. 1852.
„ *guiane'nsis Para'dæ* (Parada). More robust than the type, arborescent. Colombia. 1877.
„ *ho'rrida* (prickly). 20. Brown, yellow. W. Ind.; Colombia. 1843.
„ *karstenia'na* (Karstenian). Frond ample, pinnate. Caracas.
„ *Linde'ni* (Linden's). 2. Fronds large. Brazil (?). 1894.
„ *multiflo'ra* (many-flowered). Brown, yellow. W. Ind. 1824.
„ *seto'sa* (bristly). Stem prickly. Frond bipinnate. Brazil.
„ *Smi'thii* (Smith's). 25. Arborescent, smooth stemmed. New Zealand. 1860.
„ *specio'sa* (showy). 20–24. Stem tubercled. Colombia.

HEMIZO'NIA. (From *hemi*, half, and *zone*, a zone in reference to the shape of the flowers. Nat. ord. Compositæ.)

One is a fast-growing shrub, with white branches and spiny leaves, the other an annual herb. Seeds; cuttings of young wood in a gentle heat. Loam, leaf-mould, and sand.

H. corymbo'sa (corymbose). 2. Yellow. California. "Tar-weed."
,, *pu'ngens* (prickly). Yellow. California. 1898. Shrub.

HEMLOCK. *Coni'um macula'tum.*

HEMLOCK SPRUCE. *Tsu'ga canade'nsis.*

HEMP AGRIMONY. *Eupato'rium cannabi'num.*

HEN-AND-CHICKENS. *Be'llis pere'nnis proli'fera.* See DAISY.

HENBANE. *Hyoscy'amus.*

HENFRE'YA. (Named after *Arthur Henfrey, Esq.*, a distinguished botanist. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)
H. sca'ndens (climbing). See ASYSTASIA SCANDENS.

HENCKE'LIA CRINI'TA. See DIDYMOCARPUS CRINITA.

HENNA-PLANT. *Lawso'nia ine'rmis.*

HENRIETTE'LLA. (A commemorative name. Nat. ord. Melastomaceæ.)
Evergreen stove shrub. Cuttings of short side-shoots in sand, in a close propagating case. Fibrous loam, peat, and sand.
H. fascicula'ris (bundled). 6–10. White. Jamaica.

HEPA'TICA. (From *hepaticos*, relating to the liver; referring to the lobed leaves. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. See ANEMONE.)
H. acuti'loba (acute-lobed). See ANEMONE HEPATICA ACUTILOBA.
,, *america'na* (*common*. American). See ANEMONE HEPATICA.
,, *angulo'sa* (angled). See ANEMONE ANGULOSA.
,, *tri'loba* (*common*-three-lobed). See ANEMONE HEPATICA.

HEPI'ALUS HU'MULI. See OTTER MOTH.

HEPTAPLEU'RUM. (Derived from *hepta*, seven, and *pleuron*, a rib; in reference to the ridges on the fruit. Nat. ord. Araliaceæ.)
Evergreen stove shrubs or trees. Seeds; grafting. Fibrous loam, leaf-mould, and sand.
H. emargina'tum (end-notched). Green. Ceylon. 1848.
,, *polybo'tryum* (many-bunch-fruited). Green. Java. 1860.
,, *tomento'sum* (felted). Green. Malaya.
,, *venulo'sum* (finely-veined). Green. Trop. Asia and Australia.
,, ,, *erythro'stachys* (red-spiked). Red. Trop. Asia.

HERACA'NTHA TAU'RICA. See CARTHAMUS LANATUS.

HERA'CLEUM. Cow Parsnip. (From *heracles*, a plant consecrated to Hercules. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
Strong, coarse plants, adapted for rough ground, banks of lakes, rivers, and waterfalls. *H. villo'sum* is the best for these purposes. All the species are hardy biennials or herbaceous perennials, and white flowered.
H. absinthiifo'lium (wormwood-leaved). See ZOSIMA ORIENTALIS.
,, *a'sperum* (rough). White. Caucasus.
,, *ca'ndicans* (whitening). Leaves hoary. Himalaya.
,, *e'minens* (eminent). See H. PLATYTÆNIUM.
,, *flave'scens* (yellow). Leaves much divided. Northern Asia. 1889.
,, *gigante'um* (giant). See H. VILLOSUM.
,, *gummi'ferum* (gum-bearing). Europe.
,, *lana'tum* (woolly). N. Amer.
,, *lehmannia'num* (Lehmannian). Turkestan.
,, *Leichtli'nii* (Leichtlin's). Country uncertain.
,, *mantegazzia'num* (Mantegazzian). Umbels 4½ ft. across. Caucasus. 1897.
,, *nepale'nse* (Nepaulese). Sikkim Himalayas.
,, *palma'tum* (palmate). Orient.
,, *Pana'ces* (Panaces). S. Europe. "Hercules All-heal."
,, *pe'rsicum* (Persian). 13. White. Orient. 1888.
,, *platytæ'nium* (broad-banded). Asia Minor. 1871.
,, *pyrena'icum* (Pyrenean). Pyrenees.
,, *seto'sum* (bristly). S. Europe.
,, *sibi'ricum* (Siberian). 6. July to September. Europe, N. Asia. 1789.
H. Sphondy'lium (Sphondylium). 4–6. White or pink. Europe (Britain). "Hog-weed."
,, *sublinea're* (nearly-linear). Leaf segments very narrow. Himalaya.
,, *villo'sum* (shaggy). 12. White. Caucasus. 1820.
,, *Walli'chii* (Wallich's). 4–5. Himalayas.

HERBACEOUS PLANTS are those perennials which lose their stems annually, whilst the roots continue alive in the earth. The root leaves may die away, or they may remain green through the winter, and be termed evergreen herbs, or evergreen herbaceous plants. In a botanical sense, all plants not woody are herbaceous, and include annuals and bulbs.

HERBA'RIUM. A collection of plants, dried and preserved for botanical purposes.

HERBARY was a department of the garden formerly much more cultivated than at present, when the more potent medicinal plants of hotter climates are so easily procurable. The following is a list of the tenants of the herbary, the appropriate cultivation of which will be found under their particular titles: Angelica, Balm. Basil, Blessed Thistle, Borage, Burnet, Caraway, Chamomile, Chervil, Coriander, Dill, Hyssop, Lavender, Liquorice, Marigold, Marjoram, Mint, Pennyroyal, Peppermint, Purslane, Rue, Sage, Savory, Scurvy Grass, Tansy, Tarragon, Thyme, Wormwood.

HERB-BENNET. *Ge'um.*

HERBE'RTIA. (Named after *Dr. Herbert*, Dean of Manchester, a distinguished investigator of bulbous plants. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Triandria*. Allied to Cypella.)
Pretty little half-hardy bulbs. Seeds and offsets in spring; sandy loam and a little peat; should be kept in a cold pit in winter, or protected in a dry border.
H. Amato'rum (lovers'). 1½. Violet, white, brown. Uruguay. 1907.
,, *cæru'lea* (sky-blue). See H. DRUMMONDIANA.
,, *drummondia'na* (Drummond's). Violet. April. Texas. 1842.
,, *plate'nsis* (La Plata). 2. Porcelain blue. Blooms eight months of the year. Uruguay. 1909.
,, *pulche'lla* (neat). ¾. Blue, purple. July. Chili. 1827
,, *pusi'lla* (small). Yellow. June. Brazil. 1830.

HERB-GRACE. See RUE.

HERB PARIS. *Pa'ris.*

HERB ROBERT. *Gera'nium Robertia'num.*

HERCULES' CLUB. *Zantho'xylum Cla'va-He'rculis.*

HERITIE'RA. Looking-glass plant. (Named after *L'Heritier*, a French botanist. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 21-*Monœcia*, 10-*Decandria*. Allied to Sterculia.)
Stove evergreen trees; cuttings of ripe young shoots in sand, under a glass, and in brisk bottom-heat; sandy, rich loam and a little peat; summer temp., 60° to 85°; winter, 50° to 60°.
H. Fo'mes (Fomes). India and Malaya.
,, *littora'lis* (shore). 20. Red. E. Ind. 1780.
,, *macrophy'lla* (large-leaved). Whitish. India. 1880. "Looking-glass Tree."
,, *mi'nor* (smaller). 12. Mauritius. 1842.

HERMA'NNIA. (Named after *Paul Hermann*, a botanist. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*. Allied to Mahernia.)
Greenhouse evergreen shrubs, from South Africa, with yellow flowers, except where otherwise mentioned. Cuttings of young shoots in sandy soil, in spring, under a glass; sandy loam and a little fibrous peat. Winter temp., 40° to 45°.
H. alnifo'lia (alder-leaved). 7. March. 1728.
,, *althæifo'lia* (mallow-leaved). 2½. April. 1728.
,, *argе'ntea* (silvery). 2. Orange. May. 1820.
,, *ca'ndicans* (white). Purple. Branches and leaves white-felted. 1899.
,, *conglomera'ta* (clustered). Yellow. 1872.
,, *coronopifo'lia* (buckhorn-leaved). 2. June. 1823.
,, *crista'ta* (crested). 2. Orange-red. Transvaal.
,, *cuneifo'lia* (wedge-leaved). 2. August. 1791.
,, *decu'mbens* (lying-down). 1. May. 1821.

H. disermæfo'lia (hedgehog-leaved). April. 1794.
„ *fascicula'ta* (bundled). See H. LINEARIFOLIA.
„ *fla'mmea* (flame-*flowered*). 3. Orange. December. 1794.
„ *fra'grans* (fragrant). See H. ALTHÆIFOLIA.
„ *glandulo'sa* (glandular). 2. June. 1822.
„ *grandiflo'ra* (large-flowered). See MAHERNIA GRANDIFLORA.
„ *hirsu'ta* (hairy). 3. April. 1789.
„ *hispi'dula* (slightly-bristled). March. 1824.
„ *holoseri'cea* (velvet-*leaved*). 2. June. 1792.
„ *hyssopifo'lia* (hyssop-leaved). 7. Straw. May. 1725.
„ *inci'sa* (cut-*leaved*). 2. June. 1816.
„ *infla'ta* (swollen). 3. Tawny. September. Mexico. 1829.
„ *involucra'ta* (involucred). See H. SALVIFOLIA.
„ *latifo'lia* (broad-leaved). See H. SALVIFOLIA.
„ *lavandulæfo'lia* (lavender-leaved). 1½. June. 1732.
„ *linearifo'lia* (linear-leaved). Wine-coloured. 1869.
„ *mi'cans* (glittering). See H. SALVIFOLIA.
„ *multiflo'ra* (many-flowered). See H. CUNEIFOLIA.
„ *odora'ta* (sweet-scented). See H. LAVANDULÆFOLIA.
„ *plica'ta* (plaited-*leaved*). See H. ALTHÆIFOLIA.
„ *procu'mbens* (lying-down). 1½. May. 1792.
„ *pulvera'ta* (powdered). 2. June. 1820.
„ *salvifo'lia* (Salvia-leaved). 2. May. 1790.
„ *sca'bra* (rough-*leaved*). See H. HIRSUTA.
„ *scopa'ria* (broom). Creamy-white. 1870.
„ *tenuifo'lia* (slender-leaved). 2. June.
„ *trifolia'ta* (three-leaved). 2. 1752.
„ *trifu'rca* (three-forked). 3. Purple. May. 1789.
„ *triphy'lla* (three-leaved). 2. June. 1819.

HERMAPHRODITE. Flowers containing both stamens and pistil, that is, both sexes.

HERMINIE'RA. (From *hermin* or *hermis*, *herminos*, the foot of a bed; in allusion to the shape of the stem. Nat. ord. Leguminosæ.)
A fast-growing shrub requiring moist stove treatment, with the base of the pot immersed in the water of a tank or saucer. Seeds. Any light soil.
H. elaphro'xylon (light-wood). 3–6. Yellow. Trop. Africa. "Pith Tree." The wood is as light as pith, and used for making floats by the natives when swimming across the Nile.

HERMI'NIUM. (Derivation not explained. Nat. ord. *Orchias* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Gymnadenia.)
Terrestrial orchids, inhabiting dry, chalky banks. Divisions of the roots; chalky loam and fibrous peat; some hardy enough for a shady border, and others requiring the greenhouse.
H. alpi'num (alpine). White. May. Switzerland. 1824.
„ *corda'tum* (heart-*leaved*). See HABENARIA CORDATA.
„ *conge'stum* (crowded-*flowered*). Green. November. Madeira.
„ *Mono'rchis* (one-bulbed). Green. June. England.

HERMODA'CTYLUS. (From *hermos*, solitary, and *daktulos*, a finger; in allusion to the tuberous root. Nat. ord. Iridaceæ.)
Hardy, tuberous-rooted plant, closely allied to Iris and often named *I. tuberosa*. Seeds and offsets. Light, sandy, but rich soil.
H. tubero'sus (tuberous). 1. Green, black. Spring. Mediterranean region. 1597.

HERNA'NDIA. Jack-in-a-box. (Named after *F. Hernandez, M.D.*, a Spanish botanist. Nat. ord. *Laurels* [Lauraceæ]. Linn. 21-*Monœcia*, 3-*Triandria*. Allied to Cassytha.)
Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, and in brisk bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 60°.
H. guiane'nsis (Guiana). 50. Guiana. 1820.
„ *mœrenhoutia'na* (Mœrenhoutian). Pale yellow. Tahiti Islands. 1869.
„ *ovi'gera* (egg-bearing). 50. W. Ind.
„ *pelta'ta* (peltate). Tropics.
„ *sono'ra* (sounding). 50. E. Ind. 1693.

HERNIA'RIA. (From *hernia*, rupture, which, at one time, it was supposed to cure. Nat. ord. Illecebraceæ.)
Creeping, evergreen herbs, valued chiefly for groundwork in carpet bedding. Division. Any good garden soil.
H. alpi'na (alpine). Green. July. Europe.
„ *cilia'ta* (eye-lashed). Green. July, August. England.
„ *gla'bra* (smooth). Green. July. England. The best for carpet bedding.
„ *hirsu'ta* (hairy). Green. July. England.

HERON'S BILL. *Ero'dium.*

HERPE'STIS. (From *herpestes*, a creeping thing; in reference to the creeping stems. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Gratiola.)
Aquatic perennials. Seeds and divisions; rich, loamy soil. *H. Monnie'ria* is hardy; the other one requires pans or tubs of water in a stove.
H. cuneifo'lia (wedge-leaved). See H. MONNIERIA.
„ *Monnie'ria* (Monnier's). ½. Light blue. August. S. Amer. 1772.
„ *polya'ntha* (many-flowered). See H. STRICTA.
„ *refle'xa* (reflexed). See MYRIOPHYLLUM PROSERPINACOIDES.
„ *stri'cta* (erect). 1. Blue. August. Brazil. 1824.

HERPETOSPE'RMUM. (From *herpetos*, creeping, and *sperma*, a seed; the compressed, three-lobed seeds being like some creeping animal. Nat. ord. Cucurbitaceæ.)
Climbing, annual herb for open-air culture. Seeds. Ordinary soil.
H. grandiflo'rum (large-flowered). Yellow. Fruit greenish, 7 to 8 ribbed. Central China. 1906.

HERRA'NIA. (Named in compliment to *General Herran*, some time president of Colombia. Nat. ord. Sterculiaceæ.)
Evergreen tree requiring stove treatment. Seeds; cuttings of half-ripe wood in sand, with bottom-heat, in a close case. Loam, with a little peat and sand.
H. albiflo'ra (white-flowered). White. Colombia.
„ *palma'ta* (hand-shaped). Australia. 1866. This is a species of Dendropanax.

HERRE'RIA. (Commemorative of *Gabriel de Herrera*, a Spaniard. Nat. ord. Liliaceæ.)
Warm greenhouse climber. Seeds, layers. Fibrous loam and peat, with sand.
H. Salsapari'lha (Salsaparilha). 10. Green, yellow. Brazil. 1824.

HESPERA'LOË. (From *hespera*, the west, and *Aloe*. Nat. ord. Liliaceæ.)
Greenhouse plants, having a striking resemblance to a Yucca, with channelled, dry leaves, thready at the margins. Seeds or suckers. Fibrous loam, leaf-mould, and a free admixture of finely broken bricks.
H. Da'vyi (Davy's). 12. Green and white. California. 1898.
„ *yuccæfo'lia* (Yucca-leaved). 3–4. Reddish. Texas. 1882.

HESPERA'NTHA. Evening Flower. (From *hespera*, the evening, and *anthos*, a flower. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Ixia.)
Small bulbs, from South Africa. Offsets; sandy loam and peat; requiring the protection of a cold pit in winter.
H. angu'sta (narrow-*leaved*). ½. White. May. 1825.
„ *cinnamo'mea* (cinnamon). ½. Violet. April. 1787.
„ *ere'cta* (erect). See GEISSORHIZA ERECTA.
„ *falca'ta* (sickle-*leaved*). ½. Violet. May. 1787.
„ *graminifo'lia* (grass-leaved). ½. Greenish-white. August. 1808.
„ *longitu'ba* (long-tubed). 1. White, tinted red-brown. 1877.
„ *pilo'sa* (thinly hairy). White, spotted with red on the back. 1811.
„ „ *nu'da* (naked). See H. GRAMINIFOLIA.
„ *radia'ta* (radiated). ½. Violet. May. 1794.
„ *Woo'dii* (Wood's). White. Natal.

HE'SPERIS. Rocket. (From *hesperos*, the evening star; rockets being sweeter towards the evening. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)
Annuals and biennials, sow in open border, in March and April; perennials, division of the root, and giving

them fresh soil; the best time for this is after they have finished flowering and fresh growth has commenced; light, rich soil.

HARDY ANNUALS.

H. pulché'lla (neat). See MALCOLMIA PULCHELLA.
„ *pygmæ'a* (dwarf). See MALCOLMIA PULCHELLA.
„ *ramosi'ssima* (branchiest). ½. Red. July. Algiers. 1819.

HARDY BIENNIALS.

H. elá'ta (tall). See H. MATRONALIS.
„ *frá'grans* (fragrant). 1. Purple. May. Siberia, 1821.
„ *grandiflo'ra* (large-flowered). 4. White, purple. July. 1820.
„ *heterophy'lla* (various-leaved). See H. MATRONALIS.
„ *lacinia'ta* (fringed). 1½. Purple. May. S. France. 1816.
„ *runcina'ta* (irregular-lobed). See H. MATRONALIS.
„ „ *bitumino'sa* (clammy). See H. MATRONALIS.
„ *tri'stis* (sad). 1. Purple. May. Austria. 1629.

HARDY HERBACEOUS PERENNIALS.

H. á'prica (exposed). ½. Purple. May. Siberia. 1822.
„ *excé'lsa* (lofty). 3. White. May. 1828.
„ *inodo'ra* (scentless). See H. MATRONALIS SYLVESTRIS.
„ *matrona'lis* (matronly). 4. Purple. June. Europe. 1597.
„ „ *albiflo'ra* (white-flowered). 4. White. June. Europe. 1759.
„ „ *á'lbo-plé'na* (double-white-*flowered*). 2. White. June. Europe. 1597.
„ „ *foliiflo'ra* (leaf-flowered). 2. Green. June. Europe. 1597.
„ „ *horté'nsis* (garden). Purple. June. Europe. 1759.
„ „ *purpú'reo-plé'na* (double-purple). Red. June. Europe. 1597.
„ „ *sibi'rica* (Siberian). 3. Purple. June. Siberia. 1800.
„ „ *sylvé'stris* (wood). Pink. June. Britain.
„ „ *variegá'ta* (variegated-*double-flowered*). 2. White, red. June. Europe. 1597.
„ *repa'nda* (wavy-edged). See ERYSIMUM LINIFOLIUM.
„ *specio'sa* (showy). See PARRYA INTEGERRIMA.
„ *viola'cea* (violet). 1. Violet. June. Asia Minor.

HESPEROCA'LLIS. (From *hespera*, the west, and *kallos*, beautiful; literally, beauty of the west. Nat. ord. Liliaceæ.)

A greenhouse or half-hardy perennial herb. Seeds, divisions. Light, fibrous loam and leaf-mould.

H. undula'ta (wavy). 2. White, fragrant. California. 1882.

HESPEROCHI'RON. (Meaning not explained. Nat. ord. Hydrophyllaceæ.)

H. califor'nicus is a half-hardy annual, but the other is a hardy alpine perennial. Seeds; and the perennial by division or cuttings under a hand-glass. Ordinary soil.

H. califor'nicus (Californian). ½. White, lined with black. California. 1823.
„ *pu'milus* (dwarf). ½. White, lined with violet. N.W. Amer. 1888.

HESPEROSCO'RDUM. (Literally, the onion of the west; from *hesperos*, the evening, and *scordon*, garlic. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Brodiæa.)

H. hyaci'nthinum (hyacinth-like). See BRODIÆA HYACI'NTHINA.
„ *la'cteum* (milk-white). See BRODIÆA HYACI'NTHINA LACTEA.

HE'SSEA. (Named after *P. Hesse*, a botanical collector. Nat. ord. Amaryllidaceæ.)

Greenhouse bulbs from South Africa. Seeds and offsets. Rich, light, sandy loam and leaf-mould.

H. cri'spa (crisped). ½. Pink; segments wavy. Summer. 1790.
„ *filifo'lia* (thread-leaved). ½. White. November. 1774.
H. gemma'ta (twin). 1. Light yellow; segments wavy. September. 1812.
„ *stella'ris* (starry). ½. Pink. October. 1794.

HESSIAN FLY. *Cecidomy'ia destru'ctor.*

HETERANTHE'RA. (From *heteros*, variable, and *anthera*, anther. Nat. ord. *Pontederads* [Pontederiaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Water perennials, allied to Pontederia. *H. limo'sa* will thrive in a pond or stream; the other requires tubs in the greenhouse and stove; division; rich loam.

H. acu'ta (acute). See H. RENIFORMIS ACUTA.
„ *limo'sa* (bog). Blue. July. N. Amer. 1822.
„ *renifo'rmis* (kidney-*leaved*). Blue. July. S. Amer. 1824.
„ „ *acu'ta* (acute). White. June. Virginia. 1812.

HETEROCE'NTRON MEXICA'NUM. See HEERIA ROSEA.

HETEROCE'NTRON RO'SEUM. See HEERIA ROSEA.

HETEROCHÆ'TA PUBE'SCENS. See ERIGERON PUBESCENS.

HETERO'MELES. (From *heteros*, variable, and *melon*, an apple; in allusion to the variable character of the fruits. Nat. ord. Rosaceæ.)

Hardy or half-hardy evergreen shrub or small tree. Seeds; and by budding on the hawthorn. Well-drained soil.

H. arbutifo'lia (Arbutus-leaved). 10. White. July. California. 1796. "Toyou or Tollon."

HETEROMO'RPHA. (From *heteros*, variable, and *morphe*, form; referring to the leaves. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Greenhouse evergreen shrub. Cuttings of young shoots under a bell-glass, in sand; sandy loam. Winter temp., 35° to 45°.

H. arbore'scens (tree-like). 2. Yellow. August. S. Africa. 1810.

HETERO'NOMA DIVERSIFO'LIUM. See ARTHROSTEMMA FRAGILE.

HETERO'NOMA SUBTRIPLINE'RVIUM. See HEERIA SUBTRIPLINERVIA.

HETEROPA'NAX. (From *heteros*, variable, and *Panax*. Nat. ord. Araliaceæ.)

Greenhouse, evergreen shrub. Cuttings of ripe wood in gentle heat. Loam, peat, and sand.

H. frá'grans (fragrant). White. Himalaya. 1818.

HETEROPA'PPUS. (From *heteros*, variable, and *pappos*, down; in allusion to the two forms of pappus in the flower-head. Nat. ord. Compositæ.)

A hardy herbaceous perennial. Seeds and divisions. Ordinary soil.

H. deci'piens (deceiving). See H. HISPIDUS.
„ *hi'spidus* (roughly-hairy). Purple. Japan and Amurland. 1864.

HETEROPHRA'GMA. (From *heteros*, variable, and *phragma*, an enclosure; in allusion to the irregular-sized lobes of the calyx enclosing the rest of the flower. Nat. ord. Bignoniaceæ.)

Very showy stove trees, with rosy-white or orange flowers. Seeds; cuttings of half-ripe wood in sand, with strong bottom-heat in a close case. Fibrous loam, with some peat and sand.

H. adenophy'llum (glanded-leaved). India. 1822.
„ *Roxbú'rghii* (Roxburgh's). 12. Pink. India. 1820.

HETERO'PTERIS. (From *heteros*, various, and *pteron*, a wing; referring to the wings of the seed-vessels being of different forms. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*. Allied to Banisteria.)

Stove climbers, except *ni'tida*, which is a shrub. Cuttings of firm young shoots in silver sand, over sandy peat, and plunged in bottom-heat, in April; sandy peat and loam, with pieces of charcoal, and thorough drainage. Summer temp., 60° to 85°; winter, 50° to 55°.

H. cæru'lea (blue). 10. Blue. W. Ind. 1823.
„ *chrysophy'lla* (golden-leaved). Orange. Brazil. 1793.
„ *floribú'nda* (bundle-flowered). Blue. Mexico. 1824.
„ *gla'bra* (smooth). See H. UMBELLATA.
„ *laurifo'lia* (laurel-leaved). See H. VENOSA.

H. ni'tida (glossy). 10. Yellow. Brazil. 1809.
„ *platy'ptera* (broad-winged). 10. Purple, yellow. Trop. Amer. 1823.
„ *purpu'rea* (purple). Purple. W. Ind. 1759.
„ *seri'cea* (silky). 5–8. Yellow. July. Brazil. 1810.
„ *umbella'ta* (umbelled). Yellow. July. Buenos Ayres. 1838.
„ *undula'ta* (wavy-*leaved*). See H. UMBELLATA.
„ *veno'sa* (veiny). 10. Yellow. Brazil. 1793.

HETEROSPA'THE. (From *heteros*, variable, and *spathe*, a spathe. Nat. ord. Palmaceæ.)
A stove Palm, with deeply and pinnately cut leaves. Seeds when obtainable. Good fibrous loam with a little peat and sand.
H. ela'ta (tall). Leaves feathered, without spines. Amboyna. 1880.

HETEROSPE'RMUM. (From *heteros*, variable, and *sperma*, a seed. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy annuals. Sow in the open border in April, or in a slight hotbed in March; seedlings to be transplanted.
H. pinna'tum (leafleted). 2. Yellow. August. Mexico. 1799.
„ *Xa'nti* (Xant's). 1. Yellow. California. 1898. Syn. *H. Xanthii*.

HETERO'STALIS. See TYPHONIUM.

HETEROTA'XIS CRASSIFO'LIA. See MAXILLARIA CRASSIFOLIA.

HETEROTHE'CA. (From *heteros*, various, and *thece*, a capsule; referring to the fruits, which vary in shape. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy herbaceous perennials. Seeds and divisions of the plants in spring; common garden-soil.
H. grandiflo'ra (large-flowered). Yellow. August. N.W. Amer.
„ *inuloi'des* (Inula-like). 1. Yellow. June, July. Mexico. 1826.
„ *Lama'rckii* (Lamarck's). 1. Yellow. N. Amer.
„ *sca'bra* (rough). See H. GRANDIFLORA.

HETERO'TOMA. (From *heteros*, variable, and *tome*, a cut; in reference to the irregularity of the corolla. Nat. ord. Campanulaceæ.)
Greenhouse, perennial herb, with showy flowers. Seeds in heat. Fibrous loam, with peat or leaf-mould and sand. Summer temp., 60° to 75°; winter, 55° to 60°.
H. lobelioi'des (Lobelia-like). Purple, yellow. Mexico. 1861. "Bird Plant."

HETERO'TRICHUM. (From *heteros*, various, and *thrix*, hair; referring to the disposition of the hairs on the leaves, &c. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Miconia.)
Stove evergreen shrubs. Cuttings of young shoots in sandy peat, under a bell-glass, and in bottom-heat, in spring; sandy peat and fibrous loam. Summer temp., 60° to 80°; winter, 48° to 55°.
H. ma'crodon (long-toothed). 7. White. September. S. Amer. 1848.
„ *ni'veum* (snowy). See H. PATENS NIVEUM.
„ *pa'tens* (spreading). Blush. May. St. Domingo. 1820.
„ „ *ni'veum* (snowy). White. May. St. Domingo. 1820.

HEU'CHERA. Alum Root. (Named after *Professor Heucher*, a German botanist. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
Hardy herbaceous perennials; divisions of the plant any time in spring; common garden-soil.
H. america'na (American). 1. Purple. May. N. Amer. 1656.
„ *bracted'a* (large-bracted). N.W. Amer.
„ *caule'scens* (stemmed). See H. VILLOSA.
„ *cyli'ndrica* (cylindric-*panicled*). 2. Green. May. N. Amer. 1830.
„ *divarica'ta* (divaricate). See H. GLABRA.
„ *Drummo'ndi* (Drummond's). Origin uncertain.
„ *erube'scens* (reddish). See H. MICRANTHA ERUBESENS.
„ *gla'bra* (smooth). 1. Pink. May. N. Amer. 1827.
„ *grandiflo'ra* (large-flowered). See H. PUBESCENS.
H. hi'spida (bristly). 3. Purple. May. Virginia. 1826. "Satin Leaf."
„ *Menzie'sii* (Menzies'). See TOLMIEA MENZIESII.
„ *micra'ntha* (small-*flowered*). 2–3. Cream. N.W. Amer.
„ „ *erube'scens* (reddish). Purplish-red.
„ *parvifo'lia* (small-leaved). N.W. Amer.
„ *pilosi'ssima* (hairiest). N. Amer.
„ *pube'scens* (downy). 1. Pink, violet. June. N. Amer. 1812.
„ *ribifo'lia* (currant-leaved). See H. PUBESCENS.
„ *Richardso'nii* (Richardson's). See H. HISPIDA.
„ *sangui'nea* (blood-red). 1–1½. Fiery-red. June. New Mexico and Arizona. 1885.
„ „ *a'lba* (white). White. 1896.
„ „ *ma'xima* (largest). Large, deep crimson, 1906.
„ „ *sple'ndens* (splendid). 1½. Vivid coral-scarlet.
„ *villo'sa* (shaggy). ½. Violet. May. Canada. 1812.
„ *vi'scida* (clammy). See H. AMERICANA.
„ *Whee'leri* (Wheeler's). 2. Creamy-pink. October.
„ *zabelia'na* (Zabeliana). 2–3. Deep rose. Leaves green. 1900.

HEVE'A. (From *Heve*, the native name. Nat. ord. Euphorbiaceæ.)
Stove trees of economic importance. Cuttings of half-mature wood, in sand, with strong bottom-heat, in a close case. Fibrous loam and peat, with sand.
H. brasilie'nsis (Brazilian). 60. Green, white. Brazil. 1823. "Para Rubber."
„ *confu'sa* (confused). Guiana.
„ *guiane'nsis* (Guiana). 6. Guiana. 1823. "Brazilian or Bottle India-rubber."
„ *spruce'a'na* (Sprucean). Brazil.

HEWA'RDIA. (Named after *Mr. Heward*. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Adiantum.)
H. adiantoi'des (maiden-hair-like). See ADIANTUM HEWARDIA.

HEWI'TTIA. (Commemorative of *Mr. Hewitt*. Nat. ord. Convolvulaceæ.)
Stove twiner. Seeds, divisions. Fibrous loam, leaf-mould, and sand.
H. bi'color (two-coloured). Pale yellow or white, with purple base. Tropics of Old World.

HEXACE'NTRIS. (From *hex*, six, and *centron*, a spur; alluding to two of its stamens having one spur each, and two of them two spurs each. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. United to Thunbergia.)
H. mysore'nsis (Mysore). See THUNBERGIA MYSORENSIS.

HEXADE'SMIA. (Derived from *hex*, six, and *desma*, a bond; there being six united pollen masses. Nat. ord. Orchidaceæ.)
Stove epiphytical Orchids. Divisions. Pot-culture, with fibrous peat and sphagnum.
H. cruri'gera (cross-bearing). ½. White. Guatemala. 1869.
„ *Ree'dii* (Reed's). ½. Yellow-green. Brazil. 1868.

HEXAGLO'TTIS. (From *hex*, six, and *glotta*, a tongue; there being six lobes on the style. Nat. ord. Iridaceæ.)
Greenhouse bulbs from South Africa. Seeds, offsets. Rich, light, sandy soil.
H. flexuo'sa (flexuous). See H. LONGIFOLIA.
„ *longifo'lia* (long-leaved). 1½. Yellow. May. 1766.
„ *virga'ta* (twiggy). 2. Yellow. May. 1825.

HEXI'SEA. (From *exises*, in like parts; the segments being all much alike. Nat. ord. Orchidaceæ.)
An epiphytical stove Orchid. Divisions. Fibrous peat and sphagnum.
H. bidenta'ta (two-toothed). Scarlet. Panama. 1887.

HEY'NEA. (Named after *Dr. Heyne*, a German botanist. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Trichilia.)
Stove evergreen, white-flowered trees. Cuttings of well-ripened young shoots in sand, under a bell-glass, in bottom-heat; sandy, rich loam and a little peat. Summer temp., 60° to 85°; winter, 55°.
H. quinque'juga (five-paired). 20. Java. 1816.
„ *tri'juga* (three-paired). 20. September. Nepaul. 1812.

HIBBE'RTIA. (Named by *G. Hibbert*, a distinguished promoter of botany. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 3-*Trigynia*. Allied to Candollea.)

Greenhouse evergreen shrubs, with yellow flowers, from Australia, except where otherwise mentioned. Cuttings of half-ripened shoots in sandy soil, under a bell-glass, in spring; sandy loam and a little peat. Winter temp., 40° to 45°. *Volu'bilis* is an elegant twiner, and *grossulariæfo'lia* makes either a creeper or a trailer; it has a fine effect suspended from a basket; does beautifully for hanging down the sides of a rock-work in summer.

H. acicula'ris (needle-formed). 2. May. Australia. 1822.
„ *Baudoui'nii* (Baudouin's). New Caledonia.
„ *Billardié'ri* (Billardière's). 2. May. Australia. 1824.
„ *bractea'ta* (large-bracted). 2. May. Australia. 1823.
„ *cistifo'lia* (Cistus-leaved). 1. June. 1826.
„ *corifo'lia* (Coris-leaved). See H. PEDUNCULATA.
„ *Cunningha'mii* (Cunningham's). 2. July. 1832. Twiner.
„ *denta'ta* (toothed). 6. 1814. Twiner.
„ *fascicula'ta* (bundled). 2–4. Australia. 1822.
„ *flexuo'sa* (zigzag). 2. May. 1823.
„ *grossulariæfo'lia* (gooseberry-leaved). 6. May. 1816. Trailer.
„ *linea'ris* (narrow-*leaved*). 6. June. 1821.
„ „ *obtusifo'lia* (blunt-leaved). 2. Van Diemen's Land. 1824.
„ *ni'tida* (shining). 3. June. Australia. 1823.
„ *pedunncula'ta* (*long*-flower-stalked). 2. June. 1821.
„ *perfolia'ta* (leaf-pierced). 3. May. 1842.
„ *Rea'dii* (Read's). Yellow. Australia (?).
„ *sali'gna* (willow-*leaved*). 3. July. 1823.
„ *stri'cta* (upright). 2. May. Australia. 1826.
„ *virga'ta* (twiggy). See H. FASCICULATA.
„ *volu'bilis* (twining). 8. June. Australia. 1790. Twiner.

HIBI'SCUS. (Virgil's name for the Marsh Mallow. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Hardy annuals, sow in open border in the beginning of April; tender annuals, sow in hotbed—seedlings to have out-door or greenhouse treatment; hardy herbaceous require dividing in spring, and a moist situation to grow in; hardy shrubs require an open situation fully exposed to the sun, by seeds, and double ones by layers, by cuttings of ripe shoots under a hand-light, in autumn, and kept on all the winter, and also by grafting. Greenhouse and stove species are propagated by young shoots in sandy soil, under a bell-glass, the stove kinds also requiring bottom-heat, and the greenhouse kinds liking a little too, after they have stood a week in the cutting-pots; peat and loam; usual greenhouse and stove temperatures.

HARDY ANNUALS.

H. africa'nus (African). See H. TRIONUM.
„ *escule'ntus* (esculent). 2. Yellow. July, August. Tropics. "Ochro."
„ „ *specio'sus* (showy). 2. Sulphur-yellow, with blood-red blotch at the base. 1894.
„ *Trio'num* (three-coloured. *Bladder-kelmia*). 2. Yellow, brown. July. Italy. 1596.

STOVE ANNUALS.

H. digita'tus (finger-*leaved*). 2. White, red. August. Brazil. 1816.
„ „ *keria'nus* (Kerian). 2. White, red. August. Brazil. 1816.
„ *longiflo'rus* (long-flowered). Pale yellow. August. E. Ind. 1817.
„ *tetraphy'llus* (four-leaved). 1½. Yellow. July. Bengal. 1818.
„ *vitifo'lius* (vine-leaved). 2. Yellow. August. E. Ind. 1690.

HARDY HERBACEOUS PERENNIALS.

H. aculea'tus (prickly). 2. Yellow. August. N. Amer. 1810.
„ *cocci'neus* (scarlet). 2. Scarlet. July. N. Amer. 1804.
„ *grandiflo'rus* (large-flowered). 3. Flame. July. Georgia. 1816. Half-hardy.
H. inca'nus (hoary). 3. Yellow. September. Carolina. 1806.
„ *milita'ris* (military). 3. Purple. August. N. Amer. 1804.
„ *Moscheu'tos* (mallow-rose). 4. White, pink. August. N. Amer. 1759.
„ *palu'stris* (marsh). See H. MOSCHEUTOS.
„ *pentaca'rpos* (five-fruited). See KOSTELETZKYA PENTACARPA.
„ *ro'seus* (rose-coloured). 4. Pink. August. France. 1827.
„ *sca'ber* (rough). See H. ACULEATUS.
„ *specio'sus* (showy). See H. COCCINEUS.
„ *virgi'nicus* (Virginian). See KOSTELETZKYA VIRGINICA.
„ *Wra'yæ* (Mrs. Wray's). See H. HUEGELII.

HARDY DECIDUOUS SHRUBS.

H. syri'acus (Syrian). 8. Purple. August. Syria. 1596. Deciduous shrub.
„ „ *a'lbus* (white-*flowered*). 8. White.
„ „ *a'lbus-ple'nus* (double-white). 8. White. August.
„ „ *margina'tus* (border-*leaved*). 8. Purple, white. August. Syria.
„ „ *purpu'reus* (purple-*flowered*). 8. Purple. August.
„ „ *purpu'reo-ple'nus* (double-purple). 8. Purple. August.
„ „ *ru'ber* (red-*flowered*). 8. Red. August.
„ „ *variega'tus* (variegated-*flowered*). 8. Striped. August.

GREENHOUSE EVERGREEN SHRUBS.

H. califo'rnicus (Californian). 4–6. White, with purple base. California. 1891.
„ *cispla'tanus* (Cisplatan). 3–5. Rose-lilac. Brazil. 1887.
„ *crassine'rvis fla'mmeus* (flame-coloured). Fiery red. Abyssinia. 1893. Perennial herb.
„ *gossypi'nus* (cotton-like). 4. Yellow. July. S. Africa. 1818.
„ *grossulariæfo'lius* (gooseberry-*leaved*). See H. HUEGELII GROSSULARIÆFO'LIUS.
„ *heterophy'llus* (various-leaved). 6. White, red. August. N. S. Wales. 1803.
„ *Huege'lii* (Baron Huegel's). 5–10. Purple. October. Swan River. 1839. Deciduous.
„ „ *grossulariæfo'lius* (gooseberry-leaved). 4. Blush. June. Swan River.
„ „ *quinquevu'lnerus* (five-spotted). Deep rose, with five maroon blotches at the base. Swan River. 1853.
„ *lasioca'rpos occidenta'lis* (western). 4. White, pink. California and Mexico. 1888.
„ *Lebe'lei* (Lebele's). 3–5. Lemon-yellow, with five red-brown blotches. China. 1893.
„ *marmora'tus* (marbled). 3–6. White, marbled rose-pink. Mexico. 1854.
„ *multi'fidus* (many-parted-*leaved*). See FUCSIA HAKEÆFOLIA.
„ *pedunncula'tus* (stalked-flowered). 3–4. Rose-red. August. S. Africa. 1812.
„ *Richardso'ni* (Richardson's). See H. TRIONUM.

STOVE EVERGREEN SHRUBS, &c.

H. Abelmo'schus (musk-akro). 3. Yellow. August. India. 1640. "Okro."
„ *æthio'picus* (Ethiopian). 15. Purple. August. S. Africa. 1774.
„ *angulo'sus* (angled). India.
„ *aponeu'rus* (without nerves). 2–4. Bright scarlet. E. Trop. Africa. 1908.
„ *bancroftia'nus* (Bancroftian). Yellow. August. W. Ind. 1827.
„ *bifurca'tus* (two-forked). 2. Purple. June. Brazil. 1825.
„ *borbo'nicus* (Bourbon). See H. CALYCINUS.
„ *calyci'nus* (large-calyxed). 4. Yellow, with purple-crimson base. Bourbon. 1884.
„ *Camero'ni* (Cameron's). 1. Rosy. July. Madagascar. 1838.
„ „ *fu'lgens* (brilliant). Red. August. Madagascar. 1843.
„ *cancella'tus* (latticed). 3. Yellow. July. India. 1817.
„ *cannabi'nus* (hemp-like). Tropics.

H. Carso'ni (Carson's). Trop. Africa.
„ *chrysa'nthus* (golden-flowered). See H. CALYCINUS.
„ *Colle'rii* (Coller's). See H. ROSA-SINENSIS COLLERI.
„ *colli'nus* (hill-*inhabiting*). 4. Yellow, brown. January. India. 1836.
„ *Coope'ri* (Cooper's). See H. ROSA-SINENSIS COOPERI.
„ *Coulte'ri* (Coulter's). Mexico.
„ *crini'tus* (*long*-haired). 3. Yellow, red. September. India. 1828. Herbaceous perennial.
„ *cu'preus* (copper). Purple, with carmine blotch at base. Probably Ceylon. 1907.
„ *diversifo'lius* (various-leaved). 6. Yellow. June. E. Ind. 1798.
„ *ela'tus* (tall). 50. Red. W. Ind. 1790. "Cuba Bast."
„ *fe'rox* (fierce-*stinging*). 5. Yellow. May. New Grenada. 1844.
„ *ferrugi'neus* (rusty). 15. Scarlet. Madagascar. 1824.
„ *ficifo'lius* (fig-leaved). See H. ESCULENTUS.
„ *ficulneoi'des* (fig-like). 4–5. Yellow, purple. Trop. Asia.
„ *ficu'lneus* (fig-like). 4. Yellow, purple. June. Ceylon. 1732.
„ *furca'tus* (forked-*calyxed*) 2. Yellow. August. E. Ind. 1816. Herbaceous perennial.
„ *fu'scus* (brown). See H. GOSSYPINUS.
„ *hi'rtus* (hairy). 2. Scarlet. August. India.
„ *insi'gnis* (remarkable). 3. Yellow, with red zone above the base.
„ *jerroldia'nus* (Mr. Jerrold's). 6. Crimson. July. Brazil. 1843. Herbaceous perennial.
„ *La'mpas* (lamp). See THESPESIA LAMPAS.
„ *lilaci'nus* (lilac-*flowered*). See FUGOSIA HAKEÆFOLIA.
„ *liliiflo'rus* (lily-flowered). 10. Scarlet. July. Mauritius. 1828.
„ *Li'ndleyi* (Lindley's). See H. RADIATUS LINDLEI.
„ *Ludwi'gii* (Ludwig's). S. Africa.
„ *lunariifo'lius* (Lunaria-leaved). Trop. Asia and Africa.
„ *macleaya'nus* (MacLeay's). See H. BANCROFTIANUS.
„ *Ma'nihot* (Manihot). 3. Yellow. July. E. Ind. 1712. Herbaceous perennial.
„ „ *disse'cta* (cut). Leaves cut nearly to the petiole. 1902.
„ *micra'nthus* (small-flowered). India and Trop. Africa.
„ „ *ro'seus* (rosy). Rose. Abyssinia. 1895.
„ *moscha'tus* (musk). See H. ABELMOSCHUS.
„ *muta'bilis* (changeable). 10–15. White. Autumn. China. 1690.
„ *panduræfo'rmis* (fiddle-formed). 2–6. Yellow or white. July. Tropics of Old World. 1796.
„ *Paterso'nii* (Paterson's). See LAGUNARIA PATERSONII.
„ *pentaspe'rmus* (five-seeded). See KOSTELETZKYA PENTASPERMA.
„ *phœni'ceus* (purple-*flowered*). 8. Purple. July. E. Ind. 1796.
„ *phœni'ceus* (purple) of Willdenow. See H. HIRTUS.
„ *pulche'llus* (beautiful). 3. July. E. Ind. 1820.
„ *pu'ngens* (prickly). Himalaya.
„ *racemo'sus* (racemed). See H. LUNARIIFOLIUS.
„ *radia'tus* (rayed). 5–8. Yellow, with deep crimson base. India.
„ „ *flo're purpu'reo* (purple-flowered). Rose-purple.
„ „ *Li'ndlei* (Lindley's). 3. Deep purple. December. India. 1828.
„ *rhombifo'lius* (diamond-leaved). 4. Purple. July. E. Ind. 1823.
„ *Ro'sa-malaba'rica* (Malabar-rose). See H. HIRTUS.
„ *Ro'sa-sine'nsis* (Chinese-rose). 10. Red. July. E. Ind. 1731.
„ „ *Bapti'stii* (Baptist's). Crimson-scarlet, double. Polynesia. 1880.
„ „ *brillianti'ssimus* (most brilliant). Crimson-scarlet, flushed orange. 1876.
„ „ *ca'rneus ple'nus* (double-flesh). 10. Flesh. July. E. Ind. 1731.
„ „ *Colle'rii* (Coller's). Yellow, deep red, double. Polynesia.
„ „ *Coope'ri* (Cooper's). Scarlet. Leaves splashed with cream and crimson.
„ „ *fla'vus* (yellow). Yellow.
„ „ *fla'vus ple'nus* (double-yellowish). 10. Yellow. July. E. Ind.
„ „ *lu'teus* (*double*-yellow). 10. Yellow. July. E. Ind. 1823.
H. Ro'sa-sine'nsis magni'ficus (magnificent). Magenta, crimson, maroon blotch.
„ „ *meta'llicus* (metallic). Leaves metallic purple.
„ „ *minia'tus se'mi-ple'nus* (semi-double vermilion).
„ „ *ru'ber ple'nus* (double-red). 10. Red. July. E. Ind.
„ „ *variega'tus ple'nus* (double-variegated). 10. Striped. July. E. Ind.
„ „ *ve'rvicans* (lively). Crimson-scarlet.
„ „ *zebri'nus* (zebra-striped). Double, creamy-yellow, flaked scarlet. 1879.
„ *Sabdari'ffa* (Sabdariffa). Tropics.
„ *schizope'talus* (cut-petaled). 6–10. Orange-red. Trop. Africa.
„ *Sco'ttii* (Scott's). 10–15. Golden-yellow, with carmine base. Socotra. 1902.
„ *sple'ndens* (shining). 10. Rose. May. N. Holland. 1828.
„ *suratte'nsis* (Surattan). Yellow, crimson. Tropics. 1891.
„ *Telfai'riæ* (Mrs. Telfair's). 2. Rose. July. Mauritius. 1825.
„ *tilia'ceus* (Tilia-like). Hong Kong.
„ *tri'color* (three-coloured). Australia.
„ *tri'lobus* (three-lobed). 2. Yellow. July. W. Ind. 1818.
„ *tubulo'sus* (tubular). See H. PANDURÆFORMIS.
„ *velutti'nus* (velvet). See H. PANDURÆFORMIS.
„ *venu'stus* (lovely). 15. Creamy-yellow. Tahiti (?). 1891.

HICKORY. See CA'RYA.

HICO'RIA and **HICO'RIUS.** See CA'RYA.

HIDA'LGOA. (Probably commemorative, from the Spanish *hijo de algo*, the son of something. Nat. ord. Compositæ.)

Greenhouse plants climbing by their leaf-stalks, with slender branches, but otherwise closely allied to Dahlia and Coreopsis. Cuttings of short side-shoots getting firm at the base, under a bell-glass, with gentle heat. Loam, leaf-mould, and sand. Best planted out in a sunny greenhouse.

H. We'rcklei (Werckle's). Orange-scarlet, with yellow disc. Costa Rica. 1899.

HIDE-BOUND. See BARK-BOUND.

HIERA'CIUM. Hawkweed. (A name from Pliny for eye-salve; referring to the ancient employment of the juice. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous perennials, with one exception, and all yellow-flowered, except where otherwise mentioned. The dwarf ones fitted for the front of borders, rock-works, and alpine grounds. Seeds and divisions of the plant in spring; light, rich loam.

H. alpe'stre (alpine). See CREPIS ALPESTRIS.
„ *alpi'num* (mountain). ½. July. Britain.
„ *amplexicau'le* (stem-clasping). 1½. July. Pyrenees. 1739.
„ „ *pulmonarioi'des* (lungwort-like). 1½. July. Switzerland. 1819.
„ *anchusæfo'lium* (bugloss-leaved). See H. DENTATUM.
„ *a'nglicum* (English). ½. July. Britain.
„ *angustifo'lium* (narrow-leaved). ½. May. Switzerland. 1823.
„ *auranti'acum* (orange). 1½. Orange. June. Scotland.
„ „ *fla'vum* (yellow). 1½. July. Switzerland. 1819.
„ *Auri'cula* (*umbel*-eared). 1½. July. England.
„ *bi'fidum* (twice-cut). 1½. June. Hungary.
„ *borea'le* (northern). 3–4. July, August. Britain.
„ *Bornmu'lleri* (Bornmuller's). 1. Bright yellow. Leaves very woolly. Asia Minor. 1902.
„ *bracteola'tum* (bracted). 1½. August. Europe. 1823.
„ *calca'reum* (chalky). See H. RUPESTRE.
„ *canade'nse* (Canadian). 2. July. Canada. 1800.
„ *cerinthoi'des* (honeywort-like). 1½. August. Scotland.
„ *cilia'tum* (hair-fringed). See PICRIS SPRENGERIANA.
„ *colli'num* (hill). ½. July. Switzerland. 1819.
„ *corymbo'sum* (corymbed). 2. July. N. Europe. 1817.
„ *crassifo'lium* (thick-leaved). ½. July. Hungary. 1820.
„ *croca'tum* (saffron). 3–5. July, August. Britain.
„ *cro'ceum* (saffron). See CREPIS PALLASII.

H. cydoniæfo'lium (quince-leaved). 2. July. France. 1816.
„ *cymo'sum* (cymed). 1. May. Europe. 1739.
„ *denta'tum* (toothed). 1. July. Europe. 1816.
„ *denticula'tum* (small-toothed). See H. STRICTUM.
„ *echioi'des* (viper's bugloss-like). ½. July. Hungary. 1802.
„ *elonga'tum* (lengthened). See H. VILLOSUM.
„ *erio'phorum* (wool-bearing). 1. August. S. Europe. 1817.
„ *eriophy'llum* (woolly-leaved). 1½. June.
„ *fascicula'tum* (bundled). See H. CANADENSE.
„ *flagella're* (twiggy). 1. May. 1816.
„ *florenti'num* (Florentine). 2. July. Germany. 1791.
„ *folio'sum* (leafy). 2. July. Hungary. 1805.
„ *frutico'sum* (shrubby). See TOLPIS FRUTICOSA.
„ *glabra'tum* (smooth). ½. July. Switzerland. 1819.
„ „ *tubulo'sum* (tubulous). ½. July. Switzerland. 1819.
„ *Gmeli'ni* (Gmelin's). See CREPIS GMELINI.
„ *Gochna'ti* (Gochnati's). See H. PRATENSE.
„ *Grono'vii* (Gronovius's). 1. June. N. Amer. 1798.
„ *Halle'ri* (Haller's). See H. ANGLICUM.
„ *heterophy'llum* (various-leaved). 2. August. Woods.
„ *hoppea'num* (Hoppe's). ½. June. Switzerland. 1819.
„ *hu'mile* (humble). ½. July. Germany. 1804.
„ „ *brachia'tum* (brachiate). ½. June. Switzerland. 1819.
„ *inca'num* (hoary). 2. July. Caucasus. 1817.
„ *incarna'tum* (flesh-coloured). See CREPIS INCARNATA.
„ *inci'sum* (cut-*leaved*). ½. July. Switzerland. 1819.
„ *inuloi'des* (Inula-like). See H. BOREALE and H. CROCATUM.
„ *Ka'lmii* (Kalm's). 1½. August. Pennsylvania. 1794.
„ *læviga'tum* (smooth). 2. August. 1804.
„ *lana'tum* (woolly). 1. June. Europe.
„ *Lawso'ni* (Lawson's). ½. June. Britain.
„ *longifo'lium* (long-leaved). 1½. July. 1821.
„ *macula'tum* (spotted-*leaved*). 1½. August. Britain.
„ *mo'lle* (soft-*leaved*). 1½. August. Scotland.
„ *ova'tum* (egg-*leaved*). ½. July. Switzerland. 1819.
„ *palle'scens* (pale). 1. July. Hungary. 1818.
„ *pa'llidum* (pale). ½. July. Norway. 1819.
„ *panicula'tum* (panicled). 1½. June. Canada. 1800.
„ *pi'ctum* (painted). 1½. July. Switzerland. 1819.
„ *piloce'phalum* (hairy-headed). See H. VILLOSUM.
„ *pilosellæfo'rme* (mouse-ear-like). ½. June. Switzerland. 1819.
„ *porrifo'lium* (leek-leaved). 1. July. Austria. 1640.
„ *præmo'rsum* (bitten-*leaved*). See CREPIS PRÆMORSA.
„ *prate'nse* (meadow). 1. June. Europe, N. Asia. 1819.
„ *prenanthoi'des* (Prenanthus-like). 2. July. France. 1819.
„ *prunellæfo'lium* (self-heal-leaved). See CREPIS PYGMÆA.
„ *pulmonarioi'des* (lungwort-like). 1. July. France. 1819.
„ *pulmona'rium* (lungwort). See H. SAXATILE.
„ *pusi'llum* (small). See ERIGERON UNIFLORUS.
„ *racemo'sum* (racemed). 2. July. Hungary. 1816.
„ *ramo'sum* (branchy). 2. August. Hungary. 1805.
„ *re'pens* (creeping). See H. AURANTIACUM.
„ *ri'gidum* (stiff). 2. June. Britain.
„ „ *angustifo'lium* (narrow-leaved). 2. June. Britain.
„ „ *pi'ctum* (painted). 2. June. Britain.
„ *rotunda'tum* (round-*leaved*). 3. July. Hungary. 1817.
„ *rupe'stre* (rock). ½. June. Switzerland. 1820.
„ *saxa'tile* (rock). 1. July. Austria. 1801.
„ *sca'brum* (rough). 1. July. N. Amer. 1821.
„ *Schmi'dtii* (Schmidt's). 1½. June.
„ *Schrade'ri* (Schrader's). See H. VILLOSUM.
„ *speciosi'ssimum* (showiest). See H. DENTATUM.
„ *specio'sum* (showy). 1½. June. 1818.
„ *staticifo'lium* (thrift-leaved). 1½. June. Europe. 1804.
„ *Sternbe'rgii* (Sternberg's). See H. PALLIDUM.
„ *stoloni'ferum* (runner-growing). 1. May. Switzerland. 1820.
„ *stri'ctum* (upright). 1. July. Scotland.
„ *succisæfo'lium* (lopped-leaved). See CREPIS SUCCISÆFOLIA.
„ *sylva'ticum* (wood). 1½. August. Britain.
„ *tomento'sum* (felted). 1. May. Europe. 1732.
„ *trichoce'phalum* (hairy-headed). See H. GLABRATUM.
H. umbella'tum (umbelled). 3. August. Britain.
„ *undula'tum* (waved). 1½. July. Spain. 1778.
„ *veno'sum* (veiny). ½. July. N. Amer. 1790.
„ *verbascifo'lium* (mullein-leaved). See H. TOMENTOSUM.
„ *verrucula'tum* (warted). See H. SCABRUM.
„ *villo'sum* (shaggy). 1. July. Scotland.
„ *virga'tum* (twiggy). See H. CANADENSE.

HIERO'CHLOË. (From *hieros*, sacred, and *chloe*, grass; formerly strewed on the floors of churches on special occasions in Northern Europe, on account of its fragrance. Nat. ord. Gramineæ.)
Hardy perennial grasses, giving off a sweet odour, due to benzoic acid. Suitable for borders or rock-work. Divisions. Ordinary soil.
H. alpi'na (alpine). 1. July. Northern regions and New Zealand. 1827.
„ *borea'lis* (northern). 1–1½. Brownish. July. Caithness, Scotland.
„ *re'dolens* (fragrant). 1. July. Temperate Southern regions.

HIGGI'NSIA. (Named after *Don O'Higgins*, a Spanish-American officer. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. See HOFFMANNIA.)
A greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, in spring; peat and loam. Winter temp., 38° to 45°; will thrive out of doors in summer.
H. Ghiesbre'ghtii (Gheisbreght's). See HOFFMANNIA GHIESBRECHTII.
„ *mexica'na* (Mexican). See HOFFMANNIA MEXICANA.

HILLEBRA'NDIA. (Commemorative of *W. Hillebrand*, a plant collector. Nat. ord. Begoniaceæ.)
Stove perennial herb, differing from Begonia in having petals. Seeds and cuttings. Fibrous loam, leaf-mould, or peat and sand.
H. sandwice'nsis (Sandwich). 1½. White. Sandwich Islands. 1887.

HI'LLIA. (Named after *Sir John Hill*, a botanical author. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Cinchona.)
Stove evergreens, with white flowers. Cuttings in sand, under a glass, in bottom-heat; sandy loam and peat. Summer temp., 60° to 85°; winter, 48° to 55°.
H. longiflo'ra (long-flowered). See H. PARASITICA.
„ *parasi'tica* (parasitic). 1½. March. W. Ind. 1789.
„ *prasia'ntha* (leek-green-flowered). Green. Ceylon. 1824.
„ *tetra'ndra* (four-stamened). 1½. June. Jamaica. 1793.

HIMERA'NTHUS. (From *himeros*, desire, and *anthos*, a flower. Nat. ord. Solanaceæ.)
Greenhouse perennial herb. Divisions; seeds. Loam, leaf-mould, and sand.
H. runcina'tus (runcinate). ½. Green, yellow. La Plata. 1831.

HI'NDSIA. (Named after *R. B. Hinds*, a promoter of botany. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Rondeletia.)
Greenhouse evergreen shrubs, from Brazil. Cuttings of young shoots in sand, under a bell-glass, in bottom-heat. Summer temp., 60° to 85°; winter, 48° to 55°.
H. longiflo'ra (long-flowered). 2. Blue. August. 1841.
„ „ *a'lba* (white-*flowered*). 2. White. May. 1845.
„ *viola'cea* (violet-coloured). 3. Violet. May. 1844.

HIPPEA'STRUM. Equestrian Star. (From *hippeus*, a knight, and *astron*, a star; referring to one of the species, *eque'stre*. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Includes Habranthus.)
This genus of bulbs has no affinity with Amaryllis, with which the species are often confounded. Offsets; sandy loam, peat, and leaf-mould. Temp. 60° to 80° when growing; 40° to 50° when at rest.

GREENHOUSE.

H. banksia'num (Banks's). Pink. October. 1840.
„ *Forbe'sii* (Forbes's). 2. Purple, white. July. Cape of Good Hope. 1823.
„ „ *purpu'reum* (Forbes's purple). 2. Purple. July. Cape of Good Hope. 1823.

H. formosi'ssimum (handsomest). See SPREKELIA FORMOSISSIMA.
„ *japo'nicum* (Japan). Yellow. July. Japan.
„ *linea'tum* (lined). ¾. September. Chili. 1820.
„ *pudi'cum* (modest). 1. Pink. June. Cape of Good Hope. 1795.
„ *slateria'na* (Slater's). Red. March. Cape of Good Hope. 1844.

STOVE.

H. a'dvenum (stranger). 1. Yellow to red. December. Chili.
„ *Albe'rti* (Albert's). Orange-scarlet. Cuba. 1867.
„ *ambi'guum* (ambiguous). White and red. Hybrid.
„ *andrea'num* (Andrean). 1. Pale red, with deep red stripes. Colombia. 1880.
„ *angu'stum* (narrow). See H. BIFIDUM.
„ *ano'malum* (anomalous). Crimson, green. S. Amer.
„ *Arechavale'tæ* (Mme. Arechavaleta's). 2 White, banded with crimson. Montevideo. 1898.
„ *au'licum* (courtly). 1½. Green, crimson. May. Brazil. 1810.
„ „ *glaucophy'llum* (milky-green-leaved). Crimson, green.
„ „ *platype'talum* (broad-petaled). 2. Crimson, green. August. Brazil. 1824.
„ „ *stenope'talum* (narrow-petaled).
„ *Bagno'ldi* (Bagnold's). 1. Yellow, shaded red. S. Amer. 1878.
„ *barba'tum* (bearded-*tube*). See H. EQUESTRE BARBATUM.
„ *bi'color* (two-coloured). 1½. Bright red, yellow-green. October. Chili. 1824.
„ *bi'fidum* (forked). 1. Deep red. March. Buenos Ayres. 1825.
„ *brachya'ndrum* (short-anthered). Pale pink, changing to blackish-red. S. Brazil. 1890.
„ *brevifl'orum* (short-flowered). 3. White, red. April. Buenos Ayres. 1836.
„ *bulbulo'sum* (many-bulbed). See H. RUTILUM and its varieties.
„ *calyptra'tum* (hooded). 1½. Green, red. June. Brazil. 1816.
„ *Cy'bister* (Cybister). 2. Crimson, green. Bolivia. 1839.
„ „ *bre'vis* (short). 1. Green, red. June. Bolivia. 1839.
„ *eque'stre* (equestrian). 1. Orange, green. August. W. Ind. 1710.
„ „ *barba'tum* (bearded). White, green. Surinam.
„ „ *ma'jor* (larger). 2. Orange, green. August. W. Ind. 1710.
„ „ *pyrro'chroum* (fire-coloured). Scarlet. Brazil. 1865.
„ „ *semiple'num* (half-double). 2. Orange, green. August. Cuba. 1809.
„ „ *sple'ndens* (splendid). Flowers larger. 1895.
„ „ *Wolte'ri* (Wolter's). Costa Rica. 1895.
„ *herbertia'num* (Herbertian). 1. Deep red. Chili. 1825.
„ *iguape'nse* (Iguapan). ½. White, striped red or lilac on the upper segments. S. Brazil. 1903.
„ *interme'dium* (intermediate). 2. Striped. August. Brazil. 1821.
„ *kermesi'num* (carmine). June. Brazil. 1833.
„ *Krome'ri* (Kromer's). Leaves fulvous. Brazil. 1902.
„ *Leopo'ldii* (Leopold's). Bright red, white, greenish. Peru. 1869.
„ *minia'tum* (vermilion). 1. Red, yellow. June. Peru. 1825.
„ *organe'nse* (Organ Mountain). Crimson, white. Brazil. 1841.
„ „ *compre'ssum* (flattened). Red, white. Brazil.
„ *pardi'num* (panther-spotted). 1½. Spotted with scarlet on light yellow. March. Peru. 1867.
„ „ *rube'scens* (reddish). Pale red. 1870.
„ *prate'nse* (meadow). 1. Deep red. Chili. 1840.
„ *pro'cerum* (tall). 1½–3. Lilac-blue. Winter and spring. Brazil. 1864.
„ *psittaci'num* (parrot). 2. Green, scarlet. July. Brazil. 1816.
„ *pulverule'ntum* (powdered). See H. RUTILUM ACUMINATUM.
„ *pyrro'chroum* (fire-coloured). See H. EQUESTRE PYRROCHROUM.

H. Regi'næ (queen's. *Mexican Lily*). 2. Scarlet. May. Mexico. 1725.
„ *re'gium* (royal). See H. REGINÆ.
„ *reticula'tum* (netted-*veined*). 1. Scarlet. April. Brazil. 1777.
„ „ *striatifo'lium* (*white*-striped-leaved). 1. Purple. August. Brazil. 1815.
„ *retine'rvium* (netted-nerved). 2. Scarlet. May. W. Ind. 1822.
„ *Rœ'zli* (Rœzl's). Pale orange-red. Bolivia. 1875.
„ *ro'seum* (rosy). ½. Rich crimson, yellowish base. Montevideo. 1900.
„ *ru'tilum* (sparkling). 1. Crimson-scarlet. April. Brazil. 1810.
„ „ *acumina'tum* (long-pointed). Pale pink. Segments acute. Brazil.
„ „ *citri'num* (citron). 1. Bright yellow.
„ „ *croca'tum* (saffron-coloured). 1. Saffron. April. Brazil. 1815.
„ „ *fu'lgidum* (shining). 1. Bright scarlet, green. April. Brazil. 1810.
„ „ *igne'scens* (fiery). 1. Red, orange. Brazil.
„ *simsia'num* (Simsian). See H. RUTILUM FULGIDUM.
„ *solandræfl'orum* (Solandra-flowered). 1½. White, green. May. Guiana. 1839.
„ „ *stria'tum* (streaked-*flowered*). Green, white.
„ *spatha'ceum* (large-spathed). See H. EQUESTRE.
„ *stylo'sum* (*long*-styled). 1. Red. April. Brazil. 1821.
„ „ *nu'dum* (naked). Stamens very long and spread out. 1902.
„ *teretifo'lium* (terete-leaved). 1. Rosy-pink, 2 in. long. Montevideo. 1900.
„ *varia'bilis* (variable). 1. Red, white. June. Cape of Good Hope. 1821.
„ *vitta'tum* (striped-*flowered*). White, red. Peru. 1769.
„ „ *a'lbum* (white). White. 1904.
„ „ *harrisonia'num* (Harrisonian). White, red. Peru. 1874.
„ „ *latifo'lium* (broad-leaved). White, red, green.

HI'PPION HYSSOPIFO'LIUM and **H. VERTICILLA'TUM.** See ENICOSTEMA LITTORALE.

HI'PPION VISCO'SUM. See IXANTHUS VISCOSUS.

HIPPOBRO'MA. See ISOTOMA.

HIPPOBRO'MUS. (Derived from *hippos*, a horse, and *bromos*, food. Nat. ord. Sapindaceæ.)
Greenhouse tree. Cuttings in sand, in a close case, with gentle heat. Fibrous loam, with a little peat and sand.
H. ala'tus (winged). Flowers in panicles, white or tawny. S. Africa.

HIPPOCRE'PIS. Horse-shoe Vetch. (From *hippos*, a horse, and *crepis*, a shoe; referring to the form of the seed-pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)
Hardy pea-blossomed, yellow-flowered plants. The annuals merely require sowing in the open border, in March or April; the herbaceous trailers require dividing at a similar period. *H. balea'rica* is the only shrub; it resembles, and requires similar treatment to the Coronilla, needing a cold pit or a greenhouse in winter.
H. balea'rica (Balearic). 2. May. Minorca. 1776. Shrub.
„ *como'sa* (tufted). ½. April. England. Perennial trailer.
„ „ *helve'tica* (Swiss). ½. May. Switzerland. 1819. Trailer.
„ *glau'ca* (milky-green). ½. May. Italy. 1819. Perennial trailer.
„ *helve'tica* (Swiss-*tufted*). See H. COMOSA HELVETICA.
„ *multisiliquo'sa* (many-podded). 1. July. S. Europe. 1570. Annual.
„ *squama'ta* (scaly). 1. White, yellow. Crete. 1820.

HIPPO'MANE. (From *Hippomanes*, a name borrowed from Theophrastus. Nat. ord. Euphorbiaceæ.)
The Manchineel or Manzanillo tree, with a poisonous milky juice, but greatly exaggerated as to its virulent nature. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat and plenty of sand.
H. Mancine'lla (Mancinella). 40–50. Greenish. Trop. S. Amer. 1690.

HIPPOPHAË. Sea Buckthorn. (From *hippos*, a horse, and *phao*, to kill. Nat. ord. *Oleasters* [Elæagnaceæ]. Linn. 22-*Diœcia*, 4-*Tetrandria*. Allied to Shepherdia.)

Hardy deciduous shrubs. Layers, suckers, cuttings of the roots, and seeds; common soil. These are first-rate shrubs for the sea-coast, for fixing sands along with *ca'rex* and other grasses.

H. argé'ntea (silvery). See SHEPHERDIA ARGENTEA.
,, *canade'nsis* (Canadian). See SHEPHERDIA CANADENSIS.
,, *littora'lis* (sea-shore). See H. RHAMNOIDES.
,, *rhamnoi'des* (Rhamnus-like). 12. May. England.
,, ,, *angustifo'lia* (narrow-leaved). 2. May. S. England.
,, ,, *sibi'rica* (Siberian). April. Siberia.
,, *salicifo'lia* (willow-leaved). 8–30. Nepaul. 1822.

HIPPU'RIS. Mare's Tail. (From *hippos*, a horse, and *oura*, a tail; like Equisetum has been compared to a horse's tail. Nat. ord. Haloragaceæ.)

Hardy, perennial aquatic, for the edge of a tank or pond. Divisions. Loam and leaf-mould.

H. vulga'ris (common). 1. Green. June to August. Europe (Britain).

HI'PTAGE. (Derived from *hiptamai*, to fly; in reference to the hairy seed carried by the wind. Nat. ord. Malpighiaceæ.)

Stove, twining, evergreen plants. Cuttings of half-ripe shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

H. Madablo'ta (Madablota). 10–15. White, yellow. April. Trop. Asia. 1793.
,, *obtusifo'lia* (blunt-leaved). 15–20. White. China. 1810.

HIRÆ'A. (Named after *De La Hire*, a French botanist. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)

Stove climbers. Cuttings of firm young shoots in sand, under a bell-glass, in bottom-heat; sandy, fibrous loam, and fibrous peat, with a little freestone or charcoal. Summer temp., 60° to 90°; winter, 50° to 60°.

H. glauce'scens (milky-green). Yellow. E. Ind.
,, *i'ndica* (Indian). See ASPIDOPTERYS ROXBURGHIANA.
,, *nu'tans* (nodding). See ASPIDOPTERYS NUTANS.
,, *odora'ta* (sweet-scented). See TRIASPIS ODORATA.
,, *reclina'ta* (leaning). 10. Yellow. July. W. Ind.
,, *simsia'na* (Simsian). 10. Yellow. W. Ind. and Guiana. 1793.

HOA'REA. A group of species now referred to Pelargonium.

HODGSO'NIA. (Commemorative of *B. H. Hodgson*. Nat. ord. Cucurbitaceæ.)

A rampant stove climber that requires planting out and training to the rafters. Seeds. Good loam, with an admixture of sand.

H. hetero'clita (variously inclined). 12–100. Yellow, white. Himalaya, Burma, &c.

HOE. This is the implement which should be most frequently in the gardener's hand, for the surface of the soil scarcely can be too frequently stirred. The handles should never be made of heavy wood, for this wearies the hand, and is altogether a useless weight thrown upon the workman. It is merely the lever, and every ounce needlessly given to this diminishes, without any necessity, the available moving power. The best woods for handles are birch or deal.

For earthing-up plants, broad blades to hoes are very admissible, and they may, without objection, have a breadth of nine inches; but for loosening the soil and destroying weeds, they should never extend to beyond a breadth of six inches, and the work will be done best by one two inches narrower. The iron plate of which they are formed should be well steeled, and not more than one-sixteenth of an inch thick. The weight necessary should be thrown by the workman's arm and body upon the handle; and the thicker the blade, the greater is the pressure required to make it penetrate the soil. It should be set on the handle at an angle of 68°, as this brings its edge at a good cutting angle with the surface of the soil, and the workman soon learns at what point most effectively to throw his weight, and holds the handle further from, or nearer to, the blade, accordingly as he is a tall or short man. Mr. Barnes, of Bicton Gardens, employs nine sized hoes, the smallest having a blade not more than one-fourth of an inch broad, and the largest ten inches. The smallest are used for potted plants and seed-beds, and those from two inches and a half to four inches wide are used for thinning and hoeing among crops generally. These have all handles varying in length from eight inches and a half to eighteen inches, all the neck or upper part formed of iron, for the smaller sizes not thicker than a large pencil, and that part which has to be grasped by the workman is only six inches long, and formed either of willow or some other soft, light wood, which is best to the feel of the hand. Each labourer works with one in each hand, to cut right and left. The blade is made thin, and with a little foresight and activity it is astonishing how much ground can be got over in a short time.

Mr. Barnes has all his hoes made with a crane neck. The blades broader than four inches he has made like a Dutch hoe.

The crane neck allows the blade to pass freely under the foliage of any crop where the earth requires loosening; and the blade works itself clean, allowing the earth to pass through, as there is no place for it to lodge and clog up as in the old-fashioned hoe, to clean which, when used of a dewy morning, causes the loss of much time.

The thrust, or Dutch hoe, consists of a plate of iron attached somewhat obliquely to the end of a handle by a bow, used only for killing weeds or loosening ground which is to be afterwards raked. As a man can draw more than he can push, most heavy work will be easiest done by the draw-hoe.

In the island of Guernsey a very effective *weeding-prong* is used, something in the shape of a hammer, the head flattened into a chisel an inch wide, and the fork the same. The whole length of this prong is nine inches, and it is attached to a staff five feet long. Such an implement is light and easy to use, it requires no stooping, and will tear up the deepest-rooted weeds.

HOFFMA'NNIA. (Commemorative of *Professor Hoffmann*, a German botanist. Nat. ord. Rubiaceæ.)

Stove evergreen shrubs. Cuttings of half-mature shoots in sand, in a close case, with bottom-heat. Fibrous loam, one-third peat, and sand.

H. di'scolor (two-coloured). ¾. Red. Leaves with a glossy sheen above, purple beneath. Mexico. 1850.
,, *Ghiesbre'ghtii* (Ghiesbreght's). 2–3. Yellow, red. Mexico. 1861.
,, ,, *variega'ta* (variegated). Leaves edged with creamy-white.
,, *mexica'na* (Mexican). Yellow. June. Mexico. 1840.
,, *peduncula'ta* (peduncled). 2. Yellow, red. Jamaica.
,, *phœnico'poda* (purple-footed). Flowers inconspicuous. Leaves violet-red beneath. Central Amer. 1899.
,, *refu'lgens* (shining). 2. Reddish. June. Mexico.
,, ,, *porphyrophy'llum* (purple-leaved). Leaves heavily shaded with purple.
,, *rega'lis* (regal). 1½. July. Mexico. 1859.

HOFFMANSE'GGIA. (Named after *J. C. Hoffmansegg*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove, yellow, pea-blossomed evergreens. Cuttings of young shoots in sand, in bottom-heat; also division of the plant in spring; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

H. falca'ria (sickle-*leaved*). 2. July. Chili. 1806.
,, *prostra'ta* (trailing). July. Lima.

HOG-NUT. *Ca'rya porci'na.*

HOG PLUM. *Spo'ndias.*

HOHENBE'RGIA. (Named after *M. Hohenberg*, a German botanist. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. See ÆCHMEA.)

H. capita'ta (headed). See ÆCHMEA EXSUDANS.
,, *ferrugi'nea* (rusty). See ÆCHMEA AUGUSTA.
,, *strobila'cea* (cone-like). See ACANTHOSTACHYS STROBILACEA.

Others under Æchmea, with their respective names.

HOHE'RIA. (Probably commemorative. Nat. ord. Malvaceæ.)

Greenhouse trees or shrubs. The bark of *H. populnea* is used for making a demulcent drink and for cordage.

Cuttings of half-ripe wood under a hand-light. Fibrous loam, peat and sand.

H. Lya'lli (Lyall's). See PLAGIANTHUS LYALLII.

„ *popu'lnea* (poplar-like). 10–15. White. New Zealand.

„ *Sinclai'rii* (Sinclair's). 10–15. White. New Zealand.

HOI'TZIA. See LŒSELIA.

HOI'TZIA MEXICA'NA. See LŒSELIA COCCINEA.

HOLARRHE'NA. (From *holos*, entire, and *arrhen*, a male; referring to the anthers. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Alstonia.)

Stove evergreen. Cuttings of young shoots, as fresh growth has commenced, in sand, under a bell-glass, and in bottom-heat; peat and loam. Summer temp., 60° to 80°; winter, 48° to 55°.

H. antidysente'rica (antidysenteric). 10. White. May. Trop. Asia. 1778.

„ *villo'sa* (shaggy). E. Ind. 1820.

HOLBŒ'LLIA. (Named after *F. L. Holbœll*, of the Royal Botanic Gardens, Copenhagen. Nat. ord. *Barberries* [Berberidaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*. Allied to Akebia.)

Greenhouse climber, from Himalaya, valued for the fragrance of its dull flowers. Their fruit is eaten in India. Cuttings of half-ripened young shoots in sandy soil, under a glass; open, sandy loam, with a little peat; will stand in a cool greenhouse, in winter, and would twine up the wires of a wall, from the latitude of London, southwards, westwards, and in Ireland.

H. acumina'ta (pointed-*leafleted*). See H. LATIFOLIA.

„ *angustifo'lia* (narrow-leaved). See H. LATIFOLIA.

„ *latifo'lia* (broad-leaved). 10. Green or purple. March. 1845.

HO'LCUS. (*Holcos*, from the Greek name applied to some grass. Nat. ord. Gramineæ.)

A perennial British grass, valued only in the variegated form.

H. lana'tus (woolly). 1–1½. Green. Summer. Britain. "Yorkshire Fog."

„ „ *variega'tus* (variegated). Leaves striped with white.

HOLLY. (*I'lex Aquifo'lium.*) Of this hardy evergreen shrub there are many varieties, including the following distinct types:—1. Silver-edged; 2. Golden-edged; 3. Thick-leaved; 4. Prickly; 5. Yellow-leaved; 6. Variegated; 7. Spotted; 8. Recurved.

The holly will not thrive in any poor, light, sandy soil, or in a swampy situation, but likes a strong, deep, dry, loamy soil. If grown as single ornamental shrubs they should not be overshadowed by other trees; and if the land is manured, so much the better. As to pruning it, with a view to make it grow fast, the less you do of that the better. All that is necessary is to encourage the leader, by stopping any laterals that try to interfere with it.

The most expeditious way of making *holly-hedges* is to procure large plants from some nursery; but, with the smallest expense and more time, the following may be recommended:—Gather a sufficient quantity of berries when ripe; then dig a hole three or four feet deep, and throw the berries in, crushing and mixing them with some fine soil at the same time; close the hole with the soil taken out, and throw some litter, or other covering, over the whole, to prevent the wet or frost penetrating. Take them up and sow them in March. They will make nice little plants the first season; and, by transplanting the stronger ones, you will have fine plants in about three years.

Large hollies are best moved about the third week in August. With a small cord tie up the lower branches, then mark a circle two feet from the bole of the tree, and another circle two feet beyond the first; the space between the two circles must have all the soil dug deeply out of it; whilst this is going on, let another labourer be digging a hole larger than the ball of the tree will require, making it rather deeper; fill in some of the best soil, chopped fine, and mix it with water till it forms a puddle of the consistence of thick paint. Gradually undermine the ball below the roots till it stands quite loose; then wrap some garden-mats round, and tie the ball firmly together with a strong rope; then wrap the stem round as near the soil as possible with some old carpet or sacking; tie to the stem at that part a stout pole eight or nine feet long; then lower the tree gently down, and let as many men as are necessary to carry it take hold of the pole, and remove the tree to its place, letting it down gently into the hole amongst the puddle, taking care that it is not below, but rather above, the general level; fill in good soil round the ball after the tree is set upright, and the mats, ties, &c., removed. Mix this soil with water till it is a puddle like the bottom; secure the tree with props, to prevent the winds from shaking it.

The best time for cutting hollies is early in the spring, about the end of February, before they have begun to shoot. Never clip them with shears, but cut them in with a sharp knife.

HOLLYHOCK. (*Althæ'a ro'sea.*) *By Cuttings.*—These are made from the young shoots that rise from the base of the strong flower-stems. They may be formed of the tops only, or, if the young shoots are long, they may be cut into lengths of two joints each, removing the lower leaf, and shortening in the upper one. To cause them to send forth roots, a gentle hotbed should be made either of well-fermented dung, tanner's old bark, or fresh-fallen leaves. As soon as the heat is moderated, place the frame upon it, and a covering of dry sawdust upon the bed within the frame to the depth of five inches. Then prepare the cuttings, put them round the edge of pots filled with moist, sandy loam, press the earth close to the bottom of each cutting, and fill up the holes with a little more soil. Then plunge them nearly up to the rim in the sawdust, but give no water, because they are very full of sap, and would damp off immediately. Shade closely and give no air, excepting a little at the back to let out the steam for an hour in the morning. In six weeks they will begin to show signs of growth, and should then have a little water given without wetting the leaves. When roots are formed, pot them off into small pots, place them in a cold frame kept close, and shaded for a week or two. Then gradually inure them to bear the full sun, and give plenty of air, and moderate but constant supplies of water. They are then ready for planting out. The best time to perform this is in early spring, but it may be done also in August, so as to have them rooted before the winter sets in.

By Division.—Large, strong plants, with numerous shoots, may be taken up as soon as they have done flowering, and be divided with a strong knife. Care must be taken that each division has a good share of roots, and at least one shoot to it. Plant these divisions in a bed in a shady part of the garden, but not under the drip of trees. They may remain here till March, and then are ready to plant out in the place where they are to flower.

By Seed.—Save seed from the most double and best coloured flowers. Clean it from the husks, and keep it in a dry drawer, or in a bag hung up in a dry room. Sow early in March in shallow, wide pans, in a gentle heat. When the seedlings are so large as to be readily handled, transplant them either into boxes three inches apart, or prepare a bed of rich earth in a frame without heat, and plant them out in it at the same distance from each other. As soon as the weather will permit, make a sufficiently large piece of ground very rich with well-decomposed hotbed dung, in a dry, open part of the garden. Take the plants up carefully with a garden trowel, keeping as much earth as possible to each. Carry them, a few at a time, in a basket, to the prepared ground, and plant them out in rows two feet apart, and one foot between each plant. There they may remain till they flower. Then mark such as are well shaped and bright coloured; cut them down, and plant them in the place where they are to flower next season, giving a name to each. Write in a book kept for the purpose a description of each, both of shape and colour. Single and badly-shaped flowers throw away at once.

Soil.—They must have a dry, deep soil, enriched with plenty of manure. If the situation is damp, they will die off in the winter, unless well drained, and the bed elevated above the natural level.

Summer Culture.—When the plants begin to grow in the spring, give them a mulching about two inches thick, with some light littery manure. This will protect the

roots from the drying winds, and strengthen the flower-shoots. Place tall, strong stakes to them in good time, and as they advance in growth, tie the shoots separately to the stakes regularly, but not too tightly, and leave room for the stems to swell. During dry weather, give, once a week, a thorough good watering. If the flowers are intended for exhibition in spikes, cut off their extreme ends. This will cause the flowers to form a fine pyramid of bloom, and make them open more equally and much larger.

Winter Culture.—Cut down the flower-stem as early as possible after the bloom is over, and the seed is ripened. Dig the ground between the plants, leaving it moderately rough to mellow with the weather, adding a dressing of well-decomposed manure. Before the severe frosts are likely to set in, give a mulching of light, half-decayed dung, closing it round the plants. This will keep the roots warm through the frosty weather, and will enrich the ground as it decays.

Insects.—The *green fly* will, in dry seasons, attack the leaves and young shoots. (See APHIS.) *Slugs* will also attack the young shoots. They must be diligently sought for and destroyed, or, if very numerous, give the ground a watering with clear lime-water occasionally. In new ground, a *brown grub* is sometimes very destructive by eating off the young shoots just level with the ground. Nothing will kill these except hand-picking; the soil must be stirred with the hand, and the insects found and destroyed.

Diseases.—Sometimes they die off suddenly, the consequence of a too rich or too damp soil. Whenever a plant is struck with this disease, it should be instantly removed. If it has any young, healthy shoots, they may be taken off and put in as cuttings. The place must have the soil removed for a foot square, fresh soil put in, and a new healthy plant inserted.

HOLLYHOCK DISEASE. (*Pucci'nia malvacea'rum.*) For the last thirty-seven years or more the Hollyhock, especially the fine-named double forms, has been decimated by the above fungus, which is believed to have been brought to Europe from Chili. It attacks various species of Mallow in the wild state, and various garden plants belonging to the Mallow family. It is known only in the Puccinia stage, and the spores quickly germinate, hence the reason for its rapid spread. The disease was very virulent between 1873 and 1890, but since then has decreased in vigour, like many other introduced diseases, like that which destroyed Verbenas and latterly the Chrysanthemum. The disease makes its appearance, chiefly on the under-side of the leaves, first in the form of discoloured spots, which break through the skin of the leaf, and then look red-brown, becoming darker as the spores mature. The spores are two-celled, and supported by a slender, colourless stalk, and the great number of the spores give them the hue seen by the naked eye. When first detected, the diseased leaves should be removed and burnt to prevent the spread of the disease. The rest of the foliage should be well sprayed at intervals of ten days, with a solution of sulphide of potassium, at the rate of 1 oz. to 2 or 3 gallons of water. This will not kill the fungus already inside the leaves, but may prevent the spores from germinating afresh on the leaves.

HOLLY-LEAF FLY. (*Phytomy'za I'licis.*) In sheltered places more particularly, the leaves of the Holly are very liable to be disfigured by the grub of the small black fly above named. The blotches on the upper surface of the leaf are at first dirty white, but gradually become brown as the tissue of the leaf within decays. The grub is of a pale, dirty white hue, one line long and without legs. Two or three blotches, each containing a grub, may occur on a leaf. As the grub pupates or passes through its various stages to the perfect fly, within the leaf, and makes its appearance early in the following summer, all valuable trees should have the blistered leaves picked off and burnt to prevent a fresh attack in the following year.

HOLMSKIO'LDIA. (Named after *T. Holmskiold*, a Danish botanist. Nat. ord. *Verbenads* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia.*)

Stove evergreens, with scarlet flowers, from the East Indies. Cuttings of young shoots just getting firm at the base, in sandy soil, under glass, and in heat; sandy peat, and light, fibrous loam. Summer temp., 60° to 90°; winter, 50° to 60°.

H. sangui'nea (bloody). 4. 1796. Shrub.
,, *sca'ndens* (climbing). See H. SANGUINEA.

HOLOPTE'LEA. (From *holos*, whole, and *ptao*, to fly; the whole fruit, styles, and stalk are winged, literally, wholly winged. Nat. ord. Urticaceæ. Allied to Ulmus.)

A stove tree similar to an Elm. Cuttings in sand, with bottom-heat. Loam, peat, and sand.

H. integrifo'lia (entire-leaved). 40. India. 1822.

HO'LOTHRIX. (From *holos*, whole, and *thrix*, a hair; in reference to the hairy character of the small-leaved plants. Nat. ord. Orchidaceæ.)

Small, terrestrial orchids, which die down annually to the root-stock. They require warm greenhouse treatment. Fibrous peat, sphagnum, and charcoal, with plenty of drainage.

H. lindleya'na (Lindleyan). ½. White. S. Africa. 1888.
,, *ortho'ceras* (straight-horned). ½. White, striped with purple. S. Africa. 1897.
,, *villo'sa* (shaggy). ¾. Yellow-green, somewhat fragrant. S. Africa. 1908.

HOMALA'NTHUS. (From *homalos*, even or smooth, and *anthos*, a flower. Nat. ord. Euphorbiaceæ.)

Evergreen, stove shrubs. Cuttings of nearly mature wood, in sand, and placed in a close case, with bottom-heat. Fibrous loam, peat, and sand.

H. fastuo'sus (proud). Greenish. Philippines. 1866.
,, *giganteu'us* (giant). Green, or yellow-green. Java. 1866.
,, *leschenaultia'nus* (Leschenaultian). 5–14. White. August. E. Ind.; Malaya. 1823.
,, *pelta'tus* (peltate-leaved). See H. GIGANTEUS.
,, *polya'ndrus* (many-flowered). Greenish. New Zealand. 1876.
,, *populifo'lius* (poplar-leaved). See H. LESCHENAULTIANUS.

HOMA'LIUM. (From *homalos*, even or smooth. Nat. ord. Samydaceæ.)

A greenhouse, evergreen shrub. Cuttings of half-ripe wood in sand, with gentle bottom-heat. Loam, with a little peat and sand.

H. cochinchine'nsis (Cochin-Chinese). See H. FAGIFO'LIUM.
,, *fagifo'lium* (beech-leaved). 3–5. White. July. China. 1823.

HOMALOME'NA. (From *homalos*, even, and *me'ne*, the moon; a fanciful derivation from the native name. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 7-*Hepandria*. Allied to Richardia.)

Dwarf stove subshrubs or perennials. Offsets from the roots, and dividing the plant; rich, open loam. Winter temp., 40° to 45°.

H. aroma'tica (aromatic). 2. White. July. E. Ind. and Malaya. 1810.
,, *cærule'scens* (bluish). Bluish. Malaya.
,, *corda'ta* (heart-*leaved*). See H. AROMATICA.
,, *insi'gnis* (remarkable). Green. Leaves purple beneath. Borneo. 1885.
,, *lasioi'des* (woolly-like). Country uncertain.
,, *mi'nus* (lesser). See H. CÆRULESCENS.
,, *paludo'sa* (marshy). Perak.
,, *pelta'ta* (peltate). 4–4½. Pink, spotted with white. Colombia. 1877.
,, *pictura'ta* (painted). ½. Spathe green; spadix white. Colombia. 1873.
,, *pontederiæfo'lia* (Pontederia-leaved). Malaya.
,, *Rœ'zlii* (Rœzl's). ¾. Spathe brownish without, cream within. Colombia. 1875.
,, *rube'scens* (reddish). 1–2. Spathe pale purple without, white within. India. 1869.
,, *ru'bra* (red). See H. RUBESCENS.
,, *siesmayeria'na* (Siesmayerian). Leaves arrow-shaped. Borneo. 1885.
,, *singapore'nsis* (Singapore). Singapore.
,, *Walli'sii* (Wallis's). Spathe red; spadix white. Colombia. 1877.
,, *Wendla'ndii* (Wendland's). 3–4. Costa Rica.

HOMALONE'MA. See HOMALOME'NA.

HOMALOPE'TALUM. (From *homalos*, like, and

petalon, a petal; the lip is like the petals, so that all three are alike. Nat. ord. Orchidaceæ. Allied to Tetramicra.)

A diminutive stove, epiphytical Orchid. Divisions. Fibrous peat and sphagnum.

H. jamaicé'nse (Jamaican). ½. White. Jamaica. 1896.

HOME'RIA. (From *homeré'uo*, to join; the filaments are united in a tube surrounding the style. Nat. ord. Iridaceæ.)

Interesting and beautiful bulbous plants, requiring cold greenhouse or frame treatment, either in pots or planted out in well-lighted and sunny structures. Offsets and seeds. Light, sandy, rich soil.

H. auranti'aca (orange). See H. COLLINA AURANTIACA.
„ *colli'na* (hill). 1. Testaceous or reddish-yellow. S. Africa. 1793.
„ „ *auranti'aca* (orange). 1. Orange. S. Africa. 1810.
„ „ *minia'ta* (vermilion). See H. MINIATA.
„ „ *ochroleu'ca* (yellow-white). Pale yellow. S. Africa. 1812.
„ *e'legans* (elegant). 1. Yellow and dusky blue. S. Africa. 1797.
„ *flexuo'sa* (flexuous). See HEXAGLOTTIS LONGIFOLIA.
„ *linea'ta* (lined). 1. Reddish-yellow. Leaves with a median white line. S. Africa. 1825.
„ *minia'ta* (vermilion). 1. Red. S. Africa. 1825.

HOMO'GYNE. (From *homos*, like, and *gune*, female; the female flowers are similar to the rest. Nat. ord. Compositæ.)

Hardy perennial herbs of dwarf habit for the rockery. Divisions. Ordinary soil.

H. alpi'na (alpine). ½. Pale purple. March to May. Europe. 1710.
„ *di'scolor* (two-coloured). ½. Pale purple. June, July. Europe. 1633.
„ *sylve'stris* (wood). White. Europe.

HOMOIA'NTHUS VISCO'SUS. See PEREZIA VISCOSA.

HONCKE'NYA, of Willdenow. (A commemorative name. Nat. ord. Tiliaceæ.)

Stove shrub with the habit of Sparmannia. Cuttings or half-ripe wood in sand, with bottom-heat. Fibrous loam, with a little peat and sand.

H. ficifo'lia (fig-leaved). 4–6. Purple. W. Trop. Africa. 1894.

HONESTY. *Luna'ria.*

HONEY BEE. *A'pis melli'fica.*

HONEY-BERRY. *Melico'cca.*

HONEY-DEW. See EXTRAVASATED SAP.

HONEY-FLOWER. *Melia'nthus.*

HONEY-GARLIC. *Nectarosco'rdum.*

HONEY-LOCUST. *Gledi'tschia triaca'nthos.*

HONEYSUCKLE. *Lonice'ra.*

HONEYWORT. *Ceri'nthe.*

HOO'DIA. (A commemorative name. Nat. ord. Asclepiadaceæ. Allied to Boucerosia.)

Warm greenhouse succulent and dwarf shrubs, like Stapelia, producing large flowers on the top of the tubercled and spiny stems and branches. Cuttings with a slight heel of the old wood, prepared and laid on a sunny shelf for a week or ten days till the cut dries over. Make up a compost of loam, sand, and finely broken bricks in equal parts. Insert the cuttings, water them in with a rosed watering-can, stand the pots in a sunny position, and wait till the soil gets fairly dry, then give sufficient to moisten the soil. When rooted, give a fair allowance of water during summer and very little during winter. Winter temp., 55° to 60°; summer, higher, with all the sunshine available to make them flower.

H. Bai'nii (Bain's). 1. Pale buff, with a reddish tint. July. S. Africa. 1877.
„ *Curro'ri* (Curror's). 1–2. Rosy-lilac, with dark lines, 5 in. across. Portuguese W. Africa. 1906.
„ *Gordo'ni* (Gordon's). 1. Pale brown and flesh-coloured. July. S. Africa. 1796.

HOO'KERA CORONA'RIA. See BRODIÆA GRANDIFLO'RA.

HOO'KERA PULCHE'LLA. See BRODIÆA CONGESTA.

HOOP-ASH. *Ce'ltis crassifo'lia.*

HOOP-PETTICOAT. *Narci'ssus Bulboco'dium.*

HOP. *Hu'mulus.*

HOP-HORNBEAM. See O'STRYA.

HOPKI'RKIA SCA'NDENS. See SALMEA EUPATORIA.

HOPLOPHY'TUM. See ÆCHMEA.

HO'RDEUM. Barley. (The name from the Latin. Nat. ord. Gramineæ.)

Hardy, annual grasses. Seeds. Ordinary soil.

H. di'stichon (two-rowed). See H. VULGARE DISTICHON.
„ *hexa'stichon* (six-rowed). See H. VULGARE HEXASTICHON.
„ *juba'tum* (bearded). 1½. Purplish awns. N. and S. Amer. 1782. "Maned Barley."
„ *vulga're* (common). 2–6. Cultivated only. "Spring Barley."
„ „ *di'stichon* (two-rowed). "Long-eared Barley."
„ „ *hexa'stichon* (six-rowed). "Winter Barley" or "Bere."
„ „ *zeo'criton* (selected corn). "Sprat or Battledore Barley."

HOREHOUND. *Marru'bium.*

HORKE'LIA. (Named after *J. Horkel*, a German botanist. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. United to Potentilla.)

Hardy herbaceous perennials. Seeds and dividing the plant in spring; common garden-soil.

H. capita'ta (headed) of Lindley. N.W. Amer.
„ *capita'ta* (headed) of Regel. See POTENTILLA HÆMATOCHRUS.
„ *conge'sta* (crowded-*flowered*). See POTENTILLA CONGESTA.
„ *fu'sca* (dusky). White. Summer. California.
„ *Tili'ngi* (Tiling's). See POTENTILLA TRIDENTATA.

HORMI'DIUM. (From *hormos*, a necklace; referring to the arrangement of the flowers on the stem. Nat. ord. Orchidaceæ.)

Stove, epiphytical Orchids. Divisions. Fibrous peat and sphagnum in pots.

H. bicornu'tum (two-horned). See DIACRIUM BICORNUTUM.
„ *pseudopygmæ'um* (false-pigmy). White, with red marks. Costa Rica. 1909.
„ *pygmæ'um* (pigmy). See H. UNIFLORUM.
„ *Sophroni'tis* (Sophronitis). Yellow, red, green. Colombia. 1867.
„ *uniflo'rum* (one-flowered). Green; lip white, rose. Mexico. 1832.

HORMI'NUM. (From *hormao*, to excite; its medicinal qualities. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Monarda.)

Hardy herbaceous perennial. Division of the plant, and seeds in spring; requires a dry situation, or a damp winter will injure it.

H. caule'scens (stemmed). See LEPECHINIA SPICATA.
„ *pyrena'icum* (Pyrenean). 1. Blue. June. Pyrenees. 1820.

HORN. See ANIMAL MATTERS.

HORNBEAM. *Carpi'nus.*

HORNEMA'NNIA, of Vahl. (Commemorative of *Dr. Hornemann*, a German botanist. Nat. ord. Vacciniaceæ.)

Evergreen stove shrub. Cuttings in sandy peat in bottom-heat. Suckers. Sandy loam and peat.

H. martinice'nsis (Martinique). 4. Red. Martinique; Guiana. 1861.

HORNEMA'NNIA OVA'TA, of Link. See VANDELLIA CRUSTACEA.

HORNEMA'NNIA VISCO'SA, of Willdenow. See VANDELLIA HIRSUTA.

HORN-OF-PLENTY. *Fe'dia.*

HORN-POPPY. *Glau'cium.*

HORSE-CHESTNUT. *Æ'sculus.*

HORSE-RADISH. (*Cochlea'ria Armora'cia.*) Delights in a deep, rich soil, banks of a ditch, &c. Should the ground require manure, it should be dug in at the depth at which the sets are intended to be planted. It is propagated by sets, provided by cutting the main root and offsets into lengths of two inches. The tops, or crowns of the roots, form the best, those taken from the centre never becoming so soon fit for use, or of so fine a growth. Each set should have at least two eyes; for without one they sometimes refuse to vegetate at all. For a supply of the crowns, any inferior piece of ground, planted with sets six inches apart and six deep, will furnish from one to five tops each, and may be collected for several successive years with little more trouble than keeping them clear of weeds; but the times for planting are in October and February.

Insert the sets in rows eighteen inches apart each way. The ground trenched between two and three feet deep, the cuttings being placed along the bottom of the trench, and the soil turned from the next one over them. The earth ought to lie lightly over the sets; therefore treading on the beds should be carefully avoided. The shoots make their appearance in May or June, or earlier if the sets were planted in autumn.

Remove the leaves as they decay in autumn, the ground being also hoed and raked over at the same season, which may be repeated in the following spring.

In the succeeding autumn they merely require to be hoed as before, and may be taken up as wanted. By having three beds devoted to this root, one will always be lying fallow and improving; of which period advantage should be taken to apply any requisite manure.

Taking up.—To take them up, a trench is dug along the outside row down to the bottom of the roots, which, when the bed is continued in one place, may be cut off level to the original stool, and the earth from the next row then turned over them to the requisite depth; and so in rotation to the end of the plantation. By this mode a bed will continue in perfection for five or six years, after which a fresh plantation is usually necessary. But the best practice is to take the crop up entirely, and to form a plantation annually; for it not only causes the roots to be finer, but also affords the opportunity of changing the site. If this mode is followed, care must be taken to raise every lateral root; for almost the smallest will vegetate if left in the ground.

HORSE-RADISH TREE. *Mori'nga pterygospe'rma.*

HORSE-SHOE VETCH. *Hippocre'pis.*

HORSE-THISTLE. *Cni'cus.*

HORSFIE'LDIA. (Commemorative of *Dr. Horsfield*, a botanical collector. Nat. ord. Araliaceæ.)

Stove, evergreen, spiny shrub allied to Aralia, and requiring similar treatment.

H. aculea'ta (prickly). Leaves palmately lobed. Java. 1866.

HORT. A contraction of *horte'nsis*, belonging to a garden. When placed after the names of plants it is a contraction for *hortorum*, of gardens, and means that the plant or the name originated in gardens.

HORTE'NSIA JAPO'NICA and **H. OPULOI'DES.** See HYDRANGEA HORTENSIS.

HOSA'CKIA. (Named after *Dr. Hosack*, an American botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Ononis.)

Hardy plants, with yellow flowers, except where otherwise mentioned. Suitable for front of borders and rockworks; seeds and division of the plants in spring; cuttings of perennials in summer, under a hand-light.

ANNUALS.

H. subpinna'ta (rather-leafleted). June. Chili and N.W. Amer. 1836.

„ *wrangelia'na* (Wrangel's). See H. SUBPINNATA.

HERBACEOUS PERENNIALS.

H. bi'color (two-coloured). ½. Yellow and white. August. N. Amer. 1826.

„ *crassifo'lia* (thick-leaved). 3. Red. June. California. 1830.

H. decu'mbens (lying-down). ½. August. N. Amer. 1827.

„ *parvifio'ra* (small-flowered). ½. August. N. Amer. 1827.

„ *purshia'na* (Pursh's). ½. July. N. Amer. 1824.

„ *stoloni'fera* (creeping-rooted). See H. CRASSIFOLIA.

HOSE IN HOSE is a form of double flowers when one corolla is inserted within the other, as is frequently the case with the primrose.

HO'STA. (Named after *N. T. Host*, a German botanist. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. See CORNUTIA.)

H. cæru'lea (sky-blue). See CORNUTIA PUNCTATA.

„ *latifo'lia* (broad-leaved). See CORNUTIA PYRAMIDATA.

„ *longifo'lia* (long-leaved). See CORNUTIA LONGIFOLIA.

HOTBED is a bed of earth, or other material, usually covered by a glazed frame, and heated artificially, and employed either for forcing certain vegetables, for raising seedlings, or for striking cuttings. It is heated either by dung, or leaves, or tan in a state of fermentation, or by hot water.

Hotbed of Stable Dung: Preparation of Dung.—We will commence with the dung fresh at the stable door: the first thing is to throw it into a close body to "sweat." Those amateurs who have plenty, and to spare, will do well to shake it over loosely, and reject a portion of the mere droppings; for these take the most purifying, and, moreover, engender an over-powerful and sometimes unmanageable heat, which, in unpractised hands, is capable of much mischief. The main bulk of the material thus thrown together will, in a week or so, become exceedingly hot, and must then be turned completely inside out; and, in so doing, every lock or patch which adheres together must be divided. Water will now be requisite, and must be regularly applied as the work proceeds, rendering every portion equally moist. After the mass has lain for about four days longer, it is well to administer a liberal amount of water on the top; this will wash out at the bottom of the heap much of its gross impurities. In a few more days it must be again turned inside out, using water if dry in any portion, and after lying nearly a week it should be almost fit for use; but it is well to give it even another turn. If any tree-leaves, strawy materials, &c., or any simple vegetable matter is to be added to the mass, it may be added at the last turning but one. The heap ought now to be "sweet," and such may be readily ascertained even by unpractised persons; for a handful drawn from the very interior, and applied to the nostrils, will not only be devoid of impure smell, but actually possess a somewhat agreeable scent, similar to the smell of mushrooms.

Beds.—All things will now be in readiness for building the bed, and one necessary point is to select a spot perfectly dry beneath, or rendered so. It must, moreover, be thoroughly exposed to a whole day's sun; but the more it is sheltered sideways the better, as starving winds, by operating too suddenly in lowering the temperature, cause a great waste of material as well as labour. The ground-plan of the bed, or ground surface, should be nearly level. A good builder, however, will be able to rear a substantial bed on an incline; and such is not a bad plan, so forming the slope as to have the front, or south side, several inches below the back; the front being *with* the ground level, the back raised above it. By such means there will be as great a depth of dung at front as back, which is not the case when the base is level; for then, unluckily, through the incline necessary for the surface of the glass, the dung at back is generally much deeper than the front, at which latter point most heat is wanted. Good gardeners not unfrequently use a portion of weaker material at the back, such as littery stuff, containing little power as to heat. It is well, also, to fill most of the interior of the bed, after building it half a yard in height, with any half-decayed materials, such as half-worn linings, fresh leaves, &c. This will, in general, secure it from the danger of burning, whilst it will also add to the permanency of the bed.

For winter-forcing a bed should be at least four feet high at the back—if five feet, all the better; and as soon as built let some littery manure be placed round the sides, in order to prevent the wind searching it. As soon as the heat is well up, or in about four days from

the building of it, the whole bed should have a thorough watering. It is now well to close it until the heat is well up again, when a second and lighter watering may be applied; and now it will be ready for the hills of soil any time.

In making the hills of soil for the plants, in forcing melons or cucumbers, make a hollow in the centre of each light, half the depth of the bed. In the bottom of this, place nearly a barrowful of brick-bats, on this some half-rotten dung, and finally a flat square of turf, on which the hillock is placed. It is almost impossible for the roots of the plants to "scorch" with this precaution.

As the heat declines, linings, or, as they might be more properly called, coatings, are made use of, which consist of hot fermenting dung laid from eighteen to twenty-four inches, in proportion to the coldness of the season, &c., all round the bed to the whole of its height; and if founded in a trench, one equally deep must be dug for the coating, it being of importance to renew the heat as much as possible throughout its whole mass. If, after a while, the temperature again declines, the old coating must be taken away, and a similar one of hot dung applied in its place. As the spring advances, the warmth of the sun will compensate for the decline of that of the bed; but as the nights are generally yet cold, either a moderate coating, about nine or ten inches thick, is required, or the mowings of grass, or even litter, may be laid round the sides with advantage.

Various structures have been suggested, whereby the heat only of fermenting dung is employed, and its steam is prevented from penetrating within the frame. One of the best of these structures is the following, proposed by Mr. West:—

Beneath the floor of the intended hotbed there is a chamber in which the dung is placed, three and a half feet deep, surrounded by nine-inch brickwork. One-half of this is filled longitudinally with dung at the commencement, which, if kept close shut up, will last twelve or eighteen days, according to the quality of the dung. As the heat declines, the other side is filled, and the temperature is further sustained by additions to the top of both as the mass settles. When this united heat becomes insufficient, the side first filled being cleared, the old manure must be mixed with some fresh, and replaced, this being repeated alternately to either heap as often as necessary. Four doors are provided, two on each side for the admission of the dung. They are two and a half feet square, fitted into grooves at the bottom, and fastened by means of a pin and staple at the top. There are small areas sunk in front, surrounded by a curb of wood; three bars are passed longitudinally as a guide and support in packing the dung; below the bed is a bar of cast-iron, two inches wide, and three-quarters of an inch thick, placed on the edge of which there is a row, a foot asunder, across the chamber, to support a layer of small wood branches and leaves, for the purpose of sustaining the soil in the upper chamber; a number of small orifices, of which there are a series all round the pit, communicate with the flue, which surrounds the beds; the exterior wall of this flue is built with bricks laid flat, the inner one of bricks set on edge. The flue is two inches wide, and, for the sake of strength, bricks are passed occasionally from side to side as ties. The top of the flue, and the internal part of the wall, which rises at the back and front to the level the earth is meant to stand, are covered with tiles, over the joints of which slips of slate, bedded in mortar, are laid, to prevent the escape of the steam of the dung; two plugs are provided, which stop holes left to regulate the heat and steam as may be necessary. The outer wall supports the lights. For the convenience of fixing the dung, it is best to fill half of the chamber at the commencement, before the branches, mould, &c., are put in.

Hot-water Beds.—If hot water be the source of heat, the following description of the bed and frame employed by Mr. Mitchell, at Worsley, is about the best that can be employed. The objects kept in view when it was constructed were—1st. A circulation of air without loss of heat. 2nd. A supply of moisture at command, proportionable to the temperature. 3rd. A desirable amount of bottom-heat. 4th. A supply of external air (when necessary) without producing a cold draught.

The method by which the first of these is accomplished will be understood by referring to the action of flow-pipes above, and return-pipes in a heated chamber below. It is evident that, as the air in the chamber becomes heated, it will escape by the opening provided, and the air from the cold passage will rush in to supply its place; but the ascending current of heated air, coming in contact with the glass, is cooled, descends, and entering the cold passage, passes into the chamber, where it is again heated; and thus a constant circulation is produced. In order to obtain the second object, to some extent are combined the tank-and-pipe systems. The flow-pipe is put half its diameter into a channel, which, when filled with water (or so far as is necessary), gives off a vapour, exactly proportionable to the heat of the pipe and pit.

The third requisition is produced by the surrounding atmosphere and heating materials. The fourth is accomplished simply by lowering the upper sash; the cold air thus entering at the top only, falls directly into the cold passage, and passes through the hot chamber before coming in contact with the plants. When the heat in the chamber is 95°, in the open space over the bed it is 71°; in the bottom of the passage only 60°; and in the mould in the bed it is 80°. The amount of vapour is regulated with the greatest facility, even from the smallest quantity to the greatest density.—*Gard. Chron.*

HOTEI'A BARBA'TA. See ASTILBE JAPONICA.

HOTHOUSE. See STOVE.

HOTTENTOT BREAD. *Disco'rea.*

HOTTENTOT CHERRY. *Cassi'ne Maroce'nia.*

HOTTENTOT FIG. *Mesembrya'nthemum edu'le.*

HOTTO'NIA. Water Violet. (Named after *P. Hotton*, a Dutch botanist. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

A hardy aquatic or marsh plant. Divisions in spring; ponds or ditches.

H. palu'stris (marsh). 1. Flesh. May and June. England.

HOT WALL is a hollow wall, the interior air being so heated by flues or hot water as to keep the bricks of which its faces are composed so warm as to promote the ripening of the wood and fruit trained against them. See WALL (*Flued*).

HOT WATER, as a source of heat for gardening purposes, is preferable to any other for large structures. In these it is less expensive, and in all it is more manageable and less troublesome than any other. See GREENHOUSE, HOTBED, and STOVE.

HOULLE'TIA. (Named after *M. Houllet*, a French gardener. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Stanhopea.)

Stove orchids. Division of the plant; peat, broken pots, charcoal, and rotten wood; plants elevated above the pot, or in a shallow basket. Summer temp., 60° to 90°; winter, 50° to 60°.

H. brocklehurstia'na (Brocklehurstian). 2. Brown, yellow. June. Brazil. 1841.
,, *chrysa'ntha* (golden-flowered). Yellow, purple. Colombia. 1871.
,, *Lansbe'rgii* (Lansberg's). 1. Orange; lip white, tinted with purple. Costa Rica.
,, *lowia'na* (Lowian). White, yellow. Colombia. 1874.
,, *odorati'ssima* (sweetest-scented). Yellow. Colombia. 1887.
,, ,, *antioque'nsis* (Antioquian). 1. Deep red-purple, white. Antioquia. 1870.
,, ,, *xanthi'na* (orange). Orange; lip sulphur, white. 1884.
,, *pi'cta* (painted). Red-brown, yellow, purple. Colombia. 1855.
,, *Sande'ri* (Sander's). 1. Pale yellow, large. Peru. 1910.
,, *tigri'na* (tiger-striped). Yellow, crimson. Colombia. 1852.
,, *vitta'ta* (striped). See POLYCYCNIS VITTATA.
,, *Walli'sii* (Wallis's). Colombia. 1868.

HOUND'S TONGUE. *Cynoglo'ssum.*

HOUSELEEK. *Sempervi'vum.*

HOUSTO'NIA. (Named in honour of *Dr. W. Houston*, an English botanist. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Hardy herbaceous perennials, from North America. Division in spring; sandy loam and peat; beautiful for small beds and rock-works.

H. albiflo'ra (white-flowered). See H. CÆRULEA ALBA.
,, *cæru'lea* (blue). ½. Blue. June. 1785.
,, ,, *a'lba* (white). White. June. 1823.
,, *ciliola'ta* (hair-fringed). See H. PURPUREA CILIOLATA.
,, *cocci'nea* (scarlet). See BOUVARDIA TRIPHYLLA.
,, *longiflo'ra* (long-flowered). 2. White. Mexico. 1827.
,, *longifo'lia* (long-leaved). See H. PURPUREA LONGIFOLIA.
,, *purpu'rea* (purple). 1. Purple. July. 1800.
,, ,, *ciliola'ta* (hair-fringed). ½. White, blue. July. 1826.
,, ,, *longifo'lia* (long-leaved). ½. Scarlet.
,, *pusi'lla* (puny). See H. CÆRULEA.
,, *serpyllifo'lia* (wild-thyme-leaved) of Michaux. ½. Blue. June, July. 1812.
,, *serpyllifo'lia* (wild-thyme-leaved) of Graham. See H. CÆRULEA.
,, *tene'lla* (slender). See H. SERPYLLIFOLIA.
,, *va'rians* (varying). See H. PURPUREA.

HOU'TTEA. (Commemorative of *Louis Van Houtte*, of Ghent, a noted Belgian nurseryman. Nat. ord. Gesneraceæ.)

Evergreen stove shrubs. Division of tubers; cuttings in sand in a close case, with bottom-heat. Fibrous peat, leaf-mould, and sand.

H. Gardne'ri (Gardner's). 2. Red. July. Brazil. 1841.
,, *Le'ptopus* (Leptopus). See H. GARDNERI.
,, *pardi'na* (panther-spotted). 1½. Orange, red. Brazil. 1847.

HOUTTUY'NIA. (Named after *Dr. Houttuyn*, of Amsterdam. Nat. ord. *Saururads* [Piperaceæ]. Linn. 3-*Triandria*, 3-*Trigynia*.)

Herbaceous greenhouse or hardy marsh-plants. Seeds, or dividing the plants, in spring; peat and loam, kept moist, and the plant a little shaded. Winter, temp., 40° to 50°.

H. califo'rnica (Californian). 1. White, red. June to August. California. 1862.
,, *corda'ta* (heart-shaped). ½–1. White. July. Japan, China, &c. 1800.
,, *fœ'tida* (fœtid). See H. CORDATA.

HO'VEA. (Named after *A. P. Hove*, a Polish botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Lalage.)

Greenhouse evergreen shrubs, from Australia, with purple flowers, except where otherwise mentioned. Seeds, which should be sown in a hotbed, and moistened in warm water before sowing; cuttings of young side-shoots in April or May, in sand, under a bell-glass, and kept in a close frame; sandy peat with a very little fibrous loam, and pieces of charcoal and freestone, or small pieces of pounded bricks. Winter temp., 40° to 48°, with plenty of air; in summer they should be a little shaded from bright sunshine.

H. Celsi (Cel's). 4. Blue. June. 1817.
,, *chorizemæfo'lia* (Chorizema-leaved). 3. April. 1824.
,, *cri'spa* (curled). See H. TRISPERMA.
,, *elli'ptica* (oval-*leaved*). See H. CELSI.
,, *ilicifo'lia* (holly-leaved). See H. CHORIZEMÆFOLIA.
,, *lanceola'ta* (spear-head-*leaved*). See H. LONGIFOLIA.
,, *latifo'lia* (broad-leaved). See H. CELSI.
,, *linea'ris* (narrow-*leaved*). 3. July. 1796.
,, *longifo'lia* (long-leaved). 3. July. 1805.
,, *Mangle'sii* (Captain Mangles'). See H. TRISPERMA.
,, *mucrona'ta* (sharp-pointed). See H. LONGIFOLIA.
,, *panno'sa* (ragged). See H. LONGIFOLIA.
,, *pu'ngens* (pungent). Blue. 1837.
,, ,, *ma'jor* (larger). Blue. May. 1841.
,, *purpu'rea* (purple). See H. LONGIFOLIA.
,, *racemulo'sa* (spikeleted). See H. LONGIFOLIA.
,, *rosmarinifo'lia* (rosemary-leaved). See H. LONGIFOLIA.
,, *sple'ndens* (shining). See H. TRISPERMA.
,, *trispe'rma* (three-seeded). Vermilion. May. 1837.
,, *villo'sa* (shaggy). See H. LONGIFOLIA.

HOVE'NIA. (Named after *D. Hoven*, a Dutch senator. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Alaternus.)

Greenhouse evergreen shrubs, with white flowers. Cuttings of ripe young shoots in sand, under a glass; sandy loam and a little peat. Winter temp., 40° to 45°. *H. du'lcis* has stood against a wall in the Horticultural and Kew Gardens, with a little protection.

H. ace'rba (acid). See H. DULCIS.
,, *du'lcis* (sweet). 8. July. Japan; China; Himalaya. 1812.
,, *inæqua'lis* (unequal). See H. DULCIS.

HOWA'RDIA CARACASE'NSIS (Caracas). See POGONOPUS EXSERTUS.

HO'WEA. (Name taken from *Lord Howe's Island*. Nat. ord. Palmaceæ.)

Stove Palms requiring treatment similar to Kentia.

H. belmorea'na (Belmorean). 10–30. Cream. Lord Howe's Island. 1872.
,, *forsteria'na* (Forsterian). 10–20. Cream. Lord Howe's Island. 1872.

HOY'A. Honey Plant. (Named after *Mr. Hoy*, once gardener at Sion House. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Stove evergreen twiners. Cuttings inserted in almost any open soil, and plunged in a moist heat, root quickly; even the leaves will root, and soon produce a plant; peat and loam, with a considerable portion of little pieces of pounded bricks and lime-rubbish. They flourish best in the temperature of the stove, and full exposure to the sun; but in winter they should be kept rather dry, and in the temperature of a warm greenhouse—45°, 50°, or even lower.

H. acumina'ta (long-pointed). Himalaya.
,, *a'tro-purpu'rea* (dark purple). Brownish-purple. September. Java. 1848.
,, *austra'lis* (southern). White. Australia. 1820.
,, *be'lla* (beautiful). 1½. White, purple. Taung Kola. 1847.
,, *campanula'ta* (bell-*flowered*). See PHYSOSTELMA WALLICHII.
,, *carno'sa* (fleshy-*leaved*). 10. Pinkish-white. July. Asia. 1802.
,, ,, *fo'liis variega'tis* (variegated-leaved). 10. Pink. July.
,, *cinnamomifo'lia* (cinnamon-leaved). 10. Pale green. July. Java. 1847.
,, *clandesti'na* (hidden). Java.
,, *coria'cea* (leathery). 2. White, yellow. August. Manilla. 1838.
,, *coria'cea* (leathery) of Lindley. See H. MULTIFLORA.
,, *corona'ria* (garland). Yellow. November. Malaya. 1856.
,, *crassifo'lia* (thick-leaved). See H. CARNOSA.
,, *cumingia'na* (Cumingian). Yellow. Philippines.
,, *Darwi'nii* (Darwin's). Pink. March, April. Mountains of Luzon. 1910.
,, *diversifo'lia* (various-leaved). India and Malaya.
,, *engleria'na* (Englerian). White, fragrant. Siam. 1907.
,, *frate'rna* (brotherly). Brown. July. Java. 1851.
,, *frutico'sa* (shrubby). 1848.
,, *fu'sca* (dark brown). Brownish. Sylhet. 1837.
,, *fuscomargina'ta* (brown-margined). Yellowish-green. Country unknown. 1910.
,, *globulo'sa* (globular). Pale straw, white, brown-pink. India. 1882.
,, *gonoloboi'des* (Gonolobium-like). Brownish. Stems tawny. India. 1884.
,, *Griffi'thii* (Griffith's). Cream, tinted red, white. July. Himalaya. 1885.
,, *imperia'lis* (imperial). 20. Scarlet. June. Borneo. 1847.
,, ,, *Rau'schii* (Rausch's). Red. 1855.
,, *lacuno'sa* (furrowed). 3. Greenish-yellow. March. Java. 1854.
,, ,, *pallidiflo'ra* (pale-flowered). White. Java. 1861.
,, *lasia'ntha* (woolly-flowered). Yellow. July. Borneo. 1858. Climber.
,, *Lauterba'chii* (Lanterbach's). Brown-red inside, green outside. New Guinea. 1896.
,, *linea'ris* (linear). White. October. Himalaya.
,, ,, *sikkime'nsis* (Sikkim). Waxy-white. Sikkim. 1883.

H. longifo'lia Shephe'rdi (Shepherd's). Pale flesh. Sikkim. 1861.
„ *multiflo'ra* (many-flowered). Pale yellow-white. July. Malaya. 1839.
„ *obtusifo'lia* (blunt-leaved). India and Malaya. (B. M., t. 4969.)
„ *orbicula'ta* (orbicular). See H. DIVERSIFOLIA.
„ *ovalifo'lia* (oval-leaved). Pinkish-yellow. July. E. Ind. 1840.
„ *pa'llida* (pale). See H. PARASITICA.
„ *parasi'tica* (parasitical). 6. White or yellow. July. Malaya. 1815.
„ *Paxto'ni* (Paxton's). See H. BELLA.
„ *pi'cta* (painted). See H. CARNOSA.
„ *Po'ttsii* (Pots's). 10. Yellow. China. 1824.
„ *purpu'reo-fu'sca* (purple-brown). Brown and purple. September. Java. 1849.
„ *Shephe'rdi* (Shepherd's). See H. LONGIFOLIA SHEPHERDI.
„ *trine'rvis* (three-nerved). See H. POTTSII.
„ *variega'ta* (variegated). See H. CARNOSA FOLIIS VARIEGATIS.

HUDSO'NIA. (Named after *W. Hudson, F.R.S.*, author of the *Flora Anglica*. Nat. ord. *Rock-roses* [Cistaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Helianthemum.)

Half-hardy evergreens, from North America, with yellow flowers. Generally by layers in spring and autumn, and cuttings in sand, during summer, under a hand-light; sandy peat, and a moist situation. They require a little protection in winter, and may be placed in a pit. Unlike any other group of the order, the foliage more resembles a Heath than a Cistus.

H. ericoi'des (heath-like). 1. June. 1805.
„ *Nutta'llii* (Nuttall's). See H. ERICOIDES.
„ *tomento'sa* (downy). 1. May. 1826.

HUEGE'LIA DENSIFO'LIA and **H. ELONGA'TA** are *Gilia densifolia*.

HUEGE'LIA LU'TEA is *Gilia lutescens*.

HUEGE'LIA VIRGA'TA. See GILIA VIRGATA.

HUE'RNIA. (Named after *J. Huernius*, a collector of Cape plants. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Stapelia.)

Greenhouse evergreen succulents, from South Africa, except where otherwise mentioned. Cuttings in spring, well dried before inserting, or dividing the plant after flowering; sandy loam, and a little peat, leaf-mould, and lime-rubbish; plenty of water when growing and flowering. but dry, or nearly so, during the winter. Summer temp., 60° to 85°; winter, 45° to 50°.

H. appendicula'ta (appendaged). Nearly white. S. Africa (?). 1910.
„ *a'spera* (rough). ½. Zanzibar.
„ *barba'ta* (bearded). ½. White-striped. August. 1795.
„ *breviro'stris* (short-beaked). ½. Pale yellow, with blood-red spots. 1877.
„ *clavi'gera* (club-bearing). ½. Yellow-striped. September. 1795.
„ *conci'nna* (neat). ½. Greenish-yellow, red spots. Abyssinia. 1895.
„ *cri'spa* (curled). ½.
„ *gutta'ta* (spotted). S. Africa.
„ *hu'milis* (humble). ½. Yellow-striped. September. 1795.
„ *Hy'strix* (hedgehog). ½. Dusky yellow, crimson. June to September. 1868.
„ *lentigino'sa* (freckled). ½. Yellow-striped. 1795.
„ *macroca'rpa* (large-fruited) of Damman. See H. PENZIGII.
„ *macroca'rpa* (large-fruited) of *Gartenflora*, t. 1416. See H. CONCINNA.
„ *ocella'ta* (eyed). ½. Yellow-striped. September.
„ *ocula'ta* (eyed). ½. Blackish-purple, with basal eye-spot. Damaraland.
„ *Penzi'gii* (Penzig's). ½. Black-purple. Abyssinia. 1892.
„ *Pilla'nsii* (Pillans's). ½. Pale yellow, with crimson specks. 1904.
„ *primuli'na* (primrose-coloured). Pale primrose. S. Africa.
„ *reticula'ta* (netted). ½. Pink-striped. August. 1793.
H. soma'lica (Somaliland). Brown-purple, with yellow spots. Somaliland. 1898.
„ *Sprenge'ri* (Sprenger's). See CARALLUMA SPRENGERI.
„ *tuba'ta* (tubed). Flesh, spotted with pink.
„ *venu'sta* (lovely). ½. Yellow-striped. June. 1795.

HUERNIO'PSIS. (From *Huernia*, and *opsis*, resemblance. Nat. ord. Asclepiadaceæ.)

A dry stove or warm greenhouse succulent. Cuttings laid on a dry, warm shelf for ten days or so to dry, and inserted in sand on a sunny bench. Loam, finely broken bricks and sand in equal proportions.

H. deci'piens (deceiving). ½. Crimson-brown, yellow. S. Africa. 1877.

HUMA'TA. (Probably from *humatus*, interred; the stems being deep in the earth. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. A section of Davallia, to which they are now referred.)

Stove Ferns, with brownish-yellow spores. Division; peat and loam. See FERNS.

H. angusta'ta (narrow). April. Singapore.
„ *heterophy'lla* (various-leaved). April. Samaria.
„ *pectina'ta* (comb-like). April. Isle of Luzon.
„ *peda'ta* (double-lobed). May. E. Ind.
„ *Tyerma'nii* (Tyerman's). West Coast of Africa. 1871.

HUMBLE BEE. Various species of Bombus, of which *B. terre'ster* and *B. luco'rum* are common. They serve to fertilise the flowers of very numerous species of plants, when visiting them for the sake of nectar or pollen. They often pierce the base of long-tubed flowers, when they cannot readily get at the nectar by the interior of the tube in the natural way; but hive bees (*Apis mellifica*) are equally guilty of doing this on occasion.

HUMBLE PLANT. *Mimo'sa pu'dica*.

HU'MEA. (Named after *Lady Hume*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Greenhouse biennial. Sow in heat, in spring; prick out and grow under glass; place out of doors in the heat of the summer; house in good time in the autumn; shift into larger pots as wanted, and transfer to its blooming-pots in April, or plant out in good, rich soil in May. Single plants in a sheltered corner have a fine effect.

H. e'legans (elegant). 6. Red. July. N. S. Wales. 1800.
„ „ *gigante'a* (giant). 10–20. Panicles of flowers larger. 1909.

HU'MULUS. The Hop. (From *humus*, the ground; creeping on the ground if not supported. Nat. ord. *Hempworts* [Urticaceæ]. Linn. 22-*Diœcia*, 5-*Pentandria*.)

Hardy perennial twiners. Seeds and divisions in spring; deep, loamy soil. They are useful for summer shade, as they grow very quick.

H. japo'nicus (Japanese). 12–25. Yellow-green. July, August. Japan. 1885. Annual.
„ „ *lute'scens* (yellowish). Leaves tinted with bronze or gold. 1895.
„ „ *variega'tus* (variegated). Leaves variegated with creamy-yellow. 1889.
„ *Lu'pulus* (*common*. Hop). 15–25. Yellow. July. Britain.
„ „ *variega'tus* (striped-*leaved*). 15. Yellow. July Britain.

HU'MUS. When the putrefaction of dead plants is completed, there remains a soft, black mass, known as vegetable mould, or humus. One hundred parts of the humus of wheat straw have of extractive, or apotheme, rather more than twenty-six parts, and the residue is lime, peroxide of iron, phosphate of lime, and carbonaceous matter. This apotheme is identical with the humic acid of Liebig, the ulmic acid of Braconnot, and the geic acid of Berzelius. It contains—carbon, 46.6; hydrogen, 20.0; oxygen, 33.4. It was once believed, indeed, is still believed by a few men of science, that this apotheme is the immediate fertilising component of organic manures, being soluble under some circumstances, and entering at once into the roots of plants, dissolved in the moisture of the soil. But every relative research of more modern chemistry is against this conclusion; and it is now tolerably certain, that a chief nutritive

portion of vegetable manures is their carbon converted into carbonic acid, and acting as an outdoor servant, by dissolving various ingredients of plant food, that are insoluble in water. The mineral elements and various acids are also serviceable.

HUNGARIAN LOTUS. *Nymphæ'a therma'lis.*

HUNNEMA'NNIA. (Named after *J. Hunnemann*, a botanical agent. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Half-hardy herbaceous perennial. Seeds in spring; rich soil; will bloom the second year in greenhouse treatment, or may be kept over the winter in a dry, cold pit, and planted in the garden.

H. fumariæfo'lia (Fumaria-leaved). 2. Yellow. Mexico. 1827.

HUNTE'RIA. (Commemorative name. Nat. ord. Apocynaceæ.)

A stove evergreen shrub with large leaves and small flowers in axillary clusters. Cuttings of firm wood in sand, with bottom-heat. Fibrous loam, peat or leaf-mould, and sand.

H. Balla'yi (Ballay's). Greenish-white. Gaboon. 1902.

HUNTLE'YA. (Named after the *Rev. Mr. Huntley*, a zealous collector of plants. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now united to Zygopetalum.)

Stove orchids. Slips of shoots, and dividing the plant; fibrous peat, &c.; grown in a high, moist temperature. Summer temp., 60° to 90°; winter, 55° to 60°.

H. Melea'gris (Guinea-hen). See ZYGOPETALUM MELEAGRIS.

„ *sessilifo'ra* (stalkless-flowered). Violet. Guiana. 1835.

„ *viola'cea* (violet-coloured). See ZYGOPETALUM VIOLACEUM.

HU'RA. Sand-box-tree. (The native name. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 11-*Monadelphia*. Allied to Hippomane.)

Stove evergreen trees, with whitish-yellow flowers. Seeds, and cuttings of ripe young shoots under a bell-glass, in sandy soil, and in heat; rich loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°.

H. cre'pitans (rattling. *Equal-toothed*). 12. S. Amer. 1733.

„ *stre'pens* (sounding. *Unequal-toothed*). See H. CREPITANS.

HURDLES of iron are the most eligible modes of fencing, whether for permanency or temporary purposes. They are invisible at a short distance, elegant, and durable. See RAILING.

HURT and **HURTLEBERRY.** The fruit of *Vacci'nium Myrti'llus*.

HUSKY. The dung for a hotbed, when too dry, is said to be husky.

HUTCHI'NSIA. (Named after *Miss Hutchins*, an accomplished Irish cryptogamist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Iberis.)

Annuals, by seeds in April, in dry situations. Herbaceous perennials, by seed and divisions in spring, and cuttings under a hand-light, in summer; sandy loam, with a little peat or leaf-mould, and dry situations, such as banks or rock-work.

HARDY ANNUALS.

H. petræ'a (rock). ½. White. April. England.

„ *procu'mbens* (lying-down). See H. PROSTII.

„ *Pro'stii* (Prost's). ½. White. May. France. 1823.

HARDY HERBACEOUS.

H. alpi'na (alpine). See NOCCÆA ALPINA.

„ *brevisty'la* (short-styled). See THLASPI RIVALE.

„ *calyci'na* (*large*-calyxed). See SMELOWSKIA CALYCINA.

„ *cepeæfo'lia* (Cepæa-leaved). See THLASPI CEPEÆFOLIUM.

„ *pu'mila* (dwarf). See THLASPI PUMILUM.

„ *rotundifo'lia* (round-leaved). See THLASPI ROTUNDIFOLIUM.

„ *stylo'sa* (*long*-styled). See NOCCÆA STYLOSA.

HYACI'NTHUS. The Hyacinth. (In mythology, a beautiful boy, who, after being killed, was transformed into this flower. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Offsets from the bulbs, after the foliage has died down in summer; light, rich, sandy loam, with a little leaf-mould. A valuable bulb for forcing. Best florists' kinds grown out of doors should be taken up after the foliage is withered, kept in shelves and drawers until the end of autumn, and then planted and protected from severe frost in winter, and frost and heavy rains in spring, by an awning. For a brilliant outdoor display, where the kinds are not so valuable, the roots may remain in the ground many years if top-dressed, and the bulbs are not too near each other. When *grown in pots*, these should be deeper than usual, in proportion to the diameter—nine inches are not too much. The compost we have found most suitable for them in pots is a good loam, three-fourths, and decayed cow-dung, two years old, one-fourth. In October they ought to be potted, and immediately plunged in tan or ashes, quite overhead, at least two inches. In potting, make the soil very firm under the bulb, to prevent the roots going directly down too soon. In six weeks after potting and plunging, a few may be brought into heat, and forced to flower about Christmas; and others may be brought in, month after month, to supply flowers till May. *To grow them in water*, glasses with a hollow cup at the top, to hold the bulb, are used. It is not good to begin too soon with glasses. December is quite early enough. After being kept for a few days in slightly damped sand, they should be placed in their glasses. At first the water should only just touch the base of the bulbs, and the glasses should be kept in a dark closet until the roots have attained the length of an inch. Two drops of spirit of hartshorn may be added to the water in each glass when the bulbs are growing, and whenever the water is changed. Dark-coloured glass is always to be preferred, as the absence of light is natural to all roots. By keeping the glasses in a dark closet until the roots are fully an inch long, the hyacinths will not get top-heavy, but the roots, being in advance of the leaves, will preserve the plant balanced erect. The bloom will also be finer, as the roots will be in a state to nourish the leaves before these are prematurely advanced. A piece of charcoal put into each glass feeds the plant, and prevents putridity in the water.

H. amethysti'nus (amethyst-colour). ¼. Blue. April. Pyrenees; Croatia. 1759.

„ „ *a'lbus* (white). White.

„ *Auché'ri* (Aucher's). Persia.

„ *azu'reus* (azure-blue). ¼. Sky-blue. March. Asia Minor. 1856.

„ „ *amphi'bolis* (two-droppered). ¾. Pale blue. Spike of forty to fifty flowers. 1902.

„ „ *giganté'us* (giant). A large form. Mount Muris, N. Cilicia. 1898.

„ „ *robu'stus* (robust). Flowers half as large again as *H. azureus*. 1903.

„ *brevifo'lius* (short-leaved). ¼. Pink. January. S. Africa. 1811.

„ *bruma'lis* (winter). ¾. Various. February.

„ *ca'ndicans* (white). See GALTONIA CANDICANS.

„ *cilia'tus* (eye-lashed). 1. Europe; N. Africa.

„ *corymbo'sus* (corymbose). ¼. Lilac. S. Africa. 1793.

„ *fastigia'tus* (upright). Bright purple. Corsica; Sardinia.

„ *flexuo'sus* (flexuous). Syria.

„ *glau'cus* (sea-green). Purple, red. May. Persia. 1825.

„ *hispa'nicus* (Spanish). See H. AMETHYSTINUS.

„ *hi'spidus* (hispid). Cilicia.

„ *leucophæ'us* (white-dusky). S. Russia.

„ *linea'tus* (lined). ¼. Blue. Asia Minor. 1887.

„ *macro'botrys* (large-bunched). Palestine.

„ *Musca'ri* (Muscari). See MUSCARI MOSCHATUM.

„ *orienta'lis* (oriental). ¾. Blue. March. Levant. 1596.

„ „ *a'lbulus* (white). ¾. White. March. 1596. "Roman Hyacinth."

„ „ *fla'vus* (yellow). ¾. Yellow. March. 1596.

„ „ *mu'ltiplex* (double). ¾. Variegated. April. 1596.

„ „ *provincia'lis* (provincial). Blue, slender stemmed. France; Italy.

„ „ *ru'ber* (red). ¾. Red. March. 1596.

H. orienta'lis semiple'nus (semi-double). ½. Variegated. March. 1596.
,, *Pri'nceps* (chief). See GALTONIA PRINCEPS.
,, *racemo'sus* (racemed). See MUSCARI RACEMOSUM.
,, *roma'nus* (Roman). 1. White. May. Mediterranean region.
,, *sessiliflo'rus* (stalkless-flowered). N. Africa.
,, *spica'tus* (*large*-spiked). ½. Blush. February. Zante. 1826.
,, *syri'acus* (Syrian). See H. TRIFOLIATUS.
,, *trifolia'tus* (three-leaved). 1. Orange, blue. May. Syria. 1840.
,, *vi'ridis* (green). See DIPCADI FILAMENTOSUM.

HYBANTHE'RA. (From *hubos*, convex, and *anthera*, an anther; in allusion to the convex or gibbous anther. Nat. ord. Asclepiadaceæ.)

Warm greenhouse twiner. Cuttings in sand not overwatered. Loam, old mortar in small pieces, and sand. Summer temp., 60° to 85°; winter, 50° to 55°.

H. cordifo'lia (heart-leaved). Green, yellow. May. China. 1840.

HYBE'RNIA DEFOLIA'RIA. Mottled Umber Moth. This moth is very common, widely distributed, and makes its appearance during October and November. The female is brown and almost wingless. The male has well-developed wings of a pale ochreous hue mottled with brown, and marbled with light brown in the form of a short and long zigzag band across each forewing. The caterpillar is a looper, like that of the Winter Moth, and is reddish-brown on the back, with a yellow line on each side and a red spot on each segment. It makes its appearance when the flowers and leaves are unfolding, and these it devours together with buds or young fruit. Cherries, Plums, Apples, Nuts, and many forest trees, get greatly defoliated and destroyed by it. The female climbs the trunks of the trees to lay her eggs, and may be caught and destroyed by grease-banding the trees in the same way as for the Winter Moth (*Cheimatobia brumata*), which see, under the latter name.

HYBRID. A plant raised from seed, which is the result of the fertilisation of two distinct species. If the result of a cross between species belonging to two different genera, like Cattleya and Lælia, it is termed a bigeneric hybrid.

HYBRIDISING and CROSS-BREEDING. Those who desire to be successful in this kind of work should first make themselves familiar with the structure of the flowers upon which they intend to operate. A complete flower consists of four sets of organs. The outer whorl of organs is collectively known as the calyx, while the individual members of it are the sepals, if free from one another, but if more or less united, the various pieces are termed segments, lobes, or teeth of the calyx, according to their length. Inside the calyx is a second set of organs, collectively termed the corolla. If the parts are free from one another they are termed petals; but, if joined at the base, the free parts are spoken of as the lobes of the corolla. Inside of this come the stamens, consisting usually of a slender portion known as the filament, and surmounted by a more swollen or thickened part at the top, known as the anther, which contains a powdery substance named the pollen. The filament may be absent in some species, but the anther is the essential part. In the centre of the flower is the pistil, which may consist of one organ, as in a Cherry or Plum flower, or may consist of many pieces, as in the Buttercup. The lower, swollen part is the ovary or young seed-vessel, and this is surmounted by a slender stalk, known as the style, as seen in a Cherry flower. The stigma is the slightly swollen knob on the top, as seen in the same flower, and to this the pollen has to be applied. In a Carnation the stigma is much longer, and with the aid of a magnifying lens may be seen forming a finely downy line along the upper side of the spreading styles, from the apex, for some distance downwards. The three stigmas of a Begonia are erect, spirally twisted like screws, velvety, and easily seen by the naked eye. The style is lacking in many flowers, but the stigma is essential. Now it will be seen that the hybridist and cross-breeder have to concern themselves with the stamens and pistil, which are the essential parts of a flower The calyx is intended for protection and support, while the petals are also protective, but usually more or less highly coloured, and serve for attracting insects.

Stamens and pistil may be present in the same flower; or they may be in different flowers, on the same plant, as in Begonia, Melon, and Cucumber; or they may only be found on separate individuals, as in the Willow, Poplar, and Aucuba, the flowers of which are unisexual, or of one sex only. The male parent of a cross-bred or hybrid plant is that from which the pollen is taken; and the female parent is that which bears the seed.

Cross-breeding is the correct term to use, when the pollen is taken from one flower and placed on the stigma of another belonging to the same species. If pollen is taken from an anther and placed on the stigma of the same flower, this would be self-pollination, or self-fertilisation. This practice might answer the purpose if the seedlings are desired to be the same as the parent; but even then it is better if the pollen is taken from another plant of the same variety, as in the Chinese Primula, because the progeny will be more robust. Should the intention be to get a new variety, possessing a different colour of the Primula, then pollen must be taken from a variety with flowers of some desirable hue. It may be desirable in some cases to combine other characters of the foliage or habit of two parents, and in such cases pollen is taken from the anthers of one and applied to the stigma of the other. This method of getting new varieties is termed cross-breeding.

Hybridisation is a similar operation, but the parents used are more distantly related. For instance, if pollen is taken from the flower of *Begonia boliviensis* and placed on the stigma of *B. Pearcei*, the seedlings would be hybrids, if the operation has been successful.

Begonias, Dendrobiums, Cattleyas, and Cypripediums may readily be hybridised, and the resulting hybrids may be crossed again in other ways, that is, with different parents. At one time it was supposed that all hybrids were sterile, or in other words, that the seedlings were mules. Experiments have shown that this is not the case. What are termed bigeneric hybrids have been produced by intercrossing species of Cattleya and Lælia, species of Epidendrum and Lælia, species of Brassavola and Cattleya. Species of Brassia have been combined with the hybrids of Cattleya and Lælia, thus giving trigeneric hybrids. Just how far hybridisation may be carried can only be determined by experiment. The more distantly related the parents the greater the difficulty in getting them to hybridise. Much also depends upon the skill of the operator, not only in effecting hybridisation but in rearing the seedlings.

The hundreds of fine flowers of Sweet Peas, Chinese Primulas, Carnations, Garden Pinks, and some others are not the result of hybridisation, but of cross-breeding fine varieties with one another. A large proportion of the fine garden Roses, tuberous-rooted Begonias, Pansies, and Violas are the outcome of hybridisation and cross-breeding in various combinations. Hitherto it has baffled experimenters to produce a hybrid between the Sweet Pea (*Lathyrus odoratus*) and any other species of Lathyrus, and the same difficulty is experienced with many other species more or less closely related. Little hope can be held out of producing a hybrid between a Rose and a Primrose, for instance, because they belong to two different natural orders, and are too distantly related.

To be successful, the plants must be more or less closely related. The operator must also learn to get the pollen in perfect condition, and the stigma must be fully developed and in a receptive condition before the pollen can be effective. This can only be determined by knowing the character and habit of the flower upon which it is intended to operate. The Sweet Pea and Garden Pea are self-fertilising, and to make sure of introduced pollen being effective, the flower must be opened and the stamens removed from the intended seed-bearer before they are fully developed. The stamens of a Carnation must be removed before the anthers open. The female flowers of a Begonia contain no stamens. In all these cases the flowers must be covered immediately with thin gauze or muslin to make sure of excluding insects, at least in summer, when insects are plentiful. Under glass it is easy to exclude them by placing tiffany over the ventilators, when open. The next point to observe is whether the style and stigma are fully developed. In many plants the stigma becomes covered with a fine

downy pile when mature; other stigmas, when full grown, become moist or clammy, and when these states are reached the pollen may be applied with a camel's-hair brush or pencil. The forenoon or middle of the day is the best time to conduct the operation, because the atmosphere is usually dry and the pollen in the most powdery and workable condition, though it may be done at any other time while similar conditions prevail.

HYDNOPHY'TUM. (From *hudneo*, to nourish, to nurse, and *phuton*, a plant; in allusion to the habit the plants have of giving shelter to ants. Nat. ord. Rubiaceæ.)

Remarkable stove plants that harbour ants in the swollen, galleried base of their stems. Cuttings in sand in a close case, with bottom-heat. Loam, peat, and sand.

H. andamane'nse (Andaman). Andaman Islands.
„ *Forbe'sii* (Forbes's). White. Fruit red. New Guinea. (B. M., t. 7218.)
„ *formica'rum* (ants'). Malaya.
„ *longiflo'rum* (long-flowered). White. Fiji. (B. M., t. 7343.)

HYDRA'NGEA. (From *hudor*, water, and *aggeion*, a vessel; referring to the cup-form of the capsule, or seed-vessel. Nat. ord. *Hydrangeads* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*.)

Deciduous shrubs. Propagated by division of the roots, cuttings of the ripened shoots, and flourishing best in moist, sheltered places. *Horte'nsis*, the common garden Hydrangea, though a little more tender, stands the winter well in the southern parts of the island; and though cut down in most winters in the neighbourhood of London, yet, if a slight protection of mulching is thrown over the roots, the stems will rise strongly, and bloom well after Midsummer, if care be taken to remove all the weaker ones, just as is done with a Fuchsia stool. This species makes also fine ornaments in pots, and may be propagated at almost any time; the young side-shoots, when two or three inches in length, inserted in sandy soil and in heat, striking in a few days, while the old stems will strike anywhere, but require their time. To grow it well requires light, rich compost, well drained, and abundance of water. The flower generally appears first of a greenish colour, becoming of a pale rose; but in some districts the colour becomes a beautiful blue. Notwithstanding all the experiments that have been made, there is still a little doubt as to the cause that produces the change. When iron filings and a solution of alum are used, in some soils the blue colour is produced, while the same means will not produce it in others; and other soils will almost invariably produce this blue colour without any peculiar matter whatever being added. The loams at Kenwood, at Hampstead Heath, and Stanmore Heath, and the peats at Wimbledon, as well as some bogs near Edinburgh, are famous for producing this blue in the Hydrangea. When trying artificially with iron filings and alum-water, we have had different colours on the same plant. This variation is merely temporary—it cannot be propagated like a variety: a cutting from a blue plant will produce a rose one, unless the peculiar treatment be continued.

GREENHOUSE.

H. acumina'ta (long-pointed). See H. HORTENSIS ACUMINATA.
„ *Belzo'nii* (Belzoni's). See H. HORTENSIS.
„ *cyane'ma* (dark-coloured or dark-blue). See H. ROBUSTA.
„ *horte'nsis* (garden). 2–6. Changing from green to pink, or sometimes blue. Summer. China and Japan. 1740.
„ „ *acumina'ta* (long-pointed). Rose. Japan. 1874.
„ „ *a'lba* (white). Pure white. 1909.
„ „ *cyano'clada* (blue-branched). See H. HORTENSIS NIGRA.
„ „ *Li'ndleyi* (Lindley's). Rosy-white.
„ „ *macrose'pala* (large-sepalled). White.
„ „ *Marie'sii* (Maries's). Outer flowers large, pink or mauve.
„ „ *ni'gra* (black-stemmed). Stems dark blue.
„ „ *niva'lis* (snowy). Leaves white along the middle; stems white. 1904.
„ „ *Ota'ksa* (Otaksa). Flesh. Japan. 1868.
H. horte'nsis ra'mulo-cocci'nea (scarlet-branched). Large pale rose. Young shoots plum-red. 1890.
„ „ *stella'ta* (starry). Pink, starry. Japan. 1868.
„ „ *stella'ta fimbria'ta* (fringed-starry). Flowers fringed.
„ „ *stella'ta ro'sea* (rosy-starry). Bright rose.
„ „ *stella'ta ru'bra ple'na* (double red).
„ „ *tri'color* (three-coloured). Leaves white and pale green, edged yellow. 1882.
„ „ *variega'ta* (variegated). Leaves variegated.
„ „ *Ve'tchii* (Veitch's). Pure white. 1903.
„ *japo'nica* (Japan). See H. HORTENSIS.
„ *robu'sta* (robust). Pink, white. Himalaya. (B. M., t. 5038.)
„ *stella'ta* (starry-*flowered*). See H. HORTENSIS STELLATA.

HARDY.

H. alti'ssima (tallest). Himalaya.
„ *arbore'scens* (tree-like). 6. White. July. Eastern United States. 1736.
„ „ *di'scolor* (two-coloured-*leaved*). 6. White, green. August. N. Amer.
„ „ *grandiflo'ra* (large-flowered). Large, pure white, sterile. 1907.
„ *a'spera* (rough). Large, numerous; white. Himalaya and China. 1889.
„ „ *macrophy'lla* (large-leaved). China.
„ *Bretschnei'deri* (Bretschneider's). White. China. 1884.
„ *cine'rea ste'rilis* (barren). Flowers nearly all enlarged, sterile, white. Ohio, U.S.A. (?) 1908.
„ *corda'ta* (heart-*leaved*). See H. ARBORESCENS.
„ *heteroma'lla* (various-haired-*leaved*). See H. VESTITA.
„ *involucra'ta* (involucrated). 2. White and pale blue. Japan. 1875.
„ *lo'ngipes* (long-stalked). China.
„ *ni'vea* (snow-white-*leaved*). See H. RADIATA.
„ *panicula'ta* (panicled). 2–4. Barren flowers few, white.
„ „ *floribu'nda* (free-flowering). See H. PANICULATA GRANDIFLORA.
„ „ *grandiflo'ra* (large-flowered). Flowers all sterile, large, white. Japan. 1867.
„ *petiola'ris* (long-petioled). 6–15. White. May. Japan. 1878.
„ *pube'scens* (downy). See H. BRETSCHNEIDERI.
„ *quercifo'lia* (oak-leaved). 4. White. July. S.E. United States. 1803.
„ *radia'ta* (rayed). 4–6. White. August. S.E. United States. 1786.
„ „ *cane'scens* (hoary). Leaves felted, whiter.
„ „ *glabe'lla* (smooth). 5. White, green. July.
„ *sca'ndens* (climbing). See H. PETIOLARIS.
„ *serra'ta* (saw-edged). Japan.
„ *Thunbe'rgii* (Thunberg's). Rose to blue. Japan. 1870.
„ *vesti'ta* (clothed). 4. White. Himalaya. 1821.

HYDRA'STIS. Yellow Root. (From *hudor*, water; referring to the marshy places where it grows. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Caltha.)

Hardy herbaceous perennial. Division of the root; loam and peat; moist situation.

H. canade'nsis (Canadian). ½. Green. May. N. Amer. 1759.

HYDRIA'STELE. (From *hudria*, a water-bucket, and *stelee*, a stem; in allusion to the cupped bracts and bracteoles. Nat. ord. Palmaceæ.)

Stove Palm. Seeds. Fibrous loam, peat, and sand.

H. wendlandia'na (Wendlandian). Trop. Australia. 1878.

HYDRO'CERA. (From *hudor*, water, and *keras*, a horn; in allusion to the horn-like leaves. Nat. ord. Geraniaceæ. Allied to Impatiens.)

Aquatic or marsh stove herb. Seeds and divisions. Loam and leaf-mould in a warm tank.

H. angustifo'lia (narrow-leaved). 2. Red. July. E. Ind.; Malaya. 1810.
„ *triflo'ra* (three-flowered). See H. ANGUSTIFOLIA.

HYDRO'CHARIS. (From *hudor*, water, and *charis*, delight; in allusion to the beauty of the flowers of the plant floating on water. Nat. ord. Hydrocharidaceæ.)

An aquatic, with rosettes or tufts of small round

leaves, floating on ponds and still waters. Runners. Soil unnecessary.

H. Mo'rsus-Ra'næ (Frog-bit). ¼. White. England and Ireland.

HYDRO'CLEIS. (From *hudor*, water, and *kleis*, a bar; from the obstruction to the water in rivers and lagoons. Nat. ord. Alismaceæ.)

Stove perennial aquatic. Divisions; runners; seeds. Loam in tubs or the shallow part of a tank.

H. Commerso'ni (Commerson's). 1–1½. Yellow. May to July. Brazil. 1831.

HYDROCO'TYLE. Pennywort. (From *hudor*, water, and *kotule*, a hollow; in allusion to the little hollow in the centre of the round leaf. Nat. ord. Umbelliferæ.)

Dwarf perennial herbs for the bog garden, with insignificant flowers, but more interesting leaves. Seeds, divisions. Any damp soil.

H. america'na (American). ½. N. Amer.
„ *asia'tica* (Asiatic). ½. Pale pink. Tropical and subtropical regions.
„ *moscha'ta* (musky). ½. New Zealand.
„ *repa'nda* (scolloped). ½. N. Amer.
„ *rotundifo'lia* (round-leaved). ½. Asia and Trop. Africa.
„ *umbella'ta* (umbelled). ½. Trop. regions.
„ *vulga'ris* (common). 1½. Green. Britain.

HYDROGLO'SSUM SCA'NDENS FULCHE'RI. See LYGODIUM SCANDENS FULCHERI.

HYDRO'LEA. (From *hudor*, water, and *elaia*, oil; referring to the marshy habitat and oily feel of the leaves. Nat. ord. *Hydrophylls* [Hydrophyllaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Greenhouse herbaceous plants. Divisions, cuttings, and seeds; *spino'sa* is a small aquatic, growing best in peat and loam; *quadriva'lvis* is also found in boggy places.

H. carolinia'na (Carolinian). Pale blue. July. N. Amer. 1824.
„ *quadriva'lvis* (four-divided). See H. CAROLINIANA.
„ *spino'sa* (thorny). 1. Blue. S. Amer. 1791.

HYDROME'STUS. (From *hudor*, water, and *mestos*, half; referring to the plant living in water during the rainy season. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Now referred to Aphelandra.)

H. macula'tus (spotted). See APHELANDRA HYDROMESTUS.

HYDROPE'LTIS. (From *hudor*, water, and *pelte*, a shield; referring to the floating shield-like leaves. Nat. ord. *Watershields* [Nymphæaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Now referred to Brasenia.)

H. purpu'rea (purple) See BRASENIA SCHREBERI.

HYDROPHY'LLUM. Water-leaf. (From *hudor*, water, and *phullon*, a leaf. Nat. ord. *Hydrophylls* [Hydrophyllaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Nemophila.)

Hardy herbaceous perennials, from North America. Divisions and suckers; rich loam and peat; in marshy situations.

H. appendicula'tum (appendaged-*calyxed*). ¾. Blue. May. 1812.
„ *canade'nse* (Canadian). ½. White. May. 1759.
„ *magella'nicum* (Magellan). 1½. Pink. June, July. Magellan region. 1817.
„ *virgi'nicum* (Virginian). ½. Blue. June. 1739. "Shawanese Salad."

HYDRO'SME. (From *hudor*, water, and *osme*, smell; in allusion to the peculiar smell of the flower. Nat. ord. Araceæ. Now referred to Amorphophallus.)

Stove Aroids. Offsets and division of tubers. Sandy loam and peat or leaf-mould.

H. leopoldia'na (Leopoldian). Spathe velvety purple-brown. Congo. 1887.
„ *Teu'szii* (Teusz's). See AMORPHOPHALLUS EICHLERI.

HYDROTÆ'NIA. (From *hudor*, water, and *tainia*, a band; referring to a triangular band in the flower secreting a liquid. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Beatonia.)

Pretty half-hardy bulbs, with the aspect of a Tigridia, and flowers like a Fritillaria. Seeds, sown when ripe, or kept, and given a little heat in the spring; division of the offsets; light, rich, sandy loam; taken up, and kept after the foliage is decayed, and planted out the following spring. If left in the ground, and covered to protect from rains and frosts, the plants will be stronger than if the bulbs were kept dry all the winter.

H. loba'ta (lobed-*flowered*). 1½. Yellow, purple. May. Lima. 1843.
„ *Melea'gris* (Guinea-fowl-like). 1. Yellow. July. Mexico. 1837.
„ *Van Hou'ttei* (Van Houtte's). Mexico.

HYGROMETER. An instrument for ascertaining the quantity of moisture in the air. Everything that swells by moisture, and contracts by dryness, is capable of being formed into one. Every gardener who has taken a cool bunch of grapes into a hothouse well-supplied with moisture would, in the grapes almost instantly being covered with dew, see the principle upon which the hygrometer acts. The colder the grapes, the warmer the house, the more the vapour contained in it, the sooner would the dew be formed, and the more plentiful its depositure. Pouring cold water into a glass tumbler, in similar circumstances, will be attended with a similar result: *dew* will be deposited on the outside of the glass; because, in either case, the cold body condenses the vapour in its neighbourhood; and this is what is called the dew-point, being that temperature at which moisture is deposited from the surrounding atmosphere upon any object of that particular temperature. The *drip* in frames, greenhouses, &c., is similarly caused. The thermometer is the best instrument for showing the temperature; and by taking two similar ones, covering their bulbs with a fold of muslin or silk, keeping one dry and the other wet, with a thread of floss-silk acting as a syphon from a vessel of water, the greater the difference of temperature indicated by the moist and dry thermometer, the greater the deficiency of atmospheric moisture. The nearer the temperature of the moist and dry bulb, the nearer is the air to being saturated with moisture. To obtain more perfect details *Daniel's Hygrometer* may be used. It consists of two hollow glass balls containing ether, and communicating by the glass tube which rests on the support. The ball which forms the termination of the longer leg is of black glass, in order that the formation of dew on its surface may be the more perceptible. It includes the bulb of a delicate thermometer dipping in the ether, its scale being inclosed in the tube above the ball; and whatever change takes place in the temperature of the ether is indicated by this thermometer. The other ball is covered with muslin. In making an observation it is first necessary to note down the temperature of the air; next turn the instrument, so that when the muslin-covered ball is held in the hand, the ether may escape into the blackened ball; and it should also be held till the included thermometer rises a few degrees above the temperature of the air, when it should be replaced on the support. Then drop, or gently pour, a little ether on the muslin. The evaporation of this extremely volatile substance produces cold; and attention must be instantly directed to the black glass ball and included thermometer. The latter will be seen falling rapidly; and at length a ring of dew will appear at the line which runs across the black ball—quickly, if the air is very moist, slowly, if the air is dry. If the air is very dry, no moisture will be thus deposited till the thermometer falls to 10°, 20°, or 30° below the temperature of the air. But at whatever temperature the dew forms, that temperature should be noted as the dew-point; and the difference between it and the temperature of the air, at the time, is the degree of dryness according to the indications of this hygrometer. Thus, in a moderately dry day, let it be supposed that the temperature of the air is 65° in the shade, and that the muslin requires to be kept moist, before dew is formed, till the blackened ball containing the ether has its temperature reduced to 50°, as indicated by the included thermometer; there are then said to be 15° of dryness. Again, supposing the temperature is 85°, and the dew-point found, as before, to be 70°, the degree of dryness is still expressed by 15°; but the quantity of moisture diffused in the air is, notwithstanding, somewhat greater in the latter case than in the former. If 1000° represent complete saturation, the quantity of moisture, when the

temperature is 65° and the dew-point 50°, will be 609; but when the temperature is 85° and the dew-point 70°, the moisture will be represented by 623; these numbers being ascertained by tables prepared for the purpose. The difference, however, in such a case is so small, it is not worth taking into account in a horticultural point of view. But as these numbers can only be ascertained by calculation, it is more convenient to reckon by the degrees of dryness, bearing in mind that the dryness of the air is indicated by the difference between the temperature of the air and of the dew-point. Thus, if the ring of dew is formed as soon as ether is applied, and only 1° difference is observable, the air is nearly saturated; if the difference is 5° to 10° the dryness is very moderate; while 15° to 20° of difference indicate excessive dryness, and beyond this the air is parching.—*Gard. Chron.*

HYGRO'PHILA. (From *hugros*, moist, and *phileo*, to love; referring to the habitat of the plant. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Ruellia.)

Stove evergreens. Cuttings of young shoots in sandy soil, in heat; peat and loam. Summer temp., 60° to 80°; winter, 45° to 55°.

H. angustifo'lia (narrow-leaved). ½–1. Purple or violet. Tropics of Old World. 1820.
„ *longifo'lia* (long-leaved). See H. SPINOSA.
„ *ri'ngens* (gaping). See H. ANGUSTIFOLIA.
„ *salicifo'lia* (willow-leaved). See H. ANGUSTIFOLIA.
„ *spino'sa* (spiny). 2. White or purple. August. India and Malaya. 1781.

HYLE'SINUS PINIPE'RDA. See HYLURGUS PINIPERDA.

HYLI'NE. (From *hule*, a wood; the species first discovered grew in dry woods. Nat. ord. Amaryllidaceæ.)

A stove bulb. Seeds and offsets. Fibrous loam, leafmould, and sand.

H. Worsle'yi (Worsley's). 1½. White. Brazil. 1899.

HYLO'NOME. (From *hule*, a wood, and *onoma*, renown; literally, glory of the woods. Nat. ord. Liliaceæ. It is now referred to Behnia.)

H. reticula'ta (netted). See BEHNIA RETICULATA.

HYLOTOMA ROSÆ. A saw-fly, which injures rose-trees seriously, by puncturing in rows their young shoots, and depositing its eggs in the holes. The best remedy is spreading a cloth beneath the trees in the evening, and killing the caterpillars shaken down upon it.

HYLU'RGUS PINIPE'RDA. Pine Beetle. Young Pine trees in some districts suffer greatly owing to the ravages of this beetle, which is dark-coloured, downy, and about two lines long. The female makes a gallery beneath the bark of young or old trees and lays her eggs in it. Each grub when hatched out makes a tunnel of its own, so that they run round the stems of young trees, which then either die or get their tops blown off by the wind. To keep the beetle in check all prunings and pine bark should be burned. Branches known to be attacked should be cut off and burned likewise.

HYMENÆ'A. Locust-tree. (From *Humen*, the god of marriage; referring to the leaflets being joined. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Bauhinia.)

Fine, close-grained, hard wood; and the resins Anime and Copal are produced by these stove evergreen trees. Cuttings of firm young shoots in spring, inserted firmly in sand, covered with a bell-glass, in bottom-heat; peat and rich loam. Summer temp., 60° to 85°; winter, 55° to 60°.

H. candollia'na (Decandolle's). 30. White. Acalpulco. 1824.
„ *Cou'rbaril* (Courbaril). 40. Yellow, purple. S. Amer. 1688. "Locust Tree."
„ *verruco'sa* (warty-*podded*). 20. White. Madagascar. 1808. "Copal."

HYMENA'NDRA. (From *humen*, a skin or pellicle, and *aner*, an anther or male; the connective of the anther being developed into a thin, connecting membrane. Nat. ord. Myrsinaceæ.)

Evergreen greenhouse shrub allied to Ardisia. Seeds; cuttings of half-mature wood in sand, placed in a close case, with bottom-heat. Fibrous loam, peat, and sand.

H. Walli'chii (Wallich's). 3–8. Pale greenish-white. Himalayas. 1828.

HYMENANTHE'RA. (From *humen*, a membrane, and *anthera*, an anther, or pollen-bag. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Alsodeia.)

Greenhouse evergreen shrubs. Cuttings of young shoots, getting a little firm, in spring, in sand, over peat, and well drained, under a bell-glass; sandy peat, with a third of fibrous loam. Winter temp., 40° to 45°.

H. arista'ta (bearded). Garden form.
„ *crassifo'lia* (thick-leaved). 3. Berries white. New Zealand. 1875.
„ *denta'ta* (toothed-*leaved*). 6. Yellow. May. Australia.
„ „ *angustifo'lia* (narrow-leaved).
„ *latifo'lia* (broad-leaved). Norfolk Island.

HYMENOCA'LLIS. (From *humen*, a membrane, and *kalos*, beautiful; referring to the membranous cup inside the flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Pancratium.)

They have all white flowers, except where otherwise mentioned, and much resemble Pancratiums. Their seeds differ in being large and green, the seeds of Pancratium having a black, brittle skin. Offsets; rich, sandy loam. See AMARYLLIS.

HARDY BULBS.

H. adna'ta (adhering). See H. LITTORALIS.
„ *la'cera* (torn). 1–1½. August. Southern United States. 1732.
„ *littora'lis* (sea-shore). 1½–2. Segments 4 in. long. Trop. Amer. 1758.
„ „ *acutifo'lia* (acute-leaved). May. Segments 1 in. longer than the tube. Mexico. 1824.
„ „ *Drya'ndri* (Dryander's). 2. Tube and segments shorter than the type. May. 1782.
„ „ *Staple'sii* (Staples's). 2. Segments 2–3 in. long. Mexico. 1826.
„ *rota'ta* (wheel-shaped). See H. LACERA.

GREENHOUSE BULBS.

H. Ama'ncaes (Hill of Amancaes). 2. Large, bright yellow. Chili and Peru.
„ *bistuba'ta* (double-tubed). 1½. April. Mexico. 1844.
„ *calathi'na* (cup-like). 1½–2. Peru and Bolivia. 1796.
„ „ *grandiflo'ra* (large-flowered). Corona larger. 1902.
„ *carolinia'na* (Carolina). See PANCRATIUM MARITIMUM.
„ *conci'nna* (neat). 1½. Mexico. 1893. Evergreen.
„ *galvestone'nsis* (Galveston). 1–1½. Texas.
„ *glau'ca* (sea-green). 1. July. Mexico. 1837.
„ *harrisia'na* (Harrisian). ½–1. June. Mexico. 1838.
„ *maclea'na* (Macleanian). 1. Andes of Peru. 1834.
„ *Palme'ri* (Palmer's). 1. Florida. 1888. Larger flowers than *H. humilis*.
„ *paname'nsis* (Panama). See H. LITTORALIS.
„ *skinneria'na* (Skinner's). March. Guatemala. 1843.
„ *tenuiflo'ra* (slender-flowered). 1. Segments 3–4 in. long. Colombia. 1814.
„ *vire'scens* (greenish). See H. MACLEANA.

STOVE BULBS.

H. amœ'na (handsome). See H. OVATA.
„ *andrea'na* (Andrean). 1. Ecuador. 1884.
„ *angu'sta* (narrow-*leaved*). See H. CARIBÆA.
„ *boschia'na* (Boschian). See H. UNDULATA.
„ *caribæ'a* (Caribæan). 1½. July. W. Ind. 1730.
„ „ *pa'tens* (spreading). White.
„ *caymane'nsis* (Cayman). August. Cayman. 1823.
„ *cordifo'lia* (heart-leaved). 2½. Venezuela. 1899.
„ *crassifo'lia* (thick-leaved). 1½. July. Southern United States.
„ *defle'xa* (deflexed). 1. Andes of Peru. 1839.
„ *Deleui'lii* (Deleuil's). See H. LITTORALIS.
„ *eucharidifo'lia* (Eucharis-leaved). 1. Trop. Amer. 1884.
„ *expa'nsa* (expanded). 2. May. W. Ind. 1818.
„ *fra'grans* (fragrant). See H. OVATA.
„ *guiane'nsis* (Guiana). See H. TUBIFLORA.

H. hu'milis (dwarf). ⅛–½. Greenish; corona white. Florida. 1888.
„ *macroste'phana* (large-crowned). 2–3. March, April. Garden hybrid (?). 1879.
„ *mexica'na* (Mexican). See H. LACERA.
„ *nu'tans* (nodding). 2. White; tube green. S. Amer.
„ *ovalifo'lia* (oval-leaved). See H. OVATA OVALIFOLIA.
„ *ova'ta* (egg-shaped). 1. July, August. W. Ind. 1790.
„ „ *ovalifo'lia* (oval-leaved). A small, slender variety. June. S. Amer. 1820.
„ *pa'tens* (spreading). 2. July. W. Ind. 1822.
„ *peda'lis* (*long-leaf*-stalked). May. Brazil. 1815.
„ *pedia'lis* (*long-flower*-stalked). 3. August. Brazil. 1820.
„ *quitoe'nsis* (Quito). 1. June. Ecuador.
„ *schizoste'phana* (cut-crowned). 1½. Filament winged at the base. Brazil. 1899.
„ *senega'mbica* (Senegambian). W. Trop. Africa.
„ *specio'sa* (showy). 1½. July. W. Ind. 1759.
„ „ *angustifo'lia* (narrow-leaved). 1903.
„ *tubiflo'ra* (tube-flowered). 2. August. S. Amer. 1815.
„ *undula'ta* (wavy-*leaved*). 1. July. Venezuela.

HYMENODI'CTYON. (From *humen*, a membrane, and *diktuon*, a net; the envelope of the seeds being a net-like membrane. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Luculia.)

Stove evergreen trees, from the East Indies, with greenish-yellow flowers. For culture, see CINCHONA.

H. exce'lsum (tall). 30. July. 1819.
„ *thyrsiflo'rum* (thyrse-flowered). See H. EXCELSUM.

HYMENO'DIUM CRINI'TUM. See ACROSTICHUM CRINITUM.

HYMENOLE'PIS. See ACROSTICHUM.

HYMENOPHY'LLUM. Filmy-leaf Fern. (From *humen*, a membrane, and *phullon*, a leaf. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Ferns, all with brownish-yellow spores, except where otherwise mentioned. By spores, and dividing the roots; peat and loam; should be rather cramped for room. See FERNS.

HARDY.

H. tunbridge'nse (Tunbridge). ½. Brown. June. Britain.
„ „ *Wilso'ni* (Wilson's). ½. Brown. June. Britain.

GREENHOUSE.

H. biva'lve (two-valved). New Zealand.
„ *chiloe'nse* (Chiloë). Isle of Chiloë.
„ *crispa'tum* (crisped). See H. JAVANICUM CRISPATUM.
„ *crue'ntum* (blood-coloured). Chili.
„ *demi'ssum* (drooping). 1. New Zealand and Australia.
„ „ *ni'tens* (shining). Fronds glossy.
„ *dilata'tum* (swollen). August. New Zealand.
„ „ *forsteria'num* (Forsterian).
„ *flabella'tum* (fan-shaped). May. Australia and New Zealand. 1859.
„ *flexuo'sum* (zigzag). See H. JAVANICUM FLEXUOSUM.
„ *forsteria'num* (Forsterian). See H. DILATATUM FORSTERIANUM.
„ *fucifo'rme* (Fucus-formed). Chili and Juan Fernandez.
„ *java'nicum* (Javanese). Trop. Asia, &c.
„ „ *crispa'tum* (crisped). Tasmania. 1858.
„ „ *fimbria'tum* (fringed). April. New Zealand.
„ „ *flexuo'sum* (flexuous). April. New Zealand.
„ „ *tamariscifo'lium* (tamarisk-leaved).
„ *multi'fidum* (much-cut). New Zealand and Pacific Isles.
„ *ni'tens* (shining). See H. FLABELLATUM.
„ *pectina'tum* (comb-like). Chili and Chiloë.
„ „ *supe'rbum* (superb).
„ *pulche'rrimum* (fairest). New Zealand.
„ *ra'rum* (rare). Mauritius, New Zealand, &c. 1859.
„ *sanguinole'ntum* (bloody). May. New Zealand.
„ *sca'brum* (rough). New Zealand. 1859.
„ *tamariscifo'lium* (tamarisk-leaved). See H. JAVANICUM TAMARISCIFOLIUM.

STOVE.

H. abru'ptum (abrupt). ½. Jamaica and S. Amer. 1859.
„ *ærugino'sum* (brassy). Isle of Tristan d'Acunha.
H. asplenioi'des (Asplenium-like). ½. Trop. Amer. 1859.
„ *attenua'tum* (attenuated). See H. MAGELLANICUM.
„ *biva'lve* (two-valved). May. Isle of Luzon.
„ *borya'num* (Boryan). See H. CILIATUM.
„ *Catheri'næ* (St. Catherina). Jamaica.
„ *caudicula'tum* (short-tailed). Trop. Amer.
„ *cilia'tum* (eye-lashed). Trop. Amer.
„ *cri'spum* (crisped). ½–½. Trop. Amer.
„ *ela'sticum* (elastic). 1. Mauritius and Bourbon. 1859.
„ *e'legans* (elegant). See H. LINEARE.
„ *elega'ntulum* (rather-elegant). Andes.
„ *fimbria'tum* (fringed). See H. JAVANICUM FIMBRIATUM.
„ *fucoi'des* (Fucus-like). Trop. Amer. 1859.
„ *hirsu'tum* (hairy). May. Trinidad. 1823.
„ *hirte'llum* (finely-hairy). ½. Mexico, Jamaica, &c.
„ *linea're* (linear). Trop. Amer.
„ *magella'nicum* (Magellan). S. Amer.
„ *polya'nthos* (many-flowered). W. Ind. 1824.
„ *protru'sum* (protruded). See H. POLYANTHOS.
„ *seri'ceum* (silky). 2. Trop. Amer. 1859.
„ *subtili'ssimum* (most-subtle). New Zealand.
„ *undula'tum* (waved) ½–½. Mexico, Jamaica, Peru. 1859.
„ *valva'tum* (valved). ½–½. Nicaragua, Andes of Colombia and Peru. 1859.
„ *villo'sum* (shaggy). See H. POLYANTHOS.

HYMENO'SPORUM. (From *humen*, a membrane, and *sporos*, a seed; the seeds are surrounded by a membranous wing. Nat. ord. Pittosporaceæ.)

Greenhouse evergreen tree or shrub closely allied to Pittosporum. Cuttings of half-ripe wood in a gentle heat under a bell-glass. Fibrous loam, peat, and sand.

H. fla'vum (yellow). 8–15. Yellow, marked orange-red. February. Australia. 1884.

HYMENO'STACHYS E'LEGANS. See TRICHOMANES ELEGANS.

HYOPHO'RBE. (From *hus*, *huos*, a hog, and *phorbas*, food; the seeds or fruits form food for the wild hog. Nat. ord. Palmaceæ.)

Stove Palms with feathered leaves. Seeds. Fibrous loam with one-third peat and some sand.

H. amaricau'lis (bitter-stemmed). 6–10. Mauritius. 1866.
„ *i'ndica* (Indian). 20–30. Mascarene Islands. 1824.
„ *Verschaffe'ltii* (Verschaffelt's). 8–12. Mascarene Islands.

HYOSCY'AMUS. Henbane. (From *hus*, a hog, and *kuamos*, a bean; fruit eaten by swine. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Datura.)

The annuals, by seed in the open, dry border, towards the end of March; the shrubby kinds, by cuttings under a bell-glass, in April; or under a hand-light in a shady place, in summer. Sandy, fibrous loam, and a little leaf-mould; when planted out of doors, young plants must be reared for saving through the winter in a cold pit or greenhouse. There are many other species besides the following; but they are mere weeds.

H. a'lbus (white). 1–2. White, yellow. July. Europe. 1816.
„ *au'reus* (golden). 1–2. Yellow, maroon. Asia Minor.
„ *Camera'rii* (Camerarius's). See H. RETICULATUS.
„ *canarie'nsis* (Canary). See H. ALBUS.
„ *Dato'ra* (Datora). See H. MUTICUS.
„ *ma'jor* (greater). See H. ALBUS.
„ *mu'ticus* (snipped). 1½. Yellow. May. Egypt. 1829. Half-hardy evergreen.
„ *ni'ger* (black). 1–2. Dirty yellow, with maroon veins. Britain. "Common Henbane."
„ *orienta'lis* (oriental). See PHYSOCHLAINA ORIENTALIS.
„ *physaloi'des* (Physalis-like). See SCOPOLIA PHYSALOIDES.
„ *reticula'tus* (netted). 1–2. Yellow, purple. July. Asia Minor. Hardy annual.
„ *Scopo'lia* (Scopolia). See SCOPOLIA CARNIOLICA.

HYO'SPATHE. (From *hus*, a hog, and *spathe*, a spathe. Nat. ord. Palmaceæ.)

A stove Palm with irregularly feathered leaves. Seeds. Fibrous loam, with one-third peat and some sand.

H. e'legans (elegant). Green. Brazil.

HYPE'COUM. (From *hupecheo*, to rattle; referring to the seeds in the pods. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 4-*Tetrandria*, 2-*Digynia*.)

Hardy annuals, with yellow flowers. Seeds in the open border, in March.

H. ere'ctum (erect). ½. May. Siberia. 1759.
,, *grandiflo'rum* (large-flowered). 1. Yellow. Mediterranean region.
,, *littora'le* (sea-shore). See H. PROCUMBENS.
,, *pe'ndulum* (hanging-down). ½. June. S. France. 1640.
,, *procu'mbens* (lying-down). 1. July. S. Europe. 1596.

HYPELA'TE. (From *hupo*, under, and *elaion*, oil; the sediment of oil. Nat. ord. Sapindaceæ.)

Stove evergreen tree. Cuttings of ripe shoots in sand, in a close frame, with bottom-heat.

H. panicula'ta (panicled). 20. Yellow. W. Ind. 1820.

HYPERANTHE'RA MORI'NGA. See MORINGA PTERYGOSPERMA.

HYPE'RICUM. St. John's Wort. (The *Yperikon* of Dioscorides; said to be from *yper*, on account of, and *ereike*, heath; from its growing in similar places. Nat. ord. *Tutsans* [Hypericaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

All yellow-flowered, except where otherwise mentioned. The hardier ones flourish in common and sandy loam, and the more tender in loam and peat. Annuals, sow in the open border, in March; herbaceous, sow and divide the plants in spring; shrubs are easily divided, as they stole freely, and also by seeds; greenhouse and frame kinds, by divisions, but chiefly by cuttings of young shoots in sand, under glass; most of them, if protected in winter, would grow against a wall. For exposed places the following are the best shrubby ones:—*Ela'tum*, *hirci'num*, *calyci'num*, *kalmia'num*, and *proli'ficum*.

HARDY BIENNIAL.

H. seto'sum (bristly). 1. July, August. N. Amer. 1759. Syn. *H. simplex*.

GREENHOUSE EVERGREEN SHRUBS, &c.

H. ægypti'acum (Egyptian). 2. June. Egypt. 1787.
,, *æthio'picum* (Ethiopian). 1. July. S. Africa. 1817.
,, *balea'ricum* (Balearic). 1½. May. Majorca. 1774.
,, *canarie'nse* (Canary). 2. August. Canaries. 1699.
,, *chine'nse* (Chinese). 3. June. China. 1753.
,, *co'chinchine'nse* (Cochin-Chinese). See CRATOXYLON POLYANTHUM.
,, *cordifo'lium* (heart-leaved). 2. Nepaul. 1825. Half-hardy.
,, *Co'ris* (Coris-*leaved*). 1. June. Levant. 1640. Half-hardy.
,, *empetrifo'lium* (Empetrum-leaved). 1. July. S. Europe. 1820. Half-hardy.
,, *ericoi'des* (heath-like). 1. June. Spain. 1821. Half-hardy.
,, *floribu'ndum* (bundle-flowered). 3. June. Madeira. 1779. Deciduous.
,, *folio'sum* (*shining*-leafy). 3. August. Azores. 1778.
,, *glandulo'sum* (glanded). 2. June. Madeira. 1777.
,, *grandiflo'rum* (large-flowered). 3. July. Teneriffe. 1718.
,, *heterophy'llum* (various-leaved). 2. July. Persia. 1812.
,, *hookeria'num* (Hookerian). 2. June. India. 1823.
,, ,, *Leschenau'ltii* (Leschenault's). Sikkim, Nepaul, Java.
,, *lanceola'tum* (lance-shaped). Mascarene Islands.
,, *mono'gynum* (one-styled). See H. CHINENSE.
,, *mysore'nse* (Mysore). India.
,, *oblongifo'lium* (oblong-leaved). See H. HOOKERIANUM.
,, *refle'xum* (reflexed). 1½. June to September. Teneriffe. 1778.
,, *sine'nse* (Chinese). See H. CHINENSE.
,, *trifo'rum* (three-flowered). See H. HOOKERIANUM LESCHENAULTII.

HARDY DECIDUOUS AND EVERGREEN SHRUBS.

H. adpre'ssum (adpressed). Eastern United States.
,, *Androsæ'mum* (Androsæmum). 1–2. Europe (Britain). "Tutsan."
,, ,, *au'reum* (golden). Leaves yellow.
H. Ascy'ron (Ascyron). 1–2. Northern Asia, N. Amer. 1774. "St. Peter's-wort."
,, *aspalathoi'des* (Aspalathus-like). See H. FASCICULATUM.
,, *au'reum* (golden). Golden-yellow. South United States. 1802.
,, *axilla're* (axillary-*flowered*). See H. GALIOIDES.
,, *Buckle'ii* (Buckley's). 1–2. N. and S. Carolina. 1891.
,, *calyci'num* (*large*-calyxed). 1. July. Ireland.
,, *densiflo'rum* (dense-flowered). N. Amer. 1890.
,, *ela'tum* (tall). 5. July. N. Amer. 1762.
,, *fascicula'tum* (fascicled). 1. July. Carolina. 1811.
,, *frondo'sum* (leafy). See H. AUREUM.
,, *galioi'des* (Galium-like-*leaved*). 2. August. N. Amer. Evergreen.
,, *Ge'bleri* (Gebler's). July. Altai. 1829.
,, *glau'cum* (milky-green). See H. MYRTIFOLIUM.
,, *hirci'num* (goat-*scented*). 3. August. S. Europe. 1640.
,, ,, *mi'nus* (smaller). 2. August. S. Europe.
,, *inodo'rum* (scentless). Orient.
,, *kalmia'num* (Kalm's). 2. June. N. Amer. 1759.
,, *loboca'rpum* (pod-fruited) 2. South United States. 1897.
,, *lysimachioi'des* (Lysimachia-like). 2. Himalaya, W. China. 1904.
,, *moseria'num* (Moserian). Hybrid between *H. calycinum* and *H. patulum*. 1889.
,, ,, *tri'color* (three-coloured). Leaves variegated with white and red. 1894.
,, *nudiflo'rum* (naked-flowered). Southern United States.
,, *nummula'rium* (moneywort-*leaved*). 1. June. Pyrenees. 1823. Trailer.
,, *oly'mpicum* (Olympian). 1. August. Levant. 1706. Evergreen.
,, *pa'tulum* (spreading). 1. June. Nepaul. 1823. Evergreen.
,, ,, *He'nryi* (Dr. Henry's). 2. China. 1904.
,, *proli'ficum* (prolific). 4. July. N. Amer. 1758.
,, *puncta'tum* (dotted). See H. MACULATUM.
,, *rosmarinifo'lium* (rosemary-leaved). See H. MYRTIFOLIUM.
,, *serpyllifo'lium* (thyme-leaved). ½. July. Levant. 1688. Evergreen.
,, *ura'lum* (Urala). 1. July. Nepaul. 1823.

HARDY HERBACEOUS PERENNIALS.

H. adeno'phorum (gland-bearing). See H. ELODEOIDES.
,, *adenophy'llum* (glanded-leaved). See H. OLYMPICUM.
,, *amœ'num* (pleasing). See H. AURUEM.
,, *angulo'sum* (angled-*tooth-flowered*). 2. June. N. Amer. 1812.
,, *ascyroi'des* (Ascyron-like). See H. ASCYRON.
,, *atoma'rium* (speckled). Asia Minor.
,, *atienua'tum* (thin-*leaved*). 1½. July. Dahuria. 1822.
,, *barba'tum* (bearded). 2. July. Eastern Europe.
,, ,, *asce'ndens* (ascending). See H. RUMELICUM.
,, ,, *cala'bricum* (Calabrian). 1½. August. Calabria. 1816.
,, *canade'nse* (Canadian). 1. August. N. Amer. 1770.
,, *cilia'tum* (hair-fringed-*flowered*). See H. PERFOLIATUM.
,, *crenula'tum* (finely-notched). Cilicia.
,, *cri'spum* (curly-*leaved*). 1. July. Greece. 1688.
,, *decussa'tum* (decussate). See H. ORIENTALE PTARMICÆFOLIUM.
,, *denta'tum* (toothed). See H. PERFOLIATUM.
,, *dolabrifo'rme* (hatched-formed). 2. June. N. Amer. 1821.
,, *e'legans* (elegant). 1½. June. Siberia. 1822.
,, *elodeoi'des* (Elodes-like). ½–1. Himalaya.
,, *Elo'des* (Elodes). ½. July, August. Britain, in boggy places.
,, *ere'ctum* (erect). Japan.
,, *fimbria'tum* (fringed). See H. RICHERI.
,, *grami'neum* (grass-like). 1. July. New Caledonia. 1822. Half-hardy.
,, *hirsu'tum* (hairy). 1–2. July, August. Britain.
,, *humifu'sum* (prone). ½. June to September. Britain, Prostrate.
,, *hyssopifo'lium* (hyssop-leaved). 1. July. Europe. 1823.
,, *involu'tum* (rolled-inward-*flowered*). See H. GRAMINEUM.

H. japo'nicum (Japanese). 1½. July. Eastern Temperate Asia, &c. 1823.
,, *læviga'tum* (smooth). 1½. July to September. N. Amer. 1772.
,, *linarifo'lium* (Linaria-leaved). 1. July, August. England.
,, *macroca'rpum* (large-podded). See H. ASCYRON.
,, *macula'tum* (spotted). 1–2. June, July, August. Britain.
,, *monta'num* (mountain). 1½. July, August. Britain.
,, *muti'lum* (mutilated). 1. July. N. Amer. 1759.
,, *myrtifo'lium* (myrtle-leaved). 1. July. N. Amer. 1818.
,, *nepaule'nse* (Nepaul). 1½. September. Nepaul. 1826.
,, *nudicau'le* (naked-stemmed). See H. SAROTHRA.
,, *nudifo'rum* (naked-flowered). 1½. July. N. Amer. 1811.
,, *origanifo'lium* (Origanum-leaved). See H. RHODODENDRUM.
,, *orienta'le* (oriental). 1–2. July, August. Asia Minor.
,, ,, *ptarmicæfo'lium* (Ptarmica-leaved).
,, *paludo'sum* (marsh). 2. July, August. N. Amer. 1821.
,, *perfolia'tum* (stem-pierced-*leaved*). 1. July. Greece; Asia Minor. 1739.
,, ,, *latifo'lium* (broad-leaved).
,, *perfora'tum* (perforated). 1½. July. Britain.
,, ,, *angustifo'lium* (narrow-leaved). 1½. July. Britain.
,, *polyphy'llum* (many-leaved). ½. July, August. Cilicia. Procumbent.
,, *procu'mbens* (lying-down). See H. DOLABRIFORME.
,, *pu'lchrum* (pretty). 1. July, August. Europe (Britain).
,, *pusi'llum* (small). See H. JAPONICUM.
,, *pyramida'tum* (pyramidal). See H. ASCYRON.
,, *quadra'ngulum* (square-*stalked*). 1½. July. Britain.
,, *quinquene'rvium* (five-nerved). See H. MUTILUM.
,, *re'pens* (creeping). ½. July. Eastern Europe. Creeping.
,, *re'ptans* (creeping). ½. June, July. Himalaya. Creeping.
,, *rhodo'peum* (rose-like). Macedonia.
,, *Riche'ri* (Richer's). 2. July. Middle Europe. 1821.
,, *rume'licum* (Roumelia). Macedonia.
,, *Saro'thra* (Sarothra). 1. N. Amer.
,, *tetra'pterum* (four-winged). See H. QUADRANGULUM.
,, *tomento'sum* (woolly). 1. August. S. Europe. 1648.
,, *tripline'rve* (three-nerved). 1½. July. N. Amer. 1821.
,, *virga'tum* (twiggy). See H. ANGULOSUM.
,, *virgi'nicum* (Virginian). 1½. August. N. Amer. 1800.

HYPHÆ'NE. (From *huphaino*, to entwine; referring to the fibres of the fruit. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Dioecia*, 6-*Hexandria*. Allied to Latania.)

H. theba'ica is the Doum Palm, and the Gingerbread-tree of Egypt, the fleshy-fibrous part of the fruit having the appearance and taste of that cake. Stove palm. Seeds; rich, sandy loam.

H. coria'cea (leather-leaved). 20. Trop. Africa. 1824.
,, *crini'ta* (long-haired). Trop. S. Africa.
,, *Cuci'phera* (Cuciphera). Trop. Africa.
,, *natale'nsis* (Natal). See H. CRINATA.
,, *petersia'na* (Petersian). See H. CRINITA.
,, *Scha'tan* (Schatan). Madagascar.
,, *theba'ica* (Thebesan). 40. Trop. Africa.

HYPOCALY'MMA. (From *hupo*, under, and *kalumma*, a veil; referring to the calyx falling off like a veil or cape, on account of the cohesion of the points, or apex. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from Australia. Cuttings of young shoots in sand, under a bell-glass; loam and peat, with a little silver sand and pieces of charcoal. Winter temp., 40° to 45°.

H. angustifo'lium (narrow-leaved). 2. White. May. 1843.
,, *robu'stum* (robust). 1. Rose. May. 1843.
,, *sua've* (sweet-*scented*). See H. ANGUSTIFOLIUM.

HYPOCALY'PTUS. (From *hupo*, under, and *kalupto*, to veil; referring to the two bractlets under the flower. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 4-*Decandria*. Allied to Loddigesia.)

A very old evergreen greenhouse plant, once called a Crotolaria, and one of the best of that section. Cuttings of young side-shoots in April, in sand, under a bell-glass; peat and loam. Winter temp., 40° to 45°.

H. obcorda'tus (reversed-egg-*leaved*). 1½. Purple. June. S. Africa. 1823.

HYPOCHŒ'RIS. (From *hupo*, under or below, and *chairo*, to delight in; that is, it delights to grow with its leaves lying low or close to the ground, especially in dry places. Nat. ord. Compositæ.)

A large genus of perennial, rarely annual herbs, mostly of a weedy character. *H. maculatum*, with blotched leaves, is perhaps the best. Seeds and divisions. Ordinary soil.

H. Achyro'phorus (Achyrophorus). 1. Yellow. May. N. Africa; Sicily. 1828.
,, *ætne'nsis* (Ætna). ¼. Yellow. July. Europe. 1763.
,, *crete'nsis* (Cretan). ½. Yellow. July. Greece; Sicily. 1773.
,, *macula'tus* (blotched). 1. Yellow. July. Europe (Britain).

HYPOCY'RTA. (From *hupo*, below, and *kurtos*, curved; the tube of the corolla is curved below. Nat. ord. Gesneraceæ.)

Stove perennials. Seeds; cuttings in sand in heat, covered with a bell-glass. Loam, leaf-mould, with plenty of sand.

H. brevi'calyx (short-calyxed). See ISOLOMA HYPOCYRTIFLORUM
,, *cilio'sa* (eye-lashed). See EPISCIA CILIOSA.
,, *di'scolor* (two-coloured). See ALLOPLECTUS DICHROUS.
,, *gla'bra* (smooth). 1. Scarlet and yellow. S. Amer. 1847.
,, *gra'cilis* (slender). 1. Scarlet. Brazil.
,, *leuco'stoma* (white-mouthed). See BESLERIA LEUCOSTOMA.
,, *pulche'lla* (pretty). Scarlet. Colombia. (B.M., t. 7468.)
,, *pu'lchra* (fair). 1. Orange-yellow. Colombia. 1894.
,, *sca'brida* (rough). 1. Scarlet, yellow. Brazil. 1847.
,, *strigillo'sa* (stiff-haired). 1. Scarlet, yellow. Brazil. 1843.

HYPODE'RRIS. (From *hypo*, under, and *derris*, a skin. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

A stove Fern. See FERNS.

H. Bro'wnii (Brown's). ¾–1. Brown. May. Trinidad.

HYPOE'STES. (From *hupo*, under, and *estes*, covering; referring to the bracts covering the calyx. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Dicliptera.)

Stove plants. Cuttings of young shoots in sandy soil, under a glass, in heat; peat and loam. Summer temp., 60° to 85°; winter, 48° to 55°.

DECIDUOUS.

H. co'chinchine'nsis (Cochin-China). White. July. China. Climber.
,, *mosch'ata* (musky). 2. Australia.
,, *purpu'rea* (purple). 2. Purple. May. China. 1822. Herbaceous.

EVERGREEN

H. arista'ta (awned). 2–3. White, rose-purple. S. Africa. 1874.
,, *fastuo'sa* (sumptuous). 2. Red. June. E. Ind. 1818.
,, *involucra'ta* (involucred). 1½. White. July. E. Ind. 1811.
,, *sanguinole'nta* (blood-red). 1½. Purple. Madagascar. 1865.
,, *se'rpens* (creeping). ½. July. Mauritius. 1820.

HYPOLE'PIS. (From *hupo*, under, and *lepis*, a scale. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Ferns, with brown spores. The first two require the stove, and the others a warm greenhouse. See FERNS.

H. acule'ata (sharp-pointed). August. Jamaica.
,, *amaurora'chis* (dark-ribbed). See PTERIS RUGULOSA.
,, *anthriscifo'lia* (Anthriscus-leaved). 10–18. Bourbon. Mauritius, &c. 1855.

H. bergia'na (Bergian). 3–3½. S. Africa. 1874.
„ *di'stans* (distant). 1–1½. New Zealand. 1861. Hardy.
„ *millefo'lium* (milfoil-leaved). 1½–2. New Zealand. 1880. Hardy.
„ *re'pens* (creeping). 5. August. W. Ind. 1824.
„ *rugulo'sa* (rather-rough). See PTERIS RUGULOSA.
„ *tenuifo'lia* (slender-leaved). June. N. S. Wales. 1824.

HYPOLY'TRUM. (From *hupo*, under, and *elutron*, a wrapper, or case. Nat. ord. Cyperaceæ.)

Stove perennial sedges, used for decorative purposes like Cyperus. Seeds, division. Fibrous loam, leaf-mould, and sand. Water liberally.

H. latifo'lium (broad-leaved). 2–4. Brown. Leaves 1 in. broad. Trop. Asia. 1877.
„ *schraderia'num* (Schraderian). 2½. Leaves 2 in. broad, purple edged. Brazil. 1893.

HYPOPHYLLA'NTHUS LINDE'NI. See ERYTHROCHITON LINDENI.

HYPO'XIS. (From *hupo*, beneath, and *oxus*, sharp; referring to the seed-pod. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Very pretty little bulbs, with the bulb solid, from South Africa, and with yellow flowers, except where otherwise mentioned. They are little known either to botanists or gardeners. Division of the plant in spring, and division of the roots; peat and loam. Temperature according as the species is hardy, or requiring the greenhouse or stove.

HARDY.

H. ere'cta (upright). ½. June. N. Amer. 1752.
„ *plica'ta* (plaited). See CURCULIGO PLICATA.
„ *serra'ta* (saw-*leaved*). 1. June. S. Africa. 1788.
„ *veratrifo'lia* (Veratrum-leaved). See CURCULIGO VERATRIFOLIA.

STOVE.

H. decu'mbens (lying-down). ½. July. Trop. Amer. 1829.
„ *gra'cilis* (slender). See H. DECUMBENS.
„ *Sello'wii* (Sellow's). June. Buenos Ayres. 1827.

GREENHOUSE.

H. Andre'wsii (Andrews's). ½. July. 1795.
„ *angustifo'lia* (narrow-leaved). 1. Yellow. S. Africa.
„ *Arno'ttii* (Arnott's). 1. Yellow. 1877.
„ *Bau'rii* (Baur's). ½. Bright red. 1877.
„ *caroline'nsis* (Carolina). See H. ERECTA.
„ *colchicifo'lia* (Colchicum-leaved). ½–¾. Bright yellow. 1884.
„ *ela'ta* (tall). See H. HEMEROCALLIDEA.
„ *e'legans* (elegant). See H. STELLATA ELEGANS.
„ *flave'scens* (pale-yellow). S. Africa.
„ *hemerocalli'dea* (Hemerocallis-like). 1. S. Africa. 1868.
„ *hygrome'trica* (hygrometric). ½. April. Australia. 1824.
„ *latifo'lia* (broad-leaved). Yellow. Natal. 1854.
„ *linea'ris* (linear). See H. STELLATA.
„ *longifo'lia* (long-leaved). S. Africa. 1871.
„ *mu'liceps* (many-headed). S. Africa.
„ *obli'qua* (odd-sided-*leaved*). See H. ANDREWSII.
„ *obtu'sa* (blunt). ½. June. 1816.
„ *ova'ta* (egg-shaped). 1. February. 1807.
„ *panno'sa* (woolly). See H. VILLOSA.
„ *prate'nsis* (meadow). See H. HYGROMETRICA.
„ *ramo'sa* (branchy-*stemmed*). ½. June. 1828.
„ *re'gia* (royal). Gardens.
„ *Roope'rii* (Rooper's). S. Africa.
„ *sca'bra* (rough). See H. VILLOSA.
„ *soboli'fera* (shoot-bearing). See H. VILLOSA.
„ *stella'ta* (star-*flowered*). ¼. White, blue. May. 1752.
„ „ *e'legans* (elegant). ¼. White, blue. May. 1752.
„ *stelli'pilis* (starry-haired). July. S. Africa. 1821.
„ *villo'sa* (shaggy). ½. June. 1774.

HYPTIS. (From *huptiao*, to bend backwards; the middle lobe of the front lip is bent backwards. Nat. ord. Labiatæ.)

Evergreen, stove herb, or subshrub. Cuttings of young shoots in spring, with bottom-heat. Fibrous loam, leaf-mould, and sand.

H. suave'olens (sweet-smelling). Blue, fragrant S. Amer. 1889.

HYSSO'PUS. Hyssop. (*Yssopus* of Dioscorides, but certainly not the same plant. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Hardy, blue-flowered evergreens. Sow in March or April; propagate by dividing the plant at the same time, or in September; also, by stout cuttings at a similar period; the varieties are propagated by cuttings, and, if rare, require a hand-light over them; dry, light soil. The plant is not only aromatic, but the flowers are beautiful.

H. arista'tus (awned). See H. OFFICINALIS ARISTATUS.
„ *decu'mbens* (lying-down). See H. OFFICINALIS DECUMBENS.
„ *di'scolor* (two-coloured). See LOPHANTHUS ANISATUS.
„ *officina'lis* (*common*. Shop). 2. June. S. Europe. 1548.
„ „ *angustifo'lius* (narrow-leaved). July. Caucasus.
„ „ *arista'tus* (awned).
„ „ *cane'scens* (hoary). June. Switzerland. 1819.
„ „ *decu'mbens* (lying-down).
„ „ *flo're-ru'bro* (red-flowered). 2. Red. July. Gardens.
„ „ *grandiflo'rus* (large-flowered). Flowers large, open. Lake Baikal. 1901.
„ „ *variega'tus* (variegated-*leaved*). 1½. July. Gardens.
„ *septemcrena'tus* (seven-scolloped). June. Egypt. 1829.
„ *septe'mfidus* (seven-cleft). June. Egypt. 1827.

HYSTERIO'NICA. (From *hustereuo*, to come later, and *ios*, *ia*, *ion*, single; the flower-heads come singly on the stems, late in the year. Nat. ord. Compositæ. Often named Néja.)

Hardy, or half-hardy evergreen herbs, with slender leaves like pine-needles. Cuttings in sand during July and August in a cold frame, kept close. Sandy loam and leaf-mould. Young plants should be kept in a pit or frame during winter.

H. gra'cilis (slender). 1. Yellow. September, October. Argentina.
„ *pinifo'lia* (pine-leaved). 1. Yellow. August to October. Brazil.

I

IA'NTHE BUGULIFO'LIA. See CELSIA BUGULIFOLIA.

IBBETSO'NIA GENISTOI'DES. See CYCLOPIA GENISTOIDES.

IBERIDE'LLA ROTUNDIFO'LIA. See THLASPI ROTUNDIFOLIUM.

IBE'RIS. Candy Tuft. (From *Iberia*, the ancient name of Spain, where the species abound. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Thlaspi.)

All white-flowered, except where otherwise specified. Annuals and biennials, by seeds in March and April; most of the annuals, and especially the *umbella'ta* group, are very hardy, and if sown in autumn will generally stand the winter, and bloom in April and May in consequence. The shrubby evergreen group, by seeds, but chiefly by cuttings after flowering, under a hand-light, in a shady corner, in summer. *I. sempervi'rens* may be taken as a type of this group, and whether in a clump, by the side of borders, or hanging over knolls and rockworks, its masses of white flowers are really beautiful.

HARDY ANNUALS AND BIENNIALS.

I. ama'ra (bitter). 1. White. June to August. Europe (England). " Bitter Candy-tuft."
„ „ *hesperidifo'lia* (Hesperis-leaved). Flowers larger.
„ *bernardia'na* (Bernardian). ½–¾. Pink. June to September. Pyrenees.
„ *cilia'ta* (hair-fringed-*leaved*). ¾. June. Provence. 1802. Biennial.

I. corona'ria (crown-*flowering*). See I. UMBELLATA.
„ *hyacinthiflo'ra* (Hyacinth-flowered). 1. Milk-white. 1902.
„ *interme'dia* (intermediate). 1. June. France. 1823. Biennial.
„ *Jorda'ni* (Jordan's). Asia Minor.
„ *jucu'nda* (joyous). See ÆTHIONEMA JUCUNDA.
„ *lagasca'na* (Lagascan). White. Spain.
„ *na'na* (dwarf). ½. Purple. June. Europe. 1822.
„ *nudicau'lis* (naked-stemmed). See TEESDALIA NUDICAULIS.
„ *odora'ta* (sweet-scented). 1. June. Crete. 1806.
„ *pectina'ta* (comb-like). White. Spain.
„ *serrula'ta* (saw-edged). White. Dalmatia.
„ *tau'rica* (Taurian). ½. May. Caucasus. 1802. Biennial.
„ *umbella'ta* (umbelled). 1. Purple. June. S. Europe. 1596.
„ „ *atropurpu'rea* (dark purple).
„ „ *ca'rnea* (flesh).
„ „ *na'na purpu'rea* (dwarf purple).
„ „ *purpu'rea lilaci'na* (purple-lilac).
„ *viola'cea* (violet). ½. Purple. June. 1782.
„ *virgi'nica* (Virginian). See LEPIDIUM VIRGINICUM.

GREENHOUSE EVERGREEN.

I. gibralta'rica (Gibraltar). 1. Whitish-pink. May. Gibraltar. 1732.
„ „ *hy'brida* (hybrid). White to rose-purple.

HARDY EVERGREENS.

I. carno'sa (fleshy). Europe.
„ *confe'rta* (crowded). ½. June. Spain. 1827.
„ *contra'cta* (contracted). ½. May Spain. 1824.
„ „ *ro'sea* (rosy). Rose. 1888.
„ *corifo'lia* (Coris-leaved). ½. June. S. Europe. 1739.
„ *correæfo'lia* (Correa-leaved). ½. Flowers large, pure white. Garden origin.
„ *garrexia'na* (Garrex's). See I. SEMPERVIRENS GARREXIANA.
„ *Prui'tii* (Pruit's). ½. May. Sicily.
„ *pube'scens* (downy). ½. Pale violet. June.
„ *pu'mila* (dwarf). See THLASPI PUMILUM.
„ *saxa'tilis* (rock). ½. May. S. Europe. 1739.
„ *semperflo'rens* (ever-flowering). 1½. May. Sicily. 1679.
„ „ *flo're ple'no* (double-flowered).
„ *sempervi'rens* (evergreen). ½. May. Candia. 1731.
„ „ *garrexia'na* (Garrexian). 1. May. Piedmont. 1820.
„ *spathula'ta* (spathulate). See I. CARNOSA.
„ *stylo'sa* (long-styled). See NOCCÆA STYLOSA.
„ *tenorea'na* (Tenore's). ½. Pale purple. June. Naples. 1802.

ICACI'NA. (Literally, like Icaco. Nat. ord. Olacinaceæ.)

A stove shrub with a massive tuberous root-stock, and thin climbing stems. Cuttings of short side-shoots with a heel of the old wood in sand and placed in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

I. Ma'nni (Mann's). Pale yellow. Old Calabar. 1865.

ICACO'REA GUIANE'NSIS. See ARDISIA ACUMINATA.

ICE. Mr. Beaton finds that the cheapest and most effectual mode of preserving this is in what he terms an *Iceberg*, and it is thus constructed. Choose a natural hollow for the site of the iceberg, where the bank on one side is steep, and let the outside of the cone, when it is finished, be at six feet from the bottom of the bank. Some such space is necessary between the bank and the ice, to get rid of any rain or snow water that may run down the bank before it gets to the ice. At the bottom of the bank, and half-way up, posts are to be let into the ground in pairs, four feet apart, and braced together with a strong piece of timber set across, as builders do their scaffolding; let planks for wheeling on be made into a long trough, inclining from the top of the bank, and resting on those cross pieces; the bottom of the trough being carried out to near the intended centre of the cone, and far above it; and the ice should be broken on a platform of boards at the top of the bank, and poured down the inclined trough. The broken ice should be spread a little by some one as it falls from the spout, care being taken that the cone is brought up regularly; and when the ice reaches the height of the bottom of the spout, the planks are to be re-arranged, so as to allow room for throwing off the ice as fast as it comes down; and, finally, when the cone is finished into a sharp point, the whole must be left till the *first frost* after mild or thawing weather. The outside of the iceberg has then melted a little; but on the first hard frosty night the whole is frozen over again, and the outside of the cone is then as if it were one solid face of rugged ice; and now is the time to thatch it entirely over with good long straw, about the same thickness as you would a wheat or barley stack, and no more, *provided* you have cheaper materials to give it a good thick covering afterwards. At Shrubland Park they use large quantities of leaves, and nothing else, over the straw; these are thrown on at intervals, so that the leaves do not heat by putting too many on at once. The depth of covering over the straw is sometimes twice as much as in other seasons, according to the quantity of leaves on hand; but two feet in thickness does not preserve the ice better than one foot. The ice is never uncovered by high winds blowing off the leaves, though nothing is put upon them to keep them down.

Perfect exemption from wet or damp is necessary for the bottom of an iceberg; and a few pieces of rough wood put upon such a place, and covered with brushwood about a foot, and that again covered with six inches of straw, is sufficient. The brushwood and straw are soon compressed into a few inches by the weight of the ice; and as the ice melts, the water passes through, without hindrance, into cross, open drains at the bottom. When ice is required the thatch is opened *at the bottom* each time, the ice cut out with a pickaxe, and the thatch replaced.

If an *Ice-house* is built, Mr. Cobbett's plan, as follows, is the best. Mark off the centre of a circle, the diameter of which is ten feet, and at this centre you put up a post to stand fifteen feet above the level of the ground, which post ought to be about ten inches through at the bottom, and not much smaller at the top. Great care must be taken that this post be perfectly perpendicular, or the whole building will be awry; at three feet from this put fifteen posts, nine feet high, and six inches through at the bottom, without much tapering towards the top. These posts stand about two feet apart, reckoning from centre of post to centre of post, which leaves between each two a space of eighteen inches; outside put fifty-four posts, five feet high, and five inches through at the bottom, without much tapering towards the top. These posts stand about two feet apart from centre of post to centre of post, which leaves between each two a space of nineteen inches. The space between these two rows of posts is about two feet in width, and is to contain a wall of straw; have a passage through this wall; have an outside door to the passage, and an inside door; and the inner circle, with the pole in the centre, is the place in which the ice is to be deposited. The wall is to be made of straw, wheat straw, or rye straw, with no rubbish in it, and made very smooth by the hand as it is put in. Lay it in very closely and very smoothly, so that if the wall were cut across the ends of the straw would present a compact wall. It requires something to keep the straw from *bulging* out between the posts; little stakes as big as your wrist will answer this purpose. Drive them into the ground, and fasten at the top to the plates, which are pieces of wood that go all round both the circles, and are nailed upon the tops of the posts. Their main business is to receive and sustain the lower ends of the rafters, which will be twice as numerous in the lower as in the upper half of the roof. The roof is forty-five degrees pitch, as the carpenters call it. If it were even sharper it would be none the worse. There will be about thirty ends of rafters to lodge on the plate covering the inner circle, and these cannot all be fastened to the top of the centre post. The plate which goes along on the tops of this row of posts must be put on in a somewhat sloping form, otherwise there would be a sort of hip formed by the rafters. The best way to put on such deep thatch is to have a strong man to tie for the thatcher. The thatch is to be of clean, sound, and well-prepared wheat or rye straw, four feet thick, to keep out the heat. The bed for the ice is the

circle, six feet wide in the centre. Begin by laying on the ground round logs, eight inches through or thereabouts, and placing them across the area, leaving spaces between them of about a foot. Then, crossways on these, poles about four inches through, placed at six inches apart. Then, crossways on them, rods as thick as your finger, placed at an inch apart. Then, again, small, clean, dry, last winter-cut twigs, to the thickness of about two inches, or, instead of these twigs, good, clean, strong rushes, free from grass and moss, and from rubbish of all sorts. Upon this bed the ice is put, broken, and beaten down together in the usual manner. As we have seen, there is a passage; two feet wide is enough for this passage, so that you may have two doors, and the inner door open. This inner door may be of hurdle-work and straw, and covered on one of the sides with sheep-skins with the wool on, so as to keep out the external air. The outer door, which must lock, must be of wood, made to shut very closely, and covered, besides, with skins like the other. At times of great danger from heat or from wet, the whole of the passage may be filled with straw. The door of the house should face the north, or between north and east. As to the size of the ice-house, that must of course depend upon the quantity of ice that you may choose to have. A cubic foot of ice will, when broken up, fill much more than a Winchester bushel.

ICE-PLANT. *Mesembrya'nthemum crystalli'num*, and *Tetrago'nia crystalli'na*.

ICHNEUMON FLIES. Most insects have their parasites which prey upon them in some way or other and thus keep their numbers down. The Ichneumons are flies which lay their eggs in the bodies of living green-flies, which may often be seen sticking to plants in large numbers, dead and brown, with a hole in their back from whence the ichneumon has come out. The large white cabbage butterfly has, at least, two ichneumons. *Microgaster glomeratus* lays its eggs in large numbers in the caterpillar, and when the eggs hatch out the maggots feed on the substance, without killing the caterpillar, and when full fed they come out and spin small yellow cocoons in clusters beside the dead caterpillar. *Pteromalus Brassicæ* lays its eggs beside or on the chrysalid of the same species of butterfly, and the maggots, numbering over 200, feed upon the contents of the chrysalid. *Hemiteles melanarius* preys upon the green-veined white butterfly. These ichneumons should not be destroyed.

ICHNOCA'RPUS. (From *ichnos*, a vestige, and *karpos*, a fruit; in reference to the slender seed-vessels. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Apocynum.)

Stove evergreen twiners. Cuttings of small side-shoots in April, in sand, and in heat; peat and loam. Summer temp., 60° to 80°; winter, 50°.

I. acumina'tus (long-pointed). See AGANOSMA MARGINATA.
„ *caryophylla'tus* (clove). See AGANOSMA CARYOPHYLLATA.
„ *cymo'sus* (cymose). See AGANOSMA CYMOSA.
„ *e'legans* (elegant). See AGANOSMA CYMOSA.
„ *frute'scens* (shrubby). 10. Purple. July. Ceylon. 1759.
„ *margina'tus* (margined). See AGANOSMA MARGINATA.
„ *Roxbu'rghii* (Roxburgh's). See AGANOSMA CALYCINA.
„ *Walli'chii* (Wallich's). See AGANOSMA CALYCINA.

ICI'CA. (The native name in Guiana. Nat. ord. *Burserads* [Burseraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. See PROTIUM.)

I. alti'ssima (highest). See PROTIUM ALTISSIMUM.
„ *deca'ndra* (ten-stamened). See PROTIUM DECANDRUM.
„ *ennea'ndra* (nine-stamened). See PROTIUM DECANDRUM.
„ *guiane'nsis* (Guiana). See PROTIUM GUIANENSE.
„ *heterophy'lla* (various-leaved). See PROTIUM ARACOUCHINI.
„ *Tacamaha'ca* (Tacamahac). See PROTIUM HEPTAPHYLLUM.

IDE'SIA. (In commemoration of a Dutchman named *Ysbrants Ides*. Nat. ord. Bixaceæ.)

A hardy ornamental tree of low stature, with large, heart-shaped leaves, not unlike those of a lime. Seeds; cuttings of side-shoots, with a heel of the old wood in spring, inserted in sand in a gentle heat. Ordinary soil.

I. polyca'rpa (many-fruited). 12. Greenish. Berries orange, changing to blue-black. Japan.
„ „ *cri'spa* (crisped). Leaves crisped. 1888.
„ „ *fo'liis variega'tis* (variegated-leaved). Variegation sulphur-yellow. 1902.

I'DRIA. (From *idreia*, or *idria*, skill; in allusion to the adaptation of the plant to its habitat. Nat. ord. Tamaricaceæ.)

Allied to, if not identical with, Fouquiera.

A curious, greenhouse shrub with thick pyramidal spiny stems. Seeds; cuttings under a hand-light in a greenhouse. Loam, leaf-mould, and plenty of sand.

I. columna'ria (columnar). Straw-coloured. Lower California. 1896.

IGUANU'RA. (From *iguana*, the animal of that name, and *ura*, a tail. Nat. ord. Palmaceæ.)

Stove Palms. Seeds. Loam, one-third peat, and a little sand.

I. Curti'sii (Curtis's). 1905.
„ *speranskya'na* (Speranskyan). Leaves densely tufted, spiny. Malaya. 1898.

I'LEX. The Holly. (From the resemblance of the leaves to the *Ilex* of Virgil, *Que'rcus I'lex*. Nat. ord. *Hollyworts* [Aquifoliaceæ]. Linn. 4-*Tetrandria*, 3-*Tetragynia*.)

All white-flowered but one. By seed, which should be kept in the rot-heap for a twelvemonth after gathering, frequently turned in the meantime, to rot the pulp, and then sown in beds. The *varieties* by grafting and budding—the first in March, and the second in July; by cuttings of the ripened summer shoots in autumn, on a north border, and covered with hand-glasses. Soil, sandy loam, in any place free from stagnant water. See HOLLY.

GREENHOUSE EVERGREENS.

I. angustifo'lia (narrow-leaved) See I. DAHOON.
„ *betschleria'na* (Betschlerian). Mexico.
„ *canarie'nsis* (Canary). 16. May. Canaries. 1820.
„ *cape'nsis* (Cape). S. Africa.
„ *chine'nsis* (Chinese). 10. July. China. 1814.
„ *conoca'rpa* (conical-fruited). 6. White. Brazil. "Mate" or "Paraguay Tea."
„ *donia'na* (Donian). 18. White. June. Himalayas. 1820.
„ *exce'lsa* (lofty). See I. DONIANA.
„ *magella'nica* (Magellan). Magellan. 1838. Half-hardy.
„ *Pera'do* (Perado). 10. Pink. May. Madeira. 1760.
„ *platyphy'lla* (broad-leaved) 20. June. Canaries. 1824.
„ *serru'ta* (saw-edged-*leaved*). Japan. 1840.

STOVE EVERGREENS.

I. Go'ngonha (Gongonha). See VILLARESIA MUCRONATA.
„ *insi'gnis* (remarkable). 8–10. Malaya. 1880.
„ *monta'na* (mountain). 4. W. Ind. 1820.
„ *myrtifo'lia* (myrtle-leaved). 6. July. W. Ind. 1806.
„ *ni'gro-puncta'ta* (black-spotted). Brazil.
„ *paraguaye'nsis* (Paraguay *Tea*). 15. Paraguay. 1823.
„ *salicifo'lia* (willow-leaved). See GYMNOSPORIA TRIGYNA.
„ *Scopulo'rum* (of the rocks). Ecuador.

HARDY EVERGREEN AND DECIDUOUS.

I. ambi'gua (ambiguous). 3–5. S. United States. 1812 Deciduous.
„ *Amela'nchier* (Amelanchier). S. United States. 1889
„ *Aquifo'lium* (prickly-*leaved. Common*). 20. May. Britain.
„ „ *a'lbo-margina'ta* (white-edged). 12. May. Britain.
„ „ *a'lbo-pi'cta* (white-painted. *Milkmaid*). 20. April. Britain.
„ „ *altaclare'nsis* (High-Clere). 20. April. Britain.
„ „ *angustifo'lia* (narrow-leaved). 20. May. Britain.
„ „ *argе'ntea me'dio-pi'cta* (middle-blotched). "Silver Milkmaid."
„ „ *argе'ntea pe'ndula* (weeping). "Perry's Weeping."

I. Aquifo'lium argen'tea regi'na (queen). "Silver Queen."
,, ,, *au'reo-margina'ta* (gold-edged). 12. May. Britain.
,, ,, *au'rea me'dio-pi'cta* (middle-blotched). "Gold Milkmaid."
,, ,, *au'rea pe'ndula* (weeping). "Waterer's Gold Weeping."
,, ,, *au'rea regi'na* (queen). "Golden Queen."
,, ,, *balea'rica* (Balearic). 10. May. Minorca. 1815.
,, ,, *cilia'ta* (hair-fringed-*leaved*). 20. May. Britain.
,, ,, *cilia'ta mi'nor* (small-hair-fringed-*leaved*). 20. May. Britain.
,, ,, *crassifo'lia* (thick-leaved). 20. May. Britain.
,, ,, *cri'spa* (curled-*leaved*) 20. May. Britain.
,, ,, *fe'rox* (fierce. *Hedgehog*). 12. May. Britain.
,, ,, *fe'rox argen'tea* (silvery-fierce). 20. May. Britain. "Silver Hedgehog Holly."
,, ,, *fe'rox au'rea* (golden-fierce). May. Britain. "Golden Hedgehog Holly."
,, ,, *fla'va* (yellow). 15. May. Britain.
,, ,, *flave'scens* (yellowish). "Moonlight."
,, ,, *fru'ctu a'lbo* (white-berried). 20. May. Britain.
,, ,, *fru'ctu lu'teo* (yellow-berried). 20. May. Britain.
,, ,, *fru'ctu ni'gro* (black-berried). 20. May. Britain.
,, ,, *handsworthie'nsis* (Handsworth). "Handsworth New Silver."
,, ,, *heterophy'lla* (various-leaved). 20. May. Britain.
,, ,, *latifo'lia* (broad-leaved). 20. May. Britain.
,, ,, *laurifo'lia* (laurel-leaved). 20 May. Britain.
,, ,, *margina'ta* (*thick*-margined-*leaved*). 20. May. Britain.
,, ,, *Marno'cki* (Marnock's). 1901.
,, ,, *pe'ndula* (weeping). "Weeping Holly."
,, ,, *pe'ndula tri'color* (three-coloured).
,, ,, *platyphy'lla* (broad-leaved). May. Europe. 1844.
,, ,, *recu'rva* (bent-back-*leaved*). 20. May. Britain.
,, ,, *sene'scens* (aged-*spineless*). 20. May. Britain.
,, ,, *serratifo'lia* (saw-edged-leaved). 20. May. Britain.
,, ,, *watereria'na* (Watererian). Leaves edged golden-yellow. 1874.
,, ,, *Wilso'ni* (Wilson's). Large-leaved variety. 1901.
,, *balea'rica* (Balearic). See I. AQUIFOLIUM BALEARICA.
,, *Cassi'ne* (Cassine). 12. August. Carolina. 1700. "Cassena."
,, *cornu'ta* (horned). 3–5. China. 1850.
,, *crena'ta* (crenate). 2. White. Japan.
,, ,, *ma'jor* (larger). Leaves larger. Japan. 1862.
,, ,, *Marie'sii* (Maries's).
,, ,, *microphy'lla* (small-leaved). Leaves very small. Japan. 1908.
,, ,, *variega'ta* (variegated). Leaves variegated.
,, *Dahoo'n* (Dahoon). 6. May. Carolina. 1726.
,, *deci'dua* (deciduous). 3. White. S. United States. 1736. Deciduous.
,, *dipyre'na* (two-seeded). 12. May. N. India. 1840. "Himalayan Holly."
,, *Farge'sii* (Farge's). White. Leaves 3–4 in. long, not spiny. W. China. 1910.
,, *Fortu'nei* (Fortune's). See I. CRENATA MAJOR.
,, *gla'bra* (glabrous). 3. Eastern United States. 1759. "Inkberry." Deciduous.
,, *inte'gra* (entire). China and Japan.
,, *laviga'ta* (bright-green). 3–4. June. Eastern United States. 1812. Deciduous.
,, *lanceola'ta* (lance-shaped). 3–4. July. N. Amer. 1811. Deciduous.
,, *latifo'lia* (broad-leaved). 20. Japan. 1840. "Torala."
,, *laxiflo'ra* (loose-flowered). See I. OPACA.
,, *leptaca'ntha* (slender-spined). China. 1852.
,, *lu'cida* (shining). 2–3. N. Amer. 1778.
,, *macro'poda* (long-stalked). Japan.
,, *microca'rpa* (small-fruited). See I. ROTUNDA.
,, *mo'llis* (soft). 2 to 12. July. N. Amer. 1736. Deciduous.
,, *monti'cola* (mountain-dwelling). 2–4. N. Amer. 1891.
,, *opa'ca* (opaque). 30. May. Carolina. 1744. "American Holly."
,, *Othe'ra* (Othera). White. Japan.
,, *pedunculo'sa* (long-stalked). Japan.
,, *Perny'i* (Perny's). Leaves small, with a dense habit of growth. Central China. 1903.
,, *recu'rva* (bent-back). 6. May.
,, *rugo'sa* (wrinkled). N. Eastern Asia.
,, *rotu'nda* (round). April. Japan.
I. Siebo'ldi (Siebold's). 3–4. White. Berries coral-red. Japan. 1908.
,, ,, *fru'ctu-a'lbo* (white-fruited).
,, *verticilla'ta* (whorled). 3–6. May. N. Amer. 1736. "Black Alder, Winterberry."
,, ,, *chrysoca'rpa* (golden-fruited).
,, *vomito'ria* (emetic). See I. CASSINE.

ILLAI'REA CANARINOI'DES. See LOASA CANARINOIDES.

ILLE'CEBRUM. Knot Grass. (From *illecebra*, a charmer; referring to the pretty little annuals giving a charm to waste places. Nat. ord. *Knotworts* [Illecebraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
All white-flowered, and all propagated by seed; common soil, though *verticilla'tum* likes a little moist peat. The greenhouse and stove perennials merely require the extra heat, and may also be propagated by division in the spring.
I. diffu'sum (spreading). See ALTERNANTHERA PULCHELLA.
,, *glomera'tum* (clustered). ½. June. Brazil. 1820. Stove herbaceous perennial.
,, *gomphrenoi'des* (Gomphrena-like). See TELANTHERA GOMPHRENOIDES.
,, *verticilla'tum* (whorled). ½. July. England. Hardy trailing annual.

ILLI'CIUM. Aniseed-tree. (From *illicio*, to allure; referring to the perfume. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Drimys.)
The fruit of *anisa'tum* has the flavour of anise, being used as a spice in Chinese cookery; and the seed of *religio'sum* is burnt as incense in their temples. Half-hardy evergreen shrubs. Cuttings of the young ripened shoots in sand, under a glass, in summer; by layers, from a stool in a cold pit, where they generally remain two years before being removed; sandy loam and peat; require the protection of the cold pit or greenhouse in winter, though *florida'num* has stood out in many places with but a slight protection in severe weather.
I. anisa'tum (anise-scented). 6. Red. May. Japan. 1790.
,, *florida'num* (*red*. Florida). 8. Red. May. Florida. 1766.
,, *laurifo'lium* (laurel-leaved). Yellowish-white. 1901.
,, *parviflo'rum* (small-flowered). 6. Yellow. May. Florida. 1790.
,, *religio'sum* (holy). 4. Yellow, green. March. Japan. 1842.
,, *ve'rum* (true). Green, purple. S. China. 1888. True "Star Anise."

ILLUPIE-TREE. *Ba'ssia.*

ILYSA'NTHES. (From *ilus*, mud, and *anthos*, a flower; in allusion to the muddy, wet places, where the plants grow. Nat. ord. Scrophulariaceæ.)
A greenhouse annual, with terminal racemes of flowers. Seeds. Fibrous loam, leaf-mould, and sand.
I. cape'nsis (Cape). Violet. June. S. Africa. 1829.

IMANTOPHY'LLUM. (From *himas*, a leather thong, and *phullon*, a leaf; alluding to shape and substance of the foliage. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.) See CLIVIA.
I. Aito'ni (Aiton's). See CLIVIA NOBILIS.
,, *cyrtanthiflo'rum* (curved-flowered). See CLIVIA CYRTANTHIFLORUM.
,, *Garde'ni* (Garden's). See CLIVIA GARDENI.
,, *ma'ximum* (largest). See CLIVIA MINIATA.
,, *minia'tum* (cinnabar). See CLIVIA MINIATA.

IMBRICA'RIA. (From *imbrico*, to cover like tiles on a roof; referring to the divisions of the calyx. Nat. ord. *Sapotads* [Sapotaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Mimusops.)
Stove tree, which produces fruit similar to an orange. Cuttings of ripe shoots in sand, under a glass, in strong, moist heat; sandy loam and peat.
I. borbo'nica (Bourbon). See I. MAXIMA.
,, *ma'xima* (largest). White. Mascarene Islands. 1820.

IMBRICATED. Leaves, sepals, &c., are said to be imbricated when one laps over the next, and so in succession, like the tiles of a house, as in the leaves of the common Heath, or Ling, *Callu'na vulga'ris.*

IMPA'TIENS. Balsam. (From *impatiens;* referring to the elasticity of the valves of the seed-pod, which discharge the seeds when ripe, or when touched. Nat. ord. *Cranesbills* [Geraniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

Hardy annuals and biennials, by seed in the open border, in April. *Scapiflo'ra*, a bulb, requires stove heat, and to be kept almost dry in winter. Greenhouse annuals and biennials merely require to be sown in a hotbed in March, and planted out as half-hardy and tender annuals. All these may be kept over the winter by taking off cuttings in the beginning of autumn, which would bloom in the house early in the spring. See BALSAMS.

HARDY ANNUALS.

I. amphora'ta (flagon-shaped). 3–6. Purple. Western Himalayas.
„ *amplexicau'lis* (stem-clasping). Himalaya.
„ *au'rea* (golden). Pale yellow, spotted with red. Late summer. N. Amer.
„ *Balfou'rii* (Balfour's). White, suffused rose, yellow. N.W. Himalaya. 1903. Half-hardy.
„ *bicornu'ta* (two-horned). Himalaya.
„ *biflo'ra* (two-flowered). Orange. Summer. N. Amer. "Spotted Jewel-weed."
„ *chrysa'ntha* (golden-flowered). Golden-yellow. Western Himalaya. 1901.
„ *crista'ta* (crested). See I. SCABRIDA.
„ *cuspida'ta* (short-pointed). See I. LATIFOLIA.
„ *di'scolor* (various-coloured). 1. Yellow. August. Nepaul. 1820.
„ *falcife'ra* (scythe-bearing). ½. Golden-yellow, spotted with blood-red. Sikkim Himalaya. 1903.
„ *fu'lva* (yellow). See I. BIFLORA.
„ *glandulife'ra* (gland-bearing) of Royle. See I. ROYLEI.
„ *glandulige'ra* (gland-bearing). See I. ROYLEI.
„ *latifo'lia* (broad-leaved). 1. Pale red. Oriental India. 1818.
„ „ *arthri'tica* (jointed). Nodes much thickened. Nilghiri Mountains. 1902.
„ „ *No'li-ta'ngere* (touch-me-not). 2–3. Yellow, spotted with red. Europe (Britain).
„ *macrochi'la* (long-lipped). See I. ROYLEI.
„ *parviflo'ra* (small-flowered). 1–1½. Yellow. Siberia. Naturalised in England.
„ *Ro'ylei* (Royle's). 3–6. Purple. Summer. Himalaya. 1839.
„ „ *a'lba* (white). White. Himalaya. 1839.
„ *sca'brida* (rough). 2–3. Yellow. July, August. Himalaya. 1839.
„ *Thomso'ni* (Thomson's). 1. Pale rose. Himalaya. 1901.
„ *trico'rnis* (three-horned). See I. SCABRIDA.

STOVE ANNUALS AND BIENNIALS.

I. auri'coma (golden-haired). 2. Bright yellow. Comoro Islands. 1893.
„ *Balsami'na* (Balsam). 1–2. Scarlet. July. August. Trop. Asia. 1596. "Common Balsam."
„ *bi'color* (two-coloured). Purple, white. Trop. Africa. 1863.
„ *ca'ndida* (white). See I. ROYLEI ALBA.
„ *cocci'nea* (scarlet). See I. BALSAMINA.
„ *comore'nsis* (Comoro). Bright carmine. Comoro Islands. 1887.
„ *cornu'ta* (horned). See I. BALSAMINA.
„ *Epi'scopi* (Episcopi). See I. SULTANI EPISCOPI.
„ *fascicula'ta* (fascicle-*flowered*). See I. CHINENSIS.
„ *fla'ccida* (weak). 1–1½. Pink. India. 1861.
„ „ *a'lba* (white). White.
„ *grandiflo'ra* (large-flowered). 2–3. Rosy-lilac. Madagascar. 1900.
„ *Hawke'ri* (Hawker's). 2. Rich carmine. South Sea Islands. 1886.
„ *Ho'lstii* (Holst's). 1. Orange-scarlet. Summer.
„ *hookeria'na* (Hooker's). 2½. White. Ceylon. 1852.
„ *horte'nsis* (*common*. Garden). See I. BALSAMINA.
„ *Irvi'ngii* (Irving's). W. Trop. Africa.
„ *longico'rnu* (long-horned). May. E. Ind.
„ „ *na'tans* (floating). See HYDROCERA ANGUSTIFOLIA.
I. macrophy'lla (long-leaved. *Ceylon*). 2½. Red and orange. Ceylon.
„ *mastersia'na* (Mr. Masters's). 1. Purple. July. Kashia Hills. 1837.
„ *Micholi'tzi* (Micholitz's). 1. White or rosy. New Guinea. 1892.
„ *mira'bilis* (wonderful). 4. Golden-yellow. Malacca Straits. (B. M., t. 7195.)
„ *petersia'na* (Petersian). See I. WALLERIANA PETERSIANA.
„ *pi'cta* (painted). See I. AMPHORATA.
„ *platype'tala* (broad-petaled). 1½. Purple. Java. 1844.
„ *psittaci'na* (parrot). Green, pale rose, red, white, carmine. Burma. 1901. "The Cockatoo Balsam."
„ *pulche'rrima* (handsome). 1½. Purple. July. Bombay. 1850.
„ *re'pens* (creeping). 1½. Yellow. June. Ceylon. 1848.
„ *Rodiga'si* (Rodigas's). Rosy-purple. Java. 1849.
„ *scapiflo'ra* (scape-flowered). ½. Lilac. August. E. Ind. 1835. Bulb.
„ *Sulta'ni* (Sultan's). 1. Scarlet. Zanzibar. 1882.
„ „ *Epi'scopi* (Episcopi). 1. Purple-carmine. Zanzibar. 1886.
„ *Walke'ri* (Walker's). 1½. Scarlet. Winter. Ceylon. (B. M., t. 5237.)
„ *walleria'na petersia'na* (Petersian). 1. Intense carmine-red. E. Trop. Africa. 1902.

GREENHOUSE ANNUALS.

I. bi'fida (two-cleft). See I. FLACCIDA.
„ *cape'nsis* (Cape). ½. Red. August. Cape of Good Hope. 1818.
„ *chine'nsis* (China). 1. Purple. August. China. 1824.
„ *corni'gera* (horn-bearing). 3–4. Purple, yellow. Ceylon. 1851.
„ *Flanaga'næ* (Mrs. Flanagan's). S. Africa.
„ *glandulife'ra* (gland-bearing) of Arn. Rose. August. Ceylon. 1839.
„ *Ho'lstii* (Holst's). 1–1½. Cinnabar-red. German E. Africa. 1904.
„ *Jerdo'nia* (Mrs. Jerdon's). ½. Green, red, and yellow. June. Neilgherries. 1852.
„ *madagascarie'nsis* (Madagascar). ½. Red. August. Madagascar. 1820.
„ *Maria'næ* (Mrs. Marian's). Lilac-purple. Assam. 1881.
„ *mi'nor* (smaller). ½. Red. August. E. Ind. 1817.
„ *mysore'nsis* (Mysore). ½. Red. August. Mysore. 1820.
„ *Olive'ri* (Oliver's). 3–10. Blush-pink. 2½ in. across. Uganda. 1903. Perennial.
„ *oppositifo'lia* (opposite-leaved). Pink to rosy-purple. India and Ceylon. 1907.
„ *ro'sea* (rose-coloured). See I. BALSAMINA.
„ *triflo'ra* (three-flowered). See HYDROCERA TRIFLORA.
„ *tripe'tala* (three-petaled). 1. Red. August. Nepaul. 1825.

Culture of the Balsam.—In years gone by the double varieties of the common Balsam (*I. Balsami'na*) were cultivated extensively for exhibition purposes, and no class excited a keener competition in many parts of the country. Good strains of seed were obtained and sown in heat some time in March. As soon as the cotyledons were fully developed the seedlings were potted off singly in deep thumb pots, so as to get the stem buried to the base of the seed-leaves to prevent legginess, which was always regarded as a sign of bad cultivation. Light, rich soil was used, and the pots were plunged in the hotbed of a well-lighted stove. The temperature was kept at 70° to 75°, and allowed to run up to 80° at closing time. Plenty of top air was given, whenever the weather conditions favoured, to prevent drawing, to which the Balsam is very liable. As soon as the roots were well round the sides of the pots, the plants were shifted into larger sizes, giving them heavier and richer soil at each shift. A flower or two was allowed to bloom on the main stem to ascertain the quality, after which all the inferior ones were thrown away or used for greenhouse decoration. As the side branches developed they were carefully staked out or tied down to a circular wire to encourage repeated branching and form the foundation of large plants. All flower buds were removed as fast as they made their appearance, as this encouraged

vigorous growth. At the last potting about half the compost consisted of well-rooted and dried cow-dung rubbed up fine. Liquid manure was also given when the pots were fairly filled with roots, and towards flowering-time abundance of air was given.

IMPATIENT. A plant is said to be impatient of heat or cold when it is speedily injured by a slight excess of either one or the other.

IMPREGNATION. No seed ever attains the power of germinating, unless the pollen from the stamens in the same, or some nearly allied flower, has reached and impregnated its pistils. In favourable seasons, when genial warmth and gentle winds prevail, impregnation is readily effected by the plant's own provision. The pollen of the same flower, in many cases, is shed before the stigma of the pistil is fully developed, but such flowers are dependent upon insects or the wind, and other flowers supply pollen at the time it is required. The stigma soon withers after it is applied.

Insects aid in effecting this impregnation, and in frames, hothouses, &c., from whence they are almost totally excluded, other artificial means might be adopted with success to render flowers fertile that had hitherto failed in producing seed. Thus the gardener always finds the advantage of using the camel-hair pencil to apply pollen to the stigmas of his forced melons, cherries, and peaches. See HYBRIDISING.

INARCHING, or *grafting by approach*, differs from grafting only in having the scion still attached to its parent stem whilst the process of union with the stock is proceeding. It is the most certain mode of multiplying an individual that roots or grafts with difficulty, but is attended with the inconvenience that both the stock and the parent of the scion must be neighbours. One or both plants may be in pots, which make the operation easy. In the case of Vines, the scion may be put with its end in a bottle of water, and so kept fresh while a union is being formed.

Having the stocks properly placed, make the most convenient branches approach the stock, and mark in the body of the branches the parts where they will most easily join to the stock, and in those parts of each branch, pare away the bark and part of the wood two or three inches in length, and in the same manner pare the stock in the proper place for the junction of the graft; then make a slit upward in the branch so as to form a sort of tongue, and make a slit downward in the stock to admit it; let the parts be then joined, slipping the tongue of the graft into the slit of the stock, making the whole join in an exact manner, and tie them closely together with bass, and afterwards cover the whole with a due quantity of clay, or wax. After this let a stout stake be fixed for the support of each graft, and so fastened as to prevent its being disjoined from the stock by the wind.

The operation being performed in spring, let the grafts remain in that position about four months, when they will be united, and they may then be separated from the mother-tree. In doing this be careful to perform it with a steady hand, so as not to loosen or break out the graft, sloping it off downwards close to the stock; and the head of the stock cut down close to the graft, and all the old clay and bandage cleared away and replaced with new, to remain a few weeks longer. Observe, however, that if the grafts are not firmly united with the stock, let them remain another year till autumn, before you separate the grafts from the parent tree. Instead of approach-grafting in the usual manner, it is sometimes convenient to detach shoots of the kinds to be propagated from the plants on which they grew, and inarch them upon the single plant, leaving a piece at the bottom of each shoot sufficiently long to thrust into a phial, which must be kept constantly supplied with water.

INCARVILLEA. (In commemoration of *P. Incarville*, a botanical correspondent of the great botanist Jussieu about 1743. Nat. ord. Bignoniaceæ.)

Hardy, herbaceous perennials in most cases. Seeds; cuttings of young shoots from the base of the plant; divisions of the root-stock in spring. Well-drained soil.

I. argu'ta (acute). See AMPHICOME ARGUTA.
„ *compa'cta* (compact). Purple. July to September. China. 1880.
I. Delava'yi (Delavay's). 1–2. Deep purple. China. 1893.
„ *grandiflo'ra* (large-flowered) of Poiret. See TECOMA GRANDIFLORA.
„ *grandiflo'ra* (large-flowered) of Bur and Franchet. 1. Rich rose-red. China. 1898.
„ „ *bre'vipes* (short-stalked). Flower-stalks shorter. S.W. China. 1909.
„ *Koopma'nni* (Koopmann's). See I. OLGÆ.
„ *O'lgæ* (Queen Olga's). 2–4½ ft. Purple. Turkestan. 1880.
„ *sine'nsis* (Chinese). 1–2. Bright red. China. Greenhouse.
„ *tomento'sa* (felted). See PAULOWNIA IMPERIALIS.
„ *varia'bilis* (variable). 1–2 Rose-purple. W. China. 1899.

INDEHISCENT. Fruits which do not open at maturity to allow the seeds to escape are said to be indehiscent. The Apple, Cherry, Orange, Melon, and Gooseberry are examples.

INDIAN BAY. *Lau'rus i'ndica.*

INDIAN BLUE. *Nymphæ'a cya'nea.*

INDIAN CRESS. (*Tropæ'olum.*) See NASTURTIUM.

INDIAN FIG. *Opu'ntia.*

INDIAN GRASS. *Aru'ndo.*

INDIAN HAWTHORN. *Raphio'lepis.*

INDIAN HEMP. *Apo'cynum canna'binum.*

INDIAN LOTUS. *Nymphæ'a Lo'tus.*

INDIAN MULBERRY. *Mori'nda.*

INDIAN PHYSIC. *Magnolia Frase'ri.*

INDIAN PINK. *Dia'nthus chine'nsis.*

INDIAN SHOT. *Ca'nna i'ndica.*

INDIA-RUBBER PLANT. *Fi'cus ela'stica.*

INDIGENOUS. Native, or naturally produced. Thus the Crab-tree is indigenous to England.

INDIGO'FERA. (From *indigo*, a blue dye, and *fero*, to bear. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. *17-Diadelphia, 4-Decandria.*)

Annuals and biennials, in hotbed, in spring, potted and treated as tender and half-hardy annuals; shrubby plants, by cuttings of young shoots, getting firm, in summer, in sand, under a bell-glass, and a little bottom heat, especially the tropical species; sandy loam and peat, equal parts. Red spider is their chief enemy.

GREENHOUSE HERBACEOUS PERENNIALS.

I. echina'ta (hedgehog). Red. June. E. Ind. 1824. Stove.
„ *gra'cilis* (slender). Rose. July. S. Africa.
„ *procu'mbens* (lying-down). ½. Blood. June. S. Africa. 1818.
„ *sarmento'sa* (twiggy). ½. Purple. July. S. Africa. 1786.

STOVE ANNUALS.

I. diphy'lla (two-leaved). ½. Purple. July. Africa. 1816.
„ *enneaphy'lla* (nine-leaved). 4. Purple. July. E. Ind. 1776. Trailer.
„ *gla'bra* (smooth). See I. PENTAPHYLLA.
„ *glandulo'sa* (glanded). 1. Purple. July. E. Ind. 1820.
„ *lateri'tia* (brick-coloured). 1. Purple. Guinea. 1806. Trailer.
„ *Leschenau'ltii* (Leschenault's). See I. TRITA.
„ *linifo'lia* (flax-leaved). 1. Red. July. E. Ind. 1792. Trailer.
„ *pentaphy'lla* (five-leafleted). 1. Red. July. Trop. Asia and Africa. 1820. Trailer.
„ *trifolia'ta* (three-leaved). ½. Purple. July. E. Ind. 1816.
„ *visco'sa* (clammy). 1. Red. May. E. Ind. 1608.

STOVE EVERGREEN SHRUBS.

I. A'nil (Anil). 3–5. Pink, green. S. Amer. 1880. An Indigo plant.
„ *arge'ntea* (silvery). Blue. June. N. Africa, Western Asia. 1776.
„ *aspalathoi'des* (Aspalathus-like). 3. Red. July. E. Ind. 1759.
„ *biflo'ra* (two-flowered). Purple. May. E. Ind. 1826.
„ *cæru'lea* (sky-blue). See I. ARGENTA.
„ *dendroi'des* (tree-like). Rose. Trop. Africa.
„ *elli'ptica* (oval-*leaved*). See I. PULCHELLA.
„ *endecaphy'lla* (eleven-leafleted). Tropics of Old World.
„ *fra'grans* (fragrant). See I. PENTAPHYLLA.
„ *hirsu'ta* (hairy). ½. Dark purple. July. Guinea. 1823.
„ *leptosta'chya* (slender-spiked). 3. Purple. June. Himalaya. 1818.
„ *mucrona'ta* (sharp-pointed). See I. SUBULATA.
„ *pulche'lla* (handsome). Red. July. E. Ind. 1820.
„ *subula'ta* (awl-shaped). Red. July. Trop. regions. 1824.
„ *tincto'ria* (*East Indian*. Dyer's). 3. Pink. July. E. Ind. 1731.
„ *viola'cea* (violet-coloured). See I. PULCHELLA.
„ *virga'ta* (twiggy). See I. TRITA.

GREENHOUSE EVERGREEN SHRUBS.

I. alopecuroi'des (Alopecurus-like). See I. CORIACEA.
„ *ama'na* (pleasing). 1½. Purple. March. Cape of Good Hope. 1774.
„ *angula'ta* (angled). See I. AUSTRALIS.
„ *angustifo'lia* (narrow-leaved). 2. Purple. August. Cape of Good Hope. 1774.
„ *atropurpu'rea* (dark purple). 3. Purple. July. Nepaul. 1816.
„ *austra'lis* (southern). 4. Pink. April. N. S. Wales. 1790.
„ *ca'ndicans* (white-*leaved*). 1½. Red. July. Cape of Good Hope. 1774.
„ *cauda'ta* (tailed). 3–8. White. Yunnan, China. 1902.
„ *coria'cea* (leathery-*leaved*). 3. Purple. July. Cape of Good Hope. 1774.
„ *cyli'ndrica* (cylindrical). Rose. June. Cape of Good Hope. 1822.
„ *cytisoi'des* (Cytisus-like). White, purple. S. Africa. 1774.
„ *denuda'ta* (denuded). Rose-purple. S. Africa.
„ *divarica'ta* (straggling). 3. Red. July.
„ *Do'sua* (Dosua). 2. Pale purple. Himalaya. 1842.
„ „ *stri'cta* (upright). Violet. 1870.
„ *filifo'lia* (thread-leaved). 1. Purple. August. Cape of Good Hope. 1812.
„ *filifo'rmis* (thread-like). 2. Purple. July. Cape of Good Hope. 1822.
„ *frute'scens* (shrubby). 3. Purple. July. Cape of Good Hope. 1822.
„ *inca'na* (hoary). 2. Pink. August. Cape of Good Hope. 1812.
„ *lotoi'des* (Lotus-like). 3. Red. July. Cape of Good Hope. 1800.
„ *macrosta'chya* (large-spiked). Rose. May. China. 1822.
„ *nu'da* (naked). 1. Purple. June. Cape of Good Hope. 1820.
„ *psoraloi'des* (Psoralia-like). Purple. July. S. Africa. 1758.
„ *ri'gida* (stiff). See I. TRITA.
„ *spino'sa* (spiny). 1. Purple. June. Arabia. 1820.
„ *stachyo'des* (spike-like). See I. DOSUA.
„ *stri'cta* (upright). 2–3. Pink. S. Africa. 1774.
„ *sylva'tica* (wood). See I. AUSTRALIS.
„ *tri'ta* (common). 1. Purple. July. Trop. Asia and Australia. 1816.

HARDY OR HALF-HARDY SHRUBS.

I. bungea'na (Bungean). China.
„ *deco'ra* (becoming). Pink. July. China and Japan. 1840.
„ „ *a'lba* (white). White.
„ *floribu'nda a'lba* (free-flowering white). See I. DECORA ALBA.
I. gerardia'na (Gerardian). 8–10. Rosy-purple. Himalaya. Wall shrub.
„ *hebepe'tala* (smooth-petaled). Small, reddish. Himalaya. 1907. Branching shrub.
„ *Kirilow'i* (Kirilow's). Deep rose. Mandshuria. 1901. The finest introduced.

I'NGA. (The name in South America. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Acacia.)

Stove evergreens. Cuttings of young shoots, getting firm, in spring and summer, in sandy peat, under a bell glass, and in bottom-heat; peat and loam. Summer temp., 60° to 85°; winter, 45° to 55°. *Pulche'rrima* has large clusters of long crimson stamens. To succeed well with it, and in a small plant, give it a fair heat in summer, and plenty of moisture; but keep it cool and rather dry for several months in winter.

I. affi'nis (kindred). 20. Pink. Brazil. 1800.
„ *ano'mala* (anomalous). 10. Red. June. Mexico. 1729. See CALLIANDRA GRANDIFLORA.
„ *biglobo'sa* (two-globed). See PARKIA AFRICANA.
„ *Buorgo'ni* (Buorgon's). 20. Pink. Guiana. 1752.
„ *como'sa* (tufted). 30. Pink. Jamaica. 1818. See CALLIANDRA COMOSA.
„ *coromandelia'na* (Coromandel). White. E. Ind. 1818.
„ *cycloca'rpa* (circle-podded). See ENTEROLOBIUM CYCLOCARPUM.
„ *du'lcis* (sweet). See PITHECOLOBIUM DULCE.
„ *fastuo'sa* (splendid. Red. Caracas. 1820.
„ *Feui'llei* (Feuillee's). 8. White. Lima. 1824.
„ *fœ'tida* (fœtid). See PIPTADENIA FŒTIDA.
„ *Harri'sii* (Harris's). See CALLIANDRA HARRISII.
„ *Housto'ni* (Houston's). See CALLIANDRA HOUSTONI.
„ *hymenæoi'des* (Hymenæa-like). See CALLIANDRA HYMENÆOIDES.
„ *Jiri'nga* (Jiringa). See PITHECOLOBIUM LOBATUM.
„ *latifo'lia* (broad-leaved). See PITHECOLOBIUM LATIFOLIUM.
„ *lauri'na* (laurel-*leaved*). 20. White. S. Amer. 1818.
„ *macrophy'lla* (large-leaved). See I. SETIFERA.
„ *margina'ta* (margined). 20. Pink. S. Amer. 1820.
„ *melli'fera* (honeyed). See ACACIA MELLIFERA.
„ *microphy'lla* (small-leaved). See PITHECOLOBIUM UNGUIS-CATI.
„ *pulche'rrima* (fairest). See CALLIANDRA TWEEDIEI.
„ *purpu'rea* (purple. *Soldier Wood*). See CALLIANDRA PURPUREA.
„ *Sa'man* (Saman). See PITHECOLOBIUM SAMAN.
„ *seti'fera* (bristle-bearing). 20. Pink. Guiana. 1824.
„ *sple'ndens* (shining). White. March. Caracas. 1825.
„ *stipula'ris* (stipuled). Cayenne. 1831.
„ *terge'mina* (three-paired). See CALLIANDRA TERGEMINA.
„ *veluti'na* (velvety). 30. Para. 1820.

INOCA'RPUS. Otaheite Chestnut. (From *is*, a fibre, and *karpos*, a fruit. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Dipteryx.)

The kernels are roasted and eaten in the islands as we use chestnuts. Stove evergreen tree. Cuttings of the ripened shoots in sand, and in heat; peat and loam.

I. edu'lis (eatable). 20. White. July. South Sea Islands. 1793.

INOCULATION. Same as *Budding*.

INOCULATING GRASS. See TURF.

INSECT PESTS. Most of the more injurious insects that prey upon garden plants have been dealt with in separate articles under their respective headings, so that only a few of the more general pests need be mentioned here, with the insecticides employed to keep them in check.

Acari or Mites are best known in the domain of the gardener by the ubiquitous and destructive Red Spider (*Tetra'nychus tela'rius*), which feeds on almost any cultivated plant, whether grown for the sake of its foliage, flowers, fruits, or as a vegetable. The conditions that favour it are a dry, parched atmosphere, dry foliage, and likewise when plants are kept dry at the root. Situations near the boiler of the heating apparatus or near a flue are liable to favour and foster the increase of the pest, which, by the way, is not an insect, though usually

spoken of as if it were. The conditions that favour it should not be allowed to exist, or if they cannot be avoided a sharp look-out should always be kept to prevent the pest from getting a footing, and to use the syringe freely and often where the nature of the plants or the season permit of it. Water on the foliage and moisture in the atmosphere are the enemies of red spider. Painting the hot-water pipes with a mixture of water and flowers of sulphur will destroy the enemy in vineries and other houses where syringing would be injurious to the Vines, grapes, or other occupants of the houses. A small mite (*Tarsonymus*) often does great injury to Begonias, Streptocarpus, Gloxinias, Crotons, and Vines. The danger is that the damage may be done before the tiny, colourless pest is noticed. Water may be used freely, but it should be made more effective by using soft soap, Gishurst Compound, or sulphur in it. Clear soot water has also answered the purpose, by syringing the affected plants with it. The pest may appear at any time, but chiefly in summer.

Chermes Abietis, sometimes known as *Adelges Abietis*, is an insect closely allied to the Aphides, but having no honey tubes. The form that produces galls upon the young twigs of Spruce trees settles near the base of expanding buds and, inserting its beak at the base of the young leaves, causes swellings resembling young cones to form near the tips or lower down the twigs. When numerous, these galls have a stunting effect upon the trees, upon which they turn woody and remain long after the Chermes has left them. These galls may be cut off and burned to kill the insects in them.

Cockroaches include the common one (*Blatta orientalis*), more frequent in dwelling-houses than hothouses, and the American Cockroach (*Periplaneta americana*), which is very destructive to plants in warm plant-houses where it gets established. It is a large insect, about 1¼ in. long, ¼ in. wide, with grey-brown wing-cases, longer than the body. It may be caught in a variety of ways by putting some strong-smelling or syrupy liquid in deep jars, standing these in its haunts over night, and placing some pieces of wood against the jars, so that the insects may climb to the edge, drop in, and so get drowned. The quickest way to destroy the pest is to get some phosphorus paste, spread some of it on pieces of bread, and lay the same on pieces of tile or slate about the infested houses at night, picking up the baits in the morning and placing them out of harm's way during the day. The dead cockroaches need not be gathered up, as the live ones are cannibals, and get poisoned by eating their dead brethren.

See also SLUGS, SNAILS, SCALE INSECTS, SNOWY FLY, WOODLICE, &c.

INTERMEDIATE. A *species* is often named intermediate, because possessing the different characteristics of two others.

A *hothouse* is intermediate when kept at a temperature higher than that usual in a greenhouse, and lower than that usual in a stove.

I'NULA. (A word of doubtful origin, said to be a corruption of *helenium*. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

I'nula Hele'nium, or Elecampane, furnishes the *Vin d'Aulnée* of the French. Hardy herbaceous perennials, with yellow flowers. The annuals not being worth cultivating, are omitted. Seeds, or divisions of the roots; common garden-soil. They are interesting, though rather rough-looking.

I. barba'ta (bearded). 1. Yellow. Himalaya.
„ „ *ma'jor* (greater). 1. Heads larger.
„ *bi'frons* (two-leaved). 1. Yellow. Eastern Europe.
„ *brita'nnica* (British). 1. Yellow. Europe (England).
„ *calyci'na* (large-calyxed). See I. MONTANA.
„ *crithmoi'des* (Crithmum-like). 1. Yellow. Europe (Britain). "Golden Samphire."
„ *dysente'rica* (dysenteric). See PULICARIA DYSENTERICA.
„ *ensifo'lia* (sword-leaved). ¾. August. Austria. 1793.
„ *germa'nica* (German). 4. July. Germany. 1759.
„ *gla'bra* (smooth). See I. SALICINA.
„ *glandulo'sa* (glanded). 2. August. Georgia. 1804.
„ „ *fimbria'ta* (fringed). Ray florets fringed. 1903.
„ „ *lacinia'ta* (jagged). Seems identical with *I. g. fimbriata*.
I. grandiflo'ra (large-flowered). 2. July. Caucasus. 1810.
„ *gra'ndis* (great). Yellow. August. Soongaria.
„ *grave'olens* (strong-smelling). 1½. Yellow. July. Mediterranean region. 1633.
„ *helenioi'des* (Helenium-like). 2-4. Yellow. Spain.
„ *Hele'nium* (Helenium). 3-6. Yellow. England. "Elecampane."
„ *hi'rta* (hairy). 1. July. Austria. 1759.
„ *Hooke'ri* (Hooker's). 1-2. Yellow. August. Himalaya. 1851.
„ *hy'brida* (hybrid). See I. ENSIFOLIA.
„ *limonifo'lia* (Limonum-leaved). Yellow. Greece.
„ *macrophy'lla* (large-leaved). See I. GRANDIS.
„ *Maria'na* (Maryland). See CHRYSOPSIS MARIANA.
„ *mo'llis* (soft). See I. SUAVEOLENS.
„ *monta'na* (mountain). 1½. August. S. Europe. 1759.
„ *O'culus-Chri'sti* (Christ's-eye). 1½. July. Austria. 1759.
„ *odo'ra* (fragrant). See PULICARIA ODORA.
„ *orienta'lis* (oriental). See I. GLANDULOSA.
„ *quadridenta'ta* (four-toothed-*flowered*). See I. GRAVEOLENS.
„ *racemo'sa* (racemose). 4-5. Yellow. August. Himalaya; Central China. 1903.
„ *royle'ana* (Roylean). 1½. Yellow. Himalaya.
„ *salici'na* (Salix-like). 1-1½. Yellow. July, August. Ireland.
„ *saxa'tilis* (rock). See I. VISCOSA.
„ *sca'bra* (rough). See HETEROTHECA LAMARCKII.
„ *squarro'sa* (spreading). 2. Yellow. Europe.
„ *suave'olens* (sweet-scented). 1½. July. S. Europe. 1758.
„ *thapsoi'des* (Thapsus-like). 1½. Yellow. July. Caucasus. 1819.
„ *tri'loba* (three-lobed). July. Sinai. 1837.
„ *Vailla'ntii* (Vaillant's). 2. September. France. 1739.
„ *verbascifo'lia* (mullein-leaved). See I. THAPSOIDES.
„ *visco'sa* (clammy). 1½. July. S. Europe. 1596.

IOCHRO'MA. (From *ion*, violet, and *chroma*, colour; referring to the purple colour of the flowers. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Habrothamnus.)

Greenhouse shrubs. Cuttings of young shoots, getting a little firm, in sandy soil, with a bell-glass in summer; sandy peat and fibrous loam. Winter temp., 40° to 45°.

I. calyci'na (large-calyxed). Green. Guiana.
„ *cocci'nea* (scarlet). Scarlet. Mexico.
„ *cya'nea* (blue). See I. LANCEOLATA.
„ *fla'va* (yellow). 6. Pale yellow. Cordilleras of Colombia. 1898.
„ *fuchsioi'des* (Fuchsia-like). 5. Orange-scarlet. June to August. Peru. 1843.
„ *gesneroi'des* (Gesnera-like). 3-4. Scarlet. Peru.
„ *grandiflo'ra* (large-flowered). Peru.
„ *lanceola'ta* (lance-shaped). 5. Purple-brown. July. Colombia. 1846.
„ *tubulo'sa* (tubular). 5. Violet-blue. March. Ecuador. 1844.

IO'NE PALEA'CEA. See BULBOPHYLLUM PALEACEUM.

IONI'DIUM. (From *ion*, violet, and *eidos*, resembling. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to our Violets.)

The South American species possess much of the qualities of, and are substituted for, Ipecacuanha. Herbaceous plants, flowering in June, by division and seed; under-shrubs, by cuttings in sand, under a bell-glass; peat and loam. All the following require greenhouse culture, except *stri'ctum*, which is a stove plant.

I. cape'nse (Cape). 1. White. Cape of Good Hope. 1824.
„ *co'ncolor* (one-coloured). 1. White or green. June. N. Amer. 1788.
„ *longifo'lium* (long-leaved). See NOISETTIA LONGIFOLIA.
„ *polygalæfo'lium* (Polygala-leaved). 1. Green, yellow. Mexico. 1797.
„ *sprengelia'num* (Sprengel's). See I. CONCOLOR.
„ *stri'ctum* (upright). ¾. White. W. Ind. 1824.

IONOPSI'DIUM. (From *ion*, the violet, *opsis*, appearance, and *eidos*, form; literally, plants with a form resembling the violet. Nat. ord. Cruciferæ.)

Hardy and very dwarf annual plants. Seeds. Any good garden soil.

I. acau'le (stemless). ¼. Purple or violet. Spring and summer. Portugal; N. Africa. 1845.
„ *albiflo'rum* (white-flowered). ¼. White. Algeria.

IONOP'SIS. (From *ion*, violet, and *opsis*, like. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Burlingtonia.)

Stove orchids. For culture, see BURLINGTONIA.

I. panicula'ta (panicled). 1. White, violet. Brazil. 1865.
„ *pulche'lla* (handsome). Violet. July. Merida.
„ *te'nera* (slender). See I. UTRICULARIOIDES.
„ *testicula'ta* (testicled). ½. White. Jamaica. 1905.
„ *utricularioi'des* (Utricularia-like). ½. White, purple. October. Trinidad. 1822.

IOSTE'PHANE. (From *ion*, a violet, and *stephane*, a crown; in allusion to the violet rays of the flower. Nat. ord. Compositæ.)

Subshrubby, evergreen, greenhouse plant. Cuttings of side-shoots in heat in spring. Loam, leaf-mould, and plenty of sand.

I. heterophy'lla (various-leaved). 1½. Violet or purple. August to October. Mexico. 1820.

IPECACUA'NHA. An emetic drug obtained from the roots of *Cephælis Ipecacuanha*.

IPHIGE'NIA. (*Iphigenia* was a daughter of Agamemnon. Nat. ord. Liliaceæ.)

Half-hardy herb requiring the protection of a pit or greenhouse in winter. Division of the root-stock. Loam, leaf-mould, and sand.

I. i'ndica (Indian). 1. Purple. Early summer. India. 1818.

IPOMŒ'A. (From *ips*, bindweed, and *homoios* similar. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn 5-*Pentandria*, 1-*Monogynia*.)

Annuals, by seed in a hotbed; perennials, by seed and cuttings of the short side-shoots, in sandy peat, under a bell-glass, and in a good bottom-heat; bulbous and tuberous, by division, and by cuttings of the young shoots, as they commence growing; the bulbs and tuberous ones, especially the hardier ones, are used for herbaceous grafting, merely making a cleft, and slipping the young shoot into the place, claying over, and plunging in a hotbed; stout, short stems, with roots of *Sello'wii*, are frequently used for grafting the more tender sorts; peat and loam. Temp. for stove kinds, 60° to 85° in summer; 50° to 60° in winter. The crimson *Horsfa'lliæ* requires a good heat.

Hardy and Half-hardy Annuals.

I. purpu'rea (purple). 6–10. Purple, with white ribs. Summer. Trop. Amer. 1629.
„ *versi'color* (changing-coloured). 12–15. Red, yellow. Summer. Trop. Amer. 1841.

Stove Annuals.

I. angustifo'lia (narrow-leaved). Yellow. July. Tropics of Old World. 1778.
„ *cœlesti'na* (sky-*blue*). Blue. August. 1840. Twiner.
„ *cocci'nea* (scarlet). 10. Scarlet. July to September. Tropics. 1818.
„ *filicau'lis* (thread-stalked). See I. ANGUSTIFOLIA.
„ *murica'ta* (point-covered). 8. Blue, purple. August. Himalayas. 1777.
„ *pilo'sa* (thinly-hairy). 6. White, purple. July. India; Trop. Africa. 1818.
„ *Qua'moclit* (Quamoclit). 1½–3. Scarlet. Tropics. 1629.
„ „ *a'lba* (white). White. 1629.
„ *quinquefo'lia* (five-leaved). 6. White. July. Trop. Amer. 1807.
„ *renifo'rmis* (kidney-shaped). 1. September. Trop. Asia and Africa. 1816.
„ *sero'tina* (late). Orange. July. Mexico. 1824.
„ *tridenta'ta* (three-toothed). 10. Yellow. July. E. Ind. 1778.
„ *tri'loba* (three-lobed). 10. Violet. July. Trop. Amer. 1752.

Hardy Twiners.

I. ca'ndicans (whitish). 15. White. July. N. Amer. 1776.
„ *ebractea'ta* (bractless). 1. White. July. Trop. Amer. 1819. Trailer.
„ *imperia'lis* (imperial). 6–8. Blue or rosy-lilac. 1897.
„ „ *aura'ta* (golden). Leaves golden. 1897.
„ „ *colla'ta* (collected). Flowers variable in colour, crimped at the edges. 1897.
„ *lacuno'sa* (pitted). 10. White. June. N. Amer. 1640. Deciduous.
„ *leptophy'lla* (slender-leaved). 2. Rose, purple in the throat. N.W. Amer. 1900.
„ *pandura'ta* (fiddle-shaped). 12. White, purple. June. N. Amer. 1732. Deciduous.
„ *sagitta'ta* (arrow-shaped). 3. Rose. July. N. Amer. 1819. Deciduous.
„ *sagitti'folia* (arrow-head-leaved). See I. SAGITTATA.
„ *sibi'rica* (Siberian). 8. Flesh. July. Siberia. 1779. Deciduous.
„ *sinua'ta* (scollop-*leaved*). 6. White. July. Florida. 1813. Evergreen.
„ *supe'rba* (superb). Mexico.

Greenhouse Twiners.

I. arbore'scens (tree). 10. Mexico. 1818. Shrub.
„ *arma'ta* (armed). 6. Purple. July. Mexico. 1824. Biennial.
„ *au'rea* (golden). Lemon-yellow. Lower California. 1900. Tuberous rooted.
„ *bi'color* (two-coloured). Purple. July. Trop. Amer. 1732.
„ *cra'ssipes* (thick-flower-stalked). 3. Purple. August. S. Africa. 1842.
„ *Gerra'rdi* (Gerrard's). See I. ALBIVENIA.
„ *gossypioi'des* (Gossypium-like). Rose, red-purple. Southern Argentina. 1897. Annual.
„ *Kerbe'rii* (Kerber's). Vivid scarlet. S. Amer. 1894.
„ *macrorhi'za* (long-rooted). 10. White. August. Georgia. 1815. Tuber.
„ „ *ru'bra* (red). Red, purple. August. Mexico. 1815.
„ *Natio'nis* (Nation's). Scarlet. Peru. 1864.
„ *pe'ndula* (hanging-down). See I. PALMATA.
„ *quina'ta* (five-leafleted). Violet. July. Trop. Asia and Australia.
„ *Sello'wii* (Sellow's). See I. BONARIENSIS.
„ *seti'fera* (bristle-bearing). White, fragrant. Temperate Brazil. 1894.
„ *Woo'dii* (Wood's). Rose-purple. S. Africa. 1894. Tuberous.

Stove Deciduous Twiners.

I. Aito'ni (Aiton's). 10. Pale purple. June. S. Africa.
„ *Bata'tas* (Batatas). White, purple. Tropics. 1797. "Sweet Potato."
„ *batatoi'des* (Batatas-like). See I. MESTITLANICA.
„ *Bronso'ni* (Bronson's). Cuba. 1892.
„ *campanula'ta* (bell-*flowered*). 8. Purple, white. August. E. Ind. 1800.
„ *carno'sa* (fleshy). 5. White. July. Trop. regions. 1838.
„ *Caroli'na* (Carolina). See I. COMMUTATA.
„ *commuta'ta* (changed). 10. Purple. July. N. Amer. 1732.
„ *deco'ra* (becoming). 3. White, rosy-purple. E. Africa. 1879.
„ *ficifo'lia* (fig-leaved). 3. Purple. November. Buenos Ayres. 1840.
„ *glaucifo'lia* (glaucous-leaved). Purple. June. Trop. Amer. 1732.
„ *heterophy'lla* (various-leaved). Purple. July. Australia. 1818.
„ *involucra'ta* (involucred). 4. Red. July. Guinea. 1823.
„ *leuca'ntha* (white-flowered). 6. White. August. S. Amer. 1823.
„ *longifo'lia* (long-leaved). See I. CARNOSA.
„ *mestitla'nica* (Mestitlanian). 6. Purple, crimson. July. Mexico. 1840.
„ *multiflo'ra* (many-flowered). 6. Pink. June. Jamaica.
„ *ochra'cea* (yellowish). Yellow. August. Guinea. 1826.

I. Pe's-ti'gridis (tiger's-foot). 6. Red. August. E. Ind. 1732.
„ *pilo'sa* (long-haired). 4. Pink. August. E. Ind. 1815.
„ *ru'bro-cæru'lea* (reddish-blue). 8. Blue, red. September. Mexico. 1823.
„ *schiedia'na* (Schiede's). Blue. October. Mexico. 1838.
„ *seto'sa* (bristly). 9. Purple. August. Brazil.
„ *solanifo'lia* (nightshade-leaved). 8. Pink. July. W. Ind. 1759.
„ *viola'cea* (violet-*flowered*). 8. Purple. August. S. Amer. 1792.

STOVE EVERGREEN TWINERS.

I. acumina'ta (sharp-pointed). 6. Purple. July. W. Ind. 1812.
„ *ala'tipes* (winged-stalked). Salmon. Venezuela. 1862.
„ *albive'nia* (white-veined). Yellow. September. Algoa Bay. 1824.
„ *aqua'tica* (aquatic). ½. Purple. July. Tropics of Old World. 1806. Creeper.
„ *bignonioi'des* (Bignonia-like). Purple. July. Guiana. 1824.
„ *bi'loba* (two-lobed). Purple. June. Tropics. 1776. Creeper.
„ *Bo'na-no'x* (good-night). 10. White. July. Trop. Amer. 1773.
„ *bonarie'nsis* (Buenos Ayres). Purple. August. Buenos Ayres. 1826.
„ *cæru'lea* (blue). See I. HEDERACEA.
„ *cai'rica* (Cairo). See I. PALMATA.
„ *cameruné'nsis* (Cameroons). Leaves entire. Cameroons. 1891.
„ *catha'rtica* (purging). 6. Rose. August. Trop. Amer. 1822.
„ *Cavanille'sii* (Cavanilles's). White, red. August. 1815.
„ *chrysei'des* (golden). 4. Yellow. July. China. 1817.
„ *corymbo'sa* (corymbed). See I. SIDÆFOLIA.
„ *digita'ta* (fingered). Purple. July. Tropics. 1799.
„ *disse'cta* (cut). Tropics.
„ *diversifo'lia* (diversed-leaved). See I. HEDERACEA.
„ *fastigia'ta* (pyramidal). 10. Purple. June. W. Ind. 1816.
„ *filifo'rmis* (thread-like). 10. Purple. October. W. Ind. 1823.
„ *Fu'nis* (Funis). 6. Scarlet. Mexico. 1826.
„ *grandiflo'ra* (large-flowered). 18. White. September. E. Ind. 1802.
„ *Hartwe'gi* (Hartweg's). 6. Scarlet. Mexico. 1827.
„ *hedera'cea* (ivy-leaved). 10. Light blue. Summer. Tropics. 1597.
„ „ *limba'ta* (limbed). Deep blue and white. Early summer. Australia. 1868.
„ *hederifo'lia* (ivy-leaved). 10. Crimson. July. W. Ind. 1812.
„ *Hooke'ri* (Hooker's). See I. RUBROCÆRULEA.
„ *Horsfa'lliæ* (Mrs. Horsfall's). 20. Rose-coloured. October. W. Ind. 1833.
„ „ *a'lba* (white). White. W. Ind. 1883.
„ „ *Bri'ggsi* (Briggs's). Carmine-rose.
„ *Jala'pa* (jalap). 10. Red. August. Mexico. 1733. Tuber.
„ *Lea'rii* (Mr. Lear's). 30. Dark red. September. Ceylon. 1835.
„ *linifo'lia* (flax-leaved). Yellow. May. Malaya; Australia. 1827.
„ *Maho'ni* (Mahon's). Reddish-purple, white, pink. Uganda. 1903. Shrub.
„ *martinice'nsis* (Martinique). Yellow. August. Tropics of both Worlds. 1731.
„ *muta'bilis* (changeable). See I. ACUMINATA.
„ *Ni'l* (Nil). See I. HEDERACEA.
„ *palma'ta* (hand-shaped). White. July. Tropics of both Worlds. 1680.
„ *pandura'ta* (fiddle-shaped). N. Amer.
„ *pentaphy'lla* (five-leaved). White, red. August. Tropics of both Worlds. 1739.
„ *perringia'na* (Perringian). Violet-rose. Cameroons. 1897.
„ *Pe's-ca'præ* (goat's-foot). See I. BILOBA.
„ *plate'nsis* (La Platan). See I. DIGITATA.
„ *polya'ntha* (auricula-*flowered*). See I. UMBELLATA.
I. pube'scens (downy). Blue, violet. September. W. Ind. 1816.
„ *pudibu'nda* (blushing). See I. CATHARTICA.
„ *pulche'lla* (pretty). See I. FASTIGIATA.
„ *Pu'rga* (purgative). Crimson. August. Mexico. "Jalap."
„ *repa'nda* (wavy-edged). 10. Scarlet. July. E. Ind. 1793.
„ *re'ptans* (creeping). See I. AQUATICA.
„ *Robe'rtsii* (Roberts's). White, lined pink, with rose-purple rays. Queensland.
„ *sanguinole'nta* (blood-coloured). Rose, and tube blood-red within. 1880.
„ *scrobicula'ta* (pitted). 2. Pale red. Trinidad. 1825. Trailer.
„ *senegale'nsis* (Senegalese). See I. PALMATA.
„ *sepia'ria* (hedge). 8. Red. July. E. Ind. 1799.
„ *sidæfo'lia* (Sida-leaved). 2. White. July. Mexico. 1823.
„ *si'mulans* (resembling). Mexico.
„ *specio'sa* (showy). See ARGYREIA SPECIOSA.
„ *splé'ndens* (splendid). See ARGYREIA SPLENDENS.
„ *stipula'cea* (stipuled). See I. SEPIARIA.
„ *terna'ta* (three-leaved). 10. White. W. Ind. 1884.
„ *thomsonia'na* (Thomsonian). See I. TERNATA.
„ *tubero'sa* (tuberous-rooted). 10. Pale yellow. August. W. Ind. 1731. Tuber.
„ „ *uniflo'ra* (one-flowered). See I. MARTINICENSIS.
„ *Turpe'thum* (Turpeth). 5. White. August. E. Ind. 1752.
„ *Twee'diei* (Mr. Tweedie's). 6. Reddish-purple. July. Parana. 1838.
„ *tryia'nthina* (purple). Purple. October. Mexico. 1838.
„ *umbella'ta* (umbelled). Scarlet. June. S. Amer. 1739.
„ *veno'sa* (veiny). Purple. July. Mascarene Islands. 1820.
„ *vitifo'lia* (vine-leaved). 10. Yellow. July. E. Ind. 1820.
„ *wolcottia'na* (Wolcottian). Mexico. 1894.

IPOMO'PSIS. (From *ipo*, to strike forcibly, and *opsis*, sight. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. See GILIA.)
I. e'legans (elegant) of Lindley. See GILIA AGGREGATA.
„ *e'legans* (elegant) of Michaux. See GILIA CORONOPIFOLIA.
„ *inconspi'cua* (inconspicuous). See GILIA INCONSPICUA.

I'PSEA. (Not explained. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Pachystoma.)
Stove orchid. Rough peat and a little fibrous loam. Summer temp., 60° to 90°; winter, 55°.
I. specio'sa (showy). 1. Yellow. May. Ceylon. 1840.

IRESI'NE. (From *eiros*, wool; referring to the woolly aspect of the branches. Nat. ord. *Amarants* [Amarantaceæ]. Linn. 22-*Diœcia*, 5-*Pentandria*. Allied to Gomphrena.)
Half-hardy, herbaceous, white-flowered perennials. Division in spring, and by saving and sowing the seeds in a gentle hotbed; sandy loam, leaf-mould, and a little peat. If saved over, must be protected in a cold pit or frame during the winter.
I. acumina'ta (long-pointed). Leaves purple. Mexico. 1869.
„ *celosioi'des* (Celosia-like). 1½. July. N. Amer. 1733.
„ *diffu'sa* (straggling). See I. CELOSIOIDES.
„ *ela'tior* (taller). 3. July. Antilles. 1820. Annual.
„ *elonga'ta* (long-*leaved*). 2. July. S. Amer. 1822.
„ *flave'scens* (pale yellow). 1. July. S. Amer. 1824. This is *Alternanthe'ra flave'scens*.
„ *He'rbstii* (Herbst's). Green. Leaves crimson, with rose veins. Brazil. 1864.
„ „ *au'reo-reticula'ta* (golden-netted). Leaves with golden veins.
„ *Linde'ni* (Linden's). Leaves blackish purple. Ecuador. 1867.

IRIA'RTEA. (Commemorative of *Juna Iriarte*, a botanist of Spain. Nat. ord. Palmaceæ.)
Stove Palms of low stature. Seeds. Loam, peat, and sand.

I. Bungeo'thii (Bungeroth's). Country unknown.
, *exorrhi'za* (rooting-upwards). See SOCRATEA EXORRHIZA.
„ *gigante'a* (giant). 1872.
„ *no'bilis* (noble). Trop. Amer. 1869.
„ *præmo'rsa* (bitten-*leaved*). See CATOBLASTUS PRÆMORSUS.
„ *ventrico'sa* (swollen). Brazil.

IRIS. (From *iris*, the rainbow; referring to the variety and beauty of the flowers. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

A beautiful hardy family of summer-flowering plants, though most of the bulbous species will, by forcing, flower early in spring. Herbaceous species, by suckers from the root, and division of their fleshy rhizomes. Bulbous ones, by offsets; and all by seeds. Rich, loamy soil suits the herbaceous; but the others should have a good proportion of sand, leaf-mould, and peat.

GREENHOUSE HERBACEOUS.

I. chine'nsis (Chinese). See I. JAPONICA.
„ *clandesti'na* (secret). May. Brazil. 1829.
„ *cœlesti'na* (sky-blue). 1½. Blue. June. N. Amer. 1824.
„ *crassifo'lia* (thick-leaved). See MORÆA IRIDIOIDES.
„ *defle'xa* (bent-down). See I. GERMANICA.
„ *fimbria'ta* (fringed). See I. JAPONICA.
„ *hexago'na* (six-angled). 3. Blue-purple, yellow. S. United States. (B. M., t. 6787.)
„ „ *a'lba* (white). White.
„ „ *Lama'ncei* (Lamance's). 1½. Clear blue.
„ *japo'nica* (Japanese). 1. Lavender, yellow. Japan and China. 1792.

HARDY BULBS.

I. Aitchiso'ni (Aitchison's). 1½. Purple. March. India; Afghanistan. 1901.
„ „ *chrysa'ntha* (golden-flowered). Bright yellow. 1901.
„ „ *fla'va* (yellow). See I. AITCHISONI CHRYSANTHA.
„ *ala'ta* (winged). ½. Blue. June. Algiers. 1801.
„ „ *a'lba* (white). White.
„ *bakeria'na* (Bakerian). ½. Violet and spotted violet on white. January. Armenia. 1889.
„ *Boissie'ri* (Boissier's). 1. Purple. Portugal. 1887.
„ *Bornmuelle'ri* (Bornmueller's). See I. DANFORDIÆ.
„ *bucha'rica* (Bokharan). 1. White, bright yellow. March. Eastern Bokhara. 1902.
„ *cauca'sica* (Caucasian). ½–¾. Greenish-yellow. Caucasus. 1821.
„ „ *cæru'lea* (blue). Pale lilac, lined violet. Caucasus. 1889.
„ „ *ma'jor* (greater). Flowers larger, yellow, orange.
„ *Colle'tii* (Collett's). See I. NEPALENSIS LETHA.
„ *Danfo'rdiæ* (Mrs. Danford's). ½. Orange-yellow, spotted brown. Asia Minor. 1889.
„ *filifo'lia* (thread-leaved). 1–1½. Violet, yellow. Spain, N. Africa. 1869.
„ *fosteria'na* (Fosterian). ½. Primrose yellow, violet. Afghanistan. 1891.
„ *fumo'sa* (smoky). 1. Greenish-yellow, smoky. April. Syria.
„ *gala'tica* (Galatian). ½. Greenish-yellow, purple. Galatia. 1905.
„ *Heldrei'chii* (Heldreich's). See I. STENOPHYLLA.
„ *Hi'strio* (Histrio). 1. Blue, creamy-white, with blue blotches. Syria. 1873.
„ *imbe'rbis* (beardless). See I. JUNCEA.
„ *ju'ncea* (rush-like). 1. Rich yellow, orange. July. Algeria. 1869.
„ „ *numi'dica* (Numidian). Light yellow. Atlas Mountains. 1889.
„ *kolpakowskya'na* (Kolpakowskyan). Red-purple, creamy-white. March. Turkestan. 1878.
„ *Li'bani* (Lebanon). See I. HISTRIO.
„ *lusita'nica* (Portuguese). See I. XIPHIUM LUSITANICA.
„ *maurita'nica* (Moroccan). See I. JUNCEA.
„ *nepale'nsis* (Nepaulese). 1½. Lavender, violet, cream, orange. April. Nepaul. 1823.
„ „ *Le'tha* (Letha). Flowers stalkless, fragrant. Upper Burma. 1892.
„ *orchioi'des* (Orchis-like). ½–1. Bright yellow, orange. Central Asia. 1880.
I. orchioi'des cæru'lea (blue). 1. Pale blue, yellow. 1884.
„ „ *linifo'lia* (flax-leaved). 1. Yellow.
„ „ *ocula'ta* (eyed). 1. Yellow, with blue blotches.
„ „ *sple'ndens* (splendid). Rich yellow.
„ *paleti'na* (Palestine). ½. Greenish-yellow, with blue veins. December. Palestine. 1871.
„ *pe'rsica* (Persian). ½. Bluish-green, violet. March. Persia. 1629.
„ „ *azu'rea* (azure). ½. Blue, violet.
„ „ *ma'gna* (great). ½. Flowers larger.
„ „ *purpu'rea* (purple). ½. Dark red-purple.
„ *reticula'ta* (netted). ½. Deep violet, white, orange, fragrant. Asia Minor.
„ „ *a'lba* (white). White, crests orange. 1894.
„ „ *atropurpu'rea* (dark purple). ½. Blackish-red, black. Asia Minor. 1909.
„ „ *cya'nea* (blue). ½. Cyanic or indigo-blue. Asia Minor. 1875.
„ „ *histrioi'des* (Histrio-like). ½. Bright blue, white, blotched. March. Armenia.
„ „ *histrioi'des a'lba* (white). Satiny-white, orange. 1904.
„ „ *Krela'gei* (Krelage's). ½. Red-purple, or plum. March. Asia Minor. 1879.
„ „ *ma'jor* (greater). 1. Deep violet, white, fragrant, larger.
„ „ *purpu'rea* (purple). ½. Deep red-purple, uniform. Asia Minor.
„ „ *sophene'nsis* (Sophene). ½. Red-purple to lilac. February. Asia Minor. 1885.
„ *rosenbachia'na* (Rosenbachian). ½. Blue, violet, purple. Turkestan. 1886.
„ *siehea'na* (Siehean). ½. Lurid purple. Asia Minor. 1904.
„ *sindjare'nsis* (Sindjaran). 1. Lavender and purple. Mesopotamia. 1890.
„ *Sisyri'nchium* (Sisyrinchium). 1. Light blue to reddish-purple. Mediterranean region. 1629.
„ *stenophy'lla* (narrow-leaved). ½. Lilac, dark blue. Cicilian Taurus. 1900.
„ *Tai'tii* (Tait's). 2. Blue, yellow. Portugal. 1906.
„ *Tau'ri* (Taurus). ½. Violet, white, orange-yellow. Asia Minor. 1901.
„ *tenuifo'lia* (slender-leaved). 1½. Light blue. May. Dauria. 1796.
„ *tingita'na* (Tangerian). 2. Lilac, purple. Morocco. (B. M., t. 6775.)
„ *tubergenia'na* (Tubergenian). ½. Bright yellow. Asia Minor. 1899.
„ *tubero'sa* (tuberous). See HERMODACTYLUS TUBEROSA.
„ *Varta'ni* (Vartan's). ½. White, lavender, yellow. Palestine. 1885.
„ *warleye'nsis* (Warleyan). Shades of violet. Eastern Bokhara. 1902.
„ *willmottia'na* (Willmottian). ½. Lavender, purple, white. E. Turkestan. 1901.
„ *Xi'phium* (Xiphium). 1½. Blue, yellow. June. Spain. 1596. "Spanish Iris."
„ „ *Battandie'ri* (Battandier's). White. Algiers. 1884.
„ „ *lusita'nica* (Portuguese). 1½. Yellow. June. Portugal. 1796.
„ „ *so'rdida* (dirty). 1½–2. Bronzy, smoky, orange. Portugal. 1819. "Thunderbolt Iris."
„ *xiphioi'des* (Xiphium-like). 1½. Blue, yellow. June. Spain. 1571. "English Iris."

HARDY HERBACEOUS.

I. acu'ta (pointed-*leaved*). See I. SIBIRICA.
„ *acuti'loba* (acute-lobed). 1. Fawn, purple. Caucasus. 1875.
„ *Ada'mi* (Adam's). See I. GRAMINEA.
„ *a'lba* (white). See I. FLORENTINA.
„ *Albe'rti* (Albert's). 2. Purple-violet, yellow. Turkestan. 1880.
„ *a'lbicans* (white). Pure white, fragrant. Cyprus. 1888.
„ *a'lbicans* (white) of Lange. See I. FLORENTINA ALBICANS.
„ *albopurpu'rea* (white-purple). 2. White, spotted with purple. Japan.
„ „ *colchestere'nsis* (Colchester). Rich blue, with purple shade. Japan. 1910.
„ *ama'na* (lovely). See I. HYBRIDA.
„ *aphy'lla* (leafless). 1. Blue. April. Europe. 1822.

I. aphy'lla bohe'mica (Bohemian). 1. Blue. May. Bohemia. 1825.
„ „ *furca'ta* (forked). ½. Blue. March. Tauria. 1822.
„ „ *hunga'rica* (Hungarian). 1. Violet. May. Hungary. 1815.
„ „ *Swe'rtii* (Swert's). See I. SWERTII.
„ *arena'ria* (sand). ½. Yellow. June. Hungary. 1802.
„ *Ascherso'ni* (Ascherson's). Greenish-yellow, lined purple. Asia Minor. 1902.
„ *asia'tica* (Asiatic). Blue. Asia Minor. 1892.
„ *assyri'aca* (Assyrian). 1. White. Syria. 1896.
„ *a'thoa* (Athoan). 1½. Brownish red-purple. Mt. Athos, Turkey. 1893.
„ *atrofu'sca* (dark-brown). 1½. Brown-black. Palestine. 1893.
„ *atropurpu'rea* (dark-purple). Purplish-black, yellow. Syria. 1889.
„ *au'rea* (golden). 2. Yellow. June. Himalaya. 1826.
„ „ *interme'dia* (intermediate). Deep yellow. 1900.
„ *balka'na* (Balkan). 1. Claret-lilac, white. 1878.
„ *Barnu'mæ* (Mrs. Barnum's). ½. Red-purple, yellow. Armenia. 1888.
„ *Barto'ni* (Barton's). 1½. Creamy-white, purple-violet. Afghanistan. 1883.
„ *benace'nsis* (Benacan). 1–1½. Violet, coppery violet, yellow. Tyrol. 1887.
„ *bi'color* (two-coloured). See MORÆA BICOLOR.
„ *bifio'ra* (two-flowered). 1½. Purple. June. S. Europe. 1596.
„ *biglu'mis* (two-glumed). See I. ENSATA BIGLUMIS.
„ *Bilio'tii* (Biliott's). 2½–3. Reddish-purple, blue-purple. Asia Minor. 1887.
„ *bismarckia'na* (Bismarckian). 1½. Ash-grey, black. Lebanon. 1890.
„ *Bloudo'wii* (Bloudow's). Blue. April. Altai. 1832.
„ *bohe'mica* (Bohemian). See I. APHYLLA BOHEMICA.
„ *boltonia'na* (Bolton's). See I. PRISMATICA.
„ *bosni'aca* (Bosnian). 1–1½. Clear yellow. Bosnia. 1898.
„ *brachycu'spis* (short-pointed). See I. SETOSA.
„ *bractea'ta* (bracted). 1½–2. Yellow, with bluish-purple veins. N.W. Amer. 1888.
„ *bulleya'na* (Bulleyan). 1. Cream, mottled blue-purple; inner blue-purple. Yunnan, China. 1910.
„ *carolinia'na* (Carolinian). 1½. Blue, purple, yellow. N. Carolina. 1893.
„ *cauri'na* (north-west-wind). See I. VERSICOLOR VIRGINICA.
„ *Cengia'lti* (Cengialtan). 1. Sky-blue, flushed violet. Cengialto, Tyrol. 1886.
„ „ *Lo'ppio* (Loppio). Deep blue. Monte Baldo, N. Italy. 1886.
„ *Chamæi'ris* (dwarf-Iris). ½. Yellow, veined brown. April. S. Europe.
„ „ *ita'lica* (Italian). ½. Yellow, dark violet. April. N. Italy.
„ „ *olbie'nsis* (Olbian). ½–¾. Dark violet. April. S. France.
„ *chine'nsis* (Chinese). See I. JAPONICA.
„ *chrysa'ntha* (golden-flowered). 1. Pale yellow. Persia (?). 1901.
„ *Cla'rkei* (Clarke's). 2. Violet-blue, blotched white and yellow. Himalaya. 1909.
„ *clusia'na* (Clusian). See I. PUMILA.
„ *compre'ssa* (compressed). See MORÆA IRIDIOIDES.
„ *Co'smiæ* (Cosnia's). ½. Clear yellow, purple. 1895.
„ *crete'nsis* (Cretan). ¾. Yellow, blue, purple, white. Greece. 1844.
„ *crista'ta* (crested). ½. Pale blue. June. N. Amer. 1756.
„ *cu'prea* (copper-coloured). See I. FULVA.
„ *curtope'tala* (short-petaled). See I. PSEUDACORUS.
„ *cypria'na* (Cyprian). 3. Red-lilac, orange, blue. Cyprus. 1888.
„ *Delava'yi* (Delavay's). 2–4. Violet, blotched with white. Yunnan, China. 1895.
„ *demave'ndica* (Demavendian). ½. Claret-red. Mt. Demavend, Persia. 1906.
„ *deserto'rum* (desert). See I. SWERTII.
„ *dicho'toma* (forked). 1. Light blue. August. Dahuria. 1784.
„ *dilu'ta* (diluted). See I. GUELDENSTÆDTIANA.
„ *douglasia'na* (Douglasian). 1½. Pale lilac, deep lilac, white. California. 1873.

I. Duthi'ei (Duthie's). 2. Red-lilac, with darker veins. Kumaon. 1887.
„ *e'legans* (elegant). 2. Yellow. July. 1823.
„ *ensa'ta* (sword-shaped-*leaved*). 1½. Blue, purple. June. Northern Asia. 1787.
„ „ *biglu'mis* (two-glumed). ½. Blue. April. Siberia. 1811.
„ „ *oxype'tala* (sharp-petaled). ½. Pale blue, yellow. N. China.
„ „ *Palla'sii* (Pallas's). 2. Blue. May. Tartary. 1820.
„ *Eulefe'ldi* (Eulefeld's). See I. SCARIOSA EULEFELDI.
„ *ewebankia'na* (Ewebankian). Creamy-white, brown-purple. Persia. 1901.
„ *flave'scens* (pale yellow). 2. Yellow. May. 1818.
„ *flavi'ssima* (yellowest). ¾. Yellow. May. Siberia. 1814.
„ *flexuo'sa* (zigzag). See I. SIBIRICA.
„ *florenti'na* (Florentine). 2. White. May. S. Europe. 1596. "Orris Root."
„ „ *a'lbicans* (white). White.
„ „ *mi'nor* (less). 1½. Grey. May. Gardens.
„ *fœ'tida* (fetid). See I. FŒTIDISSIMA.
„ *fœtidi'ssima* (most-fœtid. *Stinking Gladwyn*). 1½. Livid. June. Britain.
„ „ *variega'ta* (variegated-*leaved*). 1½. Livid. June. Britain.
„ *Forre'stii* (Forrest's). 1. Pale yellow, with chestnut veins on claw. Yunnan, China. 1910.
„ *fra'grans* (sweet-scented). See I. ENSATA.
„ *fu'lva* (tawny). 2. Copper, purple-veined. June. United States. 1811.
„ *furca'ta* (forked). See I. APHYLLA FURCATA.
„ *Gate'sii* (Gates's). 1½. Silvery, much striped and mottled with grey-purple. Armenia. 1889.
„ *germa'nica* (German). 3. Blue. May. Europe; Orient. 1573.
„ „ *flo're-a'lbo* (white-flowered). 3. White. May. Gardens.
„ „ *semperflo'rens* (ever-flowering). Blue. Italy. 1890.
„ „ *Si'was* (Siwas). Indigo-purple. Siwas, Asia Minor. 1887.
„ *gigante'a* (giant). See I. ORIENTALIS GIGANTEA.
„ *graci'lipes* (slender-stalked). ½–1. Purple or lilac, yellow. Japan. 1903.
„ *grami'nea* (grass-*leaved*). ¾. Striped. June. Austria. 1597.
„ *Gra'nt-Du'ffi* (Grant-Duff's). ½. Yellow, veined lilac on yellow-white claw. Palestine. 1888.
„ *gueldenstædtia'na* (Gueldenstædt's). 2. Yellow. April. Siberia. 1757.
„ *hæmatophy'lla* (blood-red-leaved). See I. SIBIRICA ORIENTALIS.
„ *halo'phila* (salt-loving). See I. SPURIA NOTHA.
„ *Hartwe'gii* (Hartweg's). ½. Pale yellow. California. 1876.
„ *Ha'ynei* (Hayne's). ½–¾. Dark grey, dotted with black. Palestine. 1893.
„ *Hele'na* (Helen's). ½. Claret, blackish crimson, lilac. Egypt; Palestine. 1893.
„ *himala'ica* (Himalayan). See I. CLARKEI.
„ *Hooke'ri* (Hooker's). See I. TRIDENTATA.
„ *hookeria'na* (Hookerian). ½–2. Purple blue, with darker blotches, white. Lahul, Bengal. 1887.
„ *Hu'mei* (Sir A. Hume's). See I. GERMANICA.
„ *hu'milis* (low). 1. Blue. April. Caucasus. 1812.
„ *hunga'rica* (Hungarian). See I. APHYLLA HUNGARICA.
„ *Hutto'ni* (Hutton's). See MORÆA SPATHACEA.
„ *hy'brida* (hybrid). Garden origin. Syn. *I. amœna.*
„ *hyere'nse* (Hyerean). Garden origin.
„ *ibe'rica* (Iberian). 1½. Red. May. Iberia. 1820.
„ *imbrica'ta* (imbricated-*bracted*). See I. FLAVESCENS.
„ *juno'nia* (Junonian). 3. Violet-purple, netted with darker lines. Asia Minor.
„ *Kæ'mpferi* (Kæmpfer's). See I. LÆVIGATA.
„ *kashmiria'na* (Cashmerian). 3. White, yellow. May. Kashmir. 1875. Fragrant.
„ *kerneria'na* (Kernerian). 2. Yellow, white. June. Troy.
„ *kingia'na* (Kingian). See I. KUMAONENSIS.
„ *Ko'chii* (Koch's). Violet, white, yellow. Istria. 1887.
„ *Korolko'wi* (Korolkow's). Rosy-lilac, purple. Turkestan. 1874.

I. Korolko'wi co'ncolor (one-coloured). Violet or purple. 1888.
,, ,, *leichtlinia'na* (Leichtlinian). Creamy-white, with black-purple blotches. 1888.
,, ,, *veno'sa* (veiny). Grey-lilac, veined with purple. 1888.
,, ,, *viola'cea* (violet). Violet, with darker veins. 1888.
,, *kumaone'nsis* (Kumaon). 2. Purple, with deeper coloured spots. Himalaya. 1887.
,, ,, *caule'scens* (stemmed). Mauve-lilac, purple-lilac, mottled. Himalaya. 1908.
,, *lacu'stris* (lake). ½. Lilac, yellow. N. Amer.
,, *lævига'ta* (smooth). Blue. May. Japan. 1836. "Japanese Flag."
,, ,, *a'lba* (white). White, with golden blotch. 1907.
,, ,, *Schirnho'feri* (Schirnhofer's). Yellow. Japan. 1888.
,, *Leichtli'nii* (Leichtlin's). 1½. Light chocolate, blue, white, rose, lilac. May. Turkestan. 1888.
,, *le'pida* (slender). See I. SQUALENS.
,, *linea'ta* (lined). See I. SUWOROWI.
,, *lisbone'nsis* (Lisbon). ¾. Dark red-purple, or black-purple. Lisbon. 1910.
,, *li'vida* (livid). 1½. Livid. April. Levant.
,, *longiflo'ra* (long-flowered). See I. BIFLORA.
,, *longifo'lia* (long-leaved). See HERMODACTYLUS TUBEROSUS.
,, *longipe'tala* (long-petaled). 2. White, purple, yellow. California. 1862.
,, ,, *monta'na* (mountain). 1. White, purple, yellow.
,, *longispa'tha* (long-spathed). See I. ENSATA.
,, *Lorte'tii* (Lortet's). 1. Grey-lilac, with darker dots. Asia Minor. 1890.
,, ,, *a'lba* (white). Pure white. 1896.
,, *lupi'na* (wolf). ½. Greenish-yellow, with brown-red veins. Armenia. 1887.
,, ,, *lu'rida* (lurid). Ashy-grey. Armenia.
,, *lu'rida* (dingy). 2. Brown. April. S. Europe. 1758.
,, *lu'tea* (yellow). See I. PSEUDACORUS.
,, *lute'scens* (yellowish). ½. Yellow. April. S. Europe. 1748.
,, ,, *State'llæ* (Statella's). 1. Pale yellow, veined green. S. Europe.
,, *macrosi'phon* (long-tubed). ¾. Lilac-purple or cream. California and Oregon. 1890.
,, *Mado'nna* (Madonna). Lilac-blue. Arabia. 1892.
,, *mandshu'rica* (Mandshurian). ½. Yellow. Mandshuria.
,, *Mari'æ* (Maria's). See I. HELENÆ.
,, *mari'tima* (maritime). See I. MACROSIPHON.
,, *martinice'nsis* (Martinique). See TRIMEZIA LURIDA.
,, *Masi'æ* (Masia's). Deep purple. Asia Minor (?). 1902.
,, *maurita'nica* (Moroccan). See I. JUNCEA.
,, *Me'da* (Medean). ½. Greenish-yellow, veined brown, yellow. Persia.
,, *melanosti'cta* (black-speckled). Yellow, violet-veined and blotched. Syria. 1907.
,, *me'llita* (honey). ½. Dark lilac. Thrace.
,, *Mile'sii* (Miles's). 3. Red-purple. June. Himalaya. 1883.
,, *minu'ta* (minute). ½. Bright yellow, dotted with brown. Japan. 1908.
,, *missourie'nsis* (Missouri) of Nuttall. N. Amer.
,, *missourie'nsis* (Missouri) of Baker. See I. LONGIPETALA MONTANA.
,, *Monnie'ri* (Monnier's). ½. Yellow. May. Greece. 1820.
,, *negle'cta* (neglected). 2. Pale blue. May.
,, *Nertchi'nskia* (Nertchinsk). See I. SIBIRICA.
,, *no'tha* (bastard). See I. SPURIA NOTHA.
,, *nudicau'lis* (naked-stemmed). See I. BIFLORA.
,, *obtusifo'lia* (blunt-leaved). Yellowish and striped. Persia.
,, *ochroleu'ca* (yellow-white). See I. ORIENTALIS.
,, *odora'ta* (sweet-scented). See I. CRISTATA.
,, *odorati'ssima* (sweetest-scented). See I. PALLIDA.
,, *orienta'lis* (eastern). 1. Light blue. May. Asia Minor. 1790.
,, ,, *gigante'a* (giant). 4. White, yellow. Central Asia. 1875.
,, *pabula'ria* (fodder). See I. ENSATA.
,, *Palla'sii* (Pallas's). See I. ENSATA PALLASII.
,, *pa'llida* (pale). 3. Pale blue. May. Turkey. 1596.
,, *palu'stris* (marsh). See I. PSEUDACORUS.
,, *parado'xa* (paradoxical). N. Persia. (B. M., t. 7081.)
,, *Pavo'nia* (peacock). See MORÆA PAVONIA and M. TRICUSPIS.

I. plica'ta (plaited). 2. White, blue. June. 1821.
,, *prisma'tica* (prismatic). 1. Purple. May. N. Amer. 1812.
,, *Pseuda'corus* (bastard acorus). 3. Yellow. June. Britain.
,, ,, *Basta'rdi* (pale yellow). 3. Pale yellow. June. Britain. 1812.
,, ,, *fo'liis variega'tis* (variegated-*leaved*). 3. Yellow. June. Britain.
,, *pu'mila* (dwarf). ½. Purple. May. Austria. 1596.
,, ,, *a'lba* (white-*flowered*). ½. White. May.
,, ,, *a'lbo-cæru'lea* (white and blue). ½. White, blue. May.
,, ,, *cæru'lea* (blue-*flowered*). ½. Blue. May.
,, *pseu'do-variega'ta* (false-variegated). Deep yellow, brown with yellow veins. 1899.
,, *Pu'rdyi* (Purdy's). California.
,, *pyrena'ica* (Pyrenean). See I. XIPHIOIDES.
,, *reichenbachia'na* (Reichenbachian). See I. SPURIA.
,, *robinsonia'na* (Robinsonian). See MORÆA ROBINSONIANA.
,, *Ro'sei* (Rose's). See I. FLORENTINA.
,, *rubromargina'ta* (red-edged). Purple. Leaves with red edges. Anatolia. 1875.
,, *ruthe'nica* (Russian). 1. Blue. May. Siberia. 1804.
,, *sambu'cina* (elder-scented). 3. Light blue. June. Central Europe. 1658.
,, *sangui'nea* (blood-red). See I. SIBIRICA ORIENTALIS.
,, *Sa'ri* (Sari). ½–½. Bright lilac. Asia Minor. 1875.
,, ,, *lu'rida* (lurid). Spotted purple-brown on pale ground, black blotch. Asia Minor.
,, ,, *Nazare'ne* (Nazarene). Spotted brown-purple on straw-yellow. Palestine. 1893.
,, *scario'sa* (dry). 1. Blue. May. Siberia. 1826.
,, ,, *Eulefe'ldi* (Eulefeld's). Violet, yellow, brown. Turkestan. 1879.
,, *seto'sa* (bristle-*pointed*). 1½. Blue, purple. May. Siberia. 1844.
,, *sibi'rica* (Siberian). 3. Light blue. May. Siberia. 1596.
,, ,, *flo're-a'lbo* (white-flowering). 2½. White. May. Siberia. 1596.
,, ,, *flo're-ple'no* (double-flowered). 3. Purple. May. Gardens.
,, ,, *orienta'lis* (oriental). 3. Large, deep blue.
,, *sofara'na* (Sofaran). 1. Dark purple, creamy-white, white, veined purple. Lebanon. 1899.
,, ,, *magni'fica* (magnificent). 1. Red-brown, purple, netted. 1902.
,, *so'rdida* (dirty). See I. XIPHION SORDIDA.
,, *spathula'ta* (spathulate-*flowered*). See I. SPURIA.
,, *Specula'trix* (speculator). 1. Light purple, white, lilac, yellow. Hong-Kong. 1877.
,, *Sprenge'ri* (Sprenger's). ¾. Yellow, purple-red spots and veins, silvery-white. Lycoanian. Taurus. 1904.
,, *spu'ria* (spurious). 1½. Pale blue. May. Mediterranean region. 1759.
,, ,, *no'tha* (spurious). 3. Blue. August. Siberia. 1780.
,, *squa'lens* (daubed). 2. Striped. May. Central Europe. 1768.
,, *State'llæ* (Statella's). See I. LUTESCENS STATELLÆ.
,, *stella'ta* (starry). See IXIA OVATA STELLATA.
,, *steno'gyne* (narrow-stigmaed). See I. GUELDENSTÆDTIANA.
,, *Straw'sii* (Straus's). ¾. Brown-violet. Sultanabad, Persia. 1899.
,, *stylo'sa* (long-styled) of Desfont. See I. UNGUICULARIS.
,, *stylo'sa angustifo'lia* (narrow-leaved) of Boissier. See I. CRETENSIS.
,, *sub-biflo'ra* (sub-two-flowered). See I. BIFLORA.
,, *sulphu'rea* (sulphur). See I. FLAVESCENS.
,, *susia'na* (Susian). 2. Striped. April. Levant. 1596.
,, *Suworo'wi* (Suworow's). Greenish, with greenish-blue veins. Bokhara. 1886.
,, *Swe'rtii* (Swert's). 1½. White. May. 1819.
,, *tange'rica* (Tangier). Yellow. June. Tangiers. 1820.
,, *tau'rica* (Taurian). Yellow. June. Tauria. 1827.
,, *tecto'rum* (roof thatch). Violet-purple, white. Japan. 1872.
,, ,, *a'lba* (white). White, yellow. 1903.
,, ,, *atrocæru'lea* (dark-blue). Dark blue. 1908.

I. tecto'rum ca'ndida (white). White. Central China. 1901.
„ „ *lilaci'na* (lilac). Lilac. 1908.
„ *Tali'schi* (Talisch's). 1. Flowers 20–30, pale yellow. Persia. 1901.
„ *te'nax* (tough). Purple. July. California. 1826.
„ *tenuifo'lia* (thin-leaved). 1. Lilac-blue. May. Central Asia. 1796.
„ *te'nuis* (slender). 1. White, marked yellow and purple. Oregon. 1888.
„ *tigri'na* (tiger-striped). See I. KUMAONENSIS.
„ *tolmiea'na* (Tolmiean). See I. MISSOURIENSIS.
„ *tomiolo'pha* (cut-crested). See I. TECTORUM.
„ *tridenta'ta* (three-toothed). 1½. Blue. May. N. Amer. 1820.
„ *trifo'ra* (three-flowered). See I. ENSATA.
„ *tripe'tala* (three-petaled). See I. TRIDENTATA.
„ *tri'stis* (sad). See MORÆA TRISTIS.
„ *troja'na* (Troy). 3. Purple-violet, white, yellow. Troy. 1887. Fragrant.
„ *unguicula'ris* (clawed). 1. Pale blue. December to March. Algeria. Fragrant.
„ „ *a'lba* (white). White.
„ „ *grandiflo'ra* (large-flowered). 1. Large, deep purple. 1889.
„ „ *lilaci'na* (lilac). 1. Smaller, pale lilac. 1888.
„ „ *margina'ta* (margined). 1. Violet, edged white. 1888.
„ „ *Pavo'nia* (peacock). 1. Having a large white radiating blotch. 1888.
„ „ *specio'sa* (showy). 1. Clear violet, white, brownish-purple. 1888.
„ *urmie'nsis* (Urmian). ½. Yellow. N.W. Persia. 1900.
„ *va'ga* (wandering). See I. LEICHTLINII.
„ *variega'ta* (variegated). 2. Striped. May. Hungary. 1597.
„ *ventrico'sa* (swollen). 1. Pale blue. June. Dahuria. 1800.
„ *ve'rna* (spring). 1. Purple. April. Virginia. 1748.
„ *versi'color* (various-coloured). 1. Variegated. May. N. Amer. 1732.
„ „ *virgi'nica* (Virginian). 1½. Blue. N. Amer. 1758.
„ *villo'sa* (shaggy). See MORÆA PAVONIA.
„ *viola'cea* (violet-coloured). ½. Violet. May. S. Europe. 1800.
„ *vire'scens* (greenish). 1. Yellow. May. Switzerland. 1820.
„ *virgi'nica* (Virginian). See I. VERSICOLOR VIRGINICA.
„ *visca'ria* (viscous). See MORÆA VISCARIA.
„ *Wilso'nii* (Wilson's). 1–2. Yellow, veined purple; standards yellow. China. 1910.

IRISH HEATH. *Daboe'cia polifo'lia.*

IRON-TREE. *Parro'tia pe'rsica.*

IRONWEED. *Verno'nia.*

IRON WOOD. *Sidero'xylon* and *Metroside'ros.*

IRONWORT. *Sideri'tis.*

IROUCA'NA GUIANE'NSIS. See CASEARIA RAMIFLORA.

IRRIGATION. Experience shows that there is in the kitchen-garden scarcely a crop that is not benefited by a much more abundant supply of water than can be obtained usually; and we can bear testimony to the correctness of Mr. Knight's conclusion, not limiting, however, our approval of such abundant watering to late crops of peas, but to all, as well as beans, spinach, and the entire cabbage tribe. Kidney beans and potatoes are not benefited by such an abundance of water. "The quantity of water," says Mr. Knight, "which may be given with advantage to plants of almost every kind, during warm and bright weather, is, I believe, very much greater than any gardener who has not seen the result will be inclined to suppose possible; and it is greater than I myself could have believed upon any other evidence than that of actual experience. My garden, in common with many others, is supplied with water by springs, which rise in a more elevated situation; and this circumstance afforded me the means of making a small pond, from which I can cause the water to flow out over every part throughout the summer; and I cause a stream to flow down the rows of celery, and along the rows of broccoli and other plants, which are planted out in summer, with very great advantage. But the most extensive and beneficial use which I make of the power to irrigate my garden by the means above mentioned, is in supplying my late crops of peas abundantly with water, by which the ill effects of mildew are almost wholly prevented, and my table is most abundantly supplied with very excellent peas through the month of October."

ISA'NDRA. See THYSANOTUS.

ISA'NTHUS. (From *isos*, equal, and *anthos*, a flower; referring to the regularity of the flowers. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Tinnea and Teucrium.)

Hardy annual. Seeds in April, in a peaty border, or in a little heat, in March, and transplanted.

I. cæru'leus (blue). 1. Blue. July. N. Amer. 1818.

ISA'TIS. (A Greek name borrowed from *Dioscorides*. Nat. ord. Cruciferæ.)

Annual or biennial, branching herbs. The Dyer's Woad (*I. tincto'ria*) was used by the ancient Britons to stain their bodies. It has been largely superseded by indigo for dyeing purposes, but is still cultivated for this use in Lincolnshire. Seeds in ordinary garden soil.

I. boissieria'na (Boissierian). 1. Yellow. Turkestan. 1876. Annual.
„ *glau'ca* (sea-green). 2. Yellow. Asia Minor. Biennial.
„ *tincto'ria* (dyer's). 3. Yellow. England. Dyer's Woad. Biennial.
„ *Villa'rsii* (Villars's). 2. Yellow. Switzerland.

ISCH'ÆMUM. (From *ischaimos*, staunching blood; used for stopping the flow of blood. Nat. ord. Gramineæ.)

A stove perennial grass. Seeds; divisions. Loam, leaf-mould, and sand.

I. la'xum (loose). 2–3. Tropics of Old World.

ISCHA'RUM. See BIARUM.

ISCHNOSI'PHON. (From *ischnos*, a track or footstep, and *siphon*, a tube; in allusion to the folded bracts enclosing the flowers. Nat. ord. Scitaminaceæ.)

Tall, branching, evergreen, fine foliage, stove herbs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, sand, and some nodules of charcoal.

I. Arou'ma (Arouma). Trop. Amer.
„ *obli'quus* (oblique). Guiana.
„ *Parke'ri* (Parker's). 2. Yellow. July. Colombia. 1823.
„ *smara'gdinus* (emerald green). Leaves emerald-green, with darker rib. Ecuador. 1870.

ISE'RTIA. (Named after *P. E. Isert*, a German surgeon. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Stove evergreen shrub. Cuttings in sandy soil, in a hotbed, in spring or summer; peat and loam, with a little charcoal and silver sand. Summer temp., 60° to 85°; winter, 55°.

I. cocci'nea (scarlet). 10. Scarlet. July. Guiana. 1820.

ISME'LIA. (Probably a commemorative name. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

This is now united to Chrysanthemum.

I. Broussone'tii (Broussonet's). See CHRYSANTHEMUM BROUSSONETII.
„ *carina'tum* (keeled). See CHRYSANTHEMUM CARINATUM.
„ *madere'nsis* (Madeira). See CHRYSANTHEMUM PINNATIFIDUM.

ISME'NE. Peruvian Daffodil. (After *Ismene*, the daughter of Œdipus and Jocasta. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. United to Hymenocallis.)

I. Ama'ncaes (Amancaes). See HYMENOCALLIS AMANCAES.
„ *andrea'na* (Andrean). See HYMENOCALLIS ANDREANA.
„ *calathi'num* (cup-*flowered*). See HYMENOCALLIS CALATHINA.
„ *crinifo'lia* (Crinum-leaved). See HYMENOCALLIS AMANCAES.
„ *cyathifo'rmis* (cup-shaped). See HYMENOCALLIS CALATHINA.
„ *defle'xa* (turned-down). See HYMENOCALLIS DEFLEXA.

I. Kni'ghtii (Knight's). See HYMENOCALLIS LACERA.
„ *maclea'na* (M'Lean's). See HYMENOCALLIS MACLEANA.
„ *narcissiflo'ra* (Narcissus-flowered). See HYMENOCALLIS CALATHINA.
„ *nu'tans* (nodding). See PANCRATIUM NUTANS.
„ *pedunculo'ta* (stalked). See HYMENOCALLIS MACLEANA.
„ *Tagliabu'ei* (Tagliabue's). See HYMENOCALLIS CALATHINA.
„ *tenuiflo'lia* (slender-leaved). See HYMENOCALLIS QUITOËNSIS.
„ *vire'scens* (greenish). See HYMENOCALLIS MACLEANA.

ISOCHI'LUS. (From *isos*, equal, and *cheilos*, a lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cœlogyne.)

Stove orchids; cultivated like the first section of Cœlogyne.

I. carnosiflo'rus (fleshy-flowered). 1½. Purple. November. Honduras. 1841.
„ *fusiformis* (spindle-rooted). ½. Yellow. July. Trinidad.
„ *graminifo'lius* (grass-leaved). ½. Green, yellow. May. Jamaica. 1823.
„ *grandiflo'rus* (large-flowered). Peru. 1840.
„ *linea'ris* (linear). Purple. Spring. W. Ind. 1791.
„ „ *a'lba* (white). White.
„ *pro'lifer* (proliferous). See PONERA PROLIFERA.

ISO'LEPIS GRA'CILIS (slender). See SCIRPUS CERNUUS.

ISO'LEPIS SETA'CEUS (bristle-like). See SCIRPUS SETACEUS.

ISOLO'MA, of J. Smith. See LINDSAYA.

ISOLO'MA, of Decaisne. (From *isos*, equal, and *loma*, a fringe or margin; in allusion to the equal lobes of the corolla. Nat. ord. Gesneraceæ.)

Stove herbs or evergreen shrubs. Seeds; offsets from the rhizomes, or cuttings of the shrubs in sand, in a propagating case, with bottom-heat. Loam and leaf-mould or peat, with sand.

I. ama'bile (lovely). 1–2. Rose, with purple spots. Colombia. 1855.
„ *bogote'nse* (Bogotan). 1–2. Yellow, red. Bogota. 1844.
„ *breviflo'rum* (short-flowered). 1. Red. August. Panama. 1847.
„ *Ceci'liæ* (Cecilia's). 1½. Rose, spotted with dark red. Cundinamarca. 1876.
„ *conci'nnum* (neat). Pale purple, white. India. 1861.
„ *deppea'num* (Deppean). 2–3. Orange-red. Autumn. Mexico. Shrub.
„ *digitaliflo'rum* (foxglove-flowered). Rose-purple, green, white, crimson. Colombia. 1870.
„ *elli'pticum* (elliptic). Scarlet. May. Santa Martha. 1844.
„ *eria'nthum* (woolly-flowered). 2–4. Cinnabar. Colombia. 1903.
„ *gigante'um* (giant). Spotted. Gardens.
„ *hirsu'tum* (hairy). Scarlet, yellow spotted scarlet. W. Ind. 1881.
„ *honde'nse* (Hondan). 1. Yellow, red. Winter. Colombia. 1845.
„ *hy'bridum* (hybrid). Yellow, spotted with crimson and purple. 1886.
„ *hypocyrtiflo'rum* (under-curved-flowered). Orange-red. Ecuador. 1866.
„ *jalisca'num* (Jaliscan). Scarlet. Mexico. 1896.
„ *Linde'ni* (Linden's). White, purple. 1868.
„ *longiflo'rum* (long-flowered). 2. Red, yellow. Guatemala. 1841.
„ *mo'lle* (soft). Bright scarlet, yellow spotted crimson. Venezuela. 1876.
„ *ocella'tum* (eyed). Red, white. Winter. Panama. 1847.
„ *pardi'num* (panther-like). Scarlet, black, white. Colombia.
„ *pi'ctum* (painted). Scarlet, yellow. June. Colombia. 1842.
„ *rubricau'le* (red-stemmed). 1. July. Panama. 1826.
„ *schiedea'num* (Schiedean). 1½. Scarlet, yellow. July. Mexico. 1844.
„ *Seema'nni* (Seemann's). 2. Brick-red. October. Panama.
„ *Tria'næi* (Dr. Triana's). Colombia.
I. triflo'rum (three-flowered). 2. Yellow, red. June to August. Colombia. 1846.
„ *vesti'tum* (clothed). 1½. Orange. July. Colombia. 1842.
„ *Warscewi'czii* (Warscewicz's). 2–3. Scarlet and yellow. Colombia. 1855.

ISO'MERIS. (From *isos*, equal, and *meris*, a part; referring to the petals, with the stamens and pistils, which are of equal length. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Cleome.)

Hardy deciduous shrub. Cuttings of the ripe young shoots, in autumn; sandy loam and a little leaf-mould. The flowers are anything but sweet.

I. arbo'rea (tree-like). 10. Yellow. May. California. 1839.

ISONA'NDRA GU'TTA. See DICHOPSIS GUTTA.

ISOPLE'XIS. (From *isos*, equal, and *pleco*, to plait; the upper plait or segment of the flower being of equal length with the lip. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to the Foxglove.)

Greenhouse evergreen shrubs. Seeds and cuttings of half-ripened short shoots in spring, in sand, under a bell-glass; sandy loam and rough leaf-mould. Winter temp., 40° to 45°.

I. canarie'nsis (Canary). 4. Yellow. June. Canaries. 1698.
„ *Sce'ptrum* (sceptre). 2. Yellow, brown. July. Madeira. 1777.

ISOPO'GON. (From *isos*, equal, and *pogon*, a beard; referring to the beard-like fringes on all parts of the inflorescence. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Protea.)

Greenhouse evergreen shrubs, from Australia. Cuttings of ripe young shoots, with most of the leaves left, inserted firmly in silver sand, over sandy loam and peat, and covered with a bell-glass or hand-light, and kept in the shade; when the cuttings are callusing at the bottom, they may be pushed on by giving them a little mild bottom-heat, but not before; fibrous loam three parts, fibrous peat one part, charcoal, broken freestone, and broken crocks one part; good drainage; watering must be given with great attention, as much dryness or much moisture are alike ruinous. Summer temp., 50° to 75°; winter, 35° to 45°. In summer, if the plants are out of doors, the sun should not strike freely on the sides of the pot.

I. anemonifo'lius (Anemone-leaved). 5. Yellow. July. 1791.
„ *anethifo'lius* (dill-leaved). 3. Pale. May. 1824.
„ *a'sper* (rough). 3. Lilac. April. 1842.
„ *attenua'tus* (attenuated). 3. Yellow. April.
„ *Ba'xteri* (Baxter's). 2. Rose. April. 1831.
„ *buxifo'lius* (box-leaved). 2. Purple.
„ „ *linea'ris* (linear). 2. Purple. September. 1830.
„ *cornige'rus* (horned). See I. TERETIFOLIUS.
„ *cunea'tus* (wedge-shaped). 4. Purple. June. 1830.
„ *Dawso'ni* (Dawson's). Australia.
„ *divarica'tus* (spreading). See I. ANETHIFOLIUS.
„ *formo'sus* (handsome). 4. Rose. April. 1805.
„ *longifo'lius* (long-leaved). 3. Yellow. April. 1823.
„ *Loudo'ni* (Loudon's). See I. CUNEATUS.
„ *ro'seus* (rose-coloured). Rose. 1840.
„ *sca'ber* (rough-*leaved*). See I. ASPER.
„ *spathula'tus* (spathulate). See I. BUXIFOLIUS.
„ „ *linea'ris* (narrow). See I. BUXIFOLIUS LINEARIS.
„ *sphæroce'phalus* (round-headed). 4. Yellow. March.
„ *terelifo'lius* (terete-leaved). 4. Australia.
„ *tri'lobus* (three-lobed). 3–4. Australia.

ISOPY'RUM. (From *isos*, equal, and *puros*, wheat. A name given by the Greeks to a plant like Nigella. Nat. ord. Ranunculaceæ.)

Dwarf herbs allied to Nigella, with the habit of Thalictrum. Divisions in spring. Ordinary soil.

I. fumarioi'des (Fumaria-like). 1. White, green. June. Siberia. 1741. Annual.
„ *grandiflo'rum* (large-flowered). 1. Purple. July. Altai. 1827.
„ *thalictroi'des* (Thalictrum-like). ½. White, green. March. April. S. Europe. 1759.

ISO'TOMA. (From *isos*, equal, and *tome*, a segment; referring to the equally cut parts of the corolla. Nat. ord. Campanulaceæ.)

Greenhouse herbs with the habit of Lobelia. Seeds and cuttings. Loam, leaf-mould, and sand.

I. axilla'ris (axillary). 1. Blue. Summer. Australia.
,, *breviflo'ra* (short-flowered). White. July. S. Amer.
,, *Bro'wnii* (Brown's). 1. Red. September. Australia. 1829. Annual.
,, *longiflo'ra* (long-flowered). White. May to August. W. Ind. 1752.
,, *senecioi'des* (Senecio-like). See I. AXILLARIS.

ISO'TROPIS. (From *isos*, equal, and *tropos*, turned; referring, probably, to the distinctly forked veins in the flower. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Gompholobium.)

Greenhouse evergreen shrub. Cuttings of the young shoots, when getting a little firm, in sand, over sandy peat, and covered with a bell-glass, in June; sandy peat, with a little fibrous loam, pieces of charcoal, and broken crocks; drainage and watering must be particularly attended to. Winter temp., 40° to 48°; summer, a shady place, or a cold pit, where the plant partly, and the pot wholly, are sheltered from the sun's rays.

I. stria'ta (streaked-*flowered*). 1. Orange. June. Swan River. 1838.

ISOTY'PUS ROSIFLO'RUS. See ONOSERIS ROSIFLORUS.

ITALIAN STARWORT. *A'ster Ame'llus.*

I'TEA. (The Greek name for the Willow, applied to this genus on account of its rapid growth in damp soil. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Escallonia.)

Hardy deciduous or evergreen shrubs. Seeds and suckers in spring; layers in summer; moist, sandy peat.

I. ilicifo'lia (holly-leaved). White. Central China. 1899.
,, *spino'sa* (spiny). See BURSARIA SPINOSA.
,, *virgi'nica* (Virginian). 6. White. July. N. Amer. 1774.

IVORY-NUT PALM. *Phyte'lephas macroca'rpa.*

IVY. *He'dera He'lix.*

IXA'NTHUS. (From *ixos*, bird-lime, and *anthos*, a flower; in allusion to the viscid flowers. Nat. ord. Gentianaceæ.)

Greenhouse biennial herb. Seed in heat in spring. Loam, leaf-mould, and sand.

I. visco'sus (clammy). 2. Yellow. June. Canaries. 1781.

I'XIA. (From *ixia*, bird-lime; in reference to the clammy juice. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Half-hardy bulbs, from South Africa. The true Ixias are known from *Spara'xis* by not having, like it, a jagged sheath; from *Babia'na*, in having a dry seed-pod instead of a berry; and from *Trito'nia*, by having the stamens inserted at the bottom of the petals instead of in the tube of the flower. They will all grow in rough peat; the strong ones require very little sand, and the smaller ones want one-third sand in the compost. They succeed well in a warm border, if sheltered from hard frosts, and not allowed to get dry when they are in growth. By seeds sown in a little heat, in spring; also by offsets; sandy loam, peat, and a little leaf-mould. When done flowering, they may be kept in or out of the pots, after the leaves get withered, without any water, until fresh growth commences. They will generally require to be potted in October, and should then be placed in a cold pit, and protected from frost, and cold, heavy rains, and taken to the greenhouse or window, after roots are plentifully formed. Many will do very well if planted in sandy soil and leaf-mould, about four inches deep, in a dry, raised border, and protected there from severe frost and heavy rains by litter, and any material that will throw off the water.

I. amœ'na (delicate). 1. Red. April. 1822.
,, *anemonæflo'ra* (Anemone-flowered). ½. White. June. 1825.
,, *angu'sta* (narrow) See HESPERANTHA ANGUSTA.
I. arista'ta (awned). 1. Pink. April. 1800.
,, *au'lica* (courtly). See I. SCARIOSA.
,, *bi'color* (two-coloured). Yellow, with purple blotches. March. 1786.
,, *bulbi'fera* (bulb-bearing). See SPARAXIS BULBIFERA.
,, *Bulboco'dium* (Bulbocodium). See ROMULEA BULBOCODIUM.
,, *ca'ndida* (white). See I. LEUCANTHA.
,, *capilla'ris* (capillary). 1½. Violet. April. 1774.
,, *capita'ta* (headed). See I. MACULATA.
,, *cepa'cea* (onion-like). See MICRANTHUS FISTULOSUS.
,, *chine'nsis* (Chinese). See BELAMCANDA PUNCTATA.
,, *chloroleu'ca* (green-white). See ROMULEA CHLOROLEUCA.
,, *cinnamo'mea* (cinnamon). See HESPERANTHA FALCATA.
,, *columella'ris* (pillar). ½. Variegated. August. 1790.
,, *columna'ris* (columnar). See I. MONADELPHA.
,, *co'nica* (conical). See I. MACULATA.
,, *corymbo'sa* (corymbose). See LAPEYROUSIA CORYMBOSA.
,, *craterοi'des* (crater-like). See I. SPECIOSA.
,, *cri'spa* (curled-*leaved*). See TRITONIA UNDULATA.
,, *crispifo'lia* (curled-leaved). See LAPEYROUSIA CORYMBOSA.
,, *croca'ta* (saffron). See TRITONIA CROCATA.
,, *crucia'ta* (cross-wise). See ROMULEA CRUCIATA.
,, *cu'rta* (short). See I. MONADELPHA.
,, *du'bia* (doubtful). See I. LUTEA.
,, *ere'cta* (upright). See I. LUTEA and varieties.
,, *exci'sa* (cut-out). See LAPEYROUSIA JUNCEA.
,, *falca'ta* (sickle-shaped). See HESPERANTHA FALCATA.
,, *fenestra'ta* (windowed). See TRITONIA HYALINA.
,, *filifo'lia* (thread-leaved). See ROMULEA SUBLUTEA.
,, *filifo'rmis* (thread-formed). See I. PATENS.
,, *flexuo'sa* (zigzag-*stalked*). 2. Pink. April. 1757.
,, *fra'grans* (fragrant). ¼. Yellow. June. 1825.
,, *fuca'ta* (coloured). See I. SCARIOSA.
,, *fuscocitri'na* (brown-lemon). See I. MACULATA.
,, *grandiflo'ra* (large-flowered). See SPARAXIS GRANDIFLORA.
,, *holoseri'cea* (wholly-silky). See SPARAXIS GRANDIFLORA.
,, *hyali'na* (hyaline). See TRITONIA HYALINA.
,, *hy'brida* (spurious). 1. White. June. 1757.
,, *incarna'ta* (flesh-coloured). See I. SCARIOSA.
,, *la'ncea* (lance-shaped). See TRITONIA SCARIOSA.
,, *leuca'ntha* (white-flowered). 1½. White. April. 1779.
,, *Lilia'go* (Liliago). See SPARAXIS GRANDIFLORA.
,, *linea'ris* (narrow-*leaved*). ½. White. May. 1796.
,, *longiflo'ra* (long-flowered). See I. PANICULATA.
,, *longifo'lia* (long-leaved). See HEXAGLOTTIS LONGIFOLIA.
,, *lu'tea* (yellow). Bright yellow. June. 1757.
,, ,, *incarna'ta* (flesh-coloured). 1. Flesh. May. 1757.
,, *macula'ta* (spotted). 1. White, brown. April. 1780.
,, ,, *ochroleu'ca* (cream-coloured). 1. Purple, yellow. May. 1780.
,, *minia'ta* (scarlet). See TRITONIA MINIATA.
,, *monade'lpha* (monadelphous). ½. Blue. May. 1792.
,, ,, *cu'rta* (short). ½. Orange. April. 1792.
,, *ova'ta* (egg-shaped). 1. Red. April. 1780.
,, ,, *stella'ta* (starry). ½. Throat yellow. April. 1876.
,, *panicula'ta* (panicled). 1–3. Cream-white, often tinted red. May. 1774.
,, ,, *roche'nsis* (Rochan). Tube dilated at the throat. 1811.
,, *pa'tens* (spreading-*flowered*). 1. Purple. April. 1779.
,, *phlogiflo'ra* (flame-flowered). See I. SCARIOSA.
,, *plantagi'nea* (plantain-like). See MICRANTHUS PLANTAGINEUS.
,, *polysta'chya* (many-spiked) of Linuæus. 1–2. White.
,, *polysta'chya* (many-spiked) of Jacquin. See TRITONIA SCILLARIS.
,, *puncta'ta* (dotted). See WATSONIA PUNCTATA.
,, *puni'cea* (purple). See I. STRICTA.
,, *purpu'rea* (purple). See BABIANA STRICTA.
,, *pusi'lla* (dwarf). See GEISSORHIZA SECUNDA.
,, *radia'ta* (radiate). See HESPERANTHA RADIATA.
,, *rapunculoi'des* (Rapunculus-like). See I. SCARIOSA.
,, *recu'rva* (recurved). See ROMULEA BULBOCODIOIDES.
,, *refle'xa* (reflexed). See TRITONIA SCILLARIS.
,, *retu'sa* (abrupt). See TRITONIA SCILLARIS.
,, *roche'nsis* (Rochan). See I. PANICULATA ROCHENSIS.
,, *rubrocya'nea* (red-blue). See I. STRICTA RUBROCYANEA.

I. scario'sa (hyaline). 2. Pink. April. 1774.
,, *secu'nda* (one-sided). See GEISSORHIZA SECUNDA.
,, *scilla'ris* (squill-*flowered*). See TRITONIA SCILLARIS.
,, *specio'sa* (showy). 1. Dark crimson. May. 1778.
,, *spica'ta* (spiked). See I. MACULATA.
,, *stri'cta* (upright). ½. Lilac or red, variable.
,, ,, *angustifo'lia* (narrow-leaved). Leaves narrow.
,, ,, *obtusifo'lia* (blunt-leaved). Flowers larger, pale lilac.
,, ,, *reflе'xa* (reflexed). Flowers smaller.
,, ,, *ru'bro-cya'nea* (red-blue). Lilac, with red throat.
,, ,, *sulphu'rea* (sulphur). Milk-white or sulphur-yellow.
,, *tri'color* (three-coloured). See SPARAXIS TRICOLOR.
,, *unifio'ra* (one-flowered). See SPARAXIS GRANDIFLORA.
,, *viridifio'ra* (green-flowered). 1. Green. May. 1780.

IXIA'NTHES. (From *ixia*, bird-lime, and *anthe*, *anthes*, a flower; the corolla is very clammy. Nat. ord. Scrophulariaceæ.)

Evergreen, greenhouse shrub. Cuttings of side-shoots in sand under a bell-glass in gentle heat. Fibrous loam, leaf-mould, or peat and sand.

I. retzioi'des (Retzia-like). 7. Yellow. S. Africa. (B. M., t. 7409.)

IXIOLI'RION. (From *ixia*, and *leirion*, a lily; literally, Ixia-like Lily. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Bravoa.)

Extremely rare, pretty, hardy bulbs, Dr. Herbert being the only person who recently possessed them in this country. His own plant of *I. monta'num* was the first specimen he saw in flower, and that in May, 1846, as he told us. It had a spiked inflorescence, while that of *I. tata'ricum* is terminal; both have sky-blue flowers. *Monta'num* has been taken by some to be the "lily of the field." Seeds, and offsets of the bulbs, which are not at all particular as to soil.

I. kolpakowskia'num (Kolpakowskian). 1. Pale purple to blue or white. Turkestan. 1878.
,, *Ledebou'ri* (Ledebour's). See I. MONTANUM TATARICUM.
,, *macra'nthum* (large-flowered). See I. MONTANUM MACRANTHUM.
,, *monta'num* (mountain). 1. Blue. June. Syria. 1844.
,, ,, *macra'nthum* (large-flowered). Deep blue, shaded purple. 1892.
,, ,, *tata'ricum* (Tartarian). 1. Blue. Tartary.
,, *Palla'sii* (Pallas's). 1–1½. Rosy-purple. Caspian region. 1874.
,, *Sinteni'si* (Sintenis's). Light blue. 1892.
,, *tata'ricum* (Tartarian). See I. MONTANUM.
,, ,, *Ledebou'ri* (Ledebour's). See I. MONTANUM TATARICUM.

IXO'DIA. (From *ixodes*, viscid; in reference to the viscid secretions on the plant. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Ammobium.)

Greenhouse evergreen shrub. Cuttings of the young shoots, getting hard at their base, in May, in sand, under a bell-glass, and kept in a close frame or pit; sandy peat, and a little fibrous loam. Winter temp., 45° to 50°.

I. achilleoi'des (milfoil-like). 2. White. June. Australia. 1803.

IXO'RA. (Named after an Eastern heathen god, *Iswara*, to which the flowers are offered. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Beautiful stove evergreen shrubs. Cuttings of the half-ripened shoots in sand, over sandy peat, under a bell-glass, and in a brisk bottom-heat; sandy, fibrous loam, and fibrous peat, with pieces of charcoal, and broken bricks or pots. Summer temp., 60° to 90°; winter, 50° to 60°. Most stove plants delight in bottom-heat, where it can be given to them when growing and preparing for blooming, but none more so than this genus, as it is next to impossible to get it in its most splendid condition without such aids. Of all means of bottom-heat, this, like the Cape Jasmines and others, delights in that produced from sweet, fermenting dung and leaves; and if so given, the insects that attack it—the scale, the red-spider, and sometimes the mealy bug—will be kept away. If this method is not resorted to, the plants will require frequent sponging with soap-water.

I. acumina'ta (long-pointed). 3–5. White. Himalayas.
,, *a'lba* (white). See I. STRICTA ALBA.
,, *arbo'rea* (tree-like). See I. COCCINEA.
,, *Bandhu'ca* (Bandhooca). See I. COCCINEA.
,, *barba'ta* (bearded). 12. White. July. Burma. 1823.
,, *bla'nda* (gentle). See I. CHINENSIS.
,, *brachia'ta* (shouldered). India.
,, *Burbi'dgei* (Burbidge's). Orange-scarlet. Borneo. 1883.
,, *chine'nsis* (Chinese). 3–4. Rose. July, August. China. 1819.
,, ,, *bla'nda* (pale). 3–4. White. August. E. Ind. 1768.
,, *cocci'nea* (scarlet). 3–4. Scarlet. Summer. India. 1800.
,, ,, *lu'teus* (yellow). Yellow.
,, ,, *supe'rbus* (superb). 4. Scarlet. Java. 1846.
,, *Co'lei* (Cole's). See I. STRICTA.
,, *croca'ta* (saffron-coloured). See I. STRICTA.
,, *cuneifo'lia* (wedge-leaved). 3. White. June. E. Ind. 1822.
,, *dixia'na* (Dixian). See I. COCCINEA.
,, *Du'ffi* (Duff's). See I. MACROTHYRSA.
,, *Eckhau'ti* (Eckhaut's). See I. COCCINEA.
,, *fe'rrea* (iron-like). 20. Pink. W. Ind. 1793.
,, *findlaya'na* (Findlayan). White, fragrant. E. Ind. 1883.
,, *fla'va* (yellow). 3. Scarlet. July. E. Ind. 1825.
,, *Fra'seri* (Fraser's). See I. COCCINEA.
,, *fu'lgens* (shining). 5. Orange. August. E. Ind. 1823.
,, ,, *variega'ta* (variegated). Leaves with a grey, feathered rib. Sumatra. 1882.
,, *grandifio'ra* (large-flowered). See I. COCCINEA.
,, *Griffi'thii* (Griffith's). 4. Red, yellow. July. Singapore. 1845.
,, *incarna'ta* (flesh-coloured). See I. COCCINEA.
,, *java'nica* (Javanese). 3. Orange. June. Java. 1846.
,, *jucu'nda* (joyous). 10. White. Ceylon. 1859.
,, *lanceola'ria* (spear-head-*leaved*). 6. Greenish-white. April. E. Ind. 1847.
,, *laxifio'ra* (lax-flowered). 3–4. White, pink. W. Trop. Africa.
,, *macrothy'rsa* (large-trussed). Vermilion-red, crimson. Sumatra. 1878.
,, *Mo'rsei* (Morse's). See I. COCCINEA.
,, *obova'ta* (reversed-egg-*leaved*). See I. COCCINEA.
,, *odora'ta* (sweet-scented). 3. Cream, rose. May. Madagascar. 1844.
,, *parvifio'ra* (small-flowered). White. August. E. Ind. 1800.
,, *pe'ndula* (drooping). Malaya.
,, *Pilgri'mii* (Pilgrim's). See I. COCCINEA.
,, *ro'sea* (rosy). See I. CHINENSIS.
,, *salicifo'lia* (willow-leaved). See I. FULGENS.
,, *se'ssilis* (stalkless-*flowered*). See I. SUBSESSILIS.
,, *specta'bilis* (showy). Burma.
,, *stri'cta* (upright). 3–4. Scarlet. July. China; India; Malaya. 1690.
,, ,, *a'lba* (white). 3–4. White. Summer. India.
,, *subse'ssilis* (nearly-stalkless). 4. White. Himalayas. 1828.
,, *undula'ta* (wavy-leaved). White. June. E. Ind. 1818.

J

JABORO'SA. (From *Jaborose*, the Arabic for the Mandrake, an allied plant. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Herbaceous perennials. Division of the plant in spring; seeds in spring; and cuttings of the young shoots under a hand-light; light, sandy loam.

J. integrifo'lia (entire-leaved). ½. White. August. Buenos Ayres. Hardy.
,, *runcina'ta* (runcinate). See HIMERANTHUS RUNCINATUS.

JACARA'NDA. (The Brazilian name. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreen trees. Cuttings of half-ripened shoots in the beginning of summer, in sand, over sandy peat, and placed in bottom-heat, well shaded, or covered with a bell-glass; sandy peat, fibrous loam, with charcoal, to keep the soil open. Summer temp., 60° to 85°; winter, 45° to 50°. In summer give plenty of water, but keep them cool and dryish in winter.

J. bahame'nsis (Bahama). See J. CÆRULEA.
„ *brasilia'na* (Brazilian). 20. Yellow. Brazil. 1820.
„ *cæru'lea* (blue). 10. Blue. July. W. Ind. 1824.
„ *digitalifio'ra* (foxglove-flowered). Lilac, white. Brazil. 1864.
„ „ *a'lba* (white). White.
„ *filicifo'lia* (fern-leaved). 25. Blue. Panama. 1800.
„ *mimosæfo'lia* (Mimosa-leaved). See J. OVALIFOLIA.
„ *ovalifo'lia* (oval-leaved). 10. Blue. April. S. Amer. 1818.
„ *pube'scens* (downy). See J. TOMENTOSA PUBESCENS.
„ *tomento'sa* (woolly). 20. Purple. Brazil. 1824.
„ „ *pube'scens* (pubescent). 15. Blue. 1825.

JACA, or **JACK-TREE.** *Artoca'rpus integrifo'lia.*

JACK-IN-A-BOX. *Herna'ndia.*

JACKSO'NIA. (Named after *G. Jackson*, librarian to A. B. Lambert, Esq. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Burtonia.)

Greenhouse evergreen shrubs, with one exception, all from Australia, and all, but that one, yellow-flowered. Cuttings of half-ripened shoots in sand, under a glass, in April; peat and loam. Winter temp., 38° to 45°. *Scopa'ria* might be tried against a wall.

J. densiflo'ra (crowded-flowered).
„ *floribu'nda* (many-flowered).
„ *furcella'ta* (fork-*branched*). 1824.
„ *grandiflo'ra* (large-flowered). April. 1838.
„ *ho'rrida* (horrid). 3. April. 1825.
„ *ligustrifo'lia* (privet-leaved). White. May. Nepaul. 1839.
„ *reticula'ta* (netted). See PULTENÆA RETICULATA.
„ *scopa'ria* (broom-like). 2. July. 1803.
„ *seri'cea* (silky). Leafless. W. Australia. 1908.
„ *spino'sa* (spinous). 2. July. 1803.
„ *sternbergia'na* (Sternberg's). April. 1837.
„ *thesioi'des* (Thesium-like). April. 1820.

JACOBÆ'A. See SENECIO.

JACOBÆA LILY. See SPREKELIA FORMOSISSIMA.

JACOBI'NIA. (A commemorative name. Nat. ord. Acanthaceæ.)

Stove, evergreen subshrubs. Cuttings of shoots getting firm at the base, in sand, in a close case, with bottom-heat. Spring is the best time. Loam, leaf-mould, and sand. Sericobonia is a hybrid between *Sericogra'phis ghiesbreghtia'na* and *Libo'nia floribu'nda*, now named *Jacobinia ghiesbreghtiana* and *J. pauciflora*, respectively.

J. au'rea (golden). 4–6. Yellow. July. Mexico. 1848.
„ *ca'rnea* (flesh-coloured). See J. MAGNIFICA CARNEA.
„ *chrysoste'phana* (golden-crown). 1–3. Golden-yellow. Winter. Mexico. 1870.
„ *cilia'ta* (eyelashed). See DIANTHERA CILIATA.
„ *cocci'nea* (scarlet). 1–5. Scarlet. Winter. Brazil. 1770.
„ *ghiesbreghtia'na* (Ghiesbreghtian). 1–3. Scarlet. Winter. Mexico. 1843.
„ *Linde'ni* (Linden's). 2. Orange-yellow. Mexico. 1870.
„ *magnifica* (magnificent). 1–4. Rose-purple. Brazil.
„ „ *ca'rnea* (flesh-coloured). 2–5. Pale rose. August. Rio Janeiro. 1827.
„ „ *mi'nor* (lesser). Dwarfer. Purple.
„ „ *pohlia'na* (Pohlian). Purple.
„ „ *veluti'na* (velvety). Purple.
„ *Mohi'ntii* (Mohintl's). 3. Orange-yellow. July. Mexico. 1802.
„ *pauciflo'ra* (few-flowered). 1–3. Scarlet, yellow. Brazil. 1864.
„ *penrhosie'nsis* (Penrhosian). 1. Red, tipped yellow. Hybrid. 1870.
„ *pohlia'na* (Pohlian). See J. MAGNIFICA POHLIANA.
„ *subere'cta* (sub-erect). 1. Pale orange-yellow. Uruguay. 1900.

JACOB'S LADDER. *Polemo'nium cæru'leum.*

JACQUEMO'NTIA. (Named after *Victor Jacquemont*, a natural historian. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Ipomœa.)

Blue-flowered evergreen twiners; *cane'scens* requiring a moderately warm greenhouse, and *viola'cea* a stove. Cuttings of small side-shoots in April or May, in sandy soil, under a bell-glass, and placed in a sweet bottom-heat; peat and loam.

J. cane'scens (hoary). See J. VIOLACEA CANESCENS.
„ *viola'cea* (violet). August. Mexico. 1808.
„ „ *abbrevia'ta* (shortened). Blue, white. Mexico. 1808.
„ „ *cane'scens* (grey). August. Mexico. 1845.
„ *guyane'nsis* (Guiana). 10. White. July. Trop. Amer. 1823.
„ *hirsu'ta* (hairy). 5. Blue. August. Mexico. 1819.
„ *tamnifo'lia* (Tamus-leaved). 6. Pink. July. Trop. Amer. 1816.

JACQUI'NIA. (Named after the celebrated botanist, *Jacquin*. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Theophrasta.)

Stove evergreens. Seeds in a hotbed; cuttings of ripened shoots in summer, and in a moist bottom-heat, in sand, covered with a bell-glass; sandy peat, with a very little fibrous loam. Summer temp., 60° to 90°; winter, 58° to 65°. They require a highish temperature at all times.

J. arbo'rea (tree-like). 10. White. July. Trop. Amer.
„ *arista'ta* (awned). 4. Orange. June. W. Ind. 1796.
„ *armilla'ris* (bracelet). 6. White. June. W. Ind. 1768.
„ *auranti'aca* (orange). 4. Orange. June. Sandwich Islands. 1796.
„ *linea'ris* (narrow-*leaved*). 1. Red. June. W. Ind. 1823.
„ *macroca'rpa* (large-fruited). 6. Orange. June. Trop. Amer. 1825.
„ *mexica'na* (Mexican). Crimson. Mexico. 1866.
„ *ruscifo'lia* (Ruscus-leaved). 3. White. W. Ind. and Mexico. 1729.
„ *smara'gdina* (emerald green). See DEHERAINIA SMARAGDINA.

JÆ'SCHKEA. (A commemorative name. Nat. ord. Gentianaceæ.)

Hardy annual, with the habit of *Gentiana moorcroftiana*. Seeds. Loam, leaf-mould, and sand, or a light moist soil.

J. gentianoi'des (gentian-like). 1. Violet. Himalaya.

JALAP. See IPOMŒ'A PU'RGA.

JAMAICA EBONY. *Bry'a E'benus.*

JAMAICA HORSE BEAN. *Canava'lia ensifo'rmis.*

JAMAICA MILKWOOD. *Bro'simum spu'rium.*

JAMAICA PEPPER. *Pime'nta vulga'ris.*

JAMAICA REDWOOD. *Lapla'cea Hæmato'xylon.*

JAMAICA ROSE. *Meria'nia.*

JAMBO'SA. (From *schamber*, the native name. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. United to Eugenia.)

J. acumina'ta (pointed-*leaved*). See EUGENIA ACUMINATA.
„ *amplexicau'lis* (stem-clasping). See EUGENIA AMPLEXICAULIS.
„ *a'quea* (watery). See EUGENIA AQUEA.
„ *austra'lis* (southern). See EUGENIA MYRTIFOLIA.
„ *laurifo'lia* (bay-leaved). See EUGENIA BIFARIA.
„ *macroca'rpa* (large-fruited). See EUGENIA MACROCARPA.
„ *macrophy'lla* (large-leaved). See EUGENIA MALACCENSIS.
„ *malacce'nsis* (Malay *Apple-tree*). See EUGENIA MALACCENSIS.
„ *purpu'rea* (purple). See EUGENIA MALACCENSIS PURPUREA.
„ *ternifo'lia* (three-leaved). See EUGENIA FORMOSA TERNIFOLIA.
„ *veno'sa* (veined). See EUGENIA VENOSA.
„ *vulga'ris* (common). See EUGENIA JAMBOS.

JAME'SIA. (Commemorative of *Dr. Edwin James*, its discoverer, an American botanist. Nat. ord. Saxifragaceæ.)

A hardy, ornamental shrub, allied to Hydrangea. Seeds; cuttings of ripe wood in a cold frame, or in a gentle heat. Well-drained garden soil.

J. america'na (American). 3–4. White. New Mexico. 1865.

JAMESO'NIA. (Named after *Dr. Jameson*, professor of botany at Quito. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

A greenhouse Fern. See FERNS.

J. imbrica'ta (imbricated). Brown. May. Andes of S. Amer.

JANI'PHA. (From the native name, *Janipaba*. Nat. ord. Euphorbiaceæ.) United to Manihot.

J. æsculifo'lia (Chestnut-leaved). See MANIHOT ÆSCULIFOLIA.
,, *angustifo'lia* (narrow-leaved). 3. Brazil. 1829.
,, *fœ'tida* (fetid). See MANIHOT FŒTIDA.
,, *Lœfli'ngii* (Lœfling's). See MANIHOT CARTHAGENENSIS.
,, *Ma'nihot* (Manihot). See MANIHOT UTILISSIMA.

JANKÆ'A HELDREI'CHII. See RAMONDIA HELDREICHII.

JA'NTHE BUGULIFO'LIA. See CELSIA BUGULIFOLIA.

JAPAN CEDAR. *Cryptome'ria japo'nica.*

JAPAN EARTH. *Aca'cia Ca'techu* bark.

JAPAN HARICOT BEAN. *Canava'lia Lunare'ti.*

JAPAN VARNISH-TREE. *Rhu's vernici'fera.*

JAPAN WAX. *Rhu's succeda'nea.*

JAPANESE YEW. *Cephalota'xus.*

JASI'ONE. Sheep's Scabious. (An ancient name used by Theophrastus. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy herbaceous perennials, except *monta'na*, and all with blue flowers. Seeds, divisions, and cuttings under a hand-light, in spring. They require a sheltered place in winter, and like sandy soil, with a little peat or leaf-mould.

J. folio'sa (leafy). 1. June. Spain. 1826.
,, *hu'milis* (dwarf). ½. July. France. 1824.
,, *monta'na* (mountain). 1. June. Britain. Annual.
,, *pere'nnis* (perennial). 1. July. France. 1787.
,, *Ja'nkæ* (Janka's). 1. July. Eastern Europe.

JASMI'NUM. Jasmine. (From *Ysmyn*, the Arabic name. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

All white-flowered, except where otherwise stated. The stove and greenhouse species, by cuttings in sand, in a little peat; the hardy species, by suckers, layers, and cuttings under a hand-light. A bud of the variegated plants of *officina'lis* will frequently communicate the property to the whole of the plant; peat and loam for the house species; good, common soil for the hardy; *revolu'tum* and *proli'ferum* require a little protection in winter.

HARDY DECIDUOUS CLIMBERS, &c.

J. affi'ne (related). See J. OFFICINALE AFFINE.
,, *flo'ridum* (free-flowering). Yellow. July. China and Japan. 1842.
,, *fru'ticans* (shrubby). 3. Yellow. July. S. Europe. 1570. Shrub.
,, *heterophy'llum* (variable-leaved). 14. June. Nepaul. 1820. Shrub.
,, *nudiflo'rum* (naked-flowered). 3–12. Yellow. December to February. China and Japan. 1844.
,, ,, *fo'liis au'reis* (golden-leaved). 3–12. Yellow.
,, *officina'le* (*common*. Shop). 15. July. Persia and N.W. India. 1548.
,, ,, *affi'ne* (allied). Flowers larger.
,, ,, *fo'liis arge'nteis* (silver-leaved). 15. July.
,, ,, *fo'liis au'reis* (golden-leaved). 15. July.
,, ,, *flo'ribus ple'nis* (double-flowered). 15. July.
,, ,, *grandiflo'rum* (large-flowered). See J. OFFICINALE AFFINE.

HARDY EVERGREEN CLIMBERS, &c.

J. hu'mile (low). 3–8. Yellow. July to September. Subtropical Himalaya. 1812. Fragrant.
,, *primuli'num* (primrose-coloured). 3–6. Clear yellow, semi-double. Yunnan, China. 1903.
,, *pubi'gerum* (down-bearing). 10. Yellow. June. Nepaul. 1827. Evergreen.
,, *Ree'vesii* (Reeves's). See J. HUMILE.
,, *revolu'tum* (revolute). See J. HUMILE.
,, *wallichia'num* (Wallichian). See J. HUMILE.

GREENHOUSE EVERGREEN CLIMBERS.

J. acumina'tum (pointed-*leaved*). See J. SIMPLICIFOLIUM.
,, *angula're* (angular). 4–6. White. S. Africa.
,, *azo'ricum* (Azorian). 5. July. Azores. 1724.
,, *cape'nse* (Cape). 8. May. S. Africa. 1816. Shrub.
,, *confu'sum* (confused). See J. SIMPLICIFOLIUM.
,, *floribu'ndum* (free-flowering). 5–8. White, fragrant. Abyssinia, &c. 1902. Shrub.
,, *glau'cum* (milky-green). 3. August. S. Africa. 1774.
,, *gra'cile* (slender). See J. SIMPLICIFOLIUM.
,, *grandiflo'rum* (large-flowered). 15. July. India. 1629.
,, *lanceola'rium* (spear-head-*leaved*). Sylhet. 1826.
,, *ligustrifo'lium* (privet-leaved). See J. RIGIDUM.
,, *multiparti'tum* (many-parted). 10. White. S. Africa. 1903. Shrub.
,, *odorati'ssimum* (sweetest-scented). 3. June. Madeira. 1656.
,, *polya'nthum* (many-flowered). Pink, white. Yunnan, China. 1891. Shrub.
,, *simplicifo'lium* (simple-leaved). 3–10. June. Australia. 1791.
,, *subula'tum* (awl-shaped-*leaved*). See J. FLORIDUM.
,, *tortuo'sum* (twisted). 6. June. S. Africa. 1818.
,, *volu'bile* (twining). 3–8. Yellow. S. Africa.

STOVE EVERGREEN CLIMBERS.

J. anastomo'sans (interlacing). White. Himalaya.
,, *angustifo'lium* (narrow-leaved). 10. India. 1816.
,, *arbore'scens* (tree-like). 12. India. 1819. Shrub.
,, *auricula'tum* (eared). 10. White. India. 1790.
,, *austra'le* (southern). See J. SIMPLICIFOLIUM.
,, *bractea'tum* (*large*-bracted). See J. PUBESCENS.
,, *campanula'tum* (bell-*flowered*). See J. TORTUOSUM.
,, *cauda'tum* (*long*-tailed). 10. May. Sylhet. 1838. Deciduous.
,, *dianthifo'lium* (Dianthus-leaved). See J. SUAVISSIMUM.
,, *di'dymum* (two-fold). Pure white. Berries dark purple. Winter. Australia and Pacific Islands. 1860.
,, *fle'xile* (flexible). See J. TORTUOSUM.
,, *graci'llimum* (very graceful). 2–3. White, fragrant. N. Borneo. 1881.
,, *hirsu'tum* (hairy). See J. PUBESCENS.
,, *latifo'lium* (broad-leaved). See J. ARBORESCENS.
,, *laurifo'lium* (bay-leaved). 4. June. Himalaya. 1819.
,, *Mainga'yi* (Maingay's). White. Penang. 1902.
,, *mauritia'num* (Mauritius). See J. AURICULATUM.
,, *multiflo'rum* (many-flowered). See J. PUBESCENS.
,, *ni'tidum* (shining). White, fragrant. Admiralty Islands. 1898.
,, *panicula'tum* (panicled). 5. January. China. 1818.
,, *pube'scens* (downy). 3–30. May, June. Trop. Asia. 1759. Shrub.
,, *ri'gidum* (rigid). 5. May. Ceylon. 1839. Shrub.
,, *Sa'mbac* (Zamback). 6. Trop. Asia. 1665. Twiner.
,, ,, *flo're-ple'no* (double-flowering). 6. Trop. Asia. 1700.
,, ,, *trifolia'tum* (three-leaved). 6. Trop. Asia. 1730.
,, *sca'ndens* (climbing). 10. August. E. Ind. 1820.
,, *sine'nse* (Chinese). White. China.
,, *stenope'talum* (narrow-petaled). See J. ANASTOMOSANS.
,, *suavi'ssimum* (sweetest). May. Australia. Deciduous.
,, *syringæfo'lium* (lilac-leaved). April. Burma and Assam. 1838.
,, *trine'rve* (three-nerved). 20. E. Ind. 1804.
,, *undula'tum* (wavy). 5. January. China. 1819.

JASO'NIA. (Commemorative of *Jason*, the Argonaut. Nat. ord. Compositæ.)
Hardy perennial herbs, allied to Inula. Seeds and divisions in spring. Ordinary soil.
I. glutino'sa (clammy). See INULA VISCOSA.
„ *lævigа'ta* (smooth). 4. Yellow. July. Teneriffe. 1800. Greenhouse evergreen shrub.
„ *tubero'sa* (tuberous). 1. Yellow. July. S. Europe.

JATEORHI'ZA. (From *iatos*, healed, and *rhiza*, a root; *J. Calumba* furnishes the Calumba-root of commerce, a bitter tonic. Nat. ord. Menispermaceæ.)
Stove, perennial herbs. Seeds; cuttings in sand, in bottom-heat, in spring. Loam, leaf-mould, and sand.
J. Calu'mba (Calumba). Light green. Trop. Africa. "Calumba-root."
„ *Mie'rsii* (Miers's). 10. White, green. Trop. Africa. 1800.
„ *palma'ta* (hand-shaped). See J. CALUMBA.

JA'TROPHA. (From *iatros*, physician, and *trophe*, food; referring to its medicinal qualities. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)
Cassava bread and tapioca are made from the roots, although the juice is an acrid poison. Stove evergreen shrubs, except *herba'cea*. Sometimes by seed, in sandy peat, in a hotbed; cuttings of young firm shoots in sandy soil, in a brisk bottom-heat; let the bottom of the cutting be dried before inserting; sandy peat and fibrous loam. Summer temp., 60° to 85°; winter, 50° to 60°.
J. carthagene'nsis (Carthaginian). See MANIHOT CARTHAGENENSIS.
„ *cocci'nea* (scarlet). 4. Scarlet. Cuba. 1824.
„ *Cu'rcas* (Curcas). Pale yellow. Tropics of both Worlds. "Purging Nut."
„ *diversifo'lia* (diverse-leaved). 2–8. Scarlet. Cuba. 1809.
„ *ela'stica* (elastic). See HEVEA GUIANENSIS.
„ *gossypifo'lia* (Gossypium-leaved). 3. Pink. Trop. Amer. and Africa. "Wild Cassava."
„ *hasta'ta* (halbert-shaped). 4. Scarlet. July. Cuba. 1800.
„ *intege'rrima* (most-entire. *Spicy-leaved*). See MANIHOT DIVERSIFOLIA.
„ *Læfli'ngii* (Lœfling's). See MANIHOT UTILISSIMA.
„ *Ma'nihot* (Manihot). See MANIHOT UTILISSIMA.
„ *multi'fida* (many-cleft). 3. Green. July. S. Amer. 1696.
„ *panduræfo'lia* (fiddle-leaved). See J. HASTATA.
„ *poda'grica* (gouty-*stalked*). 1½. Orange, red. Santa Martha. 1847.
„ *u'rens* (stinging). 2–4. June to September. Trop. Amer. 1880.

JAU'MEA. (A commemorative name. Nat. ord. Compositæ.)
A warm greenhouse herb. Divisions. Sandy loam and leaf-mould.
J. linea'ris (linear). 1½. Yellow. Brazil. 1829.

JEFFERSO'NIA. (Named in honour of *T. Jefferson*, president of the United States of North America. Nat. ord. *Berberids* [Berberidaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Diphylleia.)
Hardy herbaceous perennial. Seeds and division of the plant, in spring; common, sandy garden-soil.
J. diphy'lla (two-leaved). See J. BINATA.
„ *bina'ta* (twin). ½. White. May. N. Amer. 1792.

JE'HLIA FUCHSIOI'DES. See LOPEZIA MACROPHYLLA.

JENKI'NSIA. See ACROSTICHUM.

JENKINSO'NIA. See PELARGONIUM.

JERDO'NIA. (Commemorative of *Surgeon-Major J. C. Jerdon*. Nat. ord. Gesneraceæ.)
Stove perennial herb. Seeds. Loam, leaf-mould, and sand. Summer temp., 60° to 75°; winter, 50° to 60°.
J. i'ndica (Indian). ½. Lilac, red. October. India. 1870.

JERSEY THISTLE. *Centau'rea a'spera.*

JERUSALEM ARTICHOKE (*Helia'nthus tubero'sus*) flourishes most in a rich, light soil, with an open exposure. Plant middle-sized tubers, or cuttings of the large ones, one or two eyes being preserved in each. Plant towards the end of March, though it may be performed in February, or even preferably in October.
Insert by the dibble in rows three feet apart each way, and four inches deep. The only attention necessary is an occasional hoeing to loosen the surface, a little of the earth being drawn up about the stems. Early in August cut the stems off about their middle, to admit more freely the air and light, and in other respects to be beneficial to the tubers.
They may be taken up as wanted during September, and in October, or as soon as the stems have withered entirely, for preservation in sand for winter's use. They should be raised as completely as possible; for the smallest piece of tuber will vegetate and appear in spring. It is for this reason that they are often allotted some remote corner of the garden; but their culinary merits certainly demand a more favourable treatment.

JERUSALEM SAGE. *Phlo'mis frutico'sa.*

JERUSALEM THORN. *Parkinso'nia aculea'ta.*

JESSAMINE. *Jasmi'num officina'le.*

JET D'EAU. See FOUNTAIN.

JEW'S APPLE. *Sola'num Melongе'na.*

JOB'S TEARS. *Co'ix La'cryma-Jo'bi.*

JOE PYE WEED. *Eupato'rium purpu'reum.*

JOHRE'NIA. (A commemorative name. Nat. ord. Umbelliferæ.)
Dwarf, greenhouse perennial herb. Seeds, divisions. Loam, leaf-mould, and sand.
J. Cando'llei (Candolle's). 1½. June. Persia. 1830.
„ *fungo'sa* (fungoid). 1½. July. Asia Minor.

JOLLI'FIA AFRICA'NA. See TELFAI'RIA PEDA'TA.

JONE'SIA. (Named after *Sir W. Jones*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 7-*Heptandria*, 1-*Monogynia*. Now referred to Saraca.)
J. Aso'ca (Asoca). See SARACA INDICA
„ *sca'ndens* (climbing). See SARACA TRIANDRA.

JONI'RIS STYLO'SA. See IRIS UNGUICULARIS.

JONQUIL. *Narci'ssus Jonqui'lla.*

JOSE'PHA AUGU'STA. See BOUGAINVILLEA SPECTABILIS.

JOSSI'NIA. See MY'RTUS.

JOVE'S FRUIT. *Lau'rus Diospy'ros.*

JUANULLO'A. (Named after two Spaniards, *Don G. Juan* and *Don Ulloa*. Nat. ord. *Nightshades* [Solanaceæ]. Allied to Lycium.)
Stove evergreen shrubs, with orange flowers. Cuttings in sand, under a glass, in bottom-heat; rough peat; and a moist, high temperature, in a stove.
J. auranti'aca (orange). June. Mexico. 1840.
„ *exi'mia* (choice). See DYSSOCHROMA EXIMIA.
„ *parasi'tica* (parasitic). See J. AURANTIACA.

JUBÆ'A. (In commemoration of *King Juba* of Numidia. Nat. ord. Palmaceæ.)
Greenhouse Palm. Seeds in heat. Loam, with a little peat and sand.
J. specta'bilis (showy). 30–60. Chili. 1843. "Coquito Palm."

JUDAS TREE. *Ce'rcis Siliqua'strum.*

JU'GLANS. Walnut. (From *Jupiter, Jovis*, the heathen god, and *glans*, a nut. Nat. ord. *Juglands* [Juglandaceæ]. Linn. 21-*Monœcia*, 9-*Enneandria*.)
Hardy deciduous trees, all blossoming in April. Nuts sown when gathered, or preserved until the following spring, in order to keep them from vermin; also grafting and budding the more rare species and varieties. In

budding, the small, almost inconspicuous buds at the base of the year's shoot are to be chosen; deep, loamy soil. In such soils the nut should be inserted where the tree is to grow; in all poor soils it is better to be transplanted, so as to cut the tap-root, and cause the roots to feed more among the good surface-soil.

J. ailantifo'lia (Ailantus-leaved). See J. SIEBOLDIANA.
„ *ala'ta* (winged). Hybrid between *J. cinerea* and *J. regia*. 1894.
„ *a'lba* (white). See CARYA ALBA and CARYA TOMENTOSA.
„ *allardia'na* (Allardian). Nuts blackish or ash-grey. Japan. 1909.
„ *ama'ra* (bitter). See CARYA AMARA.
„ *austra'lis* (southern). Fruits and nuts small. Argentina. 1909.
„ *califo'rnica* (Californian). California.
„ *cathaye'nsis* (Chinese). Nuts blackish, with more cavities than *J. stenocarpa*. China. 1909.
„ *cine'rea* (grey. *Butter Nut*). 30. N. Amer. 1656.
„ *coarcta'ta* (clustered). Leaves 2–3 feet long. Fruits in spikes. Japan. 1909.
„ *colla'psa* (collapsing). Nuts nearly cylindrical, otherwise like *J. Draconis*. N. China. 1909.
„ *compre'ssa* (compressed). See CARYA ALBA.
„ *cordifo'rmis* (heart-shaped). Nuts heart-shaped. Japan. 1901.
„ *Draco'nis* (Dragon's). Nuts ash-grey; cavities 4. S.W. China. 1909.
„ *duclouxia'na* (Doucloux ian). Nuts with a fragile shell. Yunnan, China. 1906.
„ *fraxinifo'lia* (ash-leaved). See PTEROCARYA CAUCASICA.
„ *kamao'nia* (Kamaonian). Nuts globose, with hard shell. Himalaya. 1906.
„ *Lava'llei* (Lavalle's). Fruits and nuts subglobose. Japan. 1909.
„ *mandshu'rica* (Mandshurian). Nuts eight-ribbed. Amurland. 1888.
„ *ni'gra* (black). 30. N. Amer. 1629. "Black Walnut."
„ *obcorda'ta* (obcordate). See CARYA PORCINA.
„ *olivæfo'rmis* (olive-shaped). See CARYA OLIVÆFORMIS.
„ *ovoi'dea* (egg-shaped). Nuts ovate, subcompressed. S.W. United States. 1909.
„ *porci'na* (pig). See CARYA PORCINA.
„ *pteroca'rpa* (winged-fruited). See PTEROCARYA CAUCASICA.
„ *pyrifo'rmis* (pear-shaped). Hybrid between *J. nigra* and *J. regia*.
„ *re'gia* (*common*. Royal). 50. Persia. 1562.
„ „ *corcyre'nsis* (Corfu). Distinct and decorative. Corfu. 1909.
„ „ *elonga'ta* (elongated). Fruits elongated.
„ „ *lacinia'ta* (cut-*leaved*). 50. Persia.
„ „ *longiro'stris* (long-beaked). Fruits long-beaked.
„ „ *ma'xima* (largest-*fruited*). 50. Persia.
„ „ *pe'ndula* (weeping).
„ „ *racemo'sa* (racemed). Fruits numerous on a stalk.
„ „ *sero'tina* (late-*vegetating*). 50. Persia.
„ „ *te'nera* (thin-*shelled*). 50. Persia.
„ *rupe'stris* (rock). A shrub. Western United States.
„ *sieboldia'na* (Sieboldian). Greenish. Spring. Japan. 1878.
„ *squamo'sa* (scaly). See CARYA ALBA.
„ *stenoca'rpa* (narrow-fruited). Nut much narrower than in *J. mandshurica*. Amurland. 1903.
„ *subcordifo'rmis* (sub-heart-shaped). Nuts shortly heart-shaped, compressed. Japan. 1909.
„ *sulca'ta* (furrowed). See CARYA SULCATA.
„ *tomento'sa* (felted). See CARYA TOMENTOSA.
„ *Torre'yi* (Torrey's). Nuts depressed, compressed. S. United States. 1909.
„ *vilmorinia'na* (Vilmorinian). Hybrid between *J. nigra* and *J. regia* (?). 1891.

JUJUBE. *Zi'zyphus Ju'juba.*

JULUS. Snake millipede. *J. terrestris* has about 200 legs. Lead colour. Scaly, like the woodlouse. Is said to eat the roots of the pansy.

J. pulche'llus.—Ochreous colour, with crimson spots down its sides. Legs, about 170. Is said to attack roots of beans, cabbages, peas, and scarlet beans.

J. complanatus.—Lilac colour. Sixty legs. Is said to eat potato-tubers. *Pulchellus* is also found in the fruit of the strawberry; but in every instance we doubt whether the plant in which the millipede is found has not first been injured by slugs, or some other cause, so that decay has commenced.

JULY-FLOWER. *Proso'pis juliflo'ra.*

JU'NCUS. Rush. (From *jungo*, to unite or tie; from their use in tying. Nat. ord. Juncaceæ.)

Perennial, hardy herbs. Divisions in spring. Wet soil.

J. effu'sus spira'lis (spiral). Leaves spirally twisted. Britain.
„ *lævi'rens* (bright green). 3. Japan. 1880.
„ *zebri'nus* (zebra striped). See SCIRPUS LACUSTRIS TABERNÆMONTANI ZEBRINUS.

JUNE BERRY. *Amela'nchier canade'nsis.*

JU'NGIA. (Commemorative of *Joachim Jung*. Nat. ord. Compositæ.)

Stove shrub with evergreen foliage. Cuttings in light soil under a hand-light in summer. Loam, with a little leaf-mould and sand.

J. ferrugi'nea (rusty). 3. Purple. August. Andes of Colombia. 1825.
„ *specta'bilis* (showy). 3. Purple. August. Peru. 1825.

JUNIPER MOTH. Two species of moth attack the Juniper, namely, *Thera juniperata* and *T. coniferata*. The caterpillars of *T. juniperata* are apple-green, whitish above, with a lemon-yellow line on the back. Moth is a little under to a little over an inch in expanse, and pale grey, with darker markings. The caterpillar of *T. coniferata* is bright green, with a bluish-white dorsal line. The moth is under one inch in expanse, greyish-brown, with a dark blotch at the base of the wing. The caterpillars of the Juniper Moth (*T. juniperata*) may be found occasionally on the Juniper in July and August, the moths in October; those of the other species in June, and the moths in July. Hand-picking the caterpillars when observed is an effectual remedy. The moths may be taken amongst the bushes with a sweeping net.

JUNI'PERUS. Juniper. (From the Celtic *juniperus*, rough. Nat. ord. *Conifers* [Coniferæ]. Linn. 22-*Diœcia*, 13-*Monadelphia*.)

Seeds, which will retain their vitality for years, and when sown, seldom vegetate under a twelvemonth, and sometimes nearer two years; cuttings in the end of summer, in a shady border, in sandy, firm soil, and covered with hand-glasses; sandy loam. The berries of the common juniper are used for flavouring gin.

HALF-HARDY EVERGREENS.

J. barbade'nsis (Barbadoes *Cedar*). 20. Florida. 1811.
„ *bermudia'na* (Bermuda *Cedar*). 20. May. Bermudas. 1683.
„ *cape'nsis* (Cape). See CALLITRIS ARBOREA.
„ *fla'ccida* (weak). May. Mexico. 1836.
„ *mexica'na* (Mexican). May. Mexico. 1846.
„ *tetrago'na* (four-angled). May. Mexico. 1836. "Rock Cedar."

HARDY EVERGREENS.

J. califo'rnica (Californian). Utah, Arizona, California. 1854.
„ *canade'nsis* (Canadian). See J. COMMUNIS CANADENSIS.
„ *Ce'drus* (Cedrus). Leaves long. Mountains of the Canaries.
„ *chine'nsis* (Chinese). 10. May. China. 1804.
„ „ *a'lbo-variega'ta* (white-variegated). Variegated with white.
„ „ *au'rea* (golden). Young leaves and twigs yellow. Dwarf. Japan.
„ „ *glau'ca* (sea-green). Foliage glaucous.
„ „ *variega'ta* (variegated). Variegated with white and cream.
„ *commu'nis* (common). 5–15. May. Britain. "Common Juniper."
„ „ *alpi'na* (alpine). Squat on the ground. Scotland.
„ „ *alpi'na au'rea* (golden). Dwarf golden.
„ „ *au'rea* (golden). Foliage yellow.

J. commu'nis canade'nsis (Canadian). 20. May. Canada. 1820.
,, ,, *compre'ssa* (compressed). Pyrenees.
,, ,, *fastigia'ta* (upright). 8–12. Columnar in habit. Ireland.
,, ,, *glau'ca* (sea-green). Foliage bluish.
,, ,, *hemisphæ'rica* (hemispherical). Dwarf, globose bush. Mount Etna. 1844. "Hedgehog Juniper."
,, ,, *na'na* (dwarf). See J. COMMUNIS ALPINA.
,, ,, *oblo'nga* (oblong-*fruited*). June. 1829.
,, ,, *oblo'nga pe'ndula* (oblong-weeping). 5. May. Britain.
,, ,, *refle'xa* (reflexed).
,, *craco'via* (Cracow). 4. May. Poland. 1820.
,, *davu'rica* (Davurian). 8. July. Davuria. 1791.
,, *drupa'cea* (drupe-*fruited*). 4. May. Syria. 1820.
,, *exce'lsa* (tall). 20. Asia Minor, Taurus. 1806. "Greek Juniper."
,, *glau'ca* (milky-green). May. China. 1814.
,, *hemisphæ'rica* (half-globe-*headed*). See J. COMMUNIS HEMISPHÆRICA.
,, *henrya'na* (Henryan). N.W. Amer. 1873.
,, *Herma'nni* (Hermann's). See J. VIRGINIANA.
,, *japo'nica* (Japanese). See J. CHINENSIS.
,, ,, *au'rea* (golden). See J. CHINENSIS AUREA.
,, *littora'lis* (shore). Japan.
,, *ly'cia* (Lycian) See J. PHŒNICEA.
,, *macroca'rpa* (large-fruited). May. Greece.
,, *macro'poda* (long-stalked). Himalaya.
,, *neaborien'sis* (Naumburg). See J. MACAROCARPA.
,, *oblo'nga* (oblong). See J. COMMUNIS OBLONGA.
,, *occidenta'lis* (western). N. Western Amer.
,, *Oxyce'drus* (sharp-cedar). 15. May. Spain. 1739.
,, *pachyphlœ'a* (thick-barked). New Mexico. Arizona. 1910. Varieties of this are *conspicua*, *elegantissima*, and *ericoides*. 1910.
,, *phœni'cea* (Phœnician). 20. May. S. Europe. 1683.
,, *prostra'ta* (prostrate). See J. SABINA PROSTRATA.
,, *Pseu'do-Sabi'na* (false-savin). Siberia, Himalaya, Tibet.
,, *recu'rva* (bent-back). 4. May. Nepaul. 1817.
,, ,, *squama'ta* (scaly). 4. May. Nepaul. 1824.
,, *religio'sa* (religious). See J. EXCELSA.
,, *ri'gida* (stiff). Mountains of Japan.
,, *rufe'scens* (dusky). See J. OXYCEDRUS.
,, *Sabi'na* (*common* savin). 4. May. S. Europe. 1548.
,, ,, *cupressifo'lia* (cypress-leaved). 4. May. S. Europe. 1548.
,, ,, *fo'liis variega'tis* (variegated-leaved). 4. May. Europe.
,, ,, *prostra'ta* (prostrate). ¼. May. N. Amer. "Carpet Juniper."
,, ,, *tamariscifo'lia* (tamarisk-leaved). 4. May. S. Europe. 1562.
,, ,, *tamariscifo'lia variega'ta* (variegated). 5. May. S. Europe.
,, *sabinoi'des* (savin-like). See J. THURIFERA.
,, *Sande'ri* (Sander's). Dense-growing, dwarf. Tibet. 1899.
,, *scopulo'rum* (rock). W. United States. "Red Cedar."
,, *Smi'thii* (Smith's). May. Nepaul.
,, *sphæ'rica* (spherical). 30. N. China. 1850.
,, *squama'ta* (scaly). See J. RECURVA SQUAMATA.
,, *sue'cica* (Swedish). See J. COMMUNIS FASTIGIATA.
,, *taxifo'lia* (yew-leaved). China and Japan.
,, *thuri'fera* (incense-bearing). 10. May. Spain. 1572. "Incense Juniper."
,, *utahe'nsis* (Utahan). Utah, Colorado.
,, *uvi'fera* (grape-bearing). See J. RECURVA.
,, *virginia'na* (Virginian). 30. May. N. Amer. 1664. "Red Cedar."
,, ,, *au'rea-spi'ca* (golden-spiked). Tips of twigs golden.
,, ,, *au'reo-variega'ta* (golden-variegated). Variegated with yellow.
,, ,, *carolinia'na* (Carolina). May. Carolina.
,, ,, *glau'ca* (sea-green). Foliage glaucous green.
,, ,, *hu'milis* (humble). 12. May. N. Amer. 1800.
,, ,, *re'ptans* (creeping). Prostrate. 1896.
,, ,, *Scho'tii* (Schott's). Foliage pale green.
,, ,, *turice'nsis* (Turician). Habit pyramidal. 1896.
,, ,, *vi'ridis* (green). Foliage deep green.
,, ,, *vi'ridis pe'ndula* (drooping). Twigs pendulous.

JUPITER'S BEARD. *Anthy'llis Ba'rba-Jo'vis.*

JUPITER'S EYE and **JUPITER'S BEARD.** *Sempervi'vum tecto'rum.*

JURI'NEA. (Derivation not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Serratula.)

Hardy herbaceous perennials, with purple flowers. Seeds and division of the plant in spring; common soil.

J. ala'ta (winged). 2–3. Violet. Caucasus.
,, *cyanoi'des* (Cyanus-like). 2. Blue. July. Caucasus. 1778.
,, *depre'ssa* (depressed). ½. June. Caucasus. 1837.
,, *linearifo'lia* (linear-leaved). 2. Purple. July. Siberia. 1816.
,, *mo'llis* (soft). 1. Purple. July. S. Europe. 1818.
,, *specta'bilis* (showy). June. Caucasus. 1837.
,, *subacau'lis* (short-stemmed). See J. DEPRESSA.

JUSSIEU'A. (Named after the celebrated botanical family of *Jussieu*. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Ludwigia.)

All stove aquatics, except *repens*, which belongs to the greenhouse, and *frute'scens*, which is a shrub, and all yellow-flowered. Cuttings, divisions, and seeds; loamy soil, in basins of water.

J. brachyphy'lla (short-leaved). Yellow. July. Trop. Amer. 1829.
,, *exalta'ta* (tall). See J. SUFFRUTICOSA.
,, *frute'scens* (shrubby). Yellow. June. 1824. Evergreen shrub.
,, *grandiflo'ra* (large-flowered) of Michaux. See J. REPENS.
,, *grandiflo'ra* (large-flowered) of Ruiz and Pavon. Yellow. Peru. (B. M., t. 2122.)
,, *macroca'rpa* (large-fruited). 2. Yellow. July. Colombia.
,, ,, *cilia'ta* (eyelashed). Flowers large, yellow. Colombia. 1880. Half-hardy.
,, *na'tans* (floating). ½. Yellow. Colombia.
,, *octo'fila* (eight-filaments). See J. SUFFRUTICOSA.
,, *octova'lvis* (eight-valved). See J. SUFFRUTICOSA.
,, *ovalifo'lia* (oval-leaved). Yellow. July. Madagascar.
,, *pilo'sa* (downy). See J. BRACHYPHYLLA.
,, *re'pens* (creeping). 1. Yellow. August. Tropics. 1817.
,, *sca'bra* (rough). See J. SUFFRUTICOSA.
,, *Sprengе'rii* (Sprenger's). ½. Canary-yellow. Argentina. 1909. Half-hardy.
,, *suffrutico'sa* (half-shrubby). 1½. Yellow. August. India. 1808.
,, *swartzia'na* (Swartz's). See J. REPENS.
,, *villo'sa* (shaggy). See J. SUFFRUTICOSA.

JUSTI'CIA. (Named after *J. Justice*, a celebrated Scotch horticulturist. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Eranthemum.)

Annuals and biennials, by seed in a hotbed, and to be treated as tender and half-hardy annuals; many of them, and all the shrubs and herbaceous species, are easily propagated by cuttings, old shoots, and young side-shoots, striking very soon in sandy soil, under a glass, in heat, most of the leaves being allowed to remain. As they are fast growers, where room is at all valuable, young ones should be grown, and the old ones thrown away every year; peat and loam. Summer temp., 60° to 85°; winter, 48° to 55°. The following are a few of the best:—*Cocci'nea*, *ca'rnea*, *coma'ta*, *formo'sa*, *lu'cida*, *salviæfo'ra*, and *speci'osa*.

STOVE ANNUAL AND BIENNIAL.

J. cilia'ris (hair-fringed). See SCHWABEA CILIARIS.
,, *cilia'ta* (hair-fringed). See SCHWABEA CILIARIS.

GREENHOUSE EVERGREEN SHRUB.

J. pa'tula (spreading). See ADHATODA PATULA.

STOVE HERBACEOUS PERENNIALS.

J. coma'ta (tufted). See DIANTHERA COMATA.
,, *echioi'des* (Echium-like). See ANDROGRAPHIS ECHIOIDES.
,, *elonga'ta* (lengthened). See ANDROGRAPHIS ELONGATA.
,, *gla'bra* (smooth). Rose, yellow. June. E. Ind. 1824.

J. gutta'ta (*large*-spotted). See PHLOGACANTHUS GUTTATUS.
„ *nemoro'sa* (grove). See BELOPERONE NEMOROSA.
„ *pectora'lis* (pectoral-*balsam*). See DIANTHERA PECTORALIS.
„ *reflexiflo'ra* (bent-back-flowered). See ADHATODA REFLEXIFLORA.

STOVE EVERGREEN SHRUBS.

J. Adhato'da (Adhatoda). See ADHATODA VASICA.
„ *a'lba* (white). See ERANTHEMUM ALBUM.
„ *ama'bilis* (lovely). Red. S. Amer.
„ *aspe'rula* (roughish). See PHLOGACANTHUS ASPERULUS.
„ *Beto'nica* (Betonica). 2. Purple. June. Trop. Asia. 1825.
„ *bi'color* (two-coloured). See ERANTHEMUM BICOLOR.
„ *bracteola'ta* (small-bracted). See THYRSACANTHUS BRACTEOLATUS.
„ *calyco'tricha* (beautiful-haired). 2. Yellow. February. Brazil. 1824.
„ *campylosté'mon* (curved-stamened). 2. White, spotted with purple. S. Africa. 1883.
„ *caracasa'na* (Caracas). See BELOPERONE CARACASANA.
„ *ca'rnea* (flesh-coloured). See JACOBINIA MAGNIFICA CARNEA.
„ *carthagine'nsis* (Carthagena). See BELOPERONE VIOLACEA.
„ *cocci'nea* (scarlet). See JACOBINIA COCCINEA.
„ *crista'ta* (crested). See APHELANDRA TETRAGONA.
„ *cuspida'ta* (spine-pointed). 1½. July. Arabia. 1820.
„ *Ecbo'lium* (expelling). See ECBOLIUM LINNEANUM.
„ *eustachia'na* (beautiful-spiked) of Ker-Gawl. See J. KERIANA.
„ *eustachia'na* (beautiful-spiked) of Jacquin. W. Ind.
„ *flavi'coma* (yellow-haired). See J. CALYCOTRICHA.
„ *formo'sa* (beautiful). 2. Purple. May. 1818.
„ *furca'ta* (forked). 5. Violet. April. Mexico. 1795. Trailer.
„ *Gendaru'ssa* (Gendarussa). White or rose, with darker spots. Trop. Asia.
„ *genicula'ta* (jointed). See DIANTHERA SECUNDA.
„ *ghiesbreghtia'na* (Ghiesbreghtian). See JACOBINIA GHIESBREGHTIANA.
„ *keria'na* (Kerian). E. Ind.
„ *lanceola'ta* (spear-head-*leaved*). See BARLERIA NOCTIFLORA.
„ *Linde'ni* (Linden's). See JACOBINIA LINDENI.
„ *lithospermifo'lia* (gromwell-leaved). 3. Purple. April. Peru. 1796. Trailer.
„ *lu'cida* (shining-*leaved*). See DIANTHERA LUCIDA.
„ *Macdoné'lliæ* (Mrs. McDonell's). Yellow. November.
„ *macula'ta* (spotted). 2. Purple. June. W. Ind. 1823.
„ *marmora'ta* (marbled). Leaves light shining green, marbled with white. 1881.
„ *martinice'nsis* (Martinique). See DICLIPTERA MARTINICENSIS.
„ *nasu'ta* (large-snouted). See RHINACANTHUS COMMUNIS.
„ *nervo'sa* (nerved). See DÆDALACANTHUS NERVOSUS.
„ *ni'tida* (shining). See THYRSACANTHUS NITIDUS.
„ *nodo'sa* (knotted). See DIANTHERA NODOSA.
„ *orchioi'des* (Orchis-like) of Griffith. See SPHINCTACANTHUS GRIFFITHII.
„ *orchioi'des* (Orchis-like) of Linn. S. Africa.
„ *pedunculo'sa* (long-stalked). See DIANTHERA AMERICANA.
„ *peruvia'na* (Peruvian). See DICLIPTERA PERUVIANA.
„ *pi'cta* (painted). See GRAPTOPHYLLUM HORTENSE.
„ „ *lu'rido-sangui'nea* (lurid-blood-*leaved*). See GRAPTOPHYLLUM LURIDO-SANGUINEUM.
„ *polysta'chya* (many-spiked). 2. Pink. June. Guiana. 1821.
„ *pulché'rrima* (fairest) of Jacquin. W. Ind.
„ *pulché'rrima* (fairest) of Linn. f. See APHELANDRA PULCHERRIMA.
„ *pu'mila* (dwarf). ¼. April. S. Amer. 1820. See ANISACANTHUS PUMILUS.
„ *quadrangula'ris* (four-angled). See PHLOGACANTHUS ASPERULUS.
„ *quadrifa'ria* (four-sided). India and China.
„ *ramosi'ssima* (most-branchy). See J. BETONICA.
„ *retu'sa* (blunt-ended). Purple. December. Island of St. Crux.
J. roxburghia'na (Roxburgh's). See NOMAPHILA CORYMBOSA.
„ *salviæflo'ra* (sage-flowered). 4. Scarlet. July. Mexico. 1824.
„ *secu'nda* (one-sided). See DIANTHERA SECUNDA.
„ *specio'sa* (showy). See PERISTROPHE SPECIOSA.
„ *thyrsiflo'ra* (thyrse-flowered). See PHLOGACANTHUS THYRSIFLORUS.
„ *variega'ta* (striped-*flowered*). 2. Red. May. Guiana. 1825.
„ *ventrico'sa* (swollen). White, red. June. China. 1826.
„ *venu'sta* (lovely). See GYMNOSTACHYUM VENUSTUM.
„ *vitelli'na* (yolk-coloured). See PHLOGACANTHUS ASPERULUS.

JUTE-PLANT. *Co'rchorus capsula'ris.*

K

KADSU'RA. (The Japanese name. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 22-*Diœcia*, 12-*Polyandria*.) Trailing half-hardy evergreens. Cuttings of half-ripened wood in sand, under a bell-glass, and in heat, in May; peat and loam.

K. chine'nsis (Chinese). 8–10. Creamy-yellow. September. China and Japan.
„ „ *variega'ta* (variegated). Leaves variegated with creamy-yellow.
„ *japo'nica* (Japanese) of Jussieu. White. June. Japan. 1846.
„ *japo'nica* (Japanese) of Bentham. See K. CHINENSIS.
„ *propi'nqua* (related). See SCHIZANDRA PROPINQUA.

KÆMPFE'RIA. Galangale. (Named after *Kæmpfer*, a German naturalist. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Curcuma.)

Stove herbaceous perennials. Division of the plant as fresh growth commences; sandy loam, fibrous peat, and leaf-mould. Temp., 45° to 55° when at rest; from 60° to 85° when growing.

K. angustifo'lia (narrow-leaved). India and Malaya.
„ *atrovi'rens* (dark-green). 1. Mauve-purple, white eye. Borneo. 1886.
„ *e'legans* (elegant). 1. Purple. India. 1828.
„ *Ethe'læ* (Ethel's). ½-2. Rose-purple, with yellow blotch. Natal. 1898.
„ *Gala'nga* (Galanga). 1. White, purple. July. E. Ind. 1728.
„ *Gilbe'rti* (Gilbert's). 1. Purple and white. Burma. 1882.
„ *Ki'rkii* (Kirk's). 1½. Purple. Zanzibar. (B. M., t. 5994.)
„ „ *ela'tior* (taller). 2. Rose, with yellow blotch. Rhodesia. 1908.
„ *lu'tea* (yellow). ½. Yellow; lip orange-yellow. Penang. 1907.
„ *macro'siphon* (long-tubed). 1. Blue. German E. Africa. 1898.
„ *margina'ta* (bordered). 1. Blue. July. E. Ind. 1822.
„ *orna'ta* (adorned). Leaves with feathered white rib, purple beneath. Borneo. 1884.
„ *ovalifo'lia* (oval-leaved). White, purple. July. Burma and Malaya. 1822.
„ *pandura'ta* (fiddle-shaped). India and Malaya.
„ *Pari'shii* (Parish's). See K. OVALIFOLIA.
„ *roscoea'na* (Roscoean). 1. Rosy-purple. Burma.
„ *ro'sea* (rosy). 1½. Rose-red, with orange blotch. British Central Africa. 1904.
„ *rotu'nda* (round-*rooted*). 1. Red, white. July. India and Malaya. 1764.
„ *secu'nda* (one-sided). ½. Bright purple, white eye. Assam. 1888.
„ *specio'sa* (showy). 1. Purple. S. Africa. 1870.
„ *tillandsioi'des* (Tillandsia-like). Malaya.
„ *vitta'ta* (striped). 1. White, orange. Leaves with feathered grey rib. Sumatra. 1882.

KAGENE'CKIA. (Named after *Count Kageneck*, a patron of botany. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Pentagynia*.)

Half-hardy evergreen tree, from Chili, with white flowers. Cuttings of rather ripe shoots in sand, under a

bell-glass; probably, also, by grafting on some rosaceous plant, as the Hawthorn; loam, with a little sandy peat. Winter temp., 35° to 45°. *Cratægoi'des* has stood for years against a protective wall in the Chiswick Gardens, and produced fruit there in 1837. The male flowers are in clusters; the female flowers are solitary.

K. cratægoi'des (hawthorn-like). See K. OBLONGA.
„ *oblo'nga* (oblong-*leaved*). 30–60. June. 1830.

KALANCHO'E. (From the Chinese name of one of the species. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 8-*Octandria*, 4-*Tetragynia*. Allied to Rochea.)

Stove succulent evergreens. Cuttings dried at their base soon root in sandy loam, in a little heat; sandy loam. Summer temp., 60° to 80°, and abundance of water when growing and flowering. Winter temp., 45° to 55°, and almost dry.

K. aculifio'ra (pointed-flowered). 2. White. August. E. Ind. 1806.
„ *ægypti'aca* (Egyptian). See K. CRENATA.
„ *afzelia'na* (Afzelian). 2. Yellow. August. Trop. Africa.
„ *angole'nsis* (Angolan). Bright yellow. Portuguese W. Africa. 1905.
„ *Be'ntii* (Bent's). 3. White. Hadramaut. 1900. Largest flowers of all.
„ *ca'rnea* (flesh-coloured). Pink, fragrant. S. Africa. 1886.
„ *Cassiope'ia* (Cassiopeia). ½. Leaves blue-green. Abyssinia. 1894.
„ *ceratophy'lla* (horn-*leaved*). 2. Yellow. July. China. 1820.
„ *cocci'nea* (scarlet). Scarlet. Trop. Africa.
„ *crena'ta* (scolloped). 2. Yellow. August. Sierra Leone. 1793.
„ *dive'rsa* (diverse). 1½–2. Pale vermilion-orange. Somaliland. 1902.
„ *Dye'ri* (Dyer's). 2–2½. White. British Central Africa. 1904.
„ *Eli'zæ* (Eliza's). 1. Red. Trop. Africa. 1903.
„ *farina'cea* (mealy). Scarlet. Socotra. 1884.
„ *fla'mmea* (flame-coloured). 1–2. Bright scarlet. Somaliland. 1897.
„ *floribu'nda* (free-flowering). India.
„ *glauce'scens* (glaucous). 2. Red or dark yellow. Abyssinia. 1894.
„ *grandiflo'ra* (large-flowered) of Gardens. See K. MARMORATA.
„ *grandiflo'ra* (large-flowered) of W. and A. Greenish-yellow. India. 1864.
„ *Ki'rkii* (Kirk's). 2–4. Orange-scarlet. Nyasaland and E. Africa. 1893.
„ *lacinia'ta* (cut-*leaved*). 2. Yellow. July. E. Ind. 1781.
„ *latise'pala* (broad-sepaled). 2. White. Nyasaland. 1908.
„ *Lu'ciæ* (Lucy's). 2. Corolla ¼ in. long. Transvaal. 1908.
„ *ma'gnidens* (large-toothed). Salmon. Uganda. 1905.
„ *marmora'ta* (marbled). White. Leaves green, blotched brown. Abyssinia. 1892.
„ *pilo'sa* (pilose). Trop. Africa.
„ *prasi'na* (leek-green). ¼. White, with green middle band. British Central Africa. 1904.
„ *rotundifo'lia* (round-leaved). 2. White. July. S. Africa. 1820.
„ *somalie'nsis* (Somaliland). White, tinted yellow. Somaliland. 1902.
„ *spathula'ta* (spatulate). 2. Yellow. July. Trop. Asia. 1820.
„ *thyrsiflo'ra* (thyrse-flowered). S. Africa. (B. M., t. 7678.)
„ *va'rians* (variable). See K. SPATHULATA.

KALE. See BORECOLE.

KA'LMIA. (Named after *Peter Kalm*, a Swedish botanist. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Azalea.)

Hardy evergreens, all from North America, and all red-flowered, except where specified. By cuttings of young shoots in sandy peat, in a shady place, under hand-lights; by layers made at the end of summer; by seeds sown in shallow pans filled with sandy peat, and kept close in a frame until the seedlings are up, pricked off when fingerable, kept close again, and gradually inured to the open air; sandy peat-soil is best, though they often thrive well in sandy loam and leaf-mould; good for forcing.

K. angustifo'lia (narrow-leaved). 3. June. 1736.
„ „ *fo'liis variega'tis* (variegated-leaved). 2. June.
„ „ *glau'ca* (sea-green). 2. June.
„ „ *lu'cida* (shining). 2. June.
„ „ *mi'nima* (least). 2. June.
„ „ *na'na* (dwarf). 2. June.
„ „ *ni'tida* (shining). 2. June.
„ „ *ova'ta* (egg-*leaved*). 2. June.
„ „ *pu'mila* (dwarf). 2. June.
„ „ *ro'sea* (rosy). 3. June.
„ „ *ru'bra* (red-*flowered*). 3. June.
„ *cunea'ta* (wedge-*leaved*). 2. White, red. June. 1820.
„ *glau'ca* (milky-green). 2. Purple. April. 1767.
„ „ *rosmarinifo'lia* (rosemary-leaved). 2. April. 1812.
„ *hirsu'ta* (hairy). ½. August. 1786.
„ *latifo'lia* (broad-leaved). 8. Pink or flesh. June. 1734. "Calico Bush."
„ „ *myrtifo'lia* (myrtle-leaved). Leaves small, lanceolate. 1883.
„ „ *Pava'rti* (Pavart's). Gardens. 1888.
„ „ *polype'tala* (many-petaled). Corolla leaves free. 1890.

KALOSA'NTHES. A synonym of Rochea, and now erroneously applied to *R. cocci'nea* and its varieties. See RO'CHEA.

KANGURU VINE. *Vi'tis anta'rctica.*

KARA'TAS. (Derivation not explained. Nat. ord. Bromeliaceæ.)

Stove, evergreen herbs with spiny leaves. Seeds and suckers. Loam, leaf-mould, peat, and sand.

K. acanthocra'ter (strong-spined). Lilac. May. Brazil. 1877.
„ *agavæfo'lia* (Agave-leaved). Guiana.
„ *amazo'nica* (Amazonian). 2. White, with greenish tube. Brazil. 1886.
„ *antiaca'ntha* (spine-against-spined). Leaves brownish at the base. Bracts scarlet. Probably *Bromelia fastuosa* (?).
„ *Caroli'næ* (Carolina's). Purple, crimson. Brazil. 1865.
„ *coria'cea.* (leathery). Brazil.
„ *crue'nta* (blood-coloured). Brazil. (B. M., t. 2892.)
„ *fu'lgens* (shining). Brazil.
„ *hu'milis* (low). 1. Pink. March. Mexico and Colombia. 1789.
„ *Innoce'ntii* (Innocent's). Brazil.
„ „ *stria'ta* (striated). Leaves striped.
„ *marmora'ta* (marbled). Brazil (?).
„ *Meyendo'rfii* (Meyendorf's). See K. PRINCEPS.
„ *negle'cta* (neglected). Brazil.
„ *paxia'na* (Paxian). Brazil.
„ *Plumie'ri* (Plumier's). 1½. Yellow. May. S. Amer. 1759.
„ *pri'nceps* (chief). Brazil.
„ *purpu'rea* (purple). Brazil.
„ *ru'bilans* (reddish). Brazil.
„ *Scheremetie'wii* (Scheremetiew's). Brazil.
„ *specta'bilis* (showy). Brazil. (B. M., t. 6024.)
„ *tri'stis* (sad). Brazil.

KARELI'NIA. (Derivation not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.) The genus is now referred to Pluchea.

Hardy herbaceous. Divisions of the plant in the spring; common garden soil.

K. ca'spia (Caspian). Purple. August. Caspian. 1820.

KAUFMA'NNIA. (Commemorative of *Kaufmann*, a Russian botanist. Nat. ord. Primulaceæ.)

Hardy perennial herb. Seeds; divisions. Ordinary garden soil.

K. Semeno'vii (Semenow's). 1. Yellow. Turkestan. 1876.

KAULFU'SSIA of Blume. (Named after *G. F. Kaulfuss*, M.D. Nat. ord. *Ferns* [Filices]. Allied to Danæa.)

Stove Fern. Spores. Loam, peat, and sand.

K. æsculifo'lia (chestnut-leaved). Fronds of 3–5 leaflets. Assam; Malaya.

KAULFU'SSIA AMELLOI'DES of Nees. See CHARIEIS HETEROPHYLLA.

KAULFU'SSIA CILIA'TA of Sprengel. See GYMNOSTEPHIUM CILIARE.

KAURI PINE. *A'gathis austra'lis.*

KEDRO'STIS. (Derivation not clear. Nat. ord. Cucurbitaceæ.)

Tuberous-rooted, perennial, prostrate or climbing stove herb. Fruit a beaked berry. Seeds or divisions of the root. Loam, a little peat, and sand.

K. fœtidi'ssima (very-fœtid). Greenish-yellow, small. Trop. Africa.

KEFERSTEI'NIA. See ZYGOPETALUM.

KELP is the ash remaining after seaweed is burnt, and has been used with great advantage as a manure to potatoes, broccoli, and other species of cabbage-worts. It is composed of carbonate of soda, and iodide and bromide of potassium, carbon, sulphates of lime and magnesia, and other matters of trivial importance. See GREEN MANURE.

KENDRI'CKIA. (A commemorative name. Nat. ord. Melastomaceæ.)

A stove climber, with creeping Ivy-like stems. Cuttings in sand in a close case. Loam, peat, and sand.

K. Walke'ri (Walker's). Bright red. Ceylon. 1896.

KENNE'DYA. (Named after *Mr. Kennedy*, of the firm of Lee & Kennedy, nurserymen. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 3-*Decandria*.)

Greenhouse evergreen twiners, from Australia. Cuttings of short side-shoots getting firm, in April and May, in sand, over sandy peat, under a bell-glass, kept close for a fortnight, and then put into a little extra heat; peat and sandy loam. Winter temp., 40° to 48°, and most of them like a little shade in summer. All the species, also, may be easily propagated by seeds, which, after being soaked in warm water for a few hours, may be sown in sandy soil, and placed in a hotbed.

K. audomarie'nsis (Audomarian). See HARDENBERGIA MONOPHYLLA AUDOMARIENSIS.
,, *cocci'nea* (scarlet). 10. Scarlet. June. 1803.
,, ,, *heterophy'lla* (various-leaved). 4. Purple. April. 1826.
,, ,, *tri'color* (three-coloured). 4. Red, yellow, purple, May. 1837.
,, *comptonia'na* (Compton's). See HARDENBERGIA COMPTONIANA.
,, *corda'ta* (heart-shaped). See HARDENBERGIA MONOPHYLLA.
,, *dilata'ta* (widened). See K. COCCINEA.
,, *Fredwoo'dii* (Fredwood's). Carmine. 1864.
,, *glabra'ta* (smooth). 4–6. Orange. May. 1834.
,, *heterophy'lla* (variable-leaved). See K. COCCINEA.
,, *inophy'lla* (nerve-leaved). See K. COCCINEA.
,, *latifo'lia* (broad-leaved). See HARDENBERGIA MONOPHYLLA.
,, *macrophy'lla* (large-leaved). See HARDENBERGIA COMPTONIANA.
,, *Marrya'tæ* (Mrs. Marryatt's). See K. PROSTRATA.
,, *microphy'lla* (small-leaved). Crimson. July.
,, *monophy'lla* (simple-leaved). See HARDENBERGIA MONOPHYLLA.
,, ,, *longiracemo'sa* (long-racemed). See HARDENBERGIA MONOPHYLLA ROSEA.
,, *ni'gricans* (dark-*corollaed*). 3. Purple, green. March. 1832.
,, *ova'ta* (egg-*leaved*). See HARDENBERGIA MONOPHYLLA.
,, ,, *cæru'lea* (blue). Blue var. of *Hardenbergia monophylla*. 1888.
,, *parviflo'ra* (small-*flowered*). 4. 1824.
,, *prostra'ta* (prostrate). 4. Scarlet. April. 1790.
,, ,, *ma'jor* (larger). See K. PROSTRATA.
,, ,, *mi'nor* (smaller). Red. June. 1836.
,, *rubicu'nda* (red). 10. Dark red. June. 1788.
,, *seri'cea* (silky). 4. Scarlet. May. 1824.
,, *Stirli'ngii* (Stirling's). 3. Scarlet. May. 1834.

KE'NTIA. (Commemorative of *Lieut.-Col. Kent.* Nat. ord. Palmaceæ.)

Stove Palms of decorative character. Seeds, Loam, peat, and sand.

K. Albe'rtii (Albert's). 1905.
,, *austra'lis* (southern). Lord Howe's Island. 1872.
,, *belmorea'na* (Belmorean). See HOWEA BELMOREANA.
,, *canterburya'na* (Canterburyan). See HEDYSCEPE CANTERBURYANA.
,, *e'legans* (elegant). See CYPHOPHŒNIX ELEGANS.
,, *eleganti'ssima* (most elegant). Country unknown. 1888.
,, *forsteria'na* (Forsterian). See HOWEA FORSTERIANA.
,, ,, *stria'ta* (striped). See HOWEA FORSTERIANA STRIATA.
,, *gra'cilis* (graceful). See KENTIOPSIS DIVARICATA.
,, *kerstenia'na* (Kerstenian). Leaflets wedge-shaped. 1898. Probably a Ptychosperma.
,, *Linde'ni* (Linden's). See KENTIOPSIS MACROCARPA.
,, *Lucia'ni* (Lucian's). Country unknown. 1878.
,, *Macarthu'rii* (Macarthur's). See PTYCHOSPERMA MACARTHURII.
,, *sa'pida* (tasty). See RHOPALOSTYLIS SAPIDA.
,, *siebertia'na* (Siebertian). See PTYCHORAPHIS SIEBERTIANA.
,, *wendlandia'na* (Wendlandian). See HYDRIASTELE WENDLANDIANA.

KENTI'OPSIS. (Derived from *Kentia*, and *opsis*, resemblance; the species resemble Kentias. Nat. ord, Palmaceæ.)

Stove Palms of decorative value. Seeds. Loam, peat, and sand.

K. divarica'ta (divaricate). Leaves with 12–14 pinnæ on each side. New Caledonia. 1876.
,, *macroca'rpa* (large-fruited). Young leaves pale red. New Caledonia. 1876.
,, *olivæfo'rmis* (olive-shaped). New Caledonia.

KENTROPHY'LLUM. (From *kentron*, a spine, and *phullon*, a leaf; literally, spine-leaved. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*.) Now referred to Carthamus.

K. arbore'scens (shrubby). See CARTHAMUS ARBORESCENS.
,, *cre'ticum* (Cretan). See CARTHAMUS LANATUS.
,, *flave'scens* (yellowish). See CARTHAMUS FLAVESCENS.
,, *glau'cum* (sea-green). See CARTHAMUS GLAUCUS.
,, *læ'vis* (smooth). See STOKESIA CYANEA.
,, *lana'tum* (woolly). See CARTHAMUS LANATUS.
,, *leucocau'lon* (white-stemmed). See CARTHAMUS LEUCOCAULOS.
,, *tau'ricum* (Taurian). See CARTHAMUS LANATUS.

KENTUCKY COFFEE-TREE. *Gymnocla'dus canade'nsis.*

KERAMA'NTHUS. (From *keramos*, a vase, and *anthos*, a flower; in allusion to the shape of the calyx. Nat. ord. Passifloraceæ.)

A stove perennial allied to Modecca. Cuttings in sand in a dry stove. Fibrous loam, sand, and some nodules of charcoal or broken bricks.

K. Kir'kii (Kirk's). 2–4. Flowers greenish; berries brown. Zanzibar. 1875.

KERCHO'VEA FLORIBU'NDA. See STROMANTHE PORTEANA.

KE'RRIA. (Named after *M. Kerr*, once superintendent of the Botanic Garden, Ceylon. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Trigynia*. Allied to Spiræa.)

Hardy deciduous shrub, with yellow flowers, from Japan, formerly called *Co'rchorus japo'nicus*. Cuttings of the young shoots under a hand-light; layers, and division of the plant; common loam.

K. japo'nica (Japanese). 3. Blooms through summer. 1700.
,, ,, *flo're-ple'no* (double-flowered). 6. June. 1700.

KETELEE'RIA. (A commemorative name. Nat. ord. Coniferæ.)

Hardy Conifers coming between Pseudolarix and Abies in character. Seeds. Ordinary soil.

K. davidia'na (Davidian). China. 1873.
,, *Fortu'nei* (Fortune's). 30–40. China. 1850.
,, *sa'cra* (sacred). China.

KI'CKXIA. (Probably commemorative. Nat. ord. Apocynaceæ.)

Smooth-leaved stove trees. Seeds; cuttings in sand, in a close case, with bottom-heat. Loam, leaf-mould, and sand.

K. africa'na (African). 60. Yellow. W. Trop. Africa. Valuable rubber-tree.

„ *ela'stica* (elastic). 50. Yellow. W. Africa. 1899. Valuable rubber-tree.

KIDNEY BEAN. *Phase'olus vulga'ris.*

Varieties.—There are three kinds—the *Runners*, or twining varieties; the *Dwarfs*; and the *Skinless*, or *Mange-tout*. These last, and the runners, are those most commonly cultivated, being eaten pod and seed together, whilst of others only the seeds are eaten.

RUNNERS.—*Large Running White, White Long Pod, Dutch Case Knife, Long White*, or *Large White Sugar*. A good bearer, and one of the best for late use.

Sabre.—Seeds white. This is, perhaps, the best of all, being a good bearer, and its pods of great length and size. This sort grows very high.

Prudhomme, or *Prodommet.*—Seeds greyish, oval, and small. There is a yellow variety of this.

Prague, or *Red Pea.*—Seeds round, of violet colour. A moderate bearer, and late.

Prague Bicolor.—Similar to the last, seed a little larger. A good bearer, but very late.

Sophie.—Like the Prague, but seeds whiter and larger. A moderate bearer, and late.

Small White French Runner.—White seeds, oblong, and very thin. It is a good bearer, but is too tender to ripen its seeds in this country, except under a wall in a very warm situation.

Lima.—Seeds very large, thick, and of a dirty white; pods large, short, slightly rough, and wrinkled. Prolific, and the seeds are very mealy; but in this climate a crop can only be obtained by forwarding the plants in a hot-bed, and planting them out singly in May. It is eaten both in a green state and shelled. It grows high.

Venetian Sugar.—Resembling Lima, the principal difference consisting in the seeds being flatter, larger, and speckled with red. An abundant bearer, but must be used young.

Pale Turkey, or *Scarlet Runner.*—Of this there are two varieties distinct from the common Haricot, one with scarlet, the other with white flowers; the latter is preferable for culinary purposes on account of its greater mealiness and thinner skin. There is also a third variety with two-coloured flowers, but it is not superior to either of the above. A good bearer, but not very early.

DWARF.—*Dwarf White Dutch, Dutch Long Pod*, or *Early Dwarf Dutch.*—Pods long, narrow, and excellent when green; seeds white, small, a little compressed. Not very early in this country.

Early White, or *Brewer's White.*—Seeds white, narrow, rather long, and cylindrical. It is very dwarf, early, good for forcing, equally suited for eating green, and when the seeds are ripe.

Dwarf White Sans-parchemin forms thick, bushy plants. Good whilst green; stringless till three parts grown, and excellent when ripe.

Dwarf American White.—Pod short, of a strong and branching habit, sometimes climbing a little, but generally dwarf, and not requiring support; very prolific; its short, swollen pod a little hooked, strongly coloured with reddish-brown, particularly at the two extremities; this is not in the least stringy.

Of the *Haricot Suisse* there are many varieties, of which the principal are the *White*, the *Grey*, and the *Red.*

Dwarf Black-Spotted.—Grown particularly in the Maine. The *Mohawk* from the United States.

Dwarf Red-Speckled, Fulner's Spotted Dwarf, and *Long-Spotted French.*—These have peculiar characters, according to the length and form of their seeds. They are all excellent in a green state, for which they are chiefly used.

Dwarf Negro.—Used in a green state; this rivals the Swiss varieties. This is one of the best for general use, and an abundant bearer.

Haricot Noir de Belgique.—Is perfectly dwarf, and is the earliest which we are yet acquainted with. Its pods, although rather pale, are very good in a young state.

Crimson Runner.—Highly esteemed for stewing when ripe; seeds red, flat, and small.

Flat Yellow Canada.—The most dwarf, and one of the earliest skinless, and therefore either good when young, or when full grown; seeds nearly round, pale yellow, very good when dried. A good bearer.

Polish Beans.—A prolific sort, excellent either fresh-shelled or dried; seeds rather large, roundish, and sulphur-coloured. There is a sub-variety of it with clear, bronze-coloured seeds, which also appears to be good. A good bearer, and early.—*Gard. Chron.*

Soil and Situation.—A very light, mellow, well-drained loam. For the early and late crops, a sheltered border must always be allotted, or in a single row about a foot from a south fence, otherwise the situation cannot be too open.

Sowing commences with the year. They may be sown towards the end of January in pots, and placed upon the flue of the hothouse, or in rows in the mould of a hotbed, for production in March, to be repeated once every three weeks in similar situations in February and March, for supplying the table during April; a small sowing may be made, if fine open weather, under a frame without heat, for removal into a sheltered border early in May. The chief requisite for success in the hothouse is to have them near the glass; to keep them well watered; the air moist, and ventilated as much as the season permits.

During May, and thence until the first week in August, sowings may be made once every three weeks. In September, forcing recommences, at first merely under frames without bottom-heat; October, and thence to the close of the year, in hotbeds, &c., as in January. Sowing, when a removal is intended, should always be made in pots, the plants being less retarded, as the roots are less injured, than when the seed is inserted in patches or rows in the earth of the bed. It is a good practice, likewise, to repeat each sowing in the frames without heat after the lapse of a week, as the first will often fail, when a second, although after so short a lapse of time, will perfectly succeed. In every instance the seed is buried one and a half or two inches deep. The rows of the main crops to be two feet apart, the seed being inserted either in drills or by the dibble, four inches apart; the plants, however, to be thinned to twice that distance. If a vacancy occurs, it may always be filled by plants which have been carefully removed by the trowel from where they stood too thick. The seed inserted during the hottest period of summer should be either soaked in water for five or six hours, laid in damp mould for a day or two, or the drills be well watered previously to sowing.

The pods of both kinds are always to be gathered while young; by thus doing, and care being had not to injure the stems in detaching them, the plants are rendered prolific and long lived.

Forcing.—The hotbed must be of moderate size, and covered with earth nine inches thick. When the heat has become regular, the seed may be inserted in drills a foot apart, and the plants allowed to stand six inches asunder in the rows. Air must be admitted as freely as to the melon. The same precautions are likewise necessary as to keeping up the temperature, taking the chill off the water, &c., as for that plant. When the seed begins to sprout, the mould should be kept regularly moistened; and when grown up, water may be given moderately three times a week. The temperature should never be less than 60°, nor higher than 75°.

Those sown under frames in March for transplanting into a border, when two or three inches in height, must, in a like manner, be hardened gradually for the exposure, by the plentiful admission of air, and the total removal of the glasses during fine days. If any are raised in pots in the hothouse, they must be prepared similarly for the removal, by setting them outside in fine days, and there watering them with cold water.

If the season is too ungenial to remove them even to a warm border, the plants are often inserted in patches, to have the protection of frames or hand-lights at night, or as the weather demands.

Runners.—As these are more tender, and the seed is more apt to decay, than those of the dwarfs, no open-ground crop must be inserted before early in May, to be continued at intervals of four weeks through June and July, which will insure a supply from the middle of this last month until October.

They are so prolific and such permanent bearers, that three open-ground sowings of a size proportionate to the consumption, will, in almost every instance, be sufficient,

They are inserted in drills, either singly, three feet apart, or in pairs ten or twelve inches asunder, and each pair four feet distant from its neighbour. The seed is buried two inches deep, and four apart in the rows, the plants being thinned to twice that distance.

If grown in single rows, a row of poles must be set on the south side of each; being fixed firmly in the ground, they may be kept together by having a light pole tied horizontally along their tops, or a post being fixed at each end of a row, united by a cross bar at their tops: a string may be passed from this to each of the plants. If the rows are in pairs, a row of poles must be placed on each side, so fixed in the ground that their summits cross, and are tied together.

If the runners are nipped off as fast as they appear, the plants become bushy, and are nearly as prolific as if allowed to climb.

To obtain Seed.—Forty or fifty plants of the dwarf kinds, or thirty of the runners, will be sufficient for a moderate-sized family. They must be raised purposely in May, or a like number from the crop in that month left ungathered from; for the first pods always produce the finest seeds, and ripen perfectly. In autumn, as soon as the plants decay, they must be pulled up, thoroughly dried, and stored in the pods.

KIDNEY VETCH. *Anthy'llis.*

KIELME'YERA. (Named after a German patron of botany. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Stove evergreen tree. Cuttings of young shoots getting firm, in sand, under a bell-glass, and in heat; fibrous, sandy loam. Summer temp., 60° to 75°; winter 45° to 55°.

K. exce'lsa (tall). 60. White. July. Brazil. 1833.

KILLI'NGA. See KYLLINGA.

KI'NGIA. (Commemorative of *Capt. P. G. King*, Governor of New South Wales. Nat. ord. Juncaceæ.)

Greenhouse perennial, allied to Xanthorrhœa. Imported seeds and plants. Fibrous loam, peat, and sand.

K. austra'lis (southern). 3–4. Brown. Australia.

KING OF THE WOODS. *Anæctochi'lus rega'lis.*

KIRENGE'SHOMA. (A Japanese name. Nat. ord. Saxifragaceæ.)

Hardy perennial requiring a shady situation. Seeds and divisions in spring. Light loam and leaf-soil.

K. palma'ta (hand-shaped). 2–3. Yellow. Japan. 1891.

KIRGANE'LIA ELEGANS. See PHYLLANTHUS CASTICUM.

KITAIBE'LIA. (Commemorative of *Paul Kitaibel*, a botanist of Pesth, Austria, 1757–1817. Nat. ord. Malvaceæ.)

Tall, perennial herb for the border or shrubbery. Divisions in spring. Ordinary soil.

K. Lindemu'thii (Lindemuth's). Graft-hybrid between *Kitaibelia vitifolia* and *Abutilon Thompsoni*. 1902.

„ *vitifo'lia* (vine-leaved). 5–8. White or rose. Eastern Europe.

KITCHEN GARDEN.

Situation.—A gentle declination towards the south, with a point to the east, is the most favourable aspect; to the north-east the least so: in short, any point to the south is to be preferred to one verging towards the north. A high wall should inclose it to the north and east, gradually lowering to the south and west. If, however, a plantation or building on the east side, at some distance, shelter it from the piercing winds which blow from that quarter, and yet are at such a distance as not to intercept the rays of the rising sun, it is much to be preferred to heightening the wall. It is a still greater desideratum to have a similar shelter, or that of a hill on the south-west and north-west points. The garden is best situated at a moderate elevation; the summit of a hill or the bottom of a valley is equally to be avoided. It is a fact not very difficult of explanation, that low-lying ones are the most liable to suffer from blights and severe frosts; those much above the level of the sea are obviously most exposed to inclement winds.

Size.—To determine the appropriate size of a kitchen-garden is impossible. It ought to be proportionate to the size of the family, their partiality for vegetables, and the fertility of the soil.

It may serve as some criterion to state that the management of a kitchen-garden occupying the space of an acre affords ample employment for a gardener, who will also require an assistant at the busiest periods of the year. In general, a family of four persons, exclusive of servants, requires a full rood of open kitchen-garden.

KITCHI'NGIA. (A commemorative name. Nat. ord. Crassulaceæ.)

A dwarf, prostrate, warm greenhouse herb, rooting at the nodes. Cuttings in heat in spring. Loam, leaf-mould, sand, and some finely broken brick.

K. unifio'ra (one-flowered). ½. Rich purple. Madagascar. 1908.

KLA'TTIA. (A commemorative name. Nat. ord. Iridaceæ.)

Greenhouse evergreen shrubby plant. Seeds; cuttings or sucker-like offsets, in sand, under a bell-glass. Fibrous loam, peat, and sand.

K. parti'ta (parted). 1–2. Bright blue. April. S. Africa. 1822.

KLEINHO'VIA. (Commemorative of *Kleinhoff*, a Dutch botanist. Nat. ord. Stercullaceæ.)

Evergreen, stove tree. Cuttings of mature shoots in sand, in a close case, with bottom-heat. Loam, peat, and sand. Summer temp., 60° to 90°; winter, 50° to 60°.

K. Ho'spita (stranger). 20. Pink. Constant. Trop. Asia. 1800.

KLEI'NIA, of Linnæus. (Commemorative of *Dr. Klein*. Nat. ord. Compositæ.)

Dry and warm greenhouse evergreens, some of which are very useful for carpet bedding. Cuttings in sand, in moderate heat and not over-watered. Loam, a little leaf-mould, and plenty of sand.

K. acau'lis (stemless). S. Africa.
„ *aizoi'des* (Aizoon-like). S. Africa.
„ *Anteupho'rbium* (like Euphorbia). 3–4. Yellow, tinted rose. S. Africa. 1596.
„ *articula'ta* (jointed). 1–2. Yellow. September. S. Africa. 1775. "Candle Plant."
„ *carno'sa* (fleshy). See SENECIO ELEGANS.
„ *ficoi'des* (fig-like). S. Africa.
„ *fu'lgens* (shining). 2–3. Orange-vermilion. S. Africa. 1866.
„ *Galpi'ni* (Galpin's). S. Africa. (B. M., t. 7239.)
„ *Gra'ntii* (Grant's). ½–¾. Bright scarlet. E. Trop. Africa. 1899. Procumbent.
„ *Hawo'rthii* (Haworth's). ½. Orange-yellow. S. Africa. 1795.
„ *neriifo'lia* (Nerium-leaved). 2–3. Yellow. September. Canaries. 1732.
„ *papilla'ris* (nippled). 2. Yellow. S. Africa. 1727.
„ *pe'ndula* (drooping). Crimson. Somaliland and Arabia. 1899. Stems serpentine.
„ *pugionifo'rmis* (dagger-formed). 1. Yellow. S. Africa. 1820.
„ *radi'cans* (rooting). ½. Yellow. July. S. Africa. 1823. Creeping.
„ *re'pens* (creeping). ½–¾. Yellow. S. Africa.
„ *tomento'sa* (felted). See K. HAWORTHII.
„ *viola'cea* (violet). 3. Pale violet-rose. Abyssinia. 1910.

KLU'GIA. (Commemorative of *Dr. W. Klug*. Nat. ord. Gesneraceæ.)

Evergreen stove herbs. Seed; cuttings in sand in a close case. Loam, leaf-mould, and sand.

K. notonia'na (Notonian) of A.D.C. 1. Blue, yellow. India. 1848.
„ *notonia'na* (Notonian) of Hooker. See K. ZEYLANICA.
„ *zeyla'nica* (Cingalese). 1. Blue, yellow. Summer. Ceylon.

KNI'GHTIA. (Named after *J. A. Knight*, late president of the London Horticultural Society. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Grevillea.)

Greenhouse evergreen tree. Cuttings of ripe shoots, with all the leaves on, except a few at the base of the cutting, in sandy soil, under a bell-glass, and removed in a few weeks into a mild bottom-heat; peat, with a little sandy loam, and a few broken potsherds. Winter temp., 35° to 45°. In summer the pots should be shaded.

K. excélsa (lofty). 10. Flesh. New Zealand. 1824.
„ *strobilí'na* (cone-like). 3. Green, yellow. April. New Caledonia. 1824.

KNIGHT'S STAR. *Hippea'strum.*

KNIPHO'FIA. "Torch Lily." (Commemorative of *Johann Hieronymus Kniphof*, a German Professor of Medicine. Nat. ord. Liliaceæ.)

Hardy herbaceous herbs of great beauty for beds and borders. Divisions in spring. Ordinary garden soil, well drained, and in sheltered positions. Few plants are capable of making a more gorgeous display in the summer and autumn months. Some of them commence blooming quite early in the season, and others keep up a succession till the well-known Red-hot Poker (*K. aloides*) brightens the garden, when little else than late Michaelmas Daisies and Chyrsanthemums remain in bloom.

K. aloí'des (Aloe-like). 2–4. Orange-scarlet. August to October. S. Africa. 1707. "Common Torch Lily" or "Red-hot Poker."
„ „ *Cana'ri* (Canary). Yellow. 1888.
„ „ *glaucéscens* (séa-green). Heads very large. 1859.
„ „ *grandiflo'ra* (large-flowered). S. Africa. 1859.
„ „ *gra'ndis* (grand). See K. ALOIDES MAXIMA.
„ „ *longisca'pa* (long-scaped). Tall variety.
„ „ *ma'xima* (largest). 4–7. Deep yellow. S. Africa. 1862.
„ „ *no'bilis* (noble). 4–6. Deep orange; head very large. 1882.
„ „ *Saundé'rsii* (Saunders'). 1882.
„ „ *seró'tina* (late). 4–5. November. S. Africa. 1859.
„ *breviflo'ra* (short-flowered). 2–3. Bright yellow. S. Africa. 1897.
„ *Burché'llii* (Burchell's). 1½. Orange. S. Africa. 1816.
„ *carno'sa* (fleshy). Apricot. September. Abyssinia. 1879.
„ *caulé'scens* (long-stemmed). Red at first, then yellow. Stem elevated. S. Africa. 1862.
„ *citrí'na* (lemon). 2. Pale yellow. S. Africa. 1893.
„ *como'sa* (long-haired). 2. Yellow; stamens red. Abyssinia. 1879.
„ *coralli'na* (coral-red). Orange-red. Gardens.
„ *ere'cta* (erect). Like *K. aloides*, but flowers sometimes erect. 1903.
„ *excé'lsa* (tall). Flowers almost campanulate. Hybrid. 1904.
„ *folió'sa* (leafy). 3. Bright yellow. Abyssinia. 1876.
„ *Kí'rkii* (Kirk's). 4. Reddish-orange. S.E. Trop. Africa. 1887.
„ *laxiflo'ra* (loose-flowered). See K. BURCHELLII.
„ *Leichtli'nii* (Leichtlin's). 2–4. Yellow and red. Abyssinia. 1883.
„ „ *au'rea* (golden). Soft orange-red to soft yellow. 1900.
„ „ *dista'chya* (twin-spiked). Scape sometimes producing 2–3 heads. 1884.
„ *longi'collis* (long-hilled). 3. Clear yellow. Natal. 1893. Half-hardy.
„ *longiflo'ra* (long-flowered). 3–3½. Yellow-red. Natal. 1901.
„ *Maco'wani* (Macowan's). 2. Orange, tinted red. S. Africa. 1874.
„ *modé'sta* (modest). 2. White. Natal and Griqualand. (B.M., t. 7293.)
„ *multiflo'ra* (many-flowered). 6–7. White. S. Africa. 1899.
„ *natalé'nsis* (Natal). 2–3. Orange-red. Natal. 1889.
„ *Nelsó'ni* (Nelson's). 2. Orange-scarlet. Orange River Colony. 1892.
„ *No'rthiæ* (Miss North's). 4–6. Pale yellow; upper ones reddish. S. Africa. 1889.
„ *pallidiflo'ra* (pale-flowered). 1–2. White. Madagascar. 1887. Half-hardy.
„ *pauciflo'ra* (few-flowered). 2. Pale yellow, few. Natal. 1889. Half-hardy.
„ *præ'cox* (early). 2–2½. Scarlet, yellow. October. S. Africa. 1862.
K. primuli'na (primrose). 3. Primrose-yellow. Natal. 1897.
„ *pu'mila* (dwarf). 1. Orange. September. S. Africa. 1774.
„ *quartinia'na* (Quartinian). See K. FOLIOSA.
„ *Roopé'ri* (Rooper's). 4. Orange-red, yellow. November. Kaffraria. 1854.
„ *ru'fa* (reddish). 1½–3. Yellow, stained dull red. Orange River Colony. 1900.
„ „ *venu'sta* (lovely). Bright yellow. 1907.
„ *sarmento'sa* (twiggy). 2. Orange. Cape of Good Hope. 1789.
„ *Tu'ckii* (Tuck's). 2–2½. Orange, fading to yellow. S. Africa. 1893.
„ *Tyso'ni* (Tyson's). 3. Orange-red and yellow. S. Africa.
„ *Uva'ria* (clustered). See K. ALOIDES.
„ *Woo'dii* (Wood's). 3½. Creamy-yellow. Leaves spiny on edges. Natal. 1895.

KNOL-KOHL, KOHL-RUBI, or **KOHL-RABI** (*Bra'ssica Cau'lo-ra'pa*), the Turnip-stemmed Cabbage. It is sometimes called, also, the Cape Cabbage. The stem is thick, rises about eight inches out of the ground, is swollen into a globular form, very like a large Swedish turnip growing above ground, and is crowned with leaves, slightly scolloped on the edges, undulated, and milky-green, like those of the turnip we have mentioned. There are several varieties of it; but the green-stemmed and the purple-stemmed (especially the latter) are to be preferred.

It is sweeter, more nutritious, and more solid than either the Cabbage or White Turnip; will produce a greater weight per acre than the turnip, and prefers a heavier soil than that root; is hardier, and keeps better than any other bulb; and imparts very little of that flavour, either to milk or butter, known as *turnipy*. So much relished is it both by cows and sheep, that they will leave either turnips or cabbages to partake of it. Hares and rabbits are so fond of it that where they abound Knol-kohl can scarcely be grown. It is excellent when boiled for table. Sow in the first week of March, and plant out in June in rows four feet apart, if the soil is fertile, but only three feet if the soil is less productive, and three feet from plant to plant in the rows. The plants must have the chief part of their stems left uncovered by the soil. Two pounds of seed produce enough plants for an acre. It is an excellent crop for cleaning the soil, as the width between the plants and rows enables the hoe to be efficiently used, and during a lengthened period. When blanks occur, these may be filled up from the seed-bed with fresh plants. The produce is from eighteen to twenty tons, and upwards, per acre. The bulbs may be kept sound and nutritious until very late in the spring, even much later than the Swedish turnip.

KNO'XIA. (Named after *R. Knox*, a traveller, long resident in Ceylon. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Stove evergreens. Cuttings of young shoots in sand, under a glass, in April or May; peat and loam. Summer temp., 60° to 85°; winter, 50° to 60°.

K. brachyca'rpa (short-fruited). Pink. July. Himalaya. 1818.
„ *corymbo'sa* (corymbose). 2–3. White. June, July. India; Ceylon. 1818.
„ *exsé'rta* (outside-*stamened*). See K. CORYMBOSA.
„ *læ'vis* (smooth). See K. BRACHYCARPA.
„ *sumatre'nsis* (Sumatran) of Decandolle. White. India.
„ *sumatre'nsis* (Sumatran) of Wallich. See K. CORYMBOSA.
„ *te'res* (cylindrical-*stemmed*). See K. CORYMBOSA.
„ *zeyla'nica* (Ceylon). ½. White. July. Ceylon. 1826.

KO'CHIA. (A commemorative name. Nat. ord. Chenopodiaceæ.)

The typical *K. scoparia* is a weed, but the variety *trichophylla* is an ornamental annual of great beauty for beds, borders, prominent positions in the garden, and for pot culture. The foliage of the dying plant turns red in autumn. Seeds. Ordinary garden soil.

K. scopa'ria (broom-like). 2–3. Green. Summer. Europe; Northern Asia. 1827.
„ „ *trichophy'lla* (hair-leaved). 2–2½. Green. Plant egg-shaped or columnar. 1898.

KŒHLE'RIA HONDE'NSIS. See ISOLOMA HONDENSE.

KŒHLE'RIA SEEMA'NNI. See ISOLOMA SEEMANNI.

KŒLE'RIA. (A commemorative name. Nat. ord. Gramineæ.)

Hardy grasses of neat habit, some of which may yet be used for lawns in dry, poor soil. Seed. Light dry soils.

K. albe'scens (whitish). Western Europe.
„ *crista'ta* (crested). North temperate regions.
„ *gra'cilis* (slender). Europe (Britain).
„ „ *brita'nnica* (British). Britain.
„ *phleoi'des* (Phleum-like). Mediterranean region.
„ *seta'cea* (hair-like). S. Europe.

KŒLLENSTEI'NIA GRAMI'NEA. See AGANISIA GRAMINEA.

KŒLLENSTEI'NIA IONO'PTERA. See AGANISIA IONOPTERA.

KŒLLIKE'RIA. (A commemorative name. Nat. ord. Gesneraceæ.)

A small, but interesting stove herb. Seeds and offsets. Loam, leaf-mould, and sand in nearly equal proportions.

K. argyrosti'gma (silver-spotted). ¼. White and rose. June. Peru. (B.M., t. 4175.)

KŒLREUTE'RIA. (Named after *Kœlreuter*, a celebrated German botanist, the father of hybridising plants. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Hardy deciduous trees. Cuttings of the root; cuttings of the young shoots under a hand-light; seeds in spring; layers in the end of summer; common soil, in a sheltered situation; beautiful in its leaves, flowers, fruit, and the mode of growing, as it gets old.

K. bipinna'ta (twice-pinnate). Bright yellow, with purple spot. Yunnan, China. 1888.
„ *panicula'ta* (panicled). 10. Yellow. July. China. 1763.

KŒ'NIGA MARI'TIMA. See ALYSSUM MARITIMUM.

KOHL-RABI or **-RUBI.** See KNOL-KOHL.

KOLA NUT. *Co'la acumina'ta.*

KOLKWI'TZIA. (A commemorative name. Nat. ord. Caprifoliaceæ.)

A hardy shrub closely related to Lonicera. Seeds, cuttings, layers. Ordinary soil.

K. ama'bilis (lovely). Fruits covered with long brown bristles. Central China. 1903.

KOLPAKO'WSKIA IXIOLIRIOI'DES. See IXIOLIRION KOLPAKOWSKIANUM.

KO'PSIA. (Named after *Professor Kops*. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cerbera.)

Stove evergreen shrub. Cuttings of the young shoots, getting a little firm at their base, in sand, over sandy soil, and in bottom-heat; peat and sandy loam. Summer temp., 60° to 85°; winter, 50° to 60°.

K. frutico'sa (shrubby). Red. May. India and Malaya. 1818.

KOROLKO'WIA DI'SCOLOR. See FRITILLARIA SEWERZOWI BICOLOR.

KOROLKO'WIA SEWERZO'WI. See FRITILLARIA SEWERZOWI.

KOSTELE'TZKYA. (A commemorative name. Nat. ord. Malvaceæ.)

K. pentasperma is a stove evergreen shrub, and the others hardy perennial herbs. Divisions and cuttings; cuttings of the stove species, in a close case, with heat. Loam, leaf-mould, peat, and sand for the stove species.

K. pentaca'rpa (five-carpelled). 3. Lilac, red. August. Russia. 1752.
„ *pentaspe'rma* (five-seeded). 3. Yellow. July. Trop. Amer. 1825.
„ *virgi'nica* (Virginian). 2. Red. August. N. Amer. 1798.

KRAME'RIA. (Named after the two *Kramers*, German botanists. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

This is the intensely-astringent called Rhatany-root in South America. Stove evergreen shrub. Cuttings in sand, under a glass, in heat; sandy loam and fibrous peat. Summer temp., 60° to 90°; winter, 48° to 60°.

K. lanceola'ta (lance-shaped). 4. Red. N.W. Amer. 1824.
„ *paucifio'ra* (few-flowered). See K. LANCEOLATA.

KREYSI'GIA. (Named after *Kreysig*, a German botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Uvularia.)

Greenhouse herbaceous perennial. Division of the plant in spring; light, sandy loam; requires the protection of a cold pit, or a cool greenhouse, in winter.

K. multifio'ra (many-flowered). 1. Rose. June. N.S. Wales. 1823.

KRI'GIA. (A commemorative name. Nat. ord. Compositæ.)

A dwarf, annual herb. Seeds. Ordinary soil.

K. amplexicau'lis (stem-clasping). ½. Yellow. N. Amer.

KRYNI'TZKIA. (A commemorative name. Nat. ord. Boraginaceæ.)

Hardy, annual or biennial herbs. Seeds. Ordinary garden soil.

K. barbi'gera (bearded). White. N.W. Amer. 1885. Annual.
„ *glomera'ta* (crowded). 2. Blue. June. N.W. Amer. 1812. Biennial.
„ *Jame'sii* (James's). Blue. N.W. Amer.

KU'HNIA. (Named after *Adam Kuhn*, an American botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Liatris.)

Herbaceous perennials. Divisions in spring; sandy loam. Pretty little plants; the tenderest require a cold pit, or a greenhouse, in winter.

HARDY.

K. Crito'nia (Critonia). See K. EUPATORIOIDES.
„ *eupatorioi'des* (Eupatorium-like). 1½. White. July. N. Amer. 1812.

GREENHOUSE.

K. linearifo'lia (narrow-leaved). See JAUMEA LINEARIS.
„ *rosmarinifo'lia* (rosemary-leaved). White. July Mexico. 1828.

KU'MQUAT. See CITRUS AURANTIUM JAPONICA.

KU'NTHIA DE'PPII. See CHAMÆDOREA ELEGANS.

KU'NTHIA MONTA'NA. See CHAMÆDOREA LINDENIANA.

KU'NZEA. (In commemoration of *Gustav Kunze*, a German botanist. Nat. ord. Myrtaceæ.)

Evergreen, greenhouse shrubs allied to Leptospermum and often Heath-like. Seeds; cuttings in sand in gentle heat, and covered with a hand-light. Loam and peat, with sand, to make it porous.

K. Baxte'ri (Baxter's). 2. Red. Australia. 1838.
„ *capita'ta* (headed). 5. Pink. S. Africa. 1824.
„ *corifo'lia* (Coris-leaved). White. Australia.
„ *ericifo'lia* (Erica-leaved). Australia.
„ *peduncula'ris* (long-stalked). Australia.
„ *pomi'fera* (apple-bearing). White. Australia. 1889. Fruits named "Muntries" by the natives.
„ *recu'rva* (recurved). Australia.
„ *seri'cea* (silky). Rose. May. Australia.

KY'DIA. (Named after *Col. Kyd*, first director of the Calcutta Botanic Garden. Nat. ord. *Mallow-worts* [Malvaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Allied to Abutilon.)

Stove evergreen trees, with white flowers. Cuttings of half-ripened shoots in sand, under a bell-glass, and in heat; sandy peat and fibrous loam, well drained. Summer temp., 60° to 85°; winter, 50° to 60°.

K. calyci'na (large-calyxed). 30. India and Burma. 1818.
„ *frate'rna* (brotherly). See K. CALYCINA.

KYLLI'NGA. (Commemorative of *Peter Kylling*, a Danish botanist. Nat. ord. Cyperaceæ.)

A tufted, perennial, greenhouse sedge. Divisions. Loam, leaf-mould, and sand.

K. monoce'phala (one-headed). Whitish. Tropics of the Old World. 1868.

L

LABEL. Many are the forms and substances employed in making labels for plants. For general use they should embrace among their good qualities cheapness, durability, facility of being written upon, and legibility. Strong paper or parchment labels are the most suitable for attachment to plants being sent from the nurseries, and they should be written with pencil, indelible or otherwise, because ink readily runs, and soon gets illegible by rain or when otherwise wetted. For general purposes wooden labels are the cheapest, and quite effective, if painted on one side with white paint, not too thickly put on, and written upon with pencil, while still wet. The name usually lasts as long as the wood, whether indoors or outside, if plainly and well written. If it is desired to write the names of other plants upon the labels, while the wood is still sound, they can be reface with glass or a sharp knife. Large wooden labels, meant to be of a more permanent character, should be painted all over to preserve them, and after they get dry, a thin second coat may be given and the names written while wet. The point to be inserted in the ground should be dipped in creosote, gas-tar, or other preservative substance. Zinc and procelain labels have also been devised, but for various reasons they have not proved very satisfactory. Neat cast-iron labels, with raised letters, and of various design and size, are in use, and give a considerable amount of satisfaction. Some of them are pierced with one or two holes, so that they may be suspended with copper wire, not liable to rust. Others are fitted with an iron shaft, or with stout wire for inserting in the ground. For Roses, fruit and ornamental trees, the names are suspended or placed horizontally, and are thus easily read at a glance. Very permanent labels are those made of strips or oblong pieces of lead, with the names punched on them, with or without paint. The lead may be painted black, and the sunk letters with white paint, and after a number of years these labels may be repainted. Although more expensive than wooden labels, they last a lifetime, and are cheapest in the end.

LABELLUM. This term is universally applied to the upper segment of the inner series of the flower of an Orchid. By the twisting of the flower-stalk, the labellum or lip usually assumes the lower position, and as it is larger, and nearly always more highly coloured than the rest of the flower, it is the most conspicuous organ. In the Lipworts or Labiatæ, and some others, it is customary to speak of the upper and lower lips of the flower.

LABICHÆ'A. (Named after *M. Labiche*, a French officer. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Cassia.)

Yellow-blossomed greenhouse evergreen shrub, from Swan River. Cuttings of half-ripened shoots in summer, in sand, under a bell-glass; peat and loam. Winter temp., 38° to 45°.

L. bipuncta'ta (two-dotted). See L. LANCEOLATA.
„ *lanceola'ta* (spear-head-*leaved*). 4. April. 1837.

LABI'SIA. (From *labis*, a hook or clasp; the segments of the corolla are inflexed at the apex. Nat. ord. Myrsinaceæ.)

Evergreen stove shrubs. Seeds. Loam, leaf-mould, and a little sand.

L. ala'ta (winged). 1. White and pink outside. Borneo and Malacca. 1886.
„ *malouia'na* (Malouian). 1. Leaves with a feathery whitish-green midrib. Borneo. 1885.
„ *pothoi'na* (Pothos-like). 1. Pink. Malaya. 1845.
„ *smara'gdina* (emerald-green). ½. Pink. Borneo. 1892.

LA'BLAB PERE'NNANS, *L. vulga'ris*, *L. v. albiflo'ra*, and *L. v. purpu'rea* are all forms of *Dolichos Lablab*.

LABRADOR TEA. *Le'dum.*

LABU'RNUM. (The old Latin name of the tree. Nat. ord. Leguminosæ.)

Small, hardy, ornamental trees of great beauty, and very popular. The flowers, fruits, and seeds are poisonous. *L. Adami*, or *Cytisus Adami*, is a graft-hybrid, produced by Jean Louis Adam in 1825, by shield-grafting *Cytisus purpureus* on *Laburnum vulgare*. Branches of the tree frequently revert to one or other of the parents. The trees are propagated by seeds, and the graft-hybrid and varieties by budding and grafting.

L. Ada'mi (Adam's). Dusky or coppery purple. Graft-hybrid. 1825. "Purple Laburnum."
„ *alpi'num* (alpine). 15–30. Yellow. June. Europe. 1596. "Scotch Laburnum." Varieties of this are *au'reum*, *autumna'le*, *bi'ferum*, *fra'grans*, *grandiflo'rum*, *hirsu'tum*, and *pilo'sum*.
„ *Alschinge'ri* (Alschinger's). See L. VULGARE ALSCHINGERI.
„ *anagyroi'des* (Anagyris-like). See L. VULGARE.
„ *carama'nicum* (Caramanian). 3–5. Yellow. June. Asia Minor. 1879.
„ *sero'tinum* (late). Sulphur-yellow. June. 1854.
„ *vulga're* (common). 15–20. Yellow. May. Europe. 1596. "Laburnum." The following are varieties: *Alschinge'ri* and *Carlie'ri*, with long racemes; *fo'liis au'reis* (golden), *fo'liis variega'tis* (variegated), *involu'tum* (leaves coiled like rings), *pe'ndulum* (pendulous), *quercifo'lium* (leaves deeply cut), and *semperflo'rens* (always flowering). *Pa'rksii*, *Vo'ssii*, and *Watere'ri* are garden hybrids, with very long racemes. The first named was raised about 1840.

LABYRINTH is an arrangement of walks, inclosed by hedges or shrubberies, so intricate as to be very difficult to escape from. From the twelfth century to the end of the seventeenth they were a very favourite portion of English pleasure-ground; but they are now more judiciously banished.

LACÆ'NA. (One of the names of Helen. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Govenia.)

Divisions in spring, or after blooming; turfy peat, sphagnum, rotten wood, charcoal, and broken crocks; fixed to a block, and that built above the surface of a pot, and packed with the above material, or grown in a shallow, open basket. Summer temp., 60° to 90°, and moist; winter, 55° to 60°, and dry.

L. bi'color (two-coloured). 1. Greenish-yellow. May. Guatemala. 1843.
„ „ *a'lba* (white). Yellowish-white. 1910.
„ *specta'bilis* (showy). 1. Pinkish-white, spotted with purple. Central Amer. 1853.

LACA'THEA FLO'RIDA. See GORDONIA PUBESCENS.

LACE BARK. *Lage'tta linte'ria.*

LACEPE'DEA INSI'GNIS. See TURPINIA INSIGNIS.

LACHENA'LIA. (Named after *M. de la Chenal*, a botanical author. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Hyacinthus.)

All greenhouse bulbs, from South Africa. Offsets at potting period, and seeds in a hotbed, in spring; sandy peat, with a little fibrous loam. Winter temp., 35° to 45°, and dry, or the bulbs may be kept in drawers or bags. They are very beautiful little plants and grow freely under the above conditions, potting them whenever growth commences, and watering so long as the leaves are green, but no longer; when the pots are full of roots they stand gentle forcing. The small species require sand round their bulbs, whether in the border or pots.

L. angui'nea (serpent). 1. White. April. 1825.
„ *angustifo'lia* (narrow-leaved). See L. CONTAMINATA.
„ *au'rea* (golden). ½–1. Golden-yellow. 1856.
„ „ *gigante'a* (giant). 1½. Golden-yellow. 1893.
„ *bifo'lia* (two-leaved). See L. ISOPETALA.
„ *bowie'na* (Bowiean). ½. Yellow, red.
„ *contamina'ta* (contaminated). ½. Pink. March. 1774.
„ *convallarioi'des* (Convallaria-like). 1. Purple-pink, fading white. 1904.
„ *fistulo'sa* (hollow-stemmed). ½. White, tinged blue and purple. 1884.
„ *fla'va* (yellow). See L. TRICOLOR.
„ *fra'grans* (sweet-scented). See L. VERSICOLOR FRAGRANS.
„ *glauca* (milky-green). See HYACINTHUS GLAUCUS.
„ *glauci'na* (milkish-green). 1. Green, white, red. May. 1795.
„ *hi'rta* (hairy). ½–¾. White, flushed with red.

L. hyacinthoï'des (hyacinth-like). See L. CONTAMINATA.
„ *isope'tala* (equal-petaled). ½. White, purple. May. 1804.
„ *lanceæfo'lia* (spear-head-leaved). See SCILLA LANCEÆFOLIA.
„ *lilaci'na* (lilac). ½. Lilac. Leaves spotted with black. 1884.
„ *liliiflo'ra* (lily-flowered). ½. White. May. 1825.
„ *lu'cida* (glossy-*leaved*). ½. Pink. April. 1798.
„ *lu'teola* (yellowish). See L. TRICOLOR LUTEA.
„ *media'na* (intermediate). White, tinted with green. 1784.
„ *muta'bilis* (changeable). See L. ORCHIOIDES.
„ *Nelso'ni* (Nelson's). Pale yellow, tinted red when young. (*au'rea*×*lu'teola.*) 1882.
„ *nervo'sa* (nerved-*leaved*). ½. Pink. June. 1810.
„ *odorati'ssima* (sweetest-scented). ½. White; outer segments tipped green. May. 1884. Fragrant.
„ *orchioï'des* (orchis-like). 1. Green, white. March. 1752.
„ *orthope'tala* (straight-petaled). ½. Whitish; outer segments tinted red.
„ *pa'llida* (pale-*flowered*). ½. Pale blue. May. 1782.
„ „ *cærule'scens* (bluish). ½. Bluish. September. 1782.
„ „ *mi'nor* (smaller). ½. Pale blue. 1782.
„ *pa'tula* (spreading-*flowered*). ½. White, pink. April. 1795.
„ *pe'ndula* (weeping). ½. Red, yellow. April. 1789.
„ „ *aurelia'na* (Aurelian). Red. Robust variety. 1890.
„ „ *macula'ta* (spotted-*leaved*). ½. Red, yellow. April. 1789.
„ *puncta'ta* (dotted). See L. RUBIDA PUNCTATA.
„ *purpu'rea* (purple). See L. VERSICOLOR PURPUREA.
„ *purpu'reo-cæru'lea* (purplish-blue). 1. Purple. April. 1789.
„ *pusi'lla* (small). ½. White. June. 1825.
„ *pustula'ta* (blistered). 1. Purple, green. February. 1790.
„ *quadri'color* (four-coloured). See L. TRICOLOR QUADRICOLOR.
„ *racemo'sa* (racemed). 1½. White, green. May. 1811.
„ *refle'xa* (reflexed). ½. Yellowish, tipped with green. 1883.
„ *ro'sea* (rosy). 1. Pink. May. 1800.
„ *ru'bida* (reddish). ½–¾. Reddish. September, October. 1803.
„ „ *puncta'ta* (spotted). ½–¾. Outer segments flesh, densely-spotted blood-red.
„ „ *tigri'na* (tiger-marked). ½–¾. Outer segments with red rib, densely spotted red.
„ „ *tigri'na Wa'rei* (Ware's). ½–¾. Yellow in the middle, red at base, tipped green. 1884.
„ *sero'tina* (late). See DICPADI SEROTINUM.
„ *sessiliflo'ra* (stalkless-flowered). See L. GLAUCINA.
„ *tri'color* (three-coloured). 1. Red, yellow, green. April. 1774.
„ „ *d'Anco'næ* (Miss d'Ancona's). 1. Light yellow, tipped green and purple. 1905.
„ „ *lu'tea* (yellow). 1. Yellow.
„ „ *quadri'color* (four-coloured). 1. Inner segments greatly widened and purple at apex.
„ „ *supe'rba* (superb). 1. Flowers large, boldly coloured. 1904.
„ *uni'color* (one-coloured). See L. VERSICOLOR UNICOLOR.
„ *unifo'lia* (one-flowered). White, blue. March. 1795.
„ *versi'color* (changeable-coloured). ½. Varying in colour.
„ „ *fra'grans* (fragrant). ½. Whitish, tinted red. April. 1798.
„ „ *purpu'rea* (purple). ½. Outer segments whitish; inner purple. April. 1826.
„ *uni'color* (one-coloured). ½. Dark red. May. 1806.
„ *viola'cea* (violet). 1. Violet. March. 1795.

LACHNÆ'A. (From *lachne*, down; referring to the downy clothing of the flower-heads. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Gnidia.)

Greenhouse evergreen shrubs, from S. Africa, and all but one white-flowered. Cuttings of short young shoots in sand, under a bell-glass, in spring; sandy peat, with a little fibrous loam. Winter temp., 35° to 45°. In summer, a sheltered, somewhat shady place.

L. buxifo'lia (box-leaved). See GNIDIA FILAMENTOSA.
„ *conglomera'ta* (clustered). See PASSERINA ERICOIDES.
„ *eriocе'phala* (woolly-headed). See LASIOSIPHON ERIOCEPHALUS.
„ *filamento'sa* (thready). 2. June. 1800.
„ *glau'ca* (milky-green). See L. FILAMENTOSA.
„ *purpu'rea* (purple-*flowered*). See LASIOSIPHON ERIOCEPHALUS.

LACHNA'NTHES. (From *lachne*, down, and *anthos*, a flower. Nat. ord. *Bloodroots* [Hæmodoraceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Anigozanthos.)

Half-hardy herbaceous perennial. The red colour found in the roots is used in dyeing in North America. Division of the roots in spring; peat and loam. Winter temp., 40°.

L. tincto'ria (dyer's). 1½. Pink. July. N. Amer. 1812.

LACKEY, or BARRED-TREE LACKEY MOTH (*Clisioca'mpa Neu'stria*). "The eggs of this insect, in winter, may be detected easily, in broad bands, round the twigs of our pear, apple, and other trees. They are arranged with such admirable art, that they seem set by the skilful hands of the jeweller, and are very conspicuous. Each bracelet, as the French gardeners call it, contains from two hundred to three hundred eggs, fastened by their ends, in a series of from fifteen to seventeen close, spiral circles, round the twig. The spaces between the eggs are filled up with a tenacious, brown gum, which protects them from inclement weather, as well as from all attacks except those of man. The eggs thus placed look like a ring of seed-lac; and we think its name may have been thence derived. They are easily crushed by the gardener's knife. The caterpillars—striped lengthwise, blue, red, and yellow, slightly hairy, and with a white line down the back—appear from these eggs in the April or May following. They congregate early in the morning, or during rain, in large nests, at the forks of the small branches, and are then easily crushed. They enter the chrysalis state at the end of June, and then they are to be found in cocoons, or oval webs, powdered with white or yellowish dust, between two leaves, &c. The chrysalis, or pupa, is longish, and dark brown, in which state it remains for three weeks or a month. In July the moth appears; its colour is light yellow or reddish-yellow-ochre. The upper wings have a darker band across their middle, which band is bordered by two light cross-lines; the fringes of the wings are whitish, spotted with brown; the lower wings are of a uniform brownish or light yellow colour. The male is readily known from the female by his comb-like (pectinated) antennæ (feelers) and thinner body. The insect flies only at night, and, consequently, is rarely seen. The caterpillars often appear in considerable numbers, and do not confine their ravages to fruit-trees, but attack many others; such as beeches, elms, poplars, oaks, and even pines. In May, when the caterpillars are living in society, the nests containing them should be collected and destroyed. Care must be taken when collecting the nest; for, if the caterpillars are much disturbed, they let themselves down to the ground by means of a thin, silken thread, and escape. In July their cocoons should be looked for on the trees, in the roofs of sheds, in hedges, and even on the tops of walls."—*The Cottage Gardener*, i. 207.

LACTU'CA. Lettuce. (From *lac*, ; milk referring to the milky juice. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Annual, biennial, or perennial herbs, the latter of which are interesting border-plants on account of their bright, clear blue or purple flowers. Seeds of annual and biennial species; divisions of perennials. Ordinary garden soil.

L. acumina'ta (acuminate). Purple. N. Amer.
„ *alpi'na* (alpine). 3. Blue-purple. July. Europe. (Scotland). Perennial. "Blue Sowthistle."
„ *breviro'stris* (short-beaked). Eastern Asia.
„ *cre'tica* (Cretan). 6. Blue. July. Greece and Asia Minor. 1820.
„ *hasta'ta* (halbert-shaped). 2. Blue. July. Himalaya. 1802.
„ *intyba'cea* (chicory-like). Yellow. Nicaragua.
„ *longifo'lia* (long-leaved). Himalaya.
„ *macrophy'lla* (large-leaved). 3–4. Reddish-purple. July.

L. macrorhi'za (large-rooted). 2–3. Violet. July, August. Himalaya. 1846. Perennial.
,, *pere'nnis* (perennial). 2. Pale blue. July to September. S. Europe. 1596.
,, *Plumie'ri* (Plumier's). 4–6. Purple or blue. July to September. France. 1804. Perennial.
,, *racemo'sa* (racemed). Armenia.
,, *sati'va* (cultivated). See L. SCARIOLA. "Cultivated Lettuce."
,, *Scari'ola* (Scariola). 2–4. Yellow. June. Europe; Orient. 1562. Annual. "Prickly Lettuce."
,, *sibi'rica* (Siberian). 2. Blue. August. Siberia. 1794.
,, *tata'rica* (Tartarian). 4. Blue. August. Siberia. 1784.
,, *tubero'sa* (tuberous). 2. Blue-purple. Asia Minor; Persia. Perennial.
,, *villo'sa* (villous). See L. ACUMINATA.

Varieties.—There are the Cos and the Cabbage; the first more grown in summer than in winter; the second at all seasons, but more usually in winter, on account of their superior hardihood. The Cilicias are of a nature intermediate between the two. When young, the Cabbage varieties are, in general, sweeter than those of the Cos at the same age; but of a full growth this is reversed. Hence the latter are preferred for salads, and the former for soups. The Cabbage varieties succeed better in a hotbed than the Cos.

Cos Varieties.—Alexandra White, Bath Black-seeded, Giant White, Hick's Hardy White, Sugarloaf, Black-seeded Green, Spotted, or Leopard, Early Egyptian, Green and Brown Cilicia, Green, Lop, White, or Versailles, White Paris Cove, the finest summer kind; Green Paris Cove, rather hardier; Bath Cos, and Brown Cos.

Cabbage Varieties.—All the Year Round, Continuity, Early Paris Market, Hardy Hammersmith, Tom Thumb, Winter Beauty, Wonderful, Drum-headed, Princes, Brown Dutch and Common White Dutch, both good for winter; Tennis Ball, or Button, good for winter; Large White, Hardy Green, or Capuchin, good for winter; Imperial Grand Admirable, Prussian, Large Roman, Malta, for summer; Neapolitan, for summer.

Soil.—Lettuces thrive best in a light, very rich soil, with a dry substratum. For the first and last crops of the year a warm, sheltered situation is required; but for the Midsummer ones, a border that is shaded during midday.

Sowing.—The first sowing in a frame on a warm border, or shallow hotbed, at the close of January, or early in February; at the close of this last month a larger one in any open situation, and smaller repeated once every three weeks, until the end of July, for summer and autumn use, to be continued at similar intervals until the close of September, for winter and early spring. Sow moderately thin, each variety separate.

Pricking out.—When the plants are about a month old, or two inches in height, thin them to three or four inches apart, and prick out those removed at similar distances. Those from the sowings in January and February in frames, and thence until August, in any open situation. Those of the August sowing must be divided into two portions; the largest being selected and planted in an open compartment for late autumn use, and the smaller on a warm border for winter and early spring.

Plant out, finally, in rows a foot apart each way. At the time of every removal, whether of pricking out or planting, water must be given moderately, and until the plants are rooted. It may be remarked, that transplanted lettuces never attain so fine a growth as those left where sown, nor become so soon fit for use; those which are planted out at once to remain being better in these respects than those pricked out previous to final planting. The varying in their time of becoming fit for use, however, is of advantage, as by these means a more perfect succession is obtained. Those which are planted to withstand the winter, which they easily do if sheltered with hoops and matting during severe weather, and continue in a fit state for use, are best planted on ridges, as a protection from excessive wet, from which they always suffer. In every stage of growth they must be kept well watered, and the earth around them frequently stirred, for the extirpation of slugs and snails. No vegetable is more benefited than the lettuce by the application, occasionally, of liquid-manure. To check the Cos plants running to seed before the heart is perfectly blanched, it is a good practice, at the time of tying them up, to cut out the centre bud of each with a sharp knife.

Frame Crops.—The plants raised from the September sowing may be divided as directed for those of August; but, in addition, some of the Cos varieties may be planted on a warm border, to have the shelter of frames and hand-glasses. Some of the strongest of these may, in succession during November, December, and January, be planted in a moderate hotbed, being removed with as little injury as possible to the roots, to bring them forward for immediate use. Whilst in frames they require much attention. Being watered and shaded until established, they must afterwards have as much light and air admitted as possible, as well as a regular supply of moisture.

At night the additional shelter of matting, and in severe weather an increased covering, must be afforded. The day temperature should never exceed 80°, nor fall below 65°. The plants may be set in rows about six inches apart; but of those which are merely sheltering during the winter, on the return of mild weather, at the beginning of March or April, every second one must be carefully removed, and planted in a warm border at the usual open-ground distance.

To obtain Seed.—Some of the finest and most perfect plants of each variety that have survived the winter, or from the forwardest sowing of the year, should be selected. The seed from any that have run up prematurely cannot be depended upon. If two varieties flower near each other, only mongrel varieties will be obtained. Each stem is to be tied to a stake as a support against tempestuous weather. The branches must be gathered as the seed ripens upon them. It must be thoroughly dried before it is stored.

LADY-BIRD. *Coccine'lla.*

LADY'S FERN. *La'strea Thely'pteris.*

LADY'S LACES. *Aru'ndo.*

LADY'S MANTLE. *Alchemi'lla.*

LADY'S SLIPPER. *Cypripe'dium.*

LADY'S SMOCK. *Cardami'ne.*

LADY'S TRESSES. *Neo'ttia spira'lis* and *Spira'nthes.*

LÆ'LIA. (*Lælia* was a Vestal virgin; alluding to the delicacy of the flower. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Epidendrum.)

Stove orchids. Divisions; turfy peat, chopped old moss, and charcoal, raised above the surface of a pot, filled with drainage, or a block of wood firmly laid across. Treatment similar to Cattleya.

L. acumina'ta (pointed-*lipped*). See L. RUBESCENS.
,, *a'lbida* (whitish). Yellowish-white. Oaxaca. 1838.
,, ,, *be'lla* (pretty). Milk-white, lilac-pink, rose-purple. Mexico.
,, ,, *bru'nnea* (brown). Brown-purple. Mexico. 1868.
,, ,, *ochra'cea* (ochre-coloured). Brownish-ochre, purple. Mexico. 1868.
,, ,, *ro'sea* (rosy). White, rose-purple. Mexico. 1869.
,, ,, *stobartia'na* (Stobartian). Purple; lip deep purple. 1877.
,, ,, *sulphu'rea* (sulphur). Sulphur, purple marks. 1884.
,, ,, *Tucke'ri* (Tucker's). Purple. Mexico. 1868.
,, *a'nceps* (two-edged). 1½. Rose, purple. November, December. Mexico.
,, ,, *a'lba* (white). White, with yellow disc. Mexico. 1879.
,, ,, *ama'bilis* (lovely). White; lip yellow, lined purple. 1889.
,, ,, *amesia'na* (Amesian). White; petals feathered crimson at tips; lip violet-crimson. 1888.
,, ,, *ashworthia'na* (Ashworthian). Snow-white; lip with bluish veins. 1894.
,, ,, *barkeria'na* (Barkerian). Purple. December. Mexico. 1833.
,, ,, *bla'nda* (mild). Sepals white; petals rosy; lip warm purple at apex. 1885.
,, ,, *calvertia'na* (Calvertian). White; front lobe of lip red-purple. 1883.
,, ,, *chamberlainia'na* (Chamberlainian). Front lobe velvety purple.

L. a'nceps crawshaya'na (Crawshayan). Flowers large; colours rich. 1895.
„ „ *Dawso'ni* (Dawson's). White; petals rhomboidal; lip with purple front lobe. 1868.
„ „ *delica'ta* (delicate). White; lip rose-purple; disc orange.
„ „ *hillia'na* (Hillian). White; lip two-lobed purple; disc orange. 1881.
„ „ *hollidaya'na* (Hollidayan). Lip with crimson veining. 1894.
„ „ *holochei'la* (whole-lipped). Lip narrow, entire. 1891.
„ „ *hyea'na* (Hyean). White; side lobes of lip with purple veins.
„ „ *kienastia'na* (Kienastian). Petals and side lobes of lip rosy. 1886.
„ „ *leea'na* (Leean). White; side lobes of lip tipped purple. 1884.
„ „ *Leema'nni* (Leemann's). Lip almost wholly dark purple. 1904.
„ „ *leucosti'cta* (white-speckled). Sepals and petals rose-purple, streaked white. 1885.
„ „ *linea'ta* (lined). Sepals white and crimson, with brown lines. 1895.
„ „ *mu'nda* (neat). White side lobes of lip with purple veins; 3 keels yellow. 1886.
„ „ *obscu'ra* (obscure). Whole flower dark purple; disc orange. 1886.
„ „ *owenia'na* (Owenian). Richly coloured, flaked with white. 1892.
„ „ *percivalia'na* (Percivalian). Palest rose-purple; front lobe of lip rich purple. 1883.
„ „ *protherœa'na* (Protherœan). White and rose-purple; lip crimson-purple. 1896.
„ „ *pulché'rrima* (fairest). Mauve-purple; disc light orange. 1883.
„ „ *ra'dians* (radiating). Deep purple; disc dark orange, lined purple. 1888.
„ „ *ræblingia'na* (Rœblingian). A peloriate form. 1908.
„ „ *ro'sea* (rosy). Bright rose; disc yellow, with dark lines. 1880.
„ „ *sanderia'na* (Sanderian). Like *L. a. Dawsoni*, but segments narrow. 1885.
„ „ *schrœderia'na* (Schrœderian). White; lip with crimson-purple lines. 1885.
„ „ *Schrœ'derœ* (Baroness Schrœder's). Rose; lip with blackish-purple front. 1887.
„ „ *scottia'na* (Scottian). Mauve; lip dark purple. 1888.
„ „ *Simo'ndsii* (Simond's). Pure white, with slate-blue lines on the lip. 1901.
„ „ *Ste'lla* (star). Pure white; lip with yellow throat and carmine lines. 1887.
„ „ *thomsonia'na* (Thomsonian). White; lip violet-crimson. 1890.
„ „ *veitchia'na* (Veitchian). White; front lobe of lip purple-mauve. 1883.
„ „ *vesta'lis* (vestal). White; throat deep sulphur. 1880.
„ „ *virgina'lis* (virginal). Pure white; disc pale sulphur. 1887.
„ „ *Warné'rii* (Warner's). Light rose; lip dark crimson.
„ *autumna'lis* (autumnal). 3. Rosy. September. Mexico. 1836.
„ „ *a'lba* (white). White. 1889.
„ „ *atroru'bens* (dark purple). Rich dark purple. Mexico. 1879.
„ „ *venu'sta* (lovely). Rose-mauve. 1884.
„ „ *xantho'tropis* (turning-yellow). Petals broader. Mexico. 1886.
„ *boothia'na* (Boothian). 1½. Purple-violet, with crimson veins. Brazil. 1847.
„ *cærule'scens* (bluish). Costa Rica. 1838.
„ *ca'ndida* (white-*flowered*). White. June. Bolanos. 1840.
„ *cinnabari'na* (scarlet-*flowered*). 2. Reddish. May. Brazil. 1836.
„ *cinnamo'mea* (cinnamon). White and purple. Brazil. 1860.
„ *crawshaya'na* (Crawshayan). Amethyst; lip purple. Supposed hybrid. 1883.
„ „ *leuco'ptera* (white-winged). Rose; lip mauve-purple. 1884.
L. cri'spa (crisped). White; lip amethyst-purple, lined in tube. Brazil. 1826.
„ „ *buchanania'na* (Buchananian). Lip broad, crimson-purple.
„ „ *Cauwela'rtiæ* (Mme. Cauwelært's). Basal half of lip greenish-yellow. 1891.
„ „ *delicati'ssima* (very delicate). White, with a broad purple stripe on lip. 1881.
„ „ *purpu'rea* (purple). Pale purple; lip blotched deep purple.
„ „ *viola'cea* (violet). Lip rich violet in front. Guiana. 1850.
„ *crispila'bia* (crisped-lipped). Amethyst-purple; disc white. Brazil. 1867.
„ *daya'na* (Dayan). See L. PUMILA DAYANA.
„ *digbya'na* (Digbyan). 1. Greenish-yellow and white. July. Honduras. 1846.
„ *dormania'na* (Dormanian). See CATTLEYA DORMANIANA.
„ *e'legans* (elegant). Amethyst-purple; front lobe of lip crimson-purple. Brazil. 1865.
„ „ *a'lba* (white). White; front lobe of lip carmine-magenta. 1884.
„ „ *blenheime'nsis* (Blenheim). Rosy-purple; lip magenta-purple. Brazil.
„ „ *broomea'na* (Broomean). White and rose; lip crimson. 1890.
„ „ *e'xcellens* (excellent). Folded part of lip pure white. 1892.
„ „ *gaskellia'na* (Gaskellian). Pale lilac; lip dark purple in front. 1887.
„ „ *giganté'a* (giant). Lilac, spotted purple. 1862.
„ „ *houttea'na* (Houttean). Rich rose-purple. 1883.
„ „ *inca'ntans* (charming). Dark nankeen; lip dark purple. 1887.
„ „ *loba'ta* (lobed). Segments very narrow. 1869.
„ „ *Marsha'lliæ* (Mrs. Marshall's). Purple. 1872.
„ „ *measuresia'na* (Measuresian). 1. Sulphur; lip dark purple, white. 1887.
„ „ *morrenia'na* (Morrenian). Magenta-rose; lip crimson. 1888.
„ „ *no'bilis* (noble). Clear rosy-crimson. 1894.
„ „ *Nyle'ptha* (Nyleptha). Sulphur-yellow; lip crimson. 1888.
„ „ *pi'cta* (painted). Light rose; lip yellow and purple. 1884.
„ „ *platychi'la* (broad-lipped). Green absent; lip broad. 1885.
„ „ *prasia'ta* (leek-green). Rose-magenta; lip lilac, white.
„ „ *prasia'ta i'ndica* (Indian). Magenta-rose; lip magenta-crimson. 1863.
„ „ *schilleria'na* (Schillerian). See L. SCHILLERIANA.
„ „ *stelzneria'na* (Stelznerian). White; lip white, rich purple in front.
„ „ *tautzia'na* (Tautzian). Pale purple and white. 1888.
„ „ *Turné'ri* (Turner's). Amethyst-purple; lip shaded with maroon.
„ „ *Wolstenho'lmiæ* (Mrs. Wolstenholme's). Amethyst-purple; lip with maroon disc. 1865.
„ *epidendroi'des* (Epidendrum-like). Purple, crimson. July. Brazil. 1839.
„ *erythrobu'lbon* (red-bulbed). Brazil. 1843.
„ *eyermania'na* (Eyermanian). Rosy-purple, yellow. Mexico. 1888.
„ *fla'va* (yellow). Yellow. Brazil, 1841.
„ „ *aurantia'ca* (orange). Glowing orange.
„ *furfura'cea* (scurfy-*stalked*). 1½. Rose. November. Mexico. 1838.
„ *glau'ca* (sea-green). 1. Pale yellowish-white. March. Mexico. 1837.
„ *gottoia'na* (Gottoian). Rose; lip purple, lined maroon. Imported with *L. grandis*. 1891.
„ *gouldia'na* (Gouldian). Purple, white; disc yellow. 1888.
„ *grandiflo'ra* (large-flowered). 1. Xalapa.
„ *gra'ndis* (grand). Soft yellow. May. Bahia. 1850.
„ „ *tenebro'sa* (dark). See L. TENEBROSA.
„ *harpophy'lla* (sickle-leaved). Vermilion. Spring. Brazil. 1873.
„ „ *Clau'dii* (Claud's). Segments broad, rich orange-scarlet. 1895.
„ *irrora'ta* (besprinkled). See L. SCHILLERIANA.

L. jonghea'na (Jonghean). Amethyst, yellow, white. Brazil. 1854.
„ „ *Ashwo'rthiæ* (Mrs. Ashworth's). White, with orange disc. 1901.
„ „ *Krome'ri* (Kromer's). Rose-purple, with purple bands on lip. 1901.
„ „ *Te'mplæ* (Mrs. Temple's). Rose; lip white, tinted rose. 1900.
„ *leea'na* (Leean). Rose; lip white, tipped purple. Supposed hybrid. Brazil. 1882.
„ *Linde'nii* (Linden's). See CATTLEYO'PSIS DELICA'TULA.
„ *lindleya'na* (Lindleyan). Rose-purple; lip white, spotted purple. Brazil. 1857.
„ *loba'ta* (lobed). See L. BOOTHIANA.
„ *lucasia'na* (Lucasian). 1. Purplish-mauve; lip yellow. Brazil. 1893.
„ *Lu'ndii* (Lund's). ½. White, suffused lilac; lip with purple veins. Brazil. 1910.
„ *maja'lis* (May-*flowering*). ¾. Pink, purple. Mexico. 1838.
„ „ *a'lba* (white). White. Colombia. 1880.
„ *monophy'lla* (one-leaved). ½. Orange-scarlet. Jamaica. 1882.
„ *Pachyste'le* (Pachystele). Rose; lip white, purple, rose. 1888.
„ *Pati'nii* (Patin's). Colombia.
„ *peduncula'ris* (*long*-flower-stalked). See L. RUBESCENS.
„ *Perri'nii* (Perrin's). Lilac. September. Brazil. 1831.
„ „ *a'lba* (white). White; disc yellow. 1888.
„ „ *irrora'ta* (sprinkled). Light rose; lip white, purple. 1882.
„ „ *ni'vea* (snowy). White; lip edged purple. 1880.
„ *porphyri'tis* (purplish). Purple and green; lip purple. Hybrid (?). Brazil. 1886.
„ *præ'stans* (excellent). See L. PUMILA PRÆSTANS.
„ *pu'mila* (dwarf). ½. Purple. July, August. Brazil. 1837.
„ „ *Colema'nii* (Coleman's). Blush-white, purple, rose. 1898.
„ „ *curlea'na* (Curlean). A few dark purple streaks on sepals and petals. 1886.
„ „ *daya'na* (Dayan). Purple. Brazil. 1876.
„ „ *delica'ta* (delicate). Nearly pure white. 1896.
„ „ *delicati'ssima* (very delicate). Blush-white. 1900.
„ „ *mira'bilis* (wonderful). Flowers larger, darker; lip with 10–12 crests. Brazil. 1878.
„ „ *præ'stans* (excellent)). Lip trumpet-shaped, convolute, not straight. Brazil. 1859.
„ „ *præ'stans a'lba* (white). Ivory white; lip tipped crimson. 1889.
„ „ *præ'stans ca'ndida* (white). White. 1898.
„ „ *præ'stans glorio'sa* (glorious). Front of lip claret. 1900.
„ „ *præ'stans Leema'nniæ* (Mrs. Leemann's). Between *candida* and *alba*. 1899.
„ „ *præ'stans lucia'na* (Lucian's). Purple-rose, red-purple. 1898.
„ „ *præ'stans no'bilis* (noble). Brightly coloured. 1898.
„ „ *specta'bilis* (showy). White, purple, nearly as large as *L. majalis*. 1879.
„ *purpura'scens* (purplish). Pink. September. Brazil. 1838.
„ *purpura'ta* (purple). White or tinted pale purple; tube of lip pale yellow, lined purple. S. Brazil. 1847.
„ „ *a'lba* (white). White, rose, yellow. 1869.
„ „ *albane'nsis* (St. Alban's). White; lip deep purple. 1895.
„ „ *ashworthia'na* (Ashworthian). Petals purple-rose, striped white. 1896.
„ „ *blenheime'nsis* (Blenheim). Blush-rose; lip very dark purple. 1888.
„ „ *bru'nnea* (brown). Lip brownish-purple. 1896.
„ „ *fastuo'sa* (proud). Rose-purple; lip deep maroon.
„ „ *Krome'ri* (Kromer's). White. 1901.
„ „ *Lewi'sii* (Lewis's). White; lip with few lilac lines. 1896.
„ „ *littlea'na* (Littlean). White; lip white and purple. 1900.
„ „ *tracya'na* (Tracyan). White; lip flushed rose. 1900.
„ „ *whitea'na* (Whitean). Lip dark purple; throat white. 1888.
„ „ *Willia'msii* (Williams's). Rose; lip crimson.
L. rube'scens (blushing). ½. Cream, pink. May. Mexico. 1840.
„ „ *a'lba* (white). White; disc pale yellow.
„ *rupe'stris* (rocky). Violet. Brazil. 1840.
„ *schilleria'na* (Schillerian). Lip heavily veined rose and purple. S. Brazil. 1855.
„ *supe'rbiens* (gorgeous-*flowered*). 1. Pink, crimson. November. Guatemala. 1840.
„ *tenebro'sa* (dark). Coppery-bronze; lip intense purple, edged white. Bahia. 1891.
„ *vi'rens* (greenish). Greenish-yellow; lip white. Brazil. 1879.
„ *Walli'sii* (Wallis's). See CATTLEYA LABIATA ELDORADO VIRGINALIS.
„ *wyattia'na* (Wyattian). See L. PURPURATA.
„ *xanthi'na* (yellow). Yellow; lip white and purple. Brazil. 1859.
„ „ *agra'phis* (unwritten). Lip without purple markings. 1888.

LÆLIOCA'TTLEYA. A name given to a large number of hybrids between species of *Lælia* and species of *Cattleya*.

LÆLIO'PSIS DOMINGE'NSIS. See BROUGHTONIA LILACINA.

LÆLIO'PSIS LINDE'NI. See CATTLEYOPSIS DELICATULA.

LAFOE'NSIA. (Named in honour of the *Duke of Lafoens*, president of the Lisbon Academy of Science. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Lagerstrœmia.)

A stove shrub. Cuttings of rather ripe wood in autumn, in sand, and in bottom-heat; peat and loam. Summer temp., 60° to 90°; winter, 50° to 55°, and kept rather dry. Prune freely in winter.

L. microphy'lla (small-leaved). See L. VANDELLIANA.
„ *vandellia'na* (Vandellian). Brazil. 1847.

LAGA'SCEA. (Named after *D. M. Lagasca*, professor of botany at Madrid. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Stove annual. Raised in a hotbed, several times potted there, and bloomed in summer, in a greenhouse or plant stove.

L. latifo'lia (broad-leaved). See L. SUAVEOLENS.
„ *mo'llis* (soft). 2. White. July. Cuba. 1815.
„ *suave'olens* (sweet-scented). 8–15. White. June. Mexico.

LAGENA'NDRA. (From *lagenos*, a bottle, and *aner*, a man, a stamen. Nat. ord. Araceæ.)

Aquatic or marsh stove herb, with creeping stems. Divisions or cuttings. Loam, peat, charcoal, and sand.

L. toxica'ria (poisonous). 4. White. E. Ind. 1818.

LAGENA'RIA. Bottle Gourd. (From *lagenos*, a bottle; referring to the shape of the fruit of some species. Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*. Allied to Cucumber.)

Hardy annuals, from the East Indies, and yellow-flowered, except where otherwise specified. Seeds in a hotbed, and either fruited there, or hardened off and cultivated out of doors, under hand-lights, against palings and other fences; rich, light soil. For culture, see CUCUMBER.

L. idola'trica (idolatrous. *Pear-fruited*). White. June.
„ *verruco'sa* (warty). 1889.
„ *vitta'ta* (banded). See L. VULGARIS VITTATA.
„ *vulga'ris* (common). 10. August. 1597.
„ „ *clava'ta* (club-shaped). 10. August. 1597.
„ „ *courgou'rda* (courgourde). 10. August. 1597.
„ „ *depre'ssa* (depressed). 10. August. 1597.
„ „ *turbina'ta* (top-shaped). 10. August. 1597.
„ „ *virgina'lis* (virginal). Fruit waxy white. 1892.
„ „ *vitta'ta* (striped). White. June.

LAGENO'PHORA. (From *lagenos*, a bottle, and *phoreo*, to bear; referring to the flower-heads. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Brachycome.)

Greenhouse herbaceous perennial. Division in spring; light soil; a cool greenhouse, or a dry, cold pit in winter.

L. Forste'ri (Forster's). Yellow and purple. New Zealand. 1837.

LAGERSTRŒ'MIA. (Named after *M. Lagerstræm*, a German. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Cuttings of small, firm side-shoots in spring, under a bell-glass, and cuttings of ripened shoots in autumn, in strong bottom-heat; peat and loam. Summer temp., 60° to 90°, with plenty of moisture, both at the root, and also at the top, except when in flower. Winter temp., 55° to 60°, and dryish, after being pruned in autumn. The greenhouse species require only warm greenhouse temperatures.

GREENHOUSE EVERGREEN SHRUBS.

L. i'ndica a'lba (Indian-white). 12. White. August. China. 1816.
„ „ *ro'sea* (rosy). 12. Rose. August. China. 1825.
„ *speció'sa* (showy). See L. FLOS-REGINÆ.

STOVE EVERGREEN SHRUBS.

L. e'legans (elegant). See L. INDICA ELEGANS.
„ *floribu'nda* (free-flowering). Trop. Asia.
„ *Flo's-regi'næ* (queen's-flower). 12. Red. Trop. Asia. 1792.
„ *grandiflo'ra* (large-flowered). See DUABA'NGA SONNERATIOI'DES.
„ *i'ndica* (Indian). 6. Flesh. July. E. Ind. 1759.
„ „ *e'legans* (elegant). 10. Rose, yellow. August. Trop. Asia. 1841.
„ *parviflo'ra* (small-flowered). 12. White. E. Ind. 1818.
„ *Regi'næ* (queen's). See L. FLOS-REGINÆ.

LAGE'TTA. Lace Bark. (Its Indian name. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

The inner bark of this stove evergreen is the beautiful Lace Bark of the West Indies. Cuttings of half-ripened shoots in sand, under a glass, and in bottom-heat, in April or May; peat and fibrous loam. Summer temp., 60° to 80°; winter, 45° to 55°.

L. lintea'ria (linen). 6. White. Jamaica. 1793.

LAGUNÆ'A. See HIBISCUS.

LAGUNA'RIA. (From its resemblance to *Lagunæa*, an allied genus. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Greenhouse evergreen shrubs. By cuttings of half-ripened shoots in sand, under a glass, and in heat, in May; peat and loam. Winter temp., 40° to 45°.

L. cuneifo'rmis (wedge-*leaved*). See FUGOSIA CUNEIFORMIS.
„ *lilaci'na* (lilac). See FUGOSIA HAKEÆFOLIA.
„ *Paterso'nii* (Paterson's). 20. Pale red. June. Norfolk Island. 1792.

LAGUNCULA'RIA. (Derivation doubtful. Nat. ord. Combretaceæ.)

Evergreen, stove shrub. Cuttings in sand with bottom-heat. Loam, peat, and sand.

L. racemo'sa (racemed). 10. White. W. Ind.; Guiana. 1820.

LAGU'RUS. (From *lagos*, a hare, and *oura*, a tail. Nat. ord. Gramineæ.)

A hardy, annual, ornamental grass, for mixing with flowers or drying. Seeds. Garden soil.

L. ova'tus (egg-shaped). 1. June, July. Europe (England).

LA'LAGE. (Named after *Lalage*, a gay, witty dame immortalised by Horace. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Now referred to Bossiæa, which see.)

L. hoveæfo'lia (Hovea-leaved). See BOSSIÆA ORNATA.
„ *orna'ta* (gay). See BOSSIÆA ORNATA.

LALLEMA'NTIA. (Commemorative of *J. E. Lallemant* of St. Petersburg. Nat. ord. Labiatæ.)

Hardy annual and biennial herbs. Seeds. Ordinary garden soil.

L. cane'scens (grey). 1½. Blue. July, August. Asia Minor and Persia. 1711. Biennial.
„ *ibe'rica* (Iberian). 1. Blue. July. Asia Minor; Syria. 1820.
„ *pelta'ta* (shield-shaped). 1½. Purple. July. Caucasus; Persia. 1711.

LAMA'RKIA. (Commemorative of *J. B. Lamark*, of France. Nat. ord. Gramineæ.)

Hardy annual grass. Seeds. Garden soil.

L. au'rea (golden). ½. Flowers in short, yellow-green heads. Mediterranean region.

LAMBE'RTIA. (Named after the late *Mr. Lambert*, a distinguished patron of botany. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Hakea.)

Greenhouse evergreen shrubs, from Australia. Cuttings of the ripened shoots, before fresh growth commences, in the spring, in sand, over sandy peat, in pots nearly filled with drainage, and covered with a bell-glass, and kept close and cool until the base of the cutting swells, when a little bottom-heat may be applied; sandy loam and fibrous peat, well-drained, and mixed with rough pieces of charcoal. Winter temp., 38° to 45°.

L. echina'ta (hedgehog). 3. July. 1824.
„ *formo'sa* (handsome). 4. Red. July. 1788.
„ *longifo'lia* (long-leaved). 4. Red. July. 1826.
„ *multiflo'ra* (many-flowered). Orange.
„ *ovalifo'lia* (oval-leaved). 1836.
„ *propi'nqua* (related). See L. ECHINATA.

LAMB'S LETTUCE. See CORN SALAD.

LA'MIUM. Dead Nettle. (From *laimos*, the throat; in allusion to the throat-like form of the corolla. Nat. ord. Labiatæ.)

Annual and perennial herbs, but only perennials listed here. Divisions. Ordinary garden soil.

L. Galeo'bdolon (Galeobdolon). 1. Yellow. May, June. Europe (England). "Yellow Archangel."
„ „ *variega'tum* (variegated). 1. Yellow. May.
„ *macula'tum* (spotted). 1. Purple. June, July. Europe (Britain).
„ „ *au'reum* (golden). Leaves yellow. "Golden Archangel."
„ *Orva'la* (Orvala). 1½. Pale red-purple, white. April. S. Europe. 1596.

LAMOUROU'XIA. (Named after *J. V. F. Lamouroux*, a naturalist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Bartsia.)

Greenhouse herbaceous perennials, scarlet-flowered, from Mexico. For culture, see ANGELO'NIA.

L. corda'ta (heart-shaped-*leaved*). See L. VISCOSA.
„ *multi'fida* (many-cleft-*leaved*). 1½. 1846.
„ *Pri'nglei* (Pringle's). 3–5. Crimson. Mexico. 1895. Shrub.
„ *visco'sa* (clammy). 1½. 1846.

LAMPROCO'CCUS. (From *lampros*, shining, and *kokkos*, a berry. Nat. ord. Bromeliaceæ. Mostly now referred to Æchmea.)

L. cærule'scens (bluish). See ÆCHMEA CÆRULESCENS.
„ *speció'sus* (showy). Leaves striped with yellow. Brazil. 1893.
„ *Vallera'ndi* (Vallerand's). See STREPTOCALYX VALLERANDI.
„ *Weilba'chii* (Weilbach's). See ÆCHMEA WEILBACHII.

LAMPRO'NIA RUBIE'LLA. See RASPBERRY MOTH.

LAMPWICK. *Phlo'mis Lychni'tis.*

LANA'RIA. (Derived from *lana*, wool; in allusion to the woolly flowers. Nat. ord. Hæmodoraceæ.)

Greenhouse perennial herb. Divisions in spring. Loam, peat, and sand.

L. plumo'sa (plumy). 1½. White. S. Africa. 1787.

LANCE-WOOD. *Guatte'ria.*

LAND-DITCHING. See DRAINING.

LANDRA. *Ra'phanus La'ndra.*

LANDSCAPE GARDENING, as its name intimates, is the composition of beautiful scenery, so that all artifice is concealed by the blending of trees, shrubs, ground, and water; this forming vistas as gratifying as those which occur naturally. Admiration for such scenery is an innate quality of the human mind; and successfully to imitate such scenery requires judgment as well as taste. It is not possible, without a heavy outlay, to introduce any desired species of landscape beauty upon a given plot of ground. There is the beauty of the level surface, quite unattainable without such outlay, upon a

surface which is abrupt and broken. The beauty of the clay districts is not otherwise to be secured upon those of the chalk; neither on light uplands can be arranged the dense beauties of well-watered, alluvial vales. "Consult the genius of the place" is an axiom which has been derided, but which is dictated by the soundest sense.

Under this general head we have not space to enter fully into details; but some of these will be found, under their appropriate titles, in other pages, and chiefly borrowed from Mr. Whately, who has published more correct views upon the art of tastefully arranging grounds than most men who have written upon the subject.

LA'NIUM. (From *lana*, wool; the sepals are downy. Nat. ord. Orchidaceæ.)

Stove Orchids. Divisions. Fibrous peat and sphagnum.

L. Berke'leyi (Berkeley's). Green, dotted red-brown. Brazil. 1894.
,, *microphy'llum* (small-leaved). Pale pink. Guiana.
,, *subula'tum* (awl-shaped). Pale green. Brazil. 1896.

LANKESTE'RIA. (Named after *Dr. E. Lankester*, a distinguished botanist. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Eranthemum.)

Stove evergreen shrubs, from Sierra Leone. Cuttings of young shoots in sandy soil, in heat, in spring; peat and loam, well drained. Summer temp., 60° to 85°; winter, 48° to 58°.

L. Barte'ri (Barter's). Pale yellow, with orange throat. Trop. Africa. 1865.
,, *e'legans* (elegant). Trop. Africa.
,, *hi'spida* (coarsely-hairy). See L. PARVIFLORA.
,, *longiflo'ra* (long-flowered). See L. PARVIFLORA.
,, *parviflo'ra* (small-flowered). Yellow. April. 1844.

LANSBE'RGIA CARACASA'NA and **L. MARTINICE'NSIS.** See TRIMEZA LURIDA.

LANTA'NA. (An ancient name for Viburnum. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreen shrubs. Cuttings of the short side-shoots, two inches in length, taken off close to the old wood, when fresh growth commences, in spring; fibrous loam and a little peat; *sellowia'na* requires sandy peat. Summer temp., 60° to 85°; winter, 45° to 55°.

L. aculea'ta (prickly). See L. CAMARA.
,, *a'lba* (white). White, yellow. S. Amer.
,, *brasilie'nsis* (Brazilian). 3. White. June. Brazil. 1823.
,, *Ca'mara* (Camara). 10. Red. June. Trop. Amer. 1692.
,, *cocci'nea* (scarlet). 3. Scarlet. June. S. Amer. 1824.
,, *cro'cea* (copper-coloured). 4. Copper. June. Jamaica. 1818.
,, *delicati'ssima* (very delicate). Pale blush. 1852.
,, *fla'va* (yellow). 2. Yellow. August. W. Ind. 1732.
,, *fuca'ta* (painted). See L. LILACINA.
,, *hi'spida* (bristly). 3. Purple. July. Mexico. 1824.
,, *ho'rrida* (horrid). 3. Red. June. Mexico. 1824.
,, *involucra'ta* (involucred). 3. Pink. July. W. Ind. 1690.
,, *lavandula'cea* (lavender-like). See LIPPIA ASPERIFOLIA.
,, *lilaci'na* (lilac). 2–3. Rose. Brazil. 1823.
,, *melissæfo'lia* (balm-leaved). See L. FLAVA.
,, *mi'sta* (mixed). 5–10. White, yellow, orange, finally red. W. Ind. 1692.
,, *mo'llis* (soft). 4. Red, white. July. Mexico. 1828.
,, *multiflo'ra* (many-flowered). W. Ind. 1834.
,, *muta'bilis* (changeable). See L. MISTA.
,, *ni'vea* (snowy). Yellow. May. Trop. Amer.
,, ,, *muta'bilis* (snowy-changeable-coloured). 5. Yellow, rose. May.
,, *odora'ta* (scented). See L. INVOLUCRATA.
,, *pilo'sa* (downy). See L. TRIFOLIA.
,, *purpu'rea* (purple). 2. Purple. July. S. Amer. 1820.
,, *Ra'dula* (rough-*leaved*). 3. Purple. W. Ind. 1803.
,, *re'cta* (straight). See L. INVOLUCRATA.
,, *salviæfo'lia* (sage-leaved). 3. Red or violet. June. Cape of Good Hope. 1823.
,, *sellowia'na* (Sellow's). 1. Rose. April. Monte Video. 1828.
L. sellowia'na lanceola'ta (spear-head-*leaved*). Deep rose. July. Monte Video. 1838.
,, *stri'cta* (erect). 3. Pale purple. Jamaica. 1733.
,, *trifo'lia* (three-leaved). 3. Purple. July. W. Ind. 1733.
,, *viola'cea* (violet). See L. SALVIÆFOLIA.

LAPAGE'RIA. (Commemorative of *Josephine Lapagerie*, wife of Napoleon Bonaparte. Nat. ord. Liliaceæ.)

A handsome, half-hardy or greenhouse evergreen twiner. Layers of the long stems. Fibrous loam and peat. Best planted out.

L. ro'sea (rosy). 12–20. Deep rose to rosy-scarlet. Chili. 1847 or 1848.
,, ,, *a'lba* (white). Pure white. Chili.
,, ,, *Ilsema'nni* (Ilsemann's). Flowers larger and brighter. 1897.
,, ,, *supe'rba* (superb). Reddish-crimson. 1878.

LAPEYROU'SIA. (Commemorative of *J. F. G. de la Peyrouse*, a French circumnavigator. Nat. ord. Iridaceæ.)

Half-hardy bulbous plants, with an egg-shaped corm, covered with matted sheaths. Seeds and offsets. Light, sandy but rich soil in a frame, greenhouse, or pit.

L. aculea'ta (prickly). See L. COMPRESSA ACULEATA.
,, *a'nceps* (two-edged). See L. COMPRESSA.
,, *azu'rea* (azure). See L. CORYMBOSA AZUREA.
,, *compre'ssa* (compressed). ½–1. Lilac or white. September. S. Africa. 1824.
,, ,, *aculea'ta* (prickly). ½–1. Blue, yellow. June. S. Africa. 1825.
,, *corymbo'sa* (corymbose). ½. Pale to deep violet. May. S. Africa. 1791.
,, ,, *azu'rea* (azure). ½. Pale lilac or sky-blue. S. Africa.
,, *crue'nta* (blood-coloured). 1–2. Bright red, with three black spots. S. Africa. 1830.
,, *Fabri'cii* (Fabricius's). ½–1. Lilac or white. S. Africa. 1825.
,, *falca'ta* (sickle-shaped). ½–1. Pale blue. May. S. Africa. 1825.
,, *fascicula'ta* (fascicled). ½. Whitish. May. S. Africa. 1825.
,, *fissifo'lia* (cleft-leaved). ½. Whitish or pale blue. August. S. Africa. 1809.
,, *grandiflo'ra* (large-flowered). 1–1½. Bright red, with three crimson blotches. S.E. Trop. Africa.
,, *ju'ncea* (rush-like). 1–2. Pale red, with three spots in throat. S. Africa. 1791.
,, *silenoi'des* (Silene-like). ½. Bright red; tube whitish. June. S. Africa. 1822.

LAPLA'CEA. (Named after *Laplace*, the distinguished philosopher. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Bonnetia.)

Stove evergreen twiner. Cuttings of half-ripened shoots in sand, in heat, under a bell-glass; sandy peat and fibrous loam, well drained. Summer temp., 60° to 85°; winter, 50° to 60°.

L. Hæmato'xylon (Hæmatoxylon). 40. White. Jamaica. 1820.
,, *semiserra'ta* (half-saw-edged-*leaved*). 2. White. September. Brazil. 1842.

LAPO'RTEA. (Commemorative of *M. Laporte*. Nat. ord. Urticaceæ.)

Stove perennial herbs or shrubs. Seeds; cuttings in sand in a close case, with bottom-heat. Fibrous loam and peat, or leaf-mould and sand. Summer temp., 70° to 80°; winter, 60°. The plants of this genus are furnished with strong, stinging hairs, which cause many people acute pain, so that great care should be exercised in handling them.

L. crenula'ta (finely-notched). Flowers dicœcious. Trop. Asia. Tree.
,, *gi'gas* (giant). 80. Green. India to Australia. 1874.
,, *moroi'des* (Morus-like). 2–3. Green. Fruit rosy-purple. Australia. "Poison Tree of Queensland."
,, *Schombu'rghii versi'color* (changing-coloured). Leaves blotched with creamy-white. Polynesia. 1875.

LARDIZA'BALA. (Commemorative of *M. Lardizalay*, a Spanish naturalist. Nat. ord. Berberidaceæ.)

A rapid growing climber, hardy in the more favoured parts of Britain, on walls, but best in a high conservatory. Seeds; layers. Fibrous loam and peat.

L. biterna'ta (twice-three times divided). Purple. Late autumn. Chili. 1848.

LA'RIX. *Larch.* (From *lar*, fat, a Celtic word. Nat. ord. Coniferæ.)

Hardy deciduous trees of more or less ornamental character. *L. europæ'a* is a valuable timber-tree. Dry and hilly soils are most suitable for it. The others enjoy the shelter of trees in lowland situations. Seeds and the varieties by grafting, occasionally by cuttings and layers.

L. america'na (American). See L. PENDULA.
„ *davu'rica* (Davurian). 2–12. Siberia. 1827.
„ *deci'dua* (deciduous). See L. EUROPÆA.
„ *europæ'a* (European). 80–100. March or April. European Alps. 1629. "The Larch."
„ „ *glau'ca pe'ndula* (sea-green weeping). Leaves glaucous.
„ „ *pe'ndula* (weeping). Branches very pendulous. Tyrolese Alps. 1800.
„ „ *penduli'na* (weeping-like). Branches drooping.
„ „ *ro'ssica* (Russian). Russia. 1806. "Russian Larch."
„ „ *sempervi'rens* (evergreen). Leaves lasting 2–3 years. 1870.
„ „ *sibi'rica* (Siberian). 80–90. Siberia. "Siberian Larch."
„ „ *virga'ta* (twiggy). Primary branches long, outstretched. Austria. 1905.
„ *Griffi'thii* (Griffith's). 30–40. Eastern Himalaya. "Sikkim Larch."
„ *japo'nica* (Japanese). See L. LEPTOLEPIS.
„ *Kæ mpferi* (Kæmpfer's). See PSEUDOLARIX KÆMPFERI.
„ *Ledebou'rii* (Ledebour's). See L. EUROPÆA SIBIRICA.
„ *lepto'lepis* (slender-scaled). 40. Japan.
„ „ *dumo'sa* (bushy). Dwarf in habit. 1903.
„ „ *murraya'na* (Murrayan).
„ „ *pe'ndula* (pendulous). "Weeping Japan Larch."
„ „ *prostra'ta* (prostrate). Stems lying on the ground. 1909.
„ *Lya'llii* (Lyall's). 40. N.W. Amer. 1863.
„ *occidenta'lis* (western). 150. N.W. Amer.
„ *pe'ndula* (pendulous). 80–90. N.E. Amer. "Tamarack." "Black Larch."
„ *Potani'ni* (Potanin's). 20–60. Western China. 1906.
„ *pyramida'lis* (pyramidal). See L. EUROPÆA.
„ *vulga'ris* (common). See L. EUROPÆA.

LARKSPUR. *Delphi'nium.*

LARO'CHEA. *Ro'chea.*

LA'RREA. (Named after a Spaniard of that name. Nat. ord. *Bean-capers* [Zygophyllaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Zygophyllum.)

Greenhouse evergreens, from South America, with yellow flowers. Cuttings of young half-ripened shoots in sand, under a bell-glass, in summer; peat and fibrous loam, with silver sand, and pieces of broken pot, and charcoal, to keep the soil open. Winter temp., 40° to 48°; summer, in a shaded position.

L. divarica'ta (straggling). 2. July. 1829.
„ *ni'tida* (shining-*leaved*). 2. June. 1829.

LARVA. The name by which an insect is described when in the state between the egg and the chrysalis form. The larva of a butterfly or moth is commonly known as a *caterpillar*; of a fly or beetle, as a *maggot* or *grub*.

LASERWORT. *Tha'psia Laserpe'tii.*

LA'SIA. (From *lasios*, woolly. Nat. ord. Araceæ.)

Stove evergreen. Divisions; and cuttings in sand in a propagating case. Loam, peat, and some nodules of charcoal, with sand.

L. aculea'ta (prickly). See L. HETEROPHYLLA.
„ *heterophy'lla* (various-leaved). 2. April. India and Malaya. 1759.
„ *spino'sa* (spiny). See L. HETEROPHYLLA.

LASIAGRO'STIS CALAMAGRO'STIS. See STIPA CALAMAGROSTIS.

LASIA'NDRA. (From *lasios*, woolly, and *aner*, an anther; woolly stamened. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Tibouchina.)

L. argе'ntea (silvery-*leaved*). See TIBOUCHINA HOLOSERICEA.
„ *fontanesia'na* (Des Fontaines'). See TIBOUCHINA GRANULOSA.
„ *lepido'ta* (scaly). See TIBOUCHINA OCHYPETALA.
„ *macra'ntha* (large-flowered). See TIBOUCHINA SEMIDECANDRA.
„ *petiola'ta* (*long*-leaf-stalked). See TIBOUCHINA GAUDICHAUDIANA.

LASIOPE'TALUM. (From *lasios*, woolly, and *petalon*, a petal, or flower-leaf. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from Australia. Cuttings of half-ripened shoots in sand, under a glass, in April or May; sandy peat and fibrous loam, well drained, and carefully watered; either stagnant moisture or a sour soil destroys them. Winter temp., 40° to 45°.

L. arbore'scens (tree). See SERINGIA PLATYPHYLLA.
„ *Baue'ri* (Bauer's). Pearly white. (B. M., t. 6445.)
„ *bractea'tum* (bracted). 3. Pink. April. 1844.
„ *ferrugi'neum* (rusty). 4. White. June. 1791.
„ *macrophy'llum* (large-leaved). 5. Pale green. May. 1825.
„ *purpu'reum* (purple). See THOMASIA PURPUREA.
„ *solana'ceum* (Solanum-like). See THOMASIA SOLANACEA.
„ *triphy'llum* (three-leaved). See THOMASIA TRIPHYLLA.

LASIORRHI'ZA RO'SEA and **L. RUNCINA'TA.** See LEUCERIA RUNCINATA.

LASIOSI'PHON. (From *lasios*, woolly, and *siphon*, a tube; the corolla tube is woolly. Nat. ord. Thymeleaceæ.)

Evergreen, greenhouse shrubs. Seeds in gentle heat; cuttings of growing shoots in gentle heat under a bell-glass. Two-thirds loam, one-third peat, with charcoal nodules and sand.

L. anthylloi'des (Anthyllis-like). 2. Soft yellow. S. Africa. 1889.
„ *eriocе'phalus* (woolly-headed). White or purple. June. S. Africa. 1793.
„ *linifo'lius* (flax-leaved). July. S. Africa. 1788.

LASIOSPE'RMUM. (From *lasios*, woolly, and *sperma*, a seed. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Santolina.)

Half-hardy evergreen trailing plants, with yellow flowers. Division in spring, and cuttings under a hand-light, in a shady place, in summer; common garden-soil. Most of them require the protection of a cold pit in winter. The Italian species are most hardy.

L. anthemoi'des (Anthemis like). See ANTHEMIS CRETICA.
„ *crithmifo'lium* (samphire-leaved). See SANTOLINA CRITHMIFOLIA.
„ *eriospe'rmum* (woolly-seeded). See L. PEDUNCULARE.
„ *peduncula're* (*long*-flower-stalked). ¾. July. S. Africa. 1798.
„ *ri'gidum* (stiff). See ANTHEMIS CRETICA.

LASTHE'NIA. (Derivation not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Hardy annuals, with yellow flowers. Seeds in October, and plants protected by boughs of evergreens during the winter; or sow in March and April in the open border.

L. califo'rnica (Californian). See L. GLABRATA.
„ *glabra'ta* (smooth). 1½. May. California. 1834.
„ *obtusifo'lia* (blunt-leaved). 1. May. Chili. 1833.

LA'STREA. (Derivation unexplained. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

For culture, see FERNS. They have all yellowish spores.

HARDY.

L. aculea'ta (*common*-prickly). See ASPIDIUM ACULEATUM.
„ *æ'mula* (emulous). 1–1½. Britain.
„ *crista'ta* (*lesser*-crested). ½. July. Britain.
„ *dilata'ta* (enlarged-*crested*). 2. June. Britain.
„ *Fi'lix-mas* (male-fern). 3. Britain.
„ *Fœnisе'cii* (Fœnisec's). See L. ÆMULA.
„ *goldia'na* (Goldie's). July. N. Amer. 1822.
„ *interme'dia* (intermediate). June. N. Amer. 1837.
„ *margina'lis* (border-*spored*). 2. June. N. Amer. 1772.

L. monta'na (mountain). 1–3. July. Britain.
„ *novebarace'nsis* (New York). 1½. July. N. Amer. 1822.
„ *Oreo'pteris* (mountain-fern). See L. MONTANA.
„ *recu'rva* (recurved). See L. ÆMULA.
„ *remo'ta* (remote). 1. England.
„ *ri'gida* (rigid). 1. England.
„ *spinulo'sa* (*crested*-prickly). 1. June. Britain.
„ *Thely'pteris* (lady-fern). 1. July. Britain.

GREENHOUSE.

L. arista'ta (bearded). See ASPIDIUM ARISTATUM.
„ „ *variega'ta* (variegated). See ASPIDIUM ARISTATUM VARIEGATUM.
„ *chine'nsis* (Chinese). China and Japan.
„ *coru'sca* (waving). See ASPIDIUM VARIUM.
„ *decompo'sita* (decomposed). ½. July. N. Holland. 1825.
„ „ *glabe'lla* (smooth). 1. New Zealand.
„ „ *Shephe'rdi* (Shepherd's). Frond narrower.
„ *decu'rrens* (running-down). June. China. 1840.
„ *decu'rsivo-pinna'tum* (decurrent-pinnate). China and Japan.
„ *erythroso'ra* (red-sorused). Japan. 1863.
„ „ *proli'fica* (prolific). Sori numerous, orange. Japan. 1882.
„ *hi'spida* (hispid). New Zealand.
„ *la'cera* (torn). Japan.
„ *margina'lis* (marginal). N. Amer.
„ *Maximowi'czii* (Maximowicz's). Dwarf and dense-growing. Japan. 1881.
„ *nevade'nse* (Nevadan). N. Amer.
„ *opa'ca* (opaque). Japan. 1862.
„ *podophy'lla* (leaf-stalked). 1–1½. Chusan and Hong-Kong.
„ *proli'fica* (prolific). See L. ERYTHROSORA PROLIFICA.
„ *Siebo'ldii* (Siebold's). Leathery. Japan.
„ *veluti'na* (velvety). 1–2. New Zealand. 1859.

STOVE.

L. acumina'ta (long-pointed). See L. DECOMPOSITA SHEPHERDI.
„ *a'lbo-puncta'ta* (white-spotted). Guinea; Natal.
„ *appendicula'ta* (appendaged). See L. PROLIXA.
„ *asce'ndens* (rising). August.
„ *athma'ntica* (without indusium). 2–3. Natal; S. Africa.
„ *atra'ta* (blackish). See L. HIRTIPES.
„ *atrovi'rens* (dark-green). See L. DECOMPOSITA.
„ *attenua'ta* (thin). June. Isle of Samaria. 1839.
„ *auge'scens* (increasing). See L. SERRA.
„ *borya'na* (Boryan). Himalaya.
„ *calcara'ta* (spurred). E. Ind.
„ *ca'na* (grey). Himalaya.
„ *canarie'nsis* (Canary). 2. Canaries.
„ *cato'ptera* (deflexed-winged). S. Africa.
„ *chryso'loba* (golden-lobed). July. Brazil. 1840.
„ *cicuta'ria* (water-hemlock-like). Tropics everywhere.
„ *co'nfluens* (run-together). Queensland.
„ *conte'rmina* (bordering). W. Ind. 1835.
„ *cuspida'ta* (short-pointed). W. Ind.; Ceylon.
„ *cyatheoi'des* (Cyathea-like). Trop. Asia.
„ *deltoi'dea* (delta-like). Trop. Amer.
„ *denticula'ta* (finely-toothed). Trop. Amer.
„ *deparioi'des* (Deparia-like). Ceylon and S. India.
„ *disse'cta* (dissected). Tropics of Old World.
„ „ *membranifo'lia* (membrane-leaved). 1844.
„ *ebu'rnea* (ivory). July. Nepaul. 1841.
„ *effu'sa* (spread-out). Trop. Amer.
„ „ *diver'gens* (diverging).
„ *e'legans* (elegant). 1–2. Ceylon. 1845.
„ *elonga'ta* (lengthened). See L. FILIX-MAS ELONGATA.
„ *erioca'rpa* (woolly-spored). See L. ODORATA.
„ *exi'gua* (little). July. Isle of Luzon.
„ *exte'nsa* (extended). Ceylon.
„ *falcicula'ta* (sickle-like). July. S. Amer.
„ *fa'llax* (deceiving). Brazil.
„ *Fi'lix-ma's elonga'ta* (elongated). Subtropical regions.
„ „ *schimperia'na* (Schimperian). Simla.
„ *florida'na* (Floridan). Louisiana and Florida.
„ *fu'scipes* (brown-stalked). 1–2. Ceylon. 1858.
„ *Griseba'chii* (Grisebach's). Cuba.
„ *hirsu'ta* (hairy). Philippines. 1858.
„ *hi'rta* (hairy). 1. W. Ind.; W. Trop. Africa.
L. hi'rtipes (hairy-stalked). June. Trop. Asia.
„ *imme'rsa* (submerged). Malaya. 1840.
„ *inci'sa* (incised). W. Ind.
„ *indivi'sa* (undivided). July. W. Ind. 1840.
„ *interme'dia* (intermediate). Trop. Asia.
„ *invi'sa* (unseen). 2. July. Jamaica. 1830.
„ *irregula'ris* (irregular). See L. LATIFOLIA.
„ *Jenma'ni* (Jenman's). 2. Jamaica. 1887.
„ *Kaulfu'sii* (Kaulfus's). 1½–2. Brazil.
„ *la'ta* (broad). June. Isle of Luzon. 1834.
„ *latifo'lia* (broad-leaved). Polynesia.
„ *le'pida* (neat). Polynesia.
„ *leuzea'na* (Leuzean). Trop. Asia.
„ *ligula'ta* (strap-*leaved*). June. Isle of Luzon. 1839.
„ *macroca'rpa* (large-spored). August. E. Ind. 1827.
„ *macrophy'lla* (large-leaved). Trop. Amer.
„ „ *calva'ta* (bald).
„ *membranifo'lia* (membrane-fronded). See L. DISSECTA MEMBRANIFOLIA.
„ *mexica'na* (Mexican). Mexico to Brazil and Ecuador.
„ *mo'llis* (soft). Tropics and sub-tropics everywhere.
„ „ *polyda'ctylon* (many-fingered). Apex of frond much divided.
„ „ *viola'scens* (violet). Rachis purple.
„ *multi'juga* (many-paired). July. E. Ind. 1839.
„ *odora'ta* (scented). Trop. Asia.
„ *pa'tens* (spreading). 2. July. W. Ind. 1784.
„ *patenti'ssima* (very-spreading). August. E. Ind. 1825.
„ *polymo'rphum* (many-shaped). Trop. Asia.
„ *polyphy'lla* (many-fronded). August. India.
„ *Pre'slii* (Presl's). June. India.
„ *proli'xa* (extended). N. India to Ceylon.
„ *propi'nqua* (allied). See L. PRESLII.
„ *prote'nsa* (extended). W. Trop. Africa. 1858.
„ *pube'scens* (downy). July. Jamaica.
„ *quinquangula're* (five-angled). W. Trop. Africa.
„ *rece'dens* (receding). 1½. Ceylon. 1845.
„ *remi'ssa* (relaxed).
„ *Richa'rdsi* (Richard's). New Caledonia.
„ „ *multi'fida* (much-divided). 3. Fronds and pinnæ cut into many lobes. 1881.
„ *rodigasia'na* (Rodigasian). Samoa.
„ *scabro'sa* (rough). Nilgherries.
„ *semicorda'ta* (half-heart-shape). June. W. Ind. 1822.
„ *Se'rra* (saw-like). 2. July. W. Ind. 1819.
„ *seti'gera* (bristle-bearing). Japan and Trop. Asia.
„ „ *crista'ta* (crested).
„ *seto'sa* (bristly). Java.
„ *si'milis* (like). July. Malacca.
„ *Sloa'nei* (Sloan's). Trop. Amer.
„ *spa'rsa* (scattered). Trop. Asia.
„ *specta'bilis* (showy). See L. SYRMATICA.
„ *spine'scens* (spiny). 1. W. Trop. Africa.
„ *Sprenge'lii* (Sprengel's). August. India.
„ *Standi'shii* (Standish's). See ASPIDIUM LASERPITIIFOLIUM.
„ *strigo'sa* (thin). 2. Mauritius.
„ *subtriphy'lla* (sub-three-leaved). Trop. Asia.
„ *syrma'tica* (long-robed). N. India to Ceylon.
„ *tenericau'lis* (slender-stalked). See L. SETIGERA.
„ *Thwaite'sii* (Thwaites's). Ceylon.
„ *Trime'ni* (Trimen's). Ceylon.
„ *trunca'ta* (snipped). E. Ind.
„ *uni'ta* (united). Tropical and sub-tropical regions.
„ *va'rians* (varying). Trinidad.
„ *variolo'sa* (slightly-varying). Malaya.
„ *venu'sta* (handsome). August. India. 1825.
„ *verruco'sa* (warty). June. E. Ind. 1840.
„ *vesti'ta* (clothed). July. Brazil. 1844.
„ *villo'sa* (shaggy). 3. July. Jamaica. 1844.
„ *visco'sa* (clammy). July. Malacca. 1839.

LATA'CE. (Probably a native name. Nat. ord. Liliaceæ.)
Greenhouse bulb. Seeds; offsets. Loam, leaf-mould, sand.

L. Volkma'nni (Volkmann's). 1. White. Chile.

LATA'NIA. Bourbon Palm. (The Bourbon name is *Latanier*. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Dicœcia*, 13-*Monadelphia*.)
Stove palms, with greenish-white flowers. Seeds in a hotbed; rich, loamy soil. Summer temp., 60° to 90°; winter, 55° to 60°.

L. au'rea (golden). See L. VERSCHAFFELTII.
„ *borbo'nica* (*common*-Bourbon). See LIVISTONA CHINENSIS.
„ *Commerso'nii* (Commerson's). 7–9. Mauritius and Bourbon. 1778.
„ *glaucophy'lla* (milky-green-leaved). See L. LODDIGESII.
„ *Loddige'sii* (Loddiges's). 10. Mauritius. 1823.
„ *ru'bra* (red). See L. COMMERSONII.
„ *Verschaffe'ltii* (Verschaffelt's). 7. Mauritius.

LATERALS, or Side-shoots, are those which spring from the sides of the main branches, and are thus described in contradistinction to the terminal or leading shoots of the branches:—The laterals on the lower branches, like those branches themselves, are usually longer as they approach the base of the tree, because they extend to obtain the benefit of the light kept from them by the branches above. If unable thus to extend, as in the case of inner trees of those planted in clumps, the laterals die, and occasion the nakedness of their trunks. If the terminal shoot of a branch be cut away, the laterals increase more in length, not only because more sap is thus afforded them, but because an extra effort is made to advance into the desired degree of light.

LATHRÆ'A. (From *lathraios*, clandestine; the plant is hidden in the earth till it is about to bloom. Nat. ord. Orobanchaceæ.)

Hardy herbs, parasitical on the roots of trees. Seeds to be sown close to the roots of suitable trees.

L. Clandesti'na (clandestine). ½. Violet-purple. April. Europe. 1890.
„ *Squama'ria* (scaly). ½. Flesh, tinted purple. May. Europe (England).

LA'THYRUS. (From *la*, to add to, and *thouros*, an irritant; to increase excitement, the supposed qualities of the seeds. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Seeds of annuals, in common soil, in spring; perennials, by division at the same time, or cuttings of the young shoots under a bell-glass; common garden soil.

HARDY ANNUALS.

L. amphica'rpus (double-fruited). 1½. Pink. June. Levant. 1680.
„ *angula'tus* (angular-*seeded*). 1. Red. June. S. Europe. 1683.
„ *cilia'tus* (eye-lashed). 1. Purple. July. S. Europe. 1820.
„ *leptophy'llus* (fine-leaved). 1. Purple. June. Caucasus. 1818.
„ *setifo'lius* (bristle-leaved). 1. Red. June. S. Europe. 1739.
„ *sphæ'ricus* (round-*seeded*). 1. Crimson. June. S. Europe. 1801.

HARDY CLIMBING ANNUALS.

L. ala'tus (winged). 3. Purple. July. Italy. 1823.
„ *a'nnuus* (annual). 4. Yellow. July. S. Europe. 1621.
„ *auricula'tus* (eared). See L. CLYMENUM.
„ *Ci'cera* (flat-podded). 2. Red. S. Europe. 1633.
„ *cirrho'sus* (tendrilled). 4. Rosy-pink. Pyrenees. 1870.
„ *Cly'menum* (Clymenum). 3. Purple. July. Mediterranean region. 1800.
„ *cornu'tus* (horned). See L. CLYMENUM.
„ *hirsu'tus* (hairy-*podded*). 4. Purple. July. England.
„ *ita'licus* (Italian). 3. Pink. August. Italy.
„ *lusita'nicus* (Portuguese). 3. July. Spain. 1827.
„ *odora'tus* (fragrant). 4. Variegated. July. Sicily. 1700. "Sweet Pea."
„ *purpu'reus* (purple). 3. Purple. July. Crete.
„ *sati'vus* (cultivated). 3. Blue. S. Europe. 1640. "Chickling Vetch."
„ *tenuifo'lius* (fine-leaved). See L. CLYMENUM.
„ *tingita'nus* (Tangier). 4. Dark purple. July. Barbary. 1680. "Tangier Pea."
„ *tu'midus* (swollen). See VICIA BITHYNICA.

HARDY DECIDUOUS CLIMBERS, &c.

L. armitagea'nus (Armitage's). See L. NERVOSUS, of Lamarck.
L. califo'rnicus (Californian). See L. MARITIMUS CALIFORNICUS.
„ *Davi'dii* (David's). 3–4. Yellowish-white. Japan; N. China.
„ *decaphy'llus* (ten-leaved). See L. POLYMORPHUS.
„ *Drummo'ndii* (Drummond's). See L. ROTUNDIFOLIUS.
„ *grandiflo'rus* (large-flowered). 4. Rose. July. S. Europe. 1814.
„ *heterophy'llus* (various-leaved). 4. Flesh. August. Europe. 1731.
„ *incu'rvus* (curved-*podded*). 2. Blue. July. Russia. 1808.
„ *interme'dius* (intermediate). 4. Red. August. N. Europe. 1820.
„ *latifo'lius* (broad-leaved). Pink. August. England. "Everlasting Pea."
„ *Macræ'i* (MacRae's). 3. Purple, white. October. Chili. 1824.
„ *magella'nicus* of D. Don. See L. NERVOSUS.
„ *magella'nicus* (Magellan) of Lamarck. 3. Purple, blue. May. Cape Horn. 1744.
„ *mari'timus* (maritime). ½. Purple. Europe (England). Prostrate.
„ „ *califo'rnicus* (Californian). 4. Purple, veined. N. California. 1826. Climbing.
„ *minia'tus* (vermilion). See L. ROTUNDIFOLIUS.
„ *Mu'lkak* (Mulkak). 5–8. Deep rose-purple. July, August. Central Asia. 1902. Fragrant.
„ *multiflo'rus* (many-flowered) of Nuttall. See L. VENOSUS.
„ *muta'bilis* (changeable). 4. Purple, red. July. Siberia. 1825.
„ *myrtifo'lius* (myrtle-leaved). See L. POLYMORPHUS.
„ *nervo'sus* (nerved) of Lamarck. 3. Blue. June. Argentina. 1824. Greenhouse evergreen shrub. "Lord Anson's Pea."
„ *palu'stris* (marsh). 4. Pale purple. June. Britain.
„ *peduncula'ris* (long-stalked). See L. ROTUNDIFOLIUS.
„ *pisifo'rmis* (pea-formed). 3. Purple. July. Siberia. 1795.
„ *polymo'rphus* (multiform). 3. Pale purple. July. Missouri. 1824.
„ *polyphy'llus* (many-leaved). N.W. Amer.
„ *prate'nsis* (meadow). 3. Yellow. Britain.
„ *pube'scens* (downy). Purple. Chili. 1895.
„ *pube'scens* (downy) of Hooker. See L. TOMENTOSUS.
„ *purpu'reo-cæru'leus* (purplish-blue). 10. Purple, blue. August. Brazil. 1836. Twiner.
„ *pyrena'icus* (Pyrenean). See L. SYLVESTRIS.
„ *ro'seus* (rosy). 2. Red. July. Iberia. 1822.
„ *rotundifo'lius* (round-leaved). 1½. Brick-red. July. Tauria. 1822.
„ *Sibtho'rpii* (Sibthorp's). See L. UNDULATUS.
„ *sple'ndens* (splendid). 4–8. Scarlet-purple. Lower California. 1881. "Pride of California." Half-hardy.
„ *stipula'ceus* (*large*-stipuled). See L. PALUSTRIS.
„ *sulphu'reus* (sulphur). Pale yellow. California.
„ *sylve'stris* (wood). 3. Purple. July. Britain. "Everlasting Pea."
„ *tomento'sus* (woolly). 3. Lilac. June. Buenos Ayres. 1839. Greenhouse evergreen shrub.
„ *tubero'sus* (tuberous). 2. Red. July. Europe. 1596. "Earthnut Pea."
„ *undula'tus* (wavy). 3. Magenta-red. June. Shores of Dardanelles. 1888.
„ *veno'sus* (veiny). 4. White, red. June. Pennsylvania.
„ *viola'ceus* (violet). 6–8. Violet-blue. August. California. 1894.

PERENNIALS, NOT CLIMBING.

L. alpe'stris (alpine). 2. Purple. June, July. Eastern Europe. 1817.
„ *alta'icus* (Altaic). ½. Purple. Altai Mountains. 1825.
„ *angustifo'lius* (narrow-leaved). 1. White. April. Siberia. 1766.
„ *cane'scens* (hoary). See L. FILIFORMIS.
„ *cya'neus* (blue). 1. Blue, pink. Russia. 1823.
„ *filifo'rmis* (thread-like). 1. Violet-purple. S. Europe. 1816.
„ *fla'ccidus* (limp). See L. VERNUS FLACCIDUS.
„ *glaucifo'lius* (sea-green-leaved). See L. OCHROLEUCUS.
„ *Gmeli'ni* (Gmelin's). Siberia.

L. hirsu'tus (hairy). 1. Red. May. Europe (England). 1822.
„ *Jorda'ni* (Jordan's). Blue. June. Lucania. 1830.
„ *lu'teus* (yellow). 1½. Buff-orange. Europe. 1759.
„ „ *au'reus* (golden). 1½. Clear yellow. Europe.
„ *macrorrhi'zus* (large-rooted). See L. MONTANUS.
„ *monta'nus* (mountain). 1. Purple, red. Europe (Britain). "Heath Pea."
„ „ *tenuifo'lius* (slender-leaved). 1. Purple, red. Europe (Britain).
„ *ni'ger* (black). 2. Pale purple. June. Europe (Britain).
„ *ochroleu'cus* (yellow-white). 2. Yellow-white. June. N. Amer. 1816.
„ *panno'nicus* (Hungarian). 1. White, cream, rose. April. Europe. 1794.
„ *pauciflo'rus* (few-flowered). 1. Purple. June. Hungary. 1820.
„ *pisifo'rmis* (pea-formed). 1. Purple. May. Europe; N. Asia. 1822.
„ *sessilifo'lius* (stalkless-leaved). 1. Purple. May. Greece and Asia Minor. 1823.
„ *sphæ'ricus* (spherical). 1. Scarlet. April. S. Europe.
„ „ *uni'jugus* (one-paired). See VICIA UNIJUGA.
„ *variega'tus* (variegated). 1. Purple, variegated. July. Europe. 1821.
„ *vene'tus* (Venetian). 1. Purple. April. S. Europe.
„ *ve'rnus* (spring). 1. Purple and blue. March, April. Europe. 1629.
„ „ *a'lbus* (white). 1. White. March, April.
„ „ *ca'rneus* (flesh). 1. Flesh. March, April.
„ „ *fla'ccidus* (limp). 1. Purple. April, May. Croatia. (B.M., t. 2937.)
„ „ *flo're-ple'no* (double-flowered). Flesh. April. 1880.

LATTICE-LEAF PLANT. *Ouvira'ndra fenestra'lis.*

LA'TUA. (The native name. Nat. ord. Solanaceæ.) Greenhouse shrub. Cuttings in sand under a bell-glass. Loam, leaf-mould, and sand.

L. veneno'sa (poisonous). 3–4. Dark purple. February. Chili. 1863.

LAUGE'RIA ODORA'TA. See GUETTARDA ODORATA.

LAUNÆ'A. (A commemorative name. Nat. ord. Compositæ.)
Hardy perennial. Seeds; divisions. Ordinary garden soil.

L. chondrilloi'des (Chondrilla-like). 1½. Yellow. June. Orient. 1818.

LAUREL. *Lau'rus no'bilis.*

LAUREL CHERRY. See CE'RASUS LAU'RO-CE'RASUS.

LAURE'LIA. (Derived from *Laurus*, the Bay Laurel; in reference to the aromatic odour. Nat. ord. Monimiaceæ.)
Greenhouse evergreen trees. Cuttings in sand in gentle heat, under a bell-glass. Loam, peat, and a little sand.

L. aroma'tica (aromatic). Chili.
„ *No'væ-Zela'ndiæ* (New Zealand). 150. New Zealand.
„ *serra'ta* (serrated). 70. Greenish-yellow. Chile. 1904. "Huanhuan."

LAURE'NTIA. (Commemorative of *M. A. Laurenti*, an Italian. Nat. ord. Campanulaceæ.)
Greenhouse herbs of dwarf habit. Seeds. Loam, leaf-mould, and plenty of sand.

L. carno'sula (fleshy). ½. Blue, yellow, white. California. (B.M., t. 6257.)
„ *erinoi'des* (Erinus-like). Purple, white. S. Africa. 1759.
„ *Miche'lii* (Michel's). ½. Blue. July. Mediterranean region. 1778.
„ *minu'ta* (minute). Pale purple or white. July. S. Africa. 1800.
„ *tene'lla* (slender). ½. Purple, violet. May. Mediterranean region. 1821.

LAU'RUS. Laurel. (From the Celtic *blaur*, or *laur*, green. Nat. ord. *Laurels* [Lauraceæ]. Linn. 9-*Enneandria*, 1-*Monogynia*.)
The Bay (*Lau'rus no'bilis*) represents this large order. They are all more or less aromatic, and produce camphor, cinnamon, nutmegs, cassia, and other fruits and products in commerce. Few of the best of these, even *no'bilis*, the Sweet Bay, will flourish in the north of the island without protection. It and its allies, the Sassafras, Benzoin, &c., are propagated by cuttings under hand-lights, in the end of summer; by layers, by pieces of the roots, and by seeds, which generally require to be in the rot-heap a season before vegetating; common soil, if good and dry, suits them. The stove and greenhouse species by cuttings in sand, under a bell-glass, and potted off in sandy peat and fibrous loam, and the usual temperature of these compartments. Many, however, would do better planted against a conservatory wall, heated and protected in winter.

HARDY DECIDUOUS.

L. æstiva'lis (summer). See NECTANDRA WILLDENOVIANA.
„ *a'lbida* (whitish-*leaved*). See SASSAFRAS OFFICINALE.
„ *Benzo'in* (Benzoin). See LINDERA BENZOIN.
„ *caroline'nsis* (Carolina). See PERSEA CAROLINENSIS and varieties.
„ *catesbia'na* (Catesby's). See NECTANDRA WILLDENOVIANA.
„ *Diospy'ros* (Jove's-fruit). See LINDERA MELISSÆFOLIA.
„ *genicula'ta* (jointed). See LITSEA GENICULATA.

GREENHOUSE EVERGREENS.

L. aggrega'ta (crowded-*flowered*). 3. Green, yellow. China. 1821.
„ *bulla'ta* (blistered. *African Oak*). See OCOTEA BULLATA.
„ *canarie'nsis* (Canary). 10. Yellow, green. Canaries. 1815.
„ *fœ'tens* (strong-smelling). See OCOTEA FŒTENS.
„ *i'ndica* (Indian-*Bay*). See PERSEA INDICA.

STOVE EVERGREENS.

L. Chloro'xylon (green-wood.) 60. Green, white. W. Ind. 1778. "Cogwood-tree."
„ *coria'cea* (leather-*leaved*). See NECTANDRA WILLDENOVIANA.
„ *crassifo'lia* (thick-leaved). See OCOTEA PUBERULA.
„ *exalta'ta* (lofty). See OCOTEA FLORIBUNDA.
„ *floribu'nda* (bundle-flowered). See OCOTEA FLORIBUNDA.
„ *ni'vea* (snow-white). 1820.
„ *pa'tens* (spreading). See PHŒBE ANTILLANA.
„ *pe'ndula* (weeping). See BEILSCHMIEDIA PENDULA.
„ *salicifo'lia* (willow-leaved). See L. NOBILIS ANGUSTIFOLIA.
„ *sple'ndens* (shining). See NECTANDRA SANGUINEA.
„ *thrysifl'ora* (thryse-flowered). 30. Yellow, green. Madagascar. 1810.

HARDY EVERGREENS.

L. Ca'ssia (Cassia). See CINNAMOMUM ZEYLANICUM.
„ *no'bilis* (noble. *Bay*). 15. Yellow, white. April. S. Europe. 1561.
„ „ *angustifo'lia* (narrow-leaved). 6. Yellow. Leaves lanceolate, narrow.
„ „ *cri'spa* (curled-*leaved*). 20. Yellow, white. May.
„ „ *flo're-ple'no* (double-flowered). 20. Yellow, white. May.
„ „ *latifo'lia* (broad-leaved). Yellow, white. May. Asia. Half-hardy.
„ „ *salicifo'lia* (willow-leaved). See L. NOBILIS ANGUSTIFOLIA.
„ „ *undula'ta* (wavy-*leaved*). 4. Yellow, white. April.
„ „ *variega'ta* (variegated-*leaved*). 20. Yellow, white. May.
„ *rega'lis* (royal). California. 1847.

LAURUSTINUS. See VIBURNUM TINUS.

LAVA'NDULA. Lavender. (From *lavo*, to wash; referring to lavender-water. Nat. ord. *Lipworts* or *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)
Cuttings of large pieces, in spring and autumn, firmly inserted in the ground; but small, young shoots in spring, under a hand-light, make the neatest plants; sandy loam suits them best. Those that require the protection of a pit or cool greenhouse are propagated in a similar manner,

and require the same soil. The flowers of the common lavender (*L. Spi'ca*) are ready for drying or distilling at the end of June.

HARDY EVERGREENS.

L. denta'ta (toothed). 1½. Lilac. August. Mediterranean region. 1597.
„ *latifo'lia* (broad-leaved). See L. SPICA LATIFOLIA.
„ *pedunculа'ta* (stalked). Spain and Portugal.
„ *Spi'ca* (*common-lavender*-spike). 2. Lilac. August. S. Europe. 1568.
„ „ *a'lba* (white).
„ „ *latifo'lia* (broad-leaved). 2. Lilac. 1568.
„ „ *na'na* (dwarf). 1.
„ *Stœ'chas* (Stœchas). 1½. Lilac. June. S. Europe. 1568.
„ *ve'ra* (true). Blue. July. S. Europe. 1568.

GREENHOUSE EVERGREENS.

L. abrotanoi'des (southernwood-like). 1½. Lilac. July. Canaries. 1699.
„ *multi'fida* (many-cleft). 1½. Lilac. August. S. Europe. 1597. Biennial.
„ *pinnа'ta* (leafleted). 1½. Lilac. June. Madeira. 1777.
„ „ *pube'scens* (downy). Lilac. June. 1816.
„ *vi'ridis* (green). 1½. Purple. June. Madeira. 1777.

LAVA'TERA. (Named after the two *Lavaters*, Swiss naturalists. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Annuals and biennials, in common garden soil, by seed in spring; herbaceous, by division, and cuttings at the same time; shrubby, by cuttings under a hand-light, in sandy soil; light, sandy loam suits them all. The frame and cool greenhouse species merely require the protection of these departments in winter.

HALF-HARDY EVERGREENS.

L. acerifo'lia (maple-leaved). 5. Pink. July. Teneriffe 1820.
„ *africa'na* (African). 5. Pink. June. Spain. 1820.
„ *assurgentiflo'ra* (rising-flowered). California.
„ *cachemiria'na* (Cashmirian). 5–8. Purple. Himalaya.
„ *hi'spida* (bristly). See L. OLBIA.
„ *insula'ris* (insular). 4. Yellow-white, striped purple. Mexico. 1896.
„ *lusita'nica* (Portuguese). 3. Purple. August. Portugal. 1748.
„ *mari'tima* (sea-*side*). 2. White. May. S. Europe. 1597.
„ *mi'cans* (glittering). 3. Purple. June. Spain. 1796.
„ *O'lbia* (Olbia). 3. Red, purple. August. Provence. 1570.
„ *phœni'cea* (*fine*-red). 5. Pink. June. Canaries. 1816.
„ *Pseu'do-o'lbia* (bastard-olbia). 5. Red. June. 1817.
„ *tri'loba* (three-lobed). 3. Light purple. June. Spain. 1759.
„ *unguicula'ta* (clawed). 6. Lilac. August. Samos. 1807.

HERBACEOUS PERENNIALS.

L. neapolita'na (Neapolitan). See L. CRETICA.
„ *plebei'a* (vulgar). 2. Pale. September. Australia. 1820. Greenhouse.
„ *thuringi'aca* (Thuringian). 4. Light blue. August. S. Europe. 1731. Hardy.

HARDY ANNUALS AND BIENNIALS.

L. ambi'gua (doubtful). See L. THURINGIACA.
„ *arbo'rea* (tree-*mallow*). 6. Purple. August. Britain. Biennial.
„ „ *variega'ta* (variegated). Leaves variegated. 1882.
„ *austra'lis* (southern). 2. Purple. August. S. Europe. 1820.
„ *bie'nnis* (biennial). 4. Red. August. Caucasus. 1819. Biennial.
„ *cre'tica* (Cretan). 4. Light blue. July. Candia. 1723.
„ *fla'va* (yellow). 4. Yellow. July. Sicily. 1818.
„ *lanceola'ta* (spear-head-*leaved*). 2. Purple. August. Europe. 1817.
L. puncta'ta (dotted-*stalked*). 2. Pale. August. Italy. 1800.
„ *salvitelle'nsis* (Salvitella). See L. THURINGIACA.
„ *sylve'stris* (wood). See L. CRETICA.
„ *trime'stris* (three-monthly). 2. Flesh. June. Mediterranean region. 1633.
„ „ *a'lba* (white). White.

LAVENDER. *Lava'ndula.*

LAVENDER COTTON. *Santoli'na.*

LAVRA'DIA. (Named after the *Marquis of Lavradio*. Nat. ord. *Violads* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Sauvage'sia, *Lavra'dia*, and *Luxembu'rgia*, compose this small tribe, which is intermediate between Violetworts and Frankeniads. Stove evergreen. Cuttings of ripened shoots in sand, under a bell-glass, and in heat; sandy peat and fibrous loam, well drained. Summer temp., 60° to 80°; winter, 48° to 55°.

L. monta'na (mountain). 1. Purple. Brazil. 1826.

LAWN is a surface of turf in the vicinity of the house, requiring to be kept smooth by the regular application of the roller and scythe. When first constructed, after the ground has been dug over as level as may be, it must be rolled, the hollows filled up, and this repeated until a level surface of earth is obtained. It must then be slightly pointed over with a fork, and the turf laid, or the grass-seed sown. For directions to lay the turf, see TURFING.

If grass-seed is employed the following is a good mixture:

	Light Soil.	Medium Soil.	Heavy Soil.
Trise'tum flave'scens (Yellowish Oat Grass)	lbs. 1	lbs. ..	lbs. ..
Cynosu'rus crista'tus (Crested Dog's Tail)	5	6	7
Festu'ca ovi'na duriu'scula (Hardish Fescue)	3	3	4
Festu'ca ovi'na tenuifo'lia (Fine-leaved Fescue)	2	2	1
Lo'lium pere'nne te'nue (Fine Rye Grass)	20	20	20
Po'a nemora'lis (Wood Meadow Grass)	1½	1½	2
Po'a nemora'lis sempervi'rens (Evergreen Ditto)	1½	1½	2
Po'a trivia'lis (Rough-stalked Meadow Grass)	1½	1½	2

The above mixtures are enough for an acre. Where the ground is overshadowed with trees, both the kinds of *Festu'ca* should be omitted, and similar quantities of the two kinds of *Po'a nemora'lis* substituted. The best time for sowing is early in the spring.

Grass-plot, correctly speaking, is a parterre, or bed of flowers, arranged with grass-turf between them, instead of gravel. It is usually confounded with LAWN, which see.

In very dry weather all lawns should be watered, and, if a little guano and muriate of lime be dissolved in the water, it will keep the surface gently moist, and the turf green, even in dry weather.

LAWSO'NIA. (Named after *Isaac Lawson*, M.D., author of *A Voyage to Carolina*. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Grislea.)

Stove-trees, from the East Indies and Egypt. Cuttings of ripe shoots in sand, under a bell-glass, and in strong heat; sandy peat and turfy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

L. a'lba (white). White. 1752.
„ „ *purpu'rea* (purple). 12. Purple. 1820.
„ *ine'rmis* (unarmed) and *L. spino'sa* (spiny). See L. ALBA.

LAXMA'NNIA. (Named after *E. Laxmann*, a Siberian traveller. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Aphyllanthes.)

Greenhouse herbaceous perennials, from Australia. Divisions; loam and peat; require a cold pit or cool greenhouse during winter.

L. gra'cilis (slender). ½. Purple, white. June. 1824.
„ *grandiflo'ra* (large-flowered). White, brown.

LAYER. The following excellent combination of practice and science is from Dr. Lindley's *Theory of Horticulture*: A layer is a branch bent into the earth, and half cut through at the bend, the free portion of the wound being called "a tongue." It is, in fact, a cutting only partially separated from its parent. The object of the gardener is to induce the layer to emit roots into the earth at the tongue. With this view he twists the shoot half round, so as to injure the wood-vessels; he heads it back, so that only a bud or two appears above ground, and when much nicety is requisite, he places a handful of silver-sand round the tongued part; then, pressing the earth down with his foot, so as to secure the layer, he leaves it without further care. The intention of both tonguing and twisting is to prevent the return of sap from the layer into the main stem, while a small quantity is allowed to rise out of the latter into the former; the effect of this being to compel the returning sap to organise itself externally as roots, instead of passing downwards below the bark as wood. The bending back is to assist in this object by preventing the expenditure of sap in the formation, or rather, completion of leaves, and the silver-sand is to secure the drainage so necessary to cuttings.

In most cases this is sufficient; but it must be obvious, that the exact manner in which the layering is effected is unimportant, and that it may be varied according to circumstances. Thus, Mr. James Munro describes a successful method of layering brittle-branched plants by simply slitting the shoot at the bend, and inserting a stone at that place (*Gardener's Magazine*, ix. 302); and Mr. Knight found that, in cases of difficult rooting, the process is facilitated by ringing the shoot just below the tongue about Midsummer, when the leaves upon the layers had acquired their full growth (*Hort. Trans.*, i. 256); by which means he prevented the passage of the returning sap farther downwards than the point intended for the emission of roots. It will sometimes happen that a branch of a plant cannot be conveniently bent downwards into the earth; in such cases, the earth may be elevated to the branch by various contrivances, as is commonly done by the Chinese. When this is done, no other care is necessary than that required for layers, except to keep the earth surrounding the branch steadily moist.

LA'YIA. (Commemorative of *Thomas Lay*, the naturalist who accompanied Beechey in his voyage. Nat. ord. Compositæ.)

Hardy annuals that might more often be cultivated. Seeds in the open in April. Ordinary garden soil.

L. calliglo'ssa (beautiful-tongued). 1½. Yellow. August and September. N.W. Amer.
„ *chrysanthemoi'des* (Chrysanthemum-like). 1½. Yellow, with paler tips. September. N.W. Amer. 1834.
„ *Dougla'sii* (Douglas's). 1. Yellow. N.W. Amer.
„ *e'legans* (elegant). 1. Yellow, tipped white. June to September. California. 1883.
„ *gaillardioi'des* (Gaillardia-like). 1–2. Orange-yellow. California. 1902.
„ *glandulo'sa* (glandular). 1. White, with yellow disc. California. "Tidy Tips."
„ *hetero'tricha* (various-haired). White. California.
„ *platyglo'ssa* (flat-tongued). 1. Yellow. September. California. 1836.

LAYING-IN is a gardener's term for training the branches of espaliers and wall-trees. *Laying-in-by-the-heels* is his mode of describing a plant's having its roots roughly buried in the soil for some temporary purpose.

LAYING-IN. Fruit-trees, shrubs, roses, and other plants from the nursery often arrive at a time when they cannot be properly planted, owing to the ground being too wet or frozen, or if numerous and require some time to plant, the gardener resorts to the practice of laying them in. A trench is made, and the plants are laid in a slanting direction in the trench, and their roots covered with soil. In severe weather they may also be covered with mats. The stems of roses are sometimes shrivelled on arrival, owing to delay since they were lifted. In that case a deep trench is made and the roses laid in the bottom of it, and entirely covered with soil for a week or more till they become plump. This is burying them temporarily.

LAZY-BEDS are beds dug for the growth of potatoes, the sets being then placed in rows on the surface, and covered by the soil dug out of narrow, deep alleys between the beds.

LEADWORT. *Plumba'go.*

LEAF-MOULD. This is formed of leaves kept moist and in a heap, frequently turned over, until completely decayed, and reduced to a dark brown, moist powder. It usually takes two years to complete this process. An excess of water delays the decaying, and either lime or gas ammoniacal liquor promotes it; but then few potted plants are benefited by any such excess of either of these additions.

LEATHERWOOD. *Di'rca.*

LEAVENWO'RTHIA. (Commemorative of *M. C. Leavenworth*. Nat. ord. Cruciferæ. Allied to Arabis.)

Dwarf, annual herbs with leafless scapes. Seeds. Ordinary garden soil.

L. au'rea (golden). See L. MICHAUXII.
„ *Michau'xii* (Michaux's). ½. Yellow. June. N.W. Amer. 1868.

LEAVES are the organs, in which are performed some of the most important functions of a plant. They are very general, but not absolutely necessary organs, since the branches sometimes perform their offices, as in Cacti, Asparagus, Butcher's Broom, and many others. Such plants, however, as naturally possess them, are destroyed, or greatly injured, by being deprived of them.

The duration of a leaf is, in general, for a year only, though in some evergreens they survive for twice or thrice that period. These organs are generally of a green colour. Light seems to have a powerful influence in causing this, since, if kept in the dark, they become of a pale yellow, or even white hue, unless uncombined hydrogen is present, in which case they retain their verdure though light be absent. Hence their blanching would seem to arise from their being unable to obtain this gas under ordinary circumstances, except when light is present. Now, the only source from which they can obtain hydrogen is by decomposing water; and how light assists in the decomposition, may, perhaps, be explained by the dis-oxygenising power with which it is gifted. The violet rays of the spectrum, and those just beyond them, have this power in the greatest degree; and Sennebier has ascertained by experiment that those rays have the greatest influence in producing the green colour of plants.

When leaves are of any other hue than green they are said to be *coloured*. This variegation is often considered to be a symptom either of tenderness or debility; and it is certain, when the leaves of a plant become generally white, that that individual is seldom long-lived. Mr. Knight, however, has demonstrated that variegation is not a certain indication of a deficiency of hardihood.

The functions of the leaves appear to be a combination of those of the lungs and stomach of animals; they not only modify the food brought to them from the roots, so as to fit it for increasing the size of the parent plant, but they also absorb nourishment from the atmosphere. The sap, after elaboration in these organs, differs in every plant, though, as far as experiments have been tried, it appears to be nearly the same in all vegetables when it first reaches them. The power of a leaf to generate sap is in proportion to its area of surface, exposure to the light, and congenial situation.

The transpiration of plants decreases with that of the temperature to which they are exposed, as well as with the period of their growth. This explains why the gardener finds that his plants do not require so much water in cold weather, nor during the time that elapses between the fall of their blossoms and the ripening of their seed. During this period they do not transpire more than one-half so much as during the period preceding and attending upon their blooming.

The transpiration takes place chiefly from the under

surface of the leaves, in some plants from both surfaces, and in floating water-plants from the upper surface. Hence arises the benefit which plants derive in rooms, greenhouses, and other confined inclosures, by keeping these surfaces cleansed with the sponge and syringe. Some plants are particularly sensitive to injury from any check to their transpiration, among which are the tea-scented roses; and it thence arises that they cannot now be cultivated, to great advantage, in nursery gardens near London, where they once flourished when that metropolis was less extensive. It must be remembered, however, in using the sponge and syringe, that the under side of leaves is also an absorbing surface, benefited by being kept clean, and by the application of moisture.

During the day leaves absorb carbonic acid gas, which they decompose, retaining its carbon, and emitting the greater part of the oxygen that enters into its composition. In the night this operation ceases, but plants continue to take in oxygen from the air in the process of breathing, as they did during the day. The oxygen combines with the carbon of substances containing it, thereby giving the plant energy to carry on its work, and carbonic acid gas, that is, carbon dioxide, is liberated as a waste product.

Carbonic acid gas in small proportions is essential to the existence of leaves; yet it only benefits them when present in quantities not exceeding one-twelfth of the bulk of the atmosphere in which they are vegetating, though one-twenty-fifth is a still more favourable proportion; and as hotbeds, heated by fermenting matters, have the air within their frames rapidly contaminated to a much greater extent than the proportions above named, thence arises the injury to the plants they contain from a too long neglected ventilation. The leaves turn yellow from the excess of acid, which they are unable to digest, and which constantly effects that change of colour which also occurs in autumn.

LEBE'CKIA. (Derivation unexplained. Nat. ord. Leguminosæ.)

Greenhouse shrubs of moderate size. Cuttings in sand, under a bell-glass, in gentle heat. Loam, peat, and sand.

L. cytisoi'des (Cytisus-like). 2–5. Yellow. S. Africa.
,, *nu'da* (naked). See INDIGOFERA FILIFOLIA.
,, *seri'cea* (silky). 3. Yellow. S. Africa.
,, *simsia'na* (Simsian). 4. Yellow. S. Africa. 1820.

LEBRETO'NIA, and **LEBRETO'NNIA.** See PAVONIA.

LECANO'PTERIS. (From *lekane*, a basin, and *pteris*, a fern. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now believed to be an abnormal form of *Polypodium lomarioides*.)

A fine stove Fern. See FERNS.

L. carno'sa (fleshy-*leaved*). Yellow. May. Java.

LECHENAU'LTIA. See LESCHENAULTIA.

LEDEBOU'RIA HYACI'NTHINA and **L. HYACINTHOI'DES.** See SCILLA INDICA.

LEDENBE'RGIA. (A commemorative name. Nat. ord. Phytolaccaceæ.)

Stove climber. Cuttings in sand in a close case with bottom-heat. Loam, leaf-mould, or peat and sand. Requires a tub or to be planted out in a well-drained and specially prepared border.

L. ro'seo-æ'nea (rosy-brassy). Leaves of a coppery hue and violet-purple beneath. Brazil. 1869.

LEDOCA'RPON PEDUNCULA'RE and **L. VERTICILLA'TUM.** See BALBISIA VERTICILLATA.

LEDON GUM. *Ci'stus glau'cus.*

LE'DUM. Labrador Tea. (From *ledon*, the Greek name of Cistus. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to the Rhododendron.)

Hardy, evergreen, white-flowered shrubs. Layers; peat, with a little sand. Very pretty for bordering Rhododendrons.

L. canade'nse (Canadian). See L. LATIFOLIUM CANADENSE.
,, *glandulo'sum* (glandular). 1–2. April. Leaves ovate, not woolly. N.W. Amer. 1896.
L. latifo'lium (broad-leaved). 3. April. N. Amer. 1763.
,, ,, *canade'nse* (Canadian). 1½. April. Canada.
,, ,, *globo'sum* (globose). Rounded bush. 1878.
,, *palu'stre* (marsh). 2. April. Europe. 1762.
,, ,, *decu'mbens* (lying-down). ½. April. Hudson Bay. 1762.

LEE'A. (Commemorative of *James Lee*, a nurseryman of Hammersmith. Nat. ord. Ampelidaceæ.)

Stove shrubs, grown chiefly for their fine foliage. Cuttings in sand in a close case, with bottom-heat. Loam, peat, some nodules of charcoal and sand.

L. ama'bilis (lovely). 1. Leaves velvety, bronzy-green, with feathered white rib, claret beneath. Borneo. 1880.
,, *cocci'nea* (scarlet). 3–5. Scarlet. Burma. 1862.
,, *Micholi'tzii* (Micholitz's). Leaves rich green, with red and white veins. New Guinea. 1899.
,, *rœhrsia'na* (Rœhrsian). See L. SAMBUCINA RŒHRSIANA.
,, *sambu'cina* (elder-like). Leaves bronzy-green when young. Malaya. 1898.
,, ,, *rœhrsia'na* (Rœhrsian). Leaves large, bronzy-green when young. Malaya. 1898.
,, *sple'ndens* (splendid). Underside of leaves red. Gardens. 1884.

LEE-CHEE. *Nephe'lium Li'tchi.*

LEEK. (*A'llium Po'rrum.*) The leek is a hardy biennial; for although it attains perfection in size and for culinary purposes the first year, it does not run to seed until the second, the perfecting of which it often survives. The whole plant is eaten, being employed in soups, &c., and boiled and eaten with meat.

Varieties.—The *Musselburgh* and the large *London Leek*, which are by far the best; the *Scotch*, or *Flag*, which is larger and hardier; the *Flanders;* and the *Lyon*, a noted leek for blanching.

Sowing.—Sow first in the end of February a small crop for transplanting in June and July, as well as in part to remain where sown; again, for the main crop, in the course of March or early in April; and lastly, towards the close of April or beginning of May, for late transplanting. Sow in drills, some to remain after thinning; the leek, however, is much benefited by transplanting.

Cultivation.—When the plants are three or four inches in height, hoe and thin to two or three inches apart; water, also, in dry weather, will strengthen and forward them for transplanting, when six or eight inches high. They must be taken away regularly from the seed-bed, the ground being well watered previously, if not soft and easily yielding. When thinned out they may be left to remain in the seed-bed six inches asunder, as they do not grow so large as the transplanted ones, which must be set by the dibble in rows ten inches apart each way, nearly down to the leaves, that the neck, by being covered with the earth, may be blanched; water in abundance at the time of planting, and shorten the long, weak leaves, but leave the roots as uninjured as possible. By this treatment, and by cutting off the tops of the leaves about once a month, as new ones are produced, the neck swells to a much larger size. The several sowings above directed will yield a supply from August until the following May, when they advance to seed. A portion should be always taken up and laid in sand previous to the ground being locked up by continued frost; but they will not keep many days in this situation.

LEE'RSIA. (Commemorative of *J. D. Leers*, a German botanist. Nat. ord. Gramineæ.)

Hardy perennial grass for the margins of streams, ponds, and ornamental water. Seeds; divisions. Ordinary soil.

L. oryzoi'des (rice-like). 2–3. Green to pale purple. August to October. Europe (England).

LEGUME. The fruit or seed-pod of the pea family (Leguminosæ), such as that of the pea, bean, and scarlet-runner.

LEIA'NTHUS. (From *leios*, smooth, and *anthos*, a flower. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Lisianthus.)

Stove plants. Seeds, sown carefully in a pot, placed in a hotbed; cuttings of young shoots in sandy soil, under a glass, in heat; sandy peat and fibrous loam; a

good heat when growing, cool and airy when blooming. General temperature, from 55° to 80°.

L. exse'rtus (exserted). 10. July. Jamaica. 1793.
„ *latifo'lius* (broad-leaved). 4. Yellow. August. Jamaica. 1821.
„ *longifo'lius* (long-leaved). 2. Yellow. August. Jamaica. 1793. Evergreen shrub.
„ *nigre'scens* (black-*flowered*). 1½. Blackish. August. Mexico. 1842. Biennial.
„ *umbella'tus* (umbel-*flowered*). 20. Green, yellow. May. Jamaica. 1843. Evergreen tree.

LEIMA'NTHIUM. See MELANTHIUM.

LEIOCHI'LUS. See LEOCHILUS.

LEIOPHY'LLUM. (From *leios*, smooth, and *phullon*, a leaf. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Ledum.)

Hardy evergreen shrub. Cuttings and layers; peaty soil.

L. buxifo'lium (box-leaved). ½. White. April. N. Amer. 1736. "Sand Myrtle."
„ „ *prostra'tum* (prostrate). ½. White. April or May. Carolina. 1812.
„ *Lyo'nii* (Lyon's). See L. BUXIFOLIUM PROSTRATUM.
„ *serpyllifo'lium* (thyme-leaved) and *L. thymifo'lium* (thyme-leaved). See L. BUXIFOLIUM.

LEIOSPE'RMUM. See WEINMANNIA.

LEITNE'RIA. (A commemorative name. Nat. ord. Leitneriaceæ.)

A hardy or half-hardy dicœcious tree, allied to the Walnuts, and having catkins like some of the Willows. Seeds and layers. Ordinary soil.

L. florida'num (Florida). 10–20. Flowers in catkins. S. United States. 1903.

LEMON. See CITRUS MEDICA LIMONUM.

LEMON-GRASS. *Andropo'gon Schœna'nthus.*

LEMO'NIA SPECTA'BILIS. See RAVENIA SPECTABILIS.

LENNE'A. (Named after *M. Lenné*, a foreign landscape-gardener. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Robinia].

Greenhouse deciduous shrub. Young shoots in spring, or ripened shoots towards autumn, under a hand-light. Must have similar protection and treatment to the *Cytisus canarie'nsis*.

L. robinioi'des (Robinia-like). Crimson. April. Mexico. 1843.

LENOPHY'LLUM. (From *lenis*, smooth, and *phullon*, a leaf; in reference to the smooth, succulent leaves. Nat. ord. Crassulaceæ.)

Dry, greenhouse herbs of a succulent nature and allied to Sedum. Seeds; cuttings in sand, and not overwatered. Loam, leaf-mould, sand, and some finely broken bricks.

L. acutifo'lium (acute-leaved). ½. Yellow. Mexico. 1904.
„ *gutta'tum* (spotted). ½. Yellow. Mexico. 1904.
„ *Weinbe'rgii* (Weinberg's). ½. Yellow. Mexico. 1904.

LE'NS. (From *lens*, a lentil. Nat. ord. Leguminosæ.) Hardy annual. Seeds. Ordinary garden soil.

L. escule'nta (eatable). 1. Purple, or light blue. July. Orient. "Lentil."

LEOCHI'LUS. (From *leios*, smooth, and *cheilos*, a lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Oncidium.)

Stove orchids. Division in spring; fibrous peat, sphagnum, and crocks, and cultivated in shallow baskets, suspended from the roof of a moist orchid-house. Winter temp., 55° to 60°; summer, 60° to 90°.

L. carina'tus (keeled). Orange. Xalapa. 1842.
„ *cochlea'ris* (spoon-*lipped*). Yellow. Jamaica. 1842.
„ *oncidioi'des* (Oncidium-like). Yellow, brown. May. Mexico. 1837.
„ *sanguinole'ntus* (bloody). Crimson. La Guayra. 1842.

LEONO'TIS. Lion's Ear. (From *leon*, a lion, and *ous*, an ear; some resemblance in the flower. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnosperm*ia. Allied to Phlomis.)

Annuals, by seed in hotbed, and young plants then treated as tender annuals; shrubs, by cuttings in sand, under a bell-glass, in peat; sandy peat and fibrous loam. Common greenhouse and plant-stove treatment. Herbaceous species, by seeds, and division of the plant.

L. Cardi'aca (cordial). See LEONURUS CARDIACA.
„ *du'bia* (doubtful). S. Africa.
„ *interme'dia* (intermediate). 3. Orange. September. Cape of Good Hope. 1882.
„ *la'cerus* (torn). See LEONURUS CARDIACA LACERUS.
„ *lana'tus* (woolly). See LEONURUS LANATUS.
„ *Leoni'tis* (Leonitis). 1½. Orange. June. S. Africa. 1813.
„ *Leonu'rus* (lion's-tail). 3. Scarlet. November. Cape of Good Hope. 1812.
„ *nepetæfo'lia* (catmint-leaved). 3. Orange. September. E. Ind. 1778.
„ *ova'ta* (egg-*leaved*). See L. LEONITIS.
„ *sibi'ricus* (Siberian). See LEONURUS SIBIRICUS.

LEO'NTICE. (From *leontike*, the old Greek name of the Chervil, or something like it. Nat. ord. Berberidaceæ.)

Hardy herbs, with tuberous rhizomes, requiring a rather warm situation at the foot of a wall. Seeds and offsets in spring. Well-drained soil.

L. Albe'rti (Albert's). ½. Brown and yellow. Turkestan.
„ *alta'ica* (Altai). See BONGARDIA RAUWOLFI.
„ *Chryso'gonum* (golden-jointed). See BONGARDIA RAUWOLFI.
„ *Leontope'talum* (lion's petal). ½. Yellow. Orient.
„ *Smirno'wii* (Smirnow's) ½. Yellow. Caucasus.
„ *thalictroi'des* (Thalictrum-like). See CAULOPHYLLUM THALICTROIDES.

LEO'NTODON. (From *leon*, a lion, and *odous*, *odontos*, a tooth; the lobes of the leaves have been compared to the teeth of a lion. Nat. ord. Compositæ.)

There are numerous species, but the variety given below is the best. Seeds and divisions. Ordinary soil.

L. cro'ceus auranti'acus (orange). See L. PYRENAICUS AURANTIACUS.
„ *pyrena'icus auranti'acus* (orange). 1. Orange. June, July. Pyrenees. 1816.

LEONTOPO'DIUM. Lion's Foot. (From *leon*, a lion, and *pous*, a foot; resemblance of the flower-heads. Nat. ord. *Composites* [Compositæ]. Linn. 14-*Syngenesia*, 2-*Superflua*. Allied to Antennaria.)

Hardy herbaceous perennials. Seeds, and division of the roots in spring; common soil.

L. alpi'num (alpine). ½. Yellow. June to August. Europe. Edelweiss.
„ „ *alta'icum* (Altai). ½. Yellow. June to August. Altai Mountains.
„ „ *himalaya'num* (Himalayan). ½. Yellow. June to August. Himalaya.
„ *helve'ticum* (Swiss). See L. ALPINUM.

LEONU'RUS. (From *leon*, a lion, and *oura*, a tail; the flower-spike resembles a lion's tail. Nat. ord. Labiatæ.)

Hardy herbaceous perennials. Seeds and divisions of the plant in spring. Ordinary soil.

L. Cardi'aca (Cardiaca). 3–5. Rosy-purple. July to September. Britain. "Motherwort."
„ „ *cri'spus* (crisped). 2. Red. July. Siberia. 1658.
„ „ *la'cerus* (torn). 3. Pink. June. Nepaul. 1824.
„ „ *villo'sus* (shaggy). 3. Purple. July. Tauria. 1820.
„ *lana'tus* (woolly). 2. Yellow. July. Siberia; China. 1752.
„ *macra'nthus* (large-flowered). 3. Amurland.
„ *sibi'ricus* (Siberian). 2. Red. July. Siberia. 1759.
„ *tata'ricus* (Tartarian). 3. Red. Asia.

LEOPARD MOTH or **WOOD LEOPARD MOTH.** The spotted caterpillar of *Zeuzera Æsculi* penetrates into and eats galleries in the interior of the branches and trunk of Apples, Pear, and Plum-trees, besides several other ornamental trees in parks and gardens. As a rule the attack is not so serious as that of the Goat Moth, because the caterpillars are fewer, but branches tunnelled by them are weakened, and liable to be snapped by the wind. The caterpillar is 1¼ in. long. The moth is 2–2½ in. in expanse, with a long body, and white wings, marked with numerous blue-black spots. The cater-

pillar may be killed by pushing a wire into its burrow, or pouring some paraffin into it.

LEOPARD'S BANE. *Doro'nicum.*

LEOPOLDI'NIA. (Named after the late *Empress of Brazil.* Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria.*)

L. pu'lchra (beautiful) of gardens. See Cocos WEDDELLIANA.

LEPA'CHYS. (From *lepis*, a scale, and *achuron*, a heap of chaff; in allusion to the chaffy scales of the receptacle. Nat. ord. Compositæ.)

Hardy perennial herbs, closely allied to Rudbeckia and Echinacea. Divisions in autumn or spring. Ordinary soil.

L. columna'ris (columnar). 3. Yellow. July to September. N.W. Amer. 1811.
„ „ *pulche'rrima* (fairest). 3. Reddish-yellow. July to September. 1835.
„ *pinna'ta* (pinnate). 3. Yellow. July. N. Amer. 1803.

LEPA'NTHES. (Derived from *lepis*, a scale, and *anthos*, a flower; in allusion to the elegant, two-ranked, numerous bracts. Nat. ord. Orchidaceæ. Allied to Restrepia.)

Stove Orchids. Offsets. Fibrous peat and sphagnum in pots well drained with crocks.

L. calodi'ctyon (beautiful net). ¼. Leaves netted with brown veins. Ecuador.
„ *sangui'nea* (blood-red). ¼. Rosy-red. Jamaica. 1844.
„ *tridenta'ta* (three-toothed). ¼. Purple, yellow. Jamaica. 1835.

LEPECHI'NIA. (Named after *Lepechin*, a Russian botanist. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Sphacele.)

Half-hardy herbaceous perennial. Division of the plant in spring, and cuttings of young shoots in sandy soil, under a hand-light, in spring and summer; loam and a little peat. *Spica'ta* requires a little protection in winter.

L. clinopodiifo'lia (Clinopodium-leaved). See MENTHA DAHURICA.
„ *spica'ta* (spiked). 1. Pale yellow. July. Mexico. 1800.

LEPERI'ZA EUCROSIOI'DES. See STRICKLANDIA EUCROSIOIDES.

LEPERI'ZA LATIFO'LIA. See URCEOLINA LATIFOLIA.

LEPICY'STIS INCA'NA. See POLYPODIUM INCANUM.

LEPICY'STIS SEPU'LTA. See POLYPODIUM LEPIDOPTERIS SEPULTUM.

LEPICY'STIS SQUAMA'TA. See POLYPODIUM SQUAMATUM.

LEPIDA'GATHIS. (From *lepis*, a scale, and *agathis*, a ball; referring to the bracts. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Geissomeria.)

Stove evergreen. Cuttings of young shoots, getting a little firm, in May, in sandy soil, in bottom-heat; fibrous, sandy loam, and a little peat and leaf-mould. Summer temp., 60° to 80°; winter, 45° to 58°.

L. crista'ta (crested). 2. E. Ind. 1820.
„ *Pobegu'ini* (Pobeguin's). ½–¾. Dark purple. Upper Guinea. 1905.

LEPI'DIUM. (From *lepidion*, a scale; in allusion to the form of the pods. Nat. ord. Cruciferæ.)

Hardy annual and perennial herbs, few of which are cultivated. *L. sativum* is the garden Cress. See CRESS AND MUSTARD. Seeds; divisions of the perennials. Ordinary soil.

L. flexicau'le (flexuous-stemmed). ¼. Foliage ornamental. New Zealand. 1898.
„ *sati'vum* (cultivated). 1. White. June. Orient. 1548. "Common Cress."
„ *virgi'nicum* (Virginian). 1. White. June. N. Amer. 1836.

LEPIDO'PTERA. (From *lepis*, a scale, and *pteron*, a wing.) A large class of scale-winged insects, including the butterflies and moths. The former are distinguished by their club-shaped antennæ. The moths have the antennæ narrowed to a point, and the base is often plumy. The larvæ are caterpillars, and many of them are destructive to garden plants, the injurious moths being by far the more numerous.

LEPIDOSTE'MON PENTSTEMONOI'DES. See PENTSTEMON ANTIRRHINOIDES.

LEPIDO'TRICHUM. (From *lepidus*, pleasing or neat, and *thrix*, *thrichos*, hair. Nat. ord. Cruciferæ.)

A prostrate, widely spreading, perennial, hardy herb. Cuttings in sand under a hand-light in summer. Ordinary soil.

L. uechtritzia'num (Uechtritzian). ¼. White. Bulgaria. 1896.

LEPIDOZA'MIA. See MACROZAMIA.

LEPI'SMIUM. (From *lepis*, a scale; referring to the small scales at the crenatures. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Now referred to Rhipsalis.)

L. caverno'sum (cavernous). See RHIPSALIS CAVERNOSA.
„ *commu'ne* (common). See RHIPSALIS MITTLERI.
„ *dissi'mile* (dissimilar). See RHIPSALIS DISSIMILIS.
„ *Myosu'rus* (mouse-tail-like). See RHIPSALIS MYOSURUS.
„ *parado'xum* (paradoxical). See RHIPSALIS PARADOXA.

LEPTA'CTINA. (From *leptos*, slender, and *aktin*, a ray; in allusion to the bristles at the base and inside the calyx. Nat. ord. Rubiaceæ.)

Evergreen stove shrubs. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, peat, and sand.

L. Ma'nnii (Mann's). 6. White. W. Trop. Africa.
„ *tetra'loba* (four-lobed). 3. White. E. Trop. Africa. 1885.

LEPTA'NDRA. See VERO'NICA.

LEPTA'NTHUS. (From *leptos*, slender, and *anthos*, a flower. Nat. ord. *Pontederads* [Pontederaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. See HETERANTHERA.)

L. grami'neus (grassy). 1. Yellow. July. N. Amer. 1823. This is *Heteranthera graminea.*
„ *limo'sa* (muddy). See HETERANTHERA LIMOSA.
„ *renifo'rmis* (kidney-shaped). See HETERANTHERA RENIFORMIS.

LEPTARRHE'NA. (From *leptos*, slender, and *arren*, a male. Nat. ord. Saxifragaceæ.)

Hardy perennial herb. Divisions. Ordinary soil.

L. amplexifo'lia (clasping-leaved). 1–1½. White. May. Arctic Amer. 1827.
„ *pyrolifo'lia* (Pyrola-leaved). See L. AMPLEXIFOLIA.

LEPTINE'LLA DIOI'CA. See COTULA DIOICA.

LEPTINE'LLA LANA'TA. See COTULA LANATA.

LEPTINE'LLA PLUMO'SA. See COTULA PLUMOSA.

LEPTOCA'LLIS. See IPOMŒA.

LEPTOCA'RPHA. (From *leptos*, slender, and *karphos*, a dried twig. Nat. ord. Compositæ.)

A subshrubby plant, related to Helianthus, and requiring a greenhouse in winter. Cuttings in sand, under a bell-glass. Loam, leaf-mould, and sand.

L. rivula'ris (brook-loving). 1–2. Yellow. Chili and Peru. 1903.

LEPTO'CERAS. (From *leptos*, slender, and *keras*, a horn; referring to the form and substance of the column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Caladenia, which see.)

L. fimbria'ta (fringed). See CALADENIA FIMBRIATA.
„ *oblo'nga* (oblong). See CALADENIA MENZIESII.
„ *pectina'ta* (comb-like). See CALADENIA FIMBRIATA.

LEPTOCHI'LUS AXILLA'RIS. See ACROSTICHUM NICOTIANÆFOLIUM.

LEPTOCHI'LUS DECU'RRENS. See ACROSTICHUM DECURRENS.

LEPTODA'CTYLON CALIFO'RNICUM. See GILIA CALIFORNICA.

LEPTODE'RMIS. (From *leptos*, slender, and *derma*, the skin; referring to the thin bark. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Hamiltonia.)

Greenhouse evergreen shrub. Cuttings of half-ripened young shoots in April, in sand, under a bell-glass, and in a mild bottom-heat; sandy peat and fibrous loam. Winter temp., 45° to 48°.

L. lanceola'ta (spear-head-*leaved*). 3. Yellow. June. Nepaul. 1842.
„ *oblo'nga* (oblong). 2. Dark violet. N. China. 1909.

LEPTOGRA'MME. (From *leptos*, slender, and *gramme*, a line; referring to the form of the spore or seed-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Gymnogramme, which see.)

L. asplenioi'des (Asplenium-like). See GYMNOGRAMME ASPLENIOIDES.
„ *gra'cile* (slender). See GYMNOGRAMME GRACILIS.
„ *linkia'na* (Linkian). See GYMNOGRAMME DIPLAZIOIDES.
„ *polypodioi'des* (Polypodium-like). See GYMNOGRAMME POLYPODIOIDES.
„ *rupe'stris* (rock). See GYMNOGRAMME DIPLAZIOIDES.
„ *To'tta* (Totta). See GYMNOGRAMME TOTTA.
„ *villo'sa* (shaggy). See GYMNOGRAMME VILLOSA.

LEPTOME'RIA. (From *leptos*, slender, and *meris*, a part; referring to the slender and almost leafless shoots. Nat. ord. *Sandalworts* [Santalaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreens, with white blossoms, from Australia. Cuttings of firm young shoots in sand, under a bell-glass; sandy peat and fibrous loam, with pieces of charcoal. Winter temp., 40° to 48°.

L. a'cida (acid). 1. 1823.
„ *Billardie'ri* (Labillardière's). 1. 1823.

LEPTO'PTERIS SUPE'RBA. See TODEA.

LEPTORHY'NCHOS. (From *leptos*, slender, and *rhunchos*, a beak; in allusion to the achene or fruit being prolonged into a beak. Nat. ord. Compositæ.)

A greenhouse, perennial herb. Divisions and cuttings under a bell-glass. Loam, leaf-mould, and sand.

L. squama'tus (scaly). 2. Yellow. May. Australia. 1837.

LEPTO'SIPHON. (From *leptos*, slender, and *siphon*, a tube; alluding to the tube of the flower. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Gilia, which see.)

L. androsa'ceus (Androsace-like). See GILIA ANDROSACEA.
„ *densiflo'rus* (clustered-flowered). See GILIA DENSIFLORA.
„ „ *coro'lla a'lba* (white-corollaed). See GILIA DENSIFLORA ALBA.
„ *grandiflo'rus* (large-flowered). See GILIA DENSIFLORA.
„ *lu'teus* (yellow). See GILIA MICRANTHA AUREA.
„ „ *pa'llidus* (pale). See GILIA MICRANTHA LUTEA.
„ *parviflo'rus* (small-flowered). See GILIA MICRANTHA AUREA.
„ *ro'seus* (rosy). See GILIA MICRANTHA.

LEPTOSPE'RMUM. (From *leptos*, slender, and *sperma*, a seed. Nat. ord. *Myrtlebloomes* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Metrosideros.)

Australian, greenhouse, evergreen plants, with white flowers, except where otherwise stated. Seeds in a hot-bed, in March; cuttings of young shoots, getting firm, in May, in well-drained pots, in sand, under a glass; loam two parts, peat one part, sand and charcoal half a part. Winter temp., 38° to 48°. Some, such as *lani'gerum* and *grandiflo'rum*, would do well on conservative walls.

L. ambi'guum (doubtful). See KUNZEA CORIFOLIA.
„ *A'nnæ* (Ann's). 2–3. White; stamens red. Philippines.
„ *arachnoi'deum* (cobwebbed). 3. June. 1795.
„ *attenua'tum* (thin). 5. June. 1795.
„ *bacca'tum* (berry-*fruited*). See L. SCOPARIUM.
„ *Chapma'nni* (Chapman's). See L. SCOPARIUM CHAPMANNI.
„ *cinerioi'des* (grey-like). See L. SCOPARIUM.
L. emargina'tum (notch-*leaved*). See L. FLAVESCENS.
„ *ericoi'des* (heath-like). 3. White. New Zealand.
„ *flave'scens* (yellowish). 5. June. 1787.
„ *flexuo'sum* (zigzag). See AGONIS FLEXUOSA.
„ *grandiflo'rum* (large-flowered). See L. FLAVESCENS.
„ *juniperi'num* (juniper-*leaved*). See L. SCOPARIUM.
„ *læviga'tum* (smooth). 3. Yellow. June. 1788.
„ *lani'gerum* (woolly). See L. PUBESCENS.
„ *multicau'le* (many-stemmed). See L. MYRTIFOLIUM.
„ *myrsinoi'des* (Myrsine-like). 3. June. Australia.
„ *myrtifo'lium* (myrtle-leaved). 4. June. 1824.
„ *Nicho'llii* (Nicholl's). See L. SCOPARIUM NICHOLLII.
„ *obli'quum* (twisted-*leaved*). See L. SCOPARIUM.
„ *pe'ndulum* (weeping). See L. ATTENUATUM.
„ *persicifo'lium* (peach-leaved). See L. SCOPARIUM.
„ *pube'scens* (downy). 3. Yellow. 1820.
„ „ *grandiflo'rum* (large-flowered). Large, pale yellow.
„ *scopa'rium* (broom-like). 2–4. June. Australia and New Zealand. 1790.
„ „ *Chapma'nni* (Chapman's). Bright rose. Leaves brownish. New Zealand. 1908.
„ „ *grandiflo'rum* (large-flowered). Large, white.
„ „ *Nicho'llii* (Nicholl's). Blood-red. Leaves purple. New Zealand. 1908.
„ *seri'ceum* (silky). 5. June. N. S. Wales. 1818.
„ *squarro'sum* (spreading). See L. SCOPARIUM.
„ *stella'tum* (starry). Australia.
„ *thymifo'lium* (thyme-leaved). See L. PUBESCENS.
„ *trilocula're* (three-celled). See L. ARACHNOIDEUM.

LEPTOSTE'LMA MA'XIMA. See ERIGERON MAXIMUS.

LEPTO'SYNE. (From *leptosune*, thinness, tenuity some of the species being very slender. Nat. ord. Compositæ.)

Hardy annual or perennial herbs, or subshrubs. Seeds cuttings of shrubby types. Ordinary soil.

L. califo'rnica (Californian). See L. DOUGLASII.
„ *calliopsi'dea* (Calliopsis-like). 1–2. Bright yellow. California. 1873. "Annual."
„ *Douglа'sii* (Douglas's). Yellow. California.
„ *gigante'a* (giant). 6–8. Yellow. California. 1895. Half-hardy subshrub.
„ *mari'tima* (maritime). 1–2. Yellow. California. 1873.
„ *Stillma'nni* (Stillmann's). 1–2. Yellow. California. 1897. Annual.

LEPTO'TES BI'COLOR. See TETRAMICRA BICOLOR.

LEPTO'TES BI'COLOR BRE'VIS. See TETRAMICRA BICOLOR BREVIS.

LEPTO'TES BI'COLOR GLAUCOPHY'LLA. See TETRAMICRA BICOLOR GLAUCOPHYLLA.

LEPTO'TES UNI'COLOR. See TETRAMICRA UNICOLOR.

LESCHENAU'LTIA. (Named after *M. Leschenault*, a French botanist. Nat. ord. *Goodeniads* [Goodeniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreens, from Australia. Cuttings of the points of young shoots in sand, under a bell-glass, and as soon as struck, potted and grown in an open compost of turfy peat, fibrous loam, silver-sand, and pieces of broken pots and charcoal, the pots being well drained. Winter temp., 38° to 45°, with plenty of air when possible. A shady position in summer.

L. arcua'ta (bowed-*branched*). See L. LINARIOIDES.
„ *Baxte'ri* (Baxter's). See L. FORMOSA.
„ „ *ma'jor* (larger). See L. FORMOSA MAJOR.
„ *bi'color ma'jor* (larger). See L. BILOBA MAJOR.
„ *bi'loba* (two-lobed). 1. Blue. June. 1840.
„ „ *ma'jor* (larger). Blue. Australia. 1884.
„ *formo'sa* (handsome). 1. Scarlet. June. 1824.
„ „ *ma'jor* (larger). Orange-red. Australia. 1886.
„ *larici'na* (larch-like). 1½. Scarlet. June. 1844.
„ *linarioi'des* (Linaria-like). 1. Yellow. August. 1844.
„ *multiflo'ra* (many-flowered). See L. FORMOSA.
„ *obla'ta* (flattened-round-*lobed*). See L. FORMOSA.
„ *sple'ndens* (shining). See L. LARICINA.

LESPEDE'ZA. (Named after *Lespedez*, once governor of Florida. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Desmodium.)

North American plants, except where otherwise specified. Annuals, by seed, in a sandy, peaty border; perennials, by the same means in spring, and division of the roots; shrubs, cuttings either of young or ripened wood in sand, under a bell-glass; sandy, fibrous peat. *Eriocarpa* requires the greenhouse, and *glomerata* must be used as a tender annual.

ANNUALS.

L. glomera'ta (crowded). 3. Purple. July. E. Ind. 1819. Stove.
„ *Stu'vei* (Stuve's). 1½. Purple. July. 1824. Hardy.

SHRUBS.

L. bi'color (two-coloured). 3–4. Rose and purple. September. China and Japan. 1858.
„ „ *interme'dia* (intermediate).
„ *Buerge'ri* (Buerger's). Japan.
„ *capita'ta* (headed). 3. Purple. N. Amer. "Round-headed Bush Clover."
„ *cyrtobo'trya* (curved-bunched). Japan.
„ *eriocar'pa* (woolly-fruited). 1. Violet. July. Nepaul. 1819. Greenhouse evergreen.
„ „ *polya'ntha* (many-flowered). Purple. China. 1890.
„ *floribu'nda* (free-flowering). Purple. Central China. 1907.
„ *fruti'scens* (shrubby). 4. Purple. July. 1739. Deciduous shrub.
„ *gerardia'na* (Gerardian). Purple. Himalaya.
„ *ju'ncea* (rush-like). 2. Blue-purple. Himalaya.
„ *macroca'rpa* (large-fruited). 3. Purple. N. China. 1883.
„ *Siebo'ldi* (Siebold's). 3–4. Blue-purple. N. China and Japan.
„ *viola'cea* (violet). 2. Violet. July. 1739. "Bush Clover."
„ „ *dive'rgens* (diverging). 2. Violet. July. 1800.
„ „ *reticula'ta* (netted). See L. RETICULATA.
„ „ *sessiliflo'ra* (stalkless-flowered). See L. SESSILIFLORA.

HARDY HERBACEOUS PERENNIALS.

L. angustifo'lia (narrow-leaved). 2. Pale purple. June. 1800.
„ *capi'llipes* (hair-stalked). 3. Purple. China. 1890.
„ *Delava'yi* (Delavay's). 3–6. Deep-violet to purple-black. Yunnan, China. 1890.
„ *dive'rgens* (diverging). See L. VIOLACEA DIVERGENS.
„ *hirte'lla* (slightly-hairy). 3. Violet. August. China. 1890.
„ *polysta'chya* (many-spiked). 3. White. July. 1789.
„ *prostra'ta* (prostrate). See L. REPENS.
„ *re'pens* (creeping). ½. Purple. July. 1810. Trailer.
„ *reticula'ta* (netted). 2. Purple. 1816.
„ *sessiliflo'ra* (stalkless-flowered). 3. Purple. July. 1800.
„ *trigono'clada* (three-angled-branched). Pale yellow or whitish. S. China. 1890.
„ *villo'sa* (shaggy). White. July. 1819.
„ *yunnane'nsis* (Yunnan). Light violet. China. 1890.

LESSE'RTIA. (Named after the French botanist *Baron Delessert*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Swainsonia.)

All natives of South Africa. Shrubby kinds, by seed in spring, and cuttings of young shoots in sand, under a glass; loam and peat; annuals, by seeds; and perennials, by seeds and division in spring; the seedlings should be potted off, when a few inches in height, into light, sandy loam. Winter temp., 40° to 48°.

GREENHOUSE ANNUALS.

L. tomento'sa (downy). ½. Purple. June. 1822.
„ *vesica'ria* (bladder-*podded*). Purple. June. 1825.
„ *virga'ta* (twiggy). Purple. June. 1828.

GREENHOUSE HERBACEOUS PERENNIALS.

L. arge'ntea (silvery). 1–2. Purple. S. Africa.
„ *diffu'sa* (diffuse). ½. Purple. S. Africa.
„ *exci'sa* (cut-out). ½. Red. August. 1776.
L. pere'nnans (perennial). 2–3. White or pale purple. S. Africa. 1873.
„ *procu'mbens* (lying-down). Purple. June. 1753.

GREENHOUSE EVERGREENS.

L. brachysta'chya (short-spiked). 1. Purple. July. 1826.
„ *falcifo'rmis* (sickle-formed). 1. Purple. July. 1773.
„ *frutico'sa* (shrubby). 1. Purple. July. 1826.
„ *mucrona'ta* (small-pointed). 2. Pale red. June. 1823.
„ *pu'lchra* (pretty). 1½. Red. May. 1802.

LETTSO'MIA. (Commemorative of *J. C. Lettsom*, a British physician and naturalist. Nat. ord. Convolvulaceæ.)

Stove, twining annuals. Seeds in heat. Fibrous loam, leaf-mould, and sand.

L. barbi'gera (beard-bearing). Blue. September. Assam; Burma.
„ *elli'ptica* (diamond-shaped). India.
„ *tomento'sa* (felted). See FREZIERA SERICEA.

LETTUCE. *Lactu'ca.*

LETTUCE FUNGUS. *Perono'spora ganglionifo'rmis.*

LEUCADE'NDRON. (From *leukos*, white, and *dendron*, a tree; the white-leaved Silver-trees of the Cape colonists. Nat. ord. *Proteads* [Proteaceæ]. Linn. 22-*Diœcia*, 4-*Tetrandria*.)

Greenhouse evergreen shrubs, with yellow flowers, from South Africa. Cuttings of the ripened shoots in summer, in sand, under a glass, and kept cool until the base of the cutting has callused, when extra heat may be applied; fibrous loam and sandy peat, with a few rough pieces of charcoal, to keep the compost open. Winter temp., 38° to 45°.

L. abieti'num (fir-like). Yellow. S. Africa.
„ *æ'mulum* (rival). 3. July. 1789.
„ *angusta'tum* (narrowed). 3. June. 1820.
„ *argе'nteum* (silvery). 15. August. 1693. "Silver Tree."
„ *buxifo'lium* (box-leaved). S. Africa.
„ *cauda'tum* (tailed). 3. May. 1800.
„ *cine'reum* (grey). 3. July. 1774.
„ *como'sum* (tufted). 3. May. 1818.
„ *conci'nnum* (neat). 3. 1800.
„ *co'ncolor* (one-coloured). 3. May. 1774.
„ *coni'ferum* (cone-bearing). Yellow. 1803.
„ *corymbo'sum* (corymbed). 3. April. 1790.
„ *deco'rum* (decorous). 3. 1790.
„ *flo'ridum* (florid). 3. April. 1795.
„ *fusciflo'rum* (brown-flowered). Brownish-purple. May, June.
„ *gla'brum* (smooth). 3. May. 1810.
„ *grandiflo'rum* (large-flowered). 3. April. 1789.
„ *hirsu'tum* (hairy). 4. Pale green. June. 1819.
„ *imbrica'tum* (imbricated). 4. 1790.
„ *infle'xum* (bent-in). 3. April. 1800.
„ *levisa'nus* (Lewis's). 4. April. 1774.
„ *linifo'lium* (flax-leaved). 4. May.
„ *margina'tum* (bordered). 3. May. 1800.
„ *ova'le* (oval-*leaved*). 3. May. 1818.
„ *plumo'sum* (feather-*flowered*). 4. July. 1774.
„ *retu'sum* (bent-back). 3. May. 1810.
„ *sali'gnum* (willow-*leaved*). 3. May. 1774.
„ *seri'ceum* (silky). 3. May. 1817.
„ *spathula'tum* (spathulate). 3. May. 1818.
„ *squarro'sum* (spreading). 3. 1824.
„ *stella're* (starry). See L. FUSCIFLORUM.
„ *stri'ctum* (upright). 3. June. 1795.
„ *to'rtum* (twisted). Yellow. S. Africa.
„ *veno'sum* (veiny). 3. May. 1816.

LEUCÆ'NA. (From *leukos*, white; in allusion to the colour of the flowers. Nat. ord. Leguminosæ.)

Evergreen, stove shrubs. Cuttings in sand in a close case. Loam, peat, and a little sand.

L. glau'ca (sea-green). 5–9. White. Tropics of both Worlds. 1690.
„ *tricho'des* (hair-like). 3–4. White. Peru.

LEU'CAS. (From *leukos*, white; in allusion to the colour of the flowers. Nat. ord. Labiatæ.)

Stove perennial herbs. Divisions, or cuttings in sand in a close case. Loam, leaf-mould, and sand.

L. lavandulæfo'lia (lavender-leaved). 1. White. E. Ind. and Malaya.
„ *linifo'lia* (flax-leaved). See L. LAVANDULÆFOLIA.
„ *martinice'nsis* (Martinique). 1½. White. Tropics of both Worlds.

LEUCE'RIA. (From *leukeres*, white; the leaves are more or less covered with a white wool. Nat. ord. Compositæ.)

Greenhouse or half-hardy herbs. Seeds, or divisions. Loam, leaf-mould, sand.

L. floribu'nda (free-flowering). 1. White. Chili.
„ *runcina'ta* (backward-toothed). 1½. White. Chili. 1844.
„ *senecioi'des* (Senecio-like). 1½. White. Chili. 1821. Annual.

LEUCHTENBE'RGIA. (Named after *Prince Leuchtenberg*. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Greenhouse evergreen. For culture, see CA'CTUS—*Echinoca'ctus*.

L. Pri'ncipis (noble). 1. Yellow. June. Mexico. 1847.

LEUCOCA'RPUS. (From *leukos*, white, and *carpos*, a fruit; the berry is white. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Half-hardy perennial herb. Seed in autumn; division and cuttings in spring; requires a little protection in winter; loam, leaf-mould, peat, and a little sand.

L. ala'tus (winged-*stalked*). 2. Yellow. Trop. Amer. 1830.

LEUCOCO'RYNE. (From *leukos*, white, and *korune*, a club; referring to the sterile anthers. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Brodiæa.)

Beautiful little half-hardy bulbs, from Chili, requiring the same treatment as Ixias.

L. allia'cea (garlic-scented). 1. White. 1825.
„ *ixioi'des* (Ixia-like). Lilac. October. 1821.
„ „ *odora'ta* (sweet-scented). 1. White. August. 1826.
„ „ *purpu'rea* (purple). 1. Lavender and crimson-maroon. Chili. 1894.

LEUCOCRI'NUM. (From *leukos*, white, and *krinon*, the White Lily; in allusion to the white flowers. Nat. ord. Liliaceæ.)

Hardy or half-hardy herb with short fleshy rhizome. Offsets. Loam, leaf-mould, and plenty of sand.

L. monta'num (mountain). ½. White. California. "Californian Soap-root."

LEUCO'JUM. Snowflake. (From *leukos*, white, and *ion*, a violet; referring to the colour and fragrance of the flowers. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Galanthus, and including Acis, Erinosma, and Ruminia.)

Hardy bulbs. Offsets in spring; sandy loam.

L. æsti'vum (summer). 1½. White. May. England.
„ *autumna'le* (autumn). ½–¾. White, tinged with red. Portugal to Ionian Islands. 1829.
„ *Hernande'zii* (Hernandez's). See L. PULCHELLUM.
„ *hyema'le* (winter). ½–¾. White, tinted with green. April. Maritime Alps.
„ *longifo'lium* (long-leaved). ½–¾. White. April, May. Corsica on the Mountains.
„ *pulche'llum* (neat). 1½. White. April. Sardinia and Balearic Isles.
„ *ro'seum* (rosy). ½–¾. Rosy-red. September, October. Mountains of Corsica. 1820.
„ „ *longifo'lium* (long-leaved). See L. LONGIFOLIUM.
„ *strumo'sum* (swollen). See HESSEA FILIFOLIA.
„ *trichophy'llum* (hair-leaved). ½–1. White. April. Spain, Portugal, N. Africa. 1820.
„ „ *grandiflo'rum* (large-flowered). Flowers ¼ in. larger, up to 1 in. long. Spain. 1820.
„ *ve'rnum* (spring). ½–¾. White, tipped with green. March. Central Europe (England). 1596.
„ „ *carpa'thicum* (Carpathian). Segments tipped yellow. Carpathian Mountains. 1816.
L. ve'rnum mu'ltiplex (full-flowered). ¾. White, double. March.
„ „ *Vagne'ri* (Vagner's). Tall, robust, with two flowers, white, tipped dark green. Hungary. 1908.

LEUCOPHY'LLUM. (From *leukos*, white, and *phullon*, a leaf; the leaves are silvery-white. Nat. ord. Scrophulariaceæ.)

A greenhouse branching shrub. Cuttings of half-ripe wood under a bell-glass. Loam, leaf-mould, and sand.

L. texa'num (Texan). Violet-purple. Mexico. 1890.

LEUCOPHY'TA BRO'WNII. See CALOCEPHALUS BROWNII.

LEUCOPO'GON. (From *leukos*, white, and *pogon*, a beard; referring to the hairs on the flowers. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Lissanthe.)

This is "the native currant" of settlers in Australia. Greenhouse, Australian, white-flowering, evergreen shrubs. Cuttings of the points of shoots, getting a little firm in May, in sand, under a bell-glass; peat and loam, both fibrous, with silver sand, and nodules of charcoal to keep the compost open; drainage and watering must be carefully attended to. Winter temp., 38° to 45°.

L. amplexicau'lis (stem-clasping). 3. 1815.
„ *colli'nus* (hill). 3. May. 1824.
„ *Cunningha'mi* (Cunningham's). See L. LANCEOLATUS.
„ *ericoi'des* (heath-like). 6. 1815.
„ *juniperi'nus* (juniper-like). 3. May. 1804.
„ *lanceola'tus* (spear-head-*leaved*). 12. May. 1790.
„ *obova'tus* (reverse-egg-*leaved*). 1. June. 1824.
„ *parviflo'rus* (small-flowered). See L. RICHEI.
„ *polysta'chyus* (many-spiked). See L. RICHEI.
„ *Ri'chei* (Riche's). 5. June. 1822.
„ *se'tiger* (bristly). 2. 1824.
„ *stria'tus* (channelled). 3. June. 1823.
„ *verticilla'tus* (whorled). 1837.
„ *virga'tus* (twiggy). 2. June. 1824.

LEUCORHA'PHIS LA'MIUM. See BRILLANTAISIA OWARIENSIS.

LEUCORHA'PHIS VOGELIA'NA. See BRILLANTAISIA VOGELIANA.

LEUCOSCE'PTRUM. (From *leukos*, white, and *skeptron*, a rod or staff; in allusion to the hoary stems. Nat. ord. Labiatæ.)

Greenhouse, evergreen shrub. Cuttings of half-ripe wood in sand under a bell-glass. Loam, leaf-mould, and some sharp sand.

L. ca'num (hoary). White. Nepaul. 1826.

LEUCOSPE'RMUM. (From *leukos*, white, and *sperma*, a seed. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Protea.)

Greenhouse evergreen shrubs, with yellow flowers, from South Africa. Cuttings of ripe young shoots, with the leaves left on, except those close to the base of the cutting, firmly in sand, and covered with a bell-glass, kept cool, and care taken to prevent damping; light, sandy, fibrous loam, with a little peat, nodules of charcoal, free-stone, and brick. Winter temp., 35° to 45°.

L. attenua'tum (thin). 3. June. 1820.
„ *ca'ndicans* (whitish). See L. TOMENTOSUM CANDICANS.
„ *elli'pticum* (elliptic). 3. S. Africa.
„ *formo'sum* (handsome). See PROTEA FORMOSA.
„ *grandiflo'rum* (large-flowered). 4. June. 1800.
„ *linea're* (narrow-*leaved*). 4. July. 1774.
„ *me'dium* (middle-sized). 3. July. 1794.
„ *pa'rile* (matched). See SERRURIA PHYLICOIDES.
„ *pa'tulum* (spreading). See L. PUBERUM.
„ *pu'berum* (finely-downy). 2. August. 1823.
„ *spathula'tum* (spathulate). 2. June. 1825.
„ „ *ca'ndicans* (whitish). 2. August. 1790.
„ *tomento'sum* (cottony). 2. June. 1789.

LEUCOSTE'GIA. See DAVALLIA.

LEUCOSTE'MMA VESTI'TUM. See HELICHRYSUM VESTITUM.

LEUCO'THOË. (The name of the Greek goddess *Ino*, after she was translated into a sea-nymph. Nat. ord. Ericaceæ.)

Beautiful hardy, evergreen shrubs. Seeds; layers; divisions in autumn or winter. Peat, or peat and leaf-mould.

L. acumina'ta (long-pointed). 3. White. June. N. Amer. 1765.
„ *axilla'ris* (axillary). 2. White. May. N. Amer. 1765.
„ „ *longifo'lia* (long-leaved). 1. White. June. N. Amer. 1765.
„ *Catesbæ'i* (Catesby's). 2. White. June. N. Amer. 1793.
„ *coria'cea* (leathery). See PIERIS NITIDA.
„ *Davi'siæ* (Mrs. Davis's). 2–5. White. California. 1853.
„ *Lo'bbi* (Lobb's). See L. DAVISIÆ.
„ *neriifo'lia* (Nerium-leaved). See AGARISTA NERIIFOLIA.
„ *pu'lchra* (beautiful). See AGARISTA PULCHRA.
„ *racemo'sa* (racemose). 3–8. White. May. N. Amer. 1736.
„ *recu'rva* (recurved). 2. White. June. N. Amer.
„ *spinulo'sa* (spiny). See L. CATESBÆI.

LEU'ZEA. (Named after *De Leuze*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Serratula.)

Hardy herbaceous perennials, with purple flowers. Seeds, and divisions of the plant in spring; common garden soil.

L. alta'ica (Altaian). See CENTAUREA CARTHAMOIDES.
„ *austra'lis* (southern). See CENTAUREA AUSTRALIS.
„ *carthamoi'des* (Carthamus-like). See CENTAUREA CARTHAMOIDES.
„ *coni'fera* (cone-bearing). ½. July. S. Europe. 1683.
„ *sali'na* (salt). See CENTAUREA SALINA.

LEVI'STICUM. (From *levo*, to assuage; said to relieve flatulency. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Angelica.)

Hardy herbaceous perennial. Seeds, and divisions of the plant in spring; common soil.

L. officina'le (shop). 6. Pale yellow. June. Italy. 1596.
„ „ *variega'tum* (variegated). Leaves with silvery variegation.

LEWI'SIA. (Named after *Captain Lewis*, the traveller. Nat. ord. Portulaceæ. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Hardy herbaceous perennials. Seeds, and dividing the roots in spring; light, sandy loam, with brick-rubbish.

L. brachycal'yx (short-calyxed). ½. California.
„ *columbia'na* (Columbian). ½. Red. N.W. United States. 1907.
„ *Cotyle'don* (Cotyledon). ½–½. Rosy. Northern California. 1907.
„ *lea'na* (Lean). ½–½. White, streaked with red. N. California. 1907.
„ *pygmæ'a* (pigmy). 1/12–½. White or pink. Rocky Mountains. 1907.
„ *redivi'va* (revived). ½. Rose. N. Amer. 1826. "Bitter Root."
„ *Twee'dyi* (Tweedy's). ½. Straw-coloured, passing into salmon-pink. N.W. United States. 1899.

LEYCESTE'RIA. (Named after *W. Leycester*, once chief justice at Bengal. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Symphoricarpus.)

Hardy evergreen shrub. Seeds in spring; cuttings of young, short shoots in spring, under a glass, and older shoots in autumn, under a hand-light; light, sandy soil; will require a few evergreen boughs over it in a very hard winter.

L. formo'sa (handsome). 4. White, purple. August. Nepaul. 1824.

LEYSSE'RA. (Named after *T. W. Leysser*, a German botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Greenhouse evergreens, orange-flowered, and from South Africa, except *capillifo'lia*. Cuttings of half-ripened shoots in sand, over sandy peat, in summer; peat and loam, both rough and sandy.

L. capillifo'lia (hair-leaved). ½. Yellow. June. Barbary. 1822.
„ *cilia'ta* (hair-fringed). See MAIRIA TAXIFOLIA.
„ *gnaphalo'des* (Gnaphalium-like). 2. August. 1774.
„ *polifo'lia* (Polium-leaved). See PRINTZIA BERGII.
„ *squarro'sa* (spreading). See HELIPTERUM GNAPHALIOIDES.

LHO'TSKYA. (Named after *Dr. John Lhotsky*, a German botanist. Nat. ord. *Fringe-myrtles* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Calythrix.)

Greenhouse evergreens, from Swan River. Cuttings of young shoots, when the base is a little firm, in sand, and under a glass; loam, and a little peat and sand. Winter temp., 38° to 45°.

L. acutifo'lia (sharp-leaved). Pale yellow. June.
„ *ericoi'des* (heath-like). 1–3. White. Australia.
„ *hi'rta* (hairy). See L. ERICOIDES.
„ *viola'cea* (violet-coloured). Violet. June. 1843.

LIA'BUM. (Derivation not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Andromachia.)

Stove herbaceous perennial and half-hardy herb. Division in spring; sandy loam, leaf-mould, and a little peat. Summer temp., 60° to 80°; winter, 48° to 55°.

L. Bro'wnei (Brown's). Yellow. June. Jamaica. 1768.
„ *uniflo'rum* (one-flowered). Yellow and orange disc. Peru. 1870. Half-hardy.

LIA'TRIS. (Derivation not known. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous perennials, from North America. Division in spring; sandy loam and peat; those from Carolina require protection in winter.

L. acido'ta (sharpened). 3–4. Purple. Texas.
„ *bellidifo'lia* (daisy-leaved). See CARPHEPHORUS BELLIDIFOLIUS.
„ *borea'lis* (northern). 1½. Pink. August.
„ *corymbo'sa* (corymbed). See CARPHEPHORUS CORYMBOSUS.
„ *cylindra'cea* (cylindric-*flowered*). 4. Pink. September. 1811.
„ *cyli'ndrica* (cylindrical). See L. PUNCTATA.
„ *e'legans* (elegant). 4. Purple. September. 1878. "Blazing Star."
„ *gra'cilis* (slender). 1½. Purple. September. Carolina. 1818.
„ *graminifo'lia* (grass-leaved). 3. Pink. August.
„ „ *du'bia* (doubtful). 6. Rich, shining lilac. 1899.
„ *heterophy'lla* (various-leaved). See L. SCARIOSA.
„ *interme'dia* (intermediate). See L. SQUARROSA.
„ *mucrona'ta* (small-pointed). See L. ACIDOTA.
„ *odorati'ssima* (sweetest-scented). See TRILISIA ODORATISSIMA.
„ *panicula'ta* (panicled). See TRILISIA PANICULATA.
„ *pilo'sa* (hairy-*leaved*). See L. SPICATA.
„ *propi'nqua* (related). See L. GRAMINIFOLIA.
„ *pu'mila* (dwarf). See L. SPICATA MONTANA.
„ *puncta'ta* (spotted). 4. Purple. N. Amer.
„ *pycnosta'chya* (dense-spiked). 3. Purple. September. 1732. "Kansas Gay Feather."
„ *scario'sa* (membranous). 4. Purple. July. 1739.
„ *sphæroi'des* (globular-*cupped*). See L. SCARIOSA.
„ *spica'ta* (*long*-spiked). 6. Purple. September. 1732.
„ „ *monta'na* (mountain). 1½. Purple. September.
„ *squarro'sa* (spreading). 3. Purple. July. 1732.
„ *tenuifo'lia* (fine-leaved). 1½. Purple. September. Carolina. 1820.
„ *turbina'ta* (top-form). See L. SPICATA.

LIBE'RTIA. (Named after *M. A. Libert*, a Belgian lady and botanist. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Monogynia*. Allied to the Peacock. Iris.)

Hardy or half-hardy bulbs, with white flowers, thriving well in a front, outside border, if light soil. Division of the roots, and sowing the seed, in spring; loam and peat.

L. cærule'scens (bluish). 1. Light blue. Chili. 1873.
„ *formo'sa* (handsome). 1½. May. Chili. 1831.
„ *grandiflo'ra* (large-flowered). 1½. April. New Zealand. 1822.
„ „ *ma'jor* (greater). 2. White, larger. 1870.
„ *ixioi'des* (Ixia-like). 1½. White. May. New Zealand. 1865.

L. Laure'ncii (Laurence's). See L. PULCHELLA.
„ *panicula'ta* (panicled). 1½. April. Australia. 1823.
„ *pulche'lla* (pretty). 1. April. Australia. 1823.
„ *tri'color* (three-coloured). 1½. White. Leaves green, yellow, red. New Zealand.

LIBOCE'DRUS. (From *libanos*, the tree which produces frankincense, and *kedros*, the cedar; in allusion to the fragrance of the wood. Nat. ord. Coniferæ.)

Large, evergreen trees, more often seen in the form of shrubs. The hardiest is *L. decurrens;* the rest require the shelter of other trees or a greenhouse. Seeds; cuttings in sand in a cold frame, in autumn. Well-drained soil.

L. chile'nsis (Chilian). 60–80. Chilian Andes. 1850.
„ *decu'rrens* (decurrent). 30–130. Oregon to S. California. 1853. "Incense Cedar." Varieties of this are *au'reo-variega'ta, compa'cta, glauca, na'na,* and *variega'ta.*
„ *donia'na* (Donian). 30–60. New Zealand. 1847.
„ *macro'lepis* (large-scaled). Yunnan, China. 1901.
„ *tetrago'na* (four-angled). 30–80. Chili. 1849.

LIBO'NIA FLORIBU'NDA. See JACOBINIA PAUCIFLORA.

LIBO'NIA PENRHOSIE'NSIS. See JACOBINIA PENRHOSIENSIS.

LICHTENSTEI'NIA LÆVIGA'TA and **L. UNDULA'TA.** See ORNITHOGLOSSUM GLAUCUM.

LICUA'LA. (From the native name. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Corypha.)

Stove Palms, from the East Indies. Seeds in strong hotbed; rich, sandy loam. Summer temp., 60° to 80°; winter, 60°.

L. acuti'fida (acutely-cut). Malaya.
„ *a'mplifrons* (large-fronded). Sumatra.
„ *e'legans* (elegant). Sumatra.
„ *gra'ndis* (grand). Yellow-green. New Britain. 1873.
„ *ho'rrida* (spiny). See L. SPINOSA.
„ *Jeanne'ncyi* (Jeannency's). New Caledonia.
„ *kirstenia'na* (Kirstenian). Leaves deeply cut. Madagascar. 1895.
„ *Leopo'ldii* (Leopold's). Leaves small, circular. 1898.
„ *Muelle'rii* (Mueller's). Queensland.
„ *pelta'ta* (shield-*leafed*). 6. White, yellow. India. 1825.
„ *Ru'mphii* (Rumphius's). Moluccas.
„ *spino'sa* (spiny). 6. White, green. Malaya. 1802.
„ *triphy'lla* (three-leaved). Malaya.
„ *Vei'tchii* (Veitch's). Green. Borneo. 1883.

LIDBE'CKIA. (Named after *E. G. Lidbeck*, a Swedish botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Lasthenia.)

Greenhouse evergreen shrubs, with yellow flowers, from South Africa. Cuttings of half-ripened short shoots in April, in sandy peat, under a bell-glass; peat, with a little fibrous loam, and a few pieces of charcoal and silver-sand. Winter temp., 40° to 45°.

L. loba'ta (lobed). 2. May. 1800.
„ *pectina'ta* (comb-*leaved*). 2. May. 1744.

LIEBI'GIA. (Named after *Liebig*, the celebrated German chemist. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Referred to Chirita.)

L. specio'sa (showy). See CHIRITA BLUMEI.

LIE'TZIA. (Commemorative of *A. Lietze*, a nurseryman of Rio Janeiro. Nat. ord. Gesneraceæ.)

Stove herb with a tuberous rootstock. Seeds, offsets; and cuttings in sand in a close case, with bottom-heat. Loam, leaf-mould, and sand.

L. brasilie'nsis (Brazilian). Green, spotted with brown-purple. Brazil. 1880.

LIEVE'NA PRI'NCEPS. See QUESNELIA RUFA.

LIFTING is sometimes used as meaning the same as transplanting, and at others merely means passing the spade under a plant, and, by raising it up, disturbing its roots to check its luxuriance.

LIGE'RIA BARBA'TA. See SINNINGIA CAROLINÆ.

LIGHT has a most powerful influence over the health and life of a plant, from the moment its leaves pierce through the surface of the soil. If absent, they become yellow, or even white. It deserves notice, that it has been proved by the experiments of Dr. Hope and others, that light from artificial sources may be concentrated so as to enable plants to carry on and perfect those elaborations on which their green colour depends. A similar concentrated light will make the Pimpernel and other flowers, which close until sunrise, open their petals, and rouse from their rest; a fact which gives another reason why plants in rooms frequented at night become weak and exhausted sooner than those which remain as nature dictates, unexcited by light. A deficiency of light decreases the decomposing power of the leaves. For this reason the best glass should always be employed in the sashes of the hothouse, conservatory, and other structures of the forcing department. But the benefit sought for is frustrated if that glass be not constantly well cleansed. The best glass, if dirty, allows fewer rays of light to pass through than inferior glass if kept bright. Solar light is essential to the ripening of all fruit: it will not ripen in the dark; and the greater the light's intensity, and the longer its daily endurance, the sweeter and the higher is the fruit's flavour. No fruits are so luscious as those grown within the tropics, and the fruits of the temperate zone are excellent in proportion to the brightness of its seasons. That light is essential in causing the colour of the leaves and other parts of plants has been noticed already; and it aids the ripening process of fruit in a similar manner, to convert their acid and mutilaginous constituents into sugar. How light operates in promoting this and other decompositions which are effected by the vegetable organs is, at present, a mystery; but so it is; and the gardener promotes its access as much as lies within his power, by removing overshadowing leaves, by employing the best glass in his hothouses, and by having their interior whitened; for white surfaces reflect all the rays of light back upon the object those surfaces inclose.

LIGHTFOO'TIA. (Named after the *Rev. J. Lightfoot*, a Scotch botanist. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Canarina.)

Greenhouse blue-flowered evergreens, from South Africa. Cuttings of young shoots in sand, containing a little peat, under a glass; fibrous loam and sandy peat; pots well drained. Winter temp., 38° to 48°.

L. Loddige'sii (Loddiges'). See L. TENELLA.
„ *oxycoccoi'des* (Oxycoccus-like). ½. July. 1787.
„ *subula'ta* (awl-*leaved*). ½. August. 1787.
„ *tene'lla* (very slender). ½. July. 1822.

LIGULA'RIA. (From *ligula*, a strap; referring to the florets. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Senecio.)

L. alta'ica (Altaian). See SENECIO ALTAICUS.
„ *cauca'sica* (Caucasian). See SENECIO CAUCASICUS.
„ *Hodgso'ni* (Hodgson's). See SENECIO HODGSONI.
„ *macrophy'lla* (large-leaved). See SENECIO LEDEBOURI.
„ *sibi'rica* (Siberian). See SENECIO LIGULARIA.
„ *specio'sa* (showy). See SENECIO LIGULARIA.
„ *thyrsoi'dea* (thyrse-*flowered*). See SENECIO SIBIRICUS.

LIGU'STICUM. (Liguria, where one species is abundant. Nat. ord. Umbelliferæ.)

Hardy perennial herb, the leaves of which are eaten as a pot-herb. Seeds, divisions. Ordinary soil.

L. Levi'sticum. See LEVISTICUM OFFICINALE.
„ *sco'ticum* (Scotch). 1–3. White or pink. Europe (Britain). "Scotch Lovage."

LIGUSTRI'NA PEKINE'NSIS. See SYRINGA PEKINENSIS.

LIGU'STRUM. Privet. (From *ligare*, to tie; referring to the use made of the flexible shoots. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Shrubs, all with white flowers. Generally by cuttings of the young shoots in sandy loam; seeds may also be sown, either when ripe, or placed in a rot-heap for a number of months previously. The common kinds are useful for fences, and will grow under trees where scarcely anything else would live; *lu'cidum* and its varieties, and *vesli'tum*, require a little protection in exposed places.

L. acumina'tum (long-pointed). 3–5. White. Japan (?). 1904. Flowers in pyramidal panicle.
„ *amure'nse* (Amurland) of gardens. See L. IBOTA.

L. angustifo'lium (narrow-leaved) of gardens. See L. MASSALONGIANUM.
„ *califo'rnicum* (Californian). See L. OVALIFOLIUM.
„ *compa'ctum* (compact). See L. ROXBURGHII.
„ *coria'ceum* (leathery). See L. JAPONICUM CORIACEUM.
„ *deci'duum* (deciduous). White. Central China.
„ *delavaya'num* (Delavayan). 2. White. Leaves myrtle-like. Yunnan. 1900.
„ *He'nryi* (Henry's). White. Central China. 1910.
„ *Hooke'ri* (Hooker's). See L. WALLICHII.
„ *Ibo'ta* (Ibota). 3–8. White. China; Japan; Sachalin. 1861.
„ „ *obova'tum* (reverse-egg-shaped).
„ „ *regelia'num* (Regelian).
„ *insula're* (insular). 2–4. White. Origin unknown. 1877.
„ *japo'nicum* (Japanese). 3–6. White. China; Japan. 1845.
„ „ *Alivo'ni* (Alivon's). See L. LUCIDUM ALIVONI.
„ „ *au'reo-variega'tum* (golden-variegated). See L. LUCIDUM AUREO-VARIEGATUM.
„ „ *coria'ceum* (leathery). 2–3. White. Japan.
„ „ *coria'ceum involu'tum* (inrolled). 2–3. White. Leaves rolled. Japan.
„ „ *macrophy'llum* (large-leaved). 2–6. White. Leaves twice as large.
„ *lu'cidum* (shining). 3–14. June. China. 1794.
„ „ *Alivo'ni* (Alivon's). Leaves variegated with pale yellow. 1886.
„ „ *au'reo-variega'tum* (golden-variegated). Leaves variegated with deep yellow.
„ „ *floribu'ndum* (free-flowering). 8. July. China. 1794.
„ „ *tri'color* (three-coloured). Leaves green, yellow and red.
„ *macroca'rpum* (large-fruited). 3–5. White in cylindric panicle. Japan (?). 1904.
„ *magnoliæfo'lium* (Magnolia-leaved). See L. LUCIDUM.
„ *massalongia'num* (Massalongian). 2–6. White. Himalaya. 1877.
„ *me'dium* (median). 3–5. White. Japan. 1891.
„ *myrtifo'lium* (myrtle-leaved). See L. MASSALONGIANUM.
„ *neilgherre'nse* (Neilgherrian). 15. White. August. India. 1820.
„ *nepale'nse* (Nepaul). 3–6. White. June. Himalaya. 1823.
„ „ *gla'brum* (glabrous). 3–5. White. Leaves smooth.
„ *ovalifo'lium* (oval-leaved). 6–15. White. Japan. 1877.
„ „ *fo'liis au'reis* (golden-leaved). Leaves much variegated with deep yellow, or wholly yellow.
„ „ *insta'bile* (unstable). Leaves alternate, opposite or in whorls of three. 1878.
„ „ *variega'tum* (variegated). Leaves variegated with yellow. Japan. 1865.
„ *Quihou'i* (Quihoui). 3–6. White. Summer. China. 1868.
„ *robu'stum* (robust). White. Himalaya. 1877.
„ *rosmarinifo'lium* (rosemary-leaved). See L. MASSALONGIANUM.
„ *Roxbu'rghii* (Roxburgh's). 3. White. Himalaya. 1874.
„ *sine'nse* (Chinese). 8–15. White. China. 1858.
„ „ *fo'liis au'reis variega'tis* (golden-variegated-leaved).
„ „ *na'num* (dwarf). 1–2. White. 1875.
„ *spica'tum* (spiked). See L. NEPALENSE.
„ *Staunto'ni* (Staunton's). See L. SINENSE.
„ *strongylophy'llum* (round-leaved). 3–5. White. China.
„ *syringæflo'rum* (Syringa-flowered). See L. JAPONICUM.
„ *vesti'tum* (clothed). See L. NEPALENSE.
„ *villo'sum* (shaggy). See L. SINENSE.
„ *vulga're* (common). 3–10. White. June, July. Britain.
„ „ *angustifo'lium* (narrow-leaved). 8. June. Britain.
„ „ *au'reum* (golden). Leaves golden.
„ „ *buxifo'lium* (box-leaved). Leaves small, broad, evergreen.
„ „ *chloroca'rpum* (green-fruited). 8. Berries green. June. Britain.
„ „ *glau'cum* (sea-green). Leaves sea-green.
„ „ *ita'licum* (Italian). Leaves evergreen. Italy.
„ „ *leucoca'rpum* (white-fruited). 8. White-berried.
L. vulga're lute'scens (yellowish). Flowers creamy-yellow. Austria. 1908.
„ „ *pe'ndulum* (pendulous). Branches long, drooping; requires grafting as a standard.
„ „ *sempervi'rens* (evergreen). See L. VULGARE ITALICUM.
„ „ *variega'tum* (variegatum). 8. Leaves blotched yellow. June. Britain.
„ „ *xanthoca'rpum* (yellow-fruited). 8. Berries yellow. August. Italy.
„ *Walke'ri* (Walker's). 5–10. White. Ceylon and Nilghiris. 1898. Greenhouse.
„ *Walli'chii* (Wallich's). 2–4. White. Himalaya. 1877.
„ *yunnane'nse* (Yunnan). 10–12. White. Yunnan, China. 1902.

LILAC. See SYRINGA.

LI'LIUM. The Lily. (From the Celtic *li*, white. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Offsets from the bulbs; also seeds, and, in some cases, small stem-bulbs; in general, light, rich, sandy loam; some, however, as those from America and Japan, like the addition of some fibrous peat, and the latter are generally the better for a cold pit treatment in winter, though they will do in a bed well drained.

GREENHOUSE BULBS.

L. a'tro-sangui'neum (dark-blood-coloured). See L. UMBELLATUM ATROSANGUINEUM.
„ *cordifo'lium* (heart-shaped). 3–4. White, marked purple within. Japan. 1853.
„ *coru'scans* (glittering). See L. ELEGANS.
„ *exi'mium* (splendid). See L. LONGIFLORUM EXIMIUM.
„ *gigante'um* (gigantic). 10. White. July. Himalaya. 1852.
„ „ *yunnane'nse* (Yunnan). Larger, better coloured. Yunnan. 1904.
„ *lancifo'lium* (spear-leaved) of gardens. See L. SPECIOSUM.
„ *Lo'wii* (Low's). 2. White, blotched purple inside. Upper Burma. 1891.
„ *neilgherre'nse* (Nilghiris). 2–3. White. Nilghiris. 1862.
„ *nepale'nse* (Nepaul). 2–6. Yellow, crimson. Nepaul. 1853.
„ *ochroleu'cum* (yellow-white). See L. SULPHUREUM.
„ *philippine'nse* (Philippines). 2–3. White. July. Philippines. 1873.
„ *primuli'num* (primrose). 5. Pale yellow, tinted green outside. Upper Burma.
„ *ro'seum* (rose-coloured). 12. Purple. April. Himalaya. 1843.
„ *specio'sum* (showy). 2. Orange. August. Japan. 1833.
„ „ *a'lbum* (white-*flowered*). 3. White. July. Japan. 1833.
„ „ *gloriosoi'des* (Gloriosa-like). White, spotted scarlet. Japan. 1880.
„ „ *Kæ'mpferi* (Kæmpfer's). 3. Rose, purple. July. Japan. 1833.
„ „ *puncta'tum* (spotted-*flowered*). 3. White-spotted. July. Japan. 1835.
„ „ *ru'brum* (red-*flowered*). 3. Rose. July. Japan. 1833.
„ *sulphu'reum* (sulphur). 4–6. Light yellow, shaded purple at the tips. Burma. 1889.
„ *thompsonia'num* (Dr. Thompson's). See L. ROSEUM.
„ *thunbergia'num* (Thunberg's). See L. ELEGANS.
„ *wallichia'num* (Wallich's). 5. Greenish-white. October. Nepaul. 1850.
„ „ *supe'rbum* (superb). See L. SULPHUREUM.

HARDY BULBS.

L. alpi'num (alpine). See L. PARVUM.
„ *andi'num* (Andes). See L. PHILADELPHICUM ANDINUM.
„ *angustifo'lium* (narrow-leaved). See L. POMPONIUM.
„ *auranti'acum* (light-orange). See L. BULBIFERUM.
„ *aura'ntium* (orange). See L. CROCEUM.
„ *aura'tum* (golden-rayed). 4–6. White, with yellow ray, spotted purple. Japan. 1862.

L. aura'tum crue'ntum (blood-coloured). Rays broader and darker than in *L. a. rubro-vittatum*.
„ „ *macra'nthum* (large-flowered). Segments of flowers broader; leaves broader. Japan. 1880.
„ „ *platyphy'llum* (broad-leaved). See L. AURATUM MACRANTHUM.
„ „ *ru'bro-vitta'tum* (red-banded). Rays deep crimson. Japan. 1867.
„ „ *ru'brum* (red). See L. AURATUM RUBRO-VITTATUM.
„ „ *tri'color* (three-coloured). White, spotted with yellow. Japan. 1880.
„ „ *virgina'le* (virginal). White, without spots, and golden rays. Japan. 1880.
„ „ *Wi'ttei* (Witte's). White with yellow rays, without spots. Japan. 1867.
„ *avena'ceum* (oat-scaled). 1½–2. Bright yellow-red, dotted. Japan, &c. 1865.
„ *Batema'nniæ* (Mrs. Bateman's). See L. ELEGANS BATEMANNIÆ.
„ *Bellado'nna* (beautiful-lady). 1–1½. Rich red, spotless. Supposed hybrid.
„ *Bio'ndii* (Biond's). See L. PAPILLIFERUM.
„ *bloomeria'num* (Bloomerian). See L. HUMBOLDTII OCELLATUM.
„ *Bolande'ri* (Bolander's). 1–3. Crimson-red, spotted. June, July. California. 1889.
„ *Bro'wnii* (Brown's). 1½–4. White, with red-brown on back of three segments. China and Japan. 1804.
„ „ *Chlora'ster* (Chloraster). White, with red-brown streaks. Western China. 1891.
„ „ *leuca'nthum* (white-flowered). 3. White, tinted greenish-yellow; bulbiferous. Western China. 1894.
„ „ *platyphy'llum* (broad-leaved). Leaves broader.
„ „ *viri'dulum* (greenish). 3. Cream-white and yellow-green, tinted claret without. Japan. 1885.
„ *bulbi'ferum* (bulb-bearing). 2–4. Brilliant red, spotted black. S. Europe. 1596.
„ *bulbi'ferum umbella'tum* (umbelled). See L. UMBELLATUM.
„ *buschia'num* (Buschian). See L. CONCOLOR BUSCHIANUM.
„ *callo'sum* (beautiful). 1½–3. Bright scarlet, unspotted. Japan. 1840.
„ *camschatce'nse* (Kamtschatka). See FRITILLARIA CAMTSCHATCENSIS.
„ *canade'nse* (Canadian). 1½–2. Rich orange-red, spotted. July. N. Amer. 1629.
„ „ *fla'vum* (yellow). Shining yellow, spotted claret.
„ „ *ru'brum* (red). Yellow inside, red outside, spotted.
„ *ca'ndidum* (white). 2–5. White. June, July. S. Europe; Syria. 1596.
„ „ *fo'liis au'reo-margina'tis* (golden-edged). Leaves edged golden-yellow.
„ „ *spica'tum* (spiked). Bracts greenish-white.
„ „ *stria'tum* (striped). Streaked purple outside.
„ *carnio'licum* (Carniolian). 2–3. Orange-yellow to scarlet. June. S. Europe.
„ *carolinia'num* (Carolinian). See L. SUPERBUM CAROLINIANUM.
„ *Catesbæ'i* (Catesby's). 1–2. Rich orange-red. N. Amer. 1787.
„ *chalcedo'nicum* (Chalcedonian). 1½–4. Bright scarlet. July, August. Greece. 1596.
„ *chine'nse* (Chinese). See L. SUTCHUENENSE.
„ *co'lchicum* (Colchican). See L. MONADELPHUM SZOVITZIANUM.
„ *columbia'num* (Columbian). 1½–4. Orange-red to golden-yellow. N.W. Amer. 1872.
„ *co'ncolor* (one-coloured). ½–1½. Bright scarlet-red. June, July. China. 1804.
„ „ *buschia'num* (Buschian). Bright scarlet, spotted black. S. Siberia.
„ „ *Cori'dion* (Coridion). Golden-yellow, slightly spotted. Japan.
„ „ *lu'teum* (yellow). Yellow, spotted purple-red. China and Japan. 1877.
„ „ *pulche'llum* (beautiful). 1–1½. Bright scarlet; spotted on lower half. E. Siberia. 1829.
„ *cro'ceum* (saffron). 3. Yellow. July. S. Europe. 1596.
„ „ *flo're-ple'no* (double-flowered). 3. Dark orange. June.
„ „ *mi'nus* (small). 2. Orange. June.

L. cro'ceum variega'tum (variegated-*leaved*). 2. Dark orange. June.
„ *dau'ricum* (Dahurian). 1½–3. Blood-red at base, paler upwards. Siberia. 1745.
„ *Ducha'rtrei* (Duchartre's). 2–3. White, tinged rose, spotted rose inside. W. China. 1906.
„ *e'legans* (elegant). ¾–1. Scarlet-red, nearly unspotted. June, July. Japan. 1835.
„ „ *aluta'ceum* (fine-leather). ½. Rich apricot, regularly spotted.
„ „ *armeni'acum* (apricot). 1. Vermilion-orange, unspotted.
„ „ *Batema'nniæ* (Mrs. Bateman's). 3½–4. Deep apricot, unspotted. Japan. 1875.
„ „ *biligula'tum* (two-tongued). Reddish-brown; segments narrow, slighly spotted.
„ „ *citri'num* (citron). 2–2½. Orange-yellow, unspotted. Japan. 1868.
„ „ *venu'stum* (lovely). 1. Vermilion-orange, unspotted.
„ „ *Walla'cei* (Wallace's). 1. Vermilion-orange, slightly spotted. September. Japan. 1876.
„ *Elisabe'thæ* (Elizabeth's). See L. JAPONICUM.
„ *exce'lsum* (tall). See L. TESTACEUM.
„ *formo'sum* (beautiful). Orange-red. Japan. 1865.
„ *Fortu'nei* (Fortune's). 1½. Orange-yellow, thickly spotted. Japan. 1862.
„ *fu'lgens* (shining). See L. ELEGANS.
„ *gla'brum* (smooth). See L. MARTAGON.
„ *Gra'yi* (Gray's). 2–3. Red-brown, spotted. July. N. Carolina. 1888.
„ *hematochro'um* (blood-coloured). See L. UMBELLATUM ATROSANGUINEUM.
„ *Hanso'ni* (Hanson's). 3–4. Orange-yellow, spotted crimson. July. Japan. 1865.
„ *Harri'sii* (Harris's). See L. LONGIFLORUM EXIMIUM.
„ *He'nryi* (Henry's). 2–7. Orange-apricot, finely spotted with black. W. China. 1888.
„ *Hooke'ri* (Hooker's). 1–2. Soft rose or lilac. July, August. Himalaya. 1878.
„ *Humbo'ldtii* (Humboldt's). 3–5. Orange, spotted. July. California. 1872.
„ „ *ocella'tum* (eyed). Orange; spots crimson, with black centre. 1876.
„ *Ja'nkæ* (Janka's). 1–3. Golden-yellow, with or without black specks. June. Carniolia. 1903.
„ *japo'nicum* (Japanese). 1½–2. Pale pink to white. July. Japan. 1804.
„ „ *Alexa'ndræ* (Princess Alexandra's). Pure white, more open. Japan. 1893.
„ „ *Colche'steri* (Colchester's). Creamy-white inside, chocolate outside.
„ *Kello'ggii* (Kellogg's). 3–4. Rose, spotted crimson. June. California. 1903.
„ *Krame'ri* (Kramer's). See L. JAPONICUM.
„ *lancifo'lium* (lance-leaved) of Thunberg. See L. ELEGANS.
„ *latifo'lium* (broad-leaved). See L. BULBIFERUM.
„ *Leichtli'nii* (Leichtlin's). 1½–4. Lemon, tinged purple outside, spotted claret. Japan. 1867.
„ „ *Maximowi'czii* (Maximowicz's). 3–4. Brilliant scarlet, with black spots. Japan. 1869.
„ „ *pseu'do-tigri'num* (false-tiger). Brilliant scarlet, with brown spots. July. China. 1867.
„ *loddigesia'num* (Loddigesian). See L. MONADELPHUM.
„ *longiflo'rum* (long-flowered). 1–3. White. July, August. China and Japan. 1819.
„ „ *exi'mium* (choice). 3–4. White, larger. Japan. 1834. "Bermuda Easter Lily."
„ „ *formosa'num* (Formosan). White, keeled red outside. Formosa. 1880.
„ „ *insula're* (insular). Flowers longer than *L. l. eximium*. Magelhaes Archipelago. 1902.
„ „ *Take'sima* (Takesima). Flowers large, white, violet outside.
„ *longifo'lium* (long-leaved). See L. ROSEUM.
„ *lu'cidum* (shining). See L. COLUMBIANUM.
„ *mari'timum* (maritime). 1–3. Red, spotted crimson. California. 1878.
„ *Ma'rtagon* (Martagon). 3. Purple. July. Central and S. Europe. 1596. "Turk's Cap Lily."
„ „ *a'lbo-ple'no* (double-white). 3. White. July. Germany.
„ „ *a'lbum* (white).
„ „ *Cata'nii* (Catan's). Blackish-purple. Dalmatia.

L. Ma'rtagon dalma'ticum (Dalmatian). Claret, or blood-purple. Dalmatia. 1872.
„ „ *dorsipuncta'tum* (spotted-backed). 3. Purple. June.
„ „ *ela'tum* (tall). 3. Purple. June.
„ „ *ocella're* (eyed). 3. Lilac. June.
„ „ *pa'llidum* (pale). 3. Lilac. June.
„ „ *perpurpu'reum* (deep purple). 3. Dark purple. June.
„ „ *petiola're* (petioled). 3. Purple. June.
„ „ *pube'scens* (downy). 3. Orange. June. Germany. 1596.
„ „ *purpu'reum* (purple). 3. Purple. June.
„ „ *se'palis-a'bis* (white-sepaled). 2½. White. July. Germany.
„ „ *se'palis-plu'rimis* (double-flowered). 3. Purple. July. Gardens.
„ *Maximowi'czii* (Maximowicz's). See L. LEICHTLINII MAXIMOWICZII.
„ *medeoloi'des* (Medeola-like). 1–2. Reddish-yellow, thinly spotted. Japan. 1878.
„ *monade'lphum* (monadelphous). 2. Yellow. June. Caucasus. 1820.
„ „ *szovitzia'num* (Szovitzian). Yellow, purple outside at base. 1880.
„ *myriophy'llum* (myriad-leaved). 2. White, flushed crimson outside. W. China. 1906.
„ *ni'grum* (black). See FRITILLARIA CAMTSCHATCENSIS.
„ *ni'tidum* (shining). 1½–2½. Bright yellow, speckled red-brown. California. 1880.
„ *odo'rum* (scented). See L. JAPONICUM COLCHESTERI.
„ *oxype'talum* (sharp-petaled). 1–1½. Purplish, spotted purple. Himalaya. 1852.
„ *papilli'ferum* (papillæ-bearing). 1. Lively red or scarlet. Yunnan, China. 1895.
„ *pardali'num* (panther-spotted). 3–6. Orange at base, spotted, crimson at apex. Californian. 1875.
„ „ *angustifo'lium* (narrow-leaved). 1½–3. Smaller, paler.
„ „ *califo'rnicum* (Californian). Blood-red. California. 1875.
„ „ *lu'teum* (yellow). Yellow, spotted with brown. 1889.
„ „ *Wa'rei* (Ware's). Pale to deep yellow, unspotted. California. 1886.
„ *Parkma'nni* (Parkman's). Deep red, large. Hybrid, *L. speciosum* and *L. auratum*. 1869.
„ *Pa'rryi* (Parry's). 2–6. Yellow, with some crimson specks. California. 1879.
„ *parviflo'rum* (small-flowered). See L. CANADENSE.
„ *pa'rvum* (small). 3–6. Rich orange-red. June, July. California. 1872.
„ *penduliflo'rum* (pendulous-flowered). See L. CANADENSE.
„ *peregri'num* (outlandish). 3–4. White. June. Asia Minor. 1824.
„ *philade'lphicum* (Philadelphian). 1–3. Scarlet. July. N. Amer. 1757.
„ „ *andi'num* (Andean). Leaves linear, scattered. 1819.
„ *polyphy'llum* (many-leaved). 2–4. Whitish-yellow, spotted purple. Himalaya. 1873.
„ *pompo'nium* (*scarlet*-pompone). 2. Red. May. Italy; France. 1659.
„ „ *flo're-ple'no* (double-flowered). 3. Red. June.
„ *pulche'llum* (pretty). See L. CONCOLOR PULCHELLUM.
„ *pu'milum* (dwarf). See L. TENUIFOLIUM.
„ *pyrena'icum* (Pyrenean). 2. Dark yellow. July. Pyrenees. 1596.
„ „ *flo're-ple'no* (double-flowered). 2. Yellow. July.
„ *Rœ'zlii* (Rœzl's). See L. PARDALINUM ANGUSTIFOLIUM.
„ *rube'llum* (small-red). ¾–1½. Pink or rosy-pink. Japan. 1898.
„ *rube'scens* (reddish). See L. WASHINGTONIANUM RUBESCENS.
„ *sangui'neum* (blood-coloured). See L. DAURICUM.
„ *sibi'ricum* (Siberian). See L. DAURICUM.
„ *si'nicum* (Chinese). See L. CONCOLOR.
„ *specta'bile* (showy). See L. DAURICUM.
„ *supe'rbum* (superb). 2–6. Golden-yellow, spotted purple, apex orange-red. E. United States. 1727.
„ „ *carolinia'num* (Carolinian). 1–2. Flower one or few. "Carolina Swamp Lily." 1819.
„ *sutchuene'nse* (Sutchuen). 1½–3. Brilliant scarlet, spotted deep brown. W. China. 1895.
L. tenuifo'lium (fine-leaved). 2. Scarlet. June. Siberia. 1820.
„ *testa'ceum* (yellow-red). 3–6. Pale yellow-red. July. Garden origin. 1841.
„ *tigri'num* (tiger-*spotted*). 6. Orange. July. China. 1804.
„ „ *flo're-ple'no* (double-flowered). Flowers double. Japan. 1869.
„ „ *Fortu'nei* (Fortune's). 4–6. Stems densely woolly. September.
„ „ *sple'ndens* (splendid). Flowers larger, spots bolder. August, September. 1870.
„ *umbella'tum* (umbelled). 2–3. Deep red. Garden origin.
„ „ *atrosangui'neum* (dark-blood-red). 2. Blood-red. July. 1835.
„ „ *grandiflo'rum* (large-flowered). 2½. Dark crimson-red. July.
„ „ *macula'tum* (spotted). 2. Orange, spotted red. August.
„ *washingtonia'num* (Washingtonian). 3–5. White, tinted lilac, with few spots. California. 1872.
„ „ *rube'scens* (reddish). White, changing to vinous-purple, spotted black. 1873.
„ *Wi'ttei* (Witte's). See L. AURATUM WITTEI.
„ *Yoshida'ii* (Yoshida's). Flowers fragrant, said to resemble *L. Brownii*. 1905.

LI'LIUM CA'NDIDUM. Common White Lily.

Propagation.—By offsets. When the old bulbs have several small ones formed around them, take them up in September, divide them into single bulbs, replant the large flowering-bulbs immediately into fresh, rich earth, where they are to flower. The small bulbs plant in a bed of the same kind of soil, in some corner by themselves; let them remain here for two years, then take them up, select the large bulbs, and plant them where they are to flower, taking care to enrich the earth with well-decomposed manure. The small ones may be replanted again till they are the same size, and should then be taken up and planted in the borders to bloom.

The Soil should be well drained, and fresh, maiden loam, made rich with a good coating of manure, and dug over two or three times previously to the planting season.

Winter Culture.—When the stools of bulbs have become large, they will have exhausted the soil, and it will be advisable to take them up, divide them, then dig holes, taking away the old exhausted soil, and put at the bottom of each hole a shovelful of rotten dung; fill up with fresh earth, and plant immediately three strong bulbs in each hole, covering them about three inches deep. The best time to do this is in September, and the reason for planting immediately is because these bulbs will not bear exposure to the air without injury. By this treatment they will flower well the next season, but much finer the second.

Insects.—The most troublesome are the WIREWORM and the common GARDEN-SLUG, which see. Whenever a leaf is observed to droop, *the grub* will be found to be the cause. Gently remove the earth near the drooping leaf, and the enemy will be discovered at work.

Diseases.—The canker sometimes attacks the bulbs. This disease arises from too much moisture in the soil. This must be corrected by draining. All cankered bulbs should be taken up and thrown away, to prevent the contagion from becoming general. *L. ca'ndidum* is often attacked and greatly destroyed by the Botrytis form of a Sclerotinia. No real cure has been found.

LI'LIUM MA'RTAGON. Martagon, or Turk's-cap Lily. The propagation of all the varieties of this species is the same as described above for *L. ca'ndidum*. The soil, however, should be liberally mixed with sand. Some species, such as *L. co'ncolor* and *L. supe'rbum*, require a considerable quantity of sandy peat mixed amongst the soil.

LI'LIUM TIGRI'NUM, Tiger Lily; and **L. BULBI'FERUM,** the Orange Lily, produce at the axils of the leaves of the flower-stem a considerable number of small embryo bulbs. These afford a ready way of propagating them. Gather the bulbs as soon as they part readily from the stem; prepare a bed for them, by digging it over, and adding some well-rotted dung. Plant them in rows across the bed at three inches apart in the row,

and nine inches from row to row. Let them remain in this bed for two or three years, then take them up, sort the bulbs into two sizes, plant the largest in a bed of rich earth, six inches apart in the row, and a foot between each row. Several of them will flower weakly the first year, but stronger the second, and will then be large enough to take their place amongst the old strong bulbs. The smaller-sized bulbs should be planted again rather thickly, and will afford a second crop of flowering bulbs the second year. The other points of summer and winter culture are similar to those required by *L. ca'ndidum*, excepting in one particular. As the flower-stems advance in growth, they put forth a number of young roots from the stem above the bulb; when that is perceived, place round each stem some rough, hard pieces of dung for these roots to strike into; this will encourage the flower-stems to grow strongly, and flower finely, besides increasing very much the size of the bulbs below.

LI'LIUM SPECIO'SUM and its varieties. This is the finest of all the genus. The petals turn back, like those of the *L. Ma'rtagon*. It throws out roots above the bulbs like *L. tigri'num*, but does not produce incipient bulbs in the axils of the leaves, like the latter species, and must therefore be propagated like *L. ca'ndidum*, by offsets. This fine species, in the southern parts of Britain, is hardy enough to bear cultivating in the open air, like the rest of the genus; but it is worthy of being cultivated in pots to bloom in the greenhouse, everywhere in this country, flowering in June and July, when the generality of the usual inhabitants are enjoying the open air. To cultivate it for that purpose, pot the larger bulbs in eleven-inch pots. If bulbs are plentiful, put three in each pot. Do this early in March, and use a rich, sandy compost. Place them in a pit or frame sheltered from frost, by covering with mats, giving plenty of air in mild weather, but very little water. *Grow them as slowly as possible*, so that they may have a large strength of roots to cause a strong growth. When the frosts are over, plunge them in a bed of old tan till the greenhouse is thinned of its plants, and then bring them into their place; put pans under the pots, and a mulching of dung on the surface of the soil. Water freely, and give plenty of air. The culture in the air is the same as is required by *L. ca'ndidum*, with the addition of a covering of dry ashes over the bulbs in winter.

LILY. *Li'lium.*

LILY-HYACINTH. *Sci'lla Li'lio-hyaci'nthus.*

LILY-OF-THE-VALLEY. (*Convalla'ria maja'lis.*) We know a garden where no one can flower the lily-of-the-valley well, and we also know places where it flowers in the greatest abundance without any care whatever. We have seen it growing naturally by the acre, in a shady wood, the soil being mere sand, enriched by the fallen leaves; we have dug it out in that wood, and found all the roots within three inches of the surface. We have also seen it flower abundantly on a south border, in a rich kitchen-garden soil. Where it refuses to succeed we would make a bed for it on the north side of a wall; dig out the natural soil a foot deep, and drain the bottom; then fill up the bed with a compost of light, sandy earth and rotten leaves, half of each; press it down gently when within two inches of the top; then lay the roots regularly, four inches apart, all over this surface, and then cover them two inches deep, and give them a good watering with a rose-pot; and, after that, we would cover the whole with an inch of quite rotten leaves, and water them once a week the following summer. February, or early in March, is the best time to plant them; and the third season they are in full perfection, and will last for ten or a dozen years.

Forcing.—Pot them in thirty-two-sized pots, filled to within three and a half inches of the rim with rich loam, upon which the roots are closely placed, and then covered about two inches in thickness with equal parts of leaf-mould and sand; they are then well watered, so as to settle the mould about the roots; place them on a shelf near the glass, in a moist stove or forcing-house, the temperature of which may range from 65° to 75°, and take care that the soil does not become dry. When they are so far advanced that the plants show their heads of flowers, remove them into a warm greenhouse, still placing them near the glass, until, as they advance in growth, they are withdrawn by degrees into a shaded part of the house, from whence they are removed to the drawing-room as required, their places to be immediately filled with others, which are similarly treated, and thus an ample succession will be kept up. Care and attention are requisite in lifting and selecting the plants for forcing; they require a minute examination to distinguish those that will flower from those that will not, the only difference being that the buds of the former are more round and short than those of the latter.—*Florists' Journal.*

LILY-PINK. *Aphylla'nthes.*

LILY-THORN. *Catesbæ'a.*

LIMATO'DIS LABRO'SA. See CALANTHE LABROSA.

LIMATO'DIS RO'SEA. See CALANTHE ROSEA.

LIME. *Ci'trus me'dica Lime'ita.*

LIME is valuable as a manure, for some one or more of its salts enter into the composition of every vegetable. But it is not the lime of every district that is suitable for the purpose. Some specimens contain a very large proportion of magnesia, which, absorbing carbonic acid very slowly, remains in a caustic state, to the injury of the roots of the plants, and the diminution of benefit from the decomposing constituents of the soil. Neither can the gardener apply it to all his soils with advantage. Thus, peat and bog earth are beneficial to the plants grown upon them by their containing Gallic and other acids, which lime removes. To garden soil of the usual staple about fifty bushels of lime per acre is a sufficient quantity. If the soil be clayey the quantity may be doubled. A very excellent manure is formed by mixing one bushel of salt with every two bushels of lime. Lime cannot be applied to the soil too fresh from the kiln; for if allowed to absorb carbonic acid from the air, it is rapidly converted into chalk.

When crops are devastated by the slug, dress them, some evening, so as to render the surface of the soil quite white, with caustic lime, during the promise of a few days' dry weather. It is instant destruction to every slug it falls upon; and those that it misses are destroyed by their coming in contact with it when moving in search of food.

Lime-rubbish is the old mortar and plaster obtained when brick-buildings are pulled down. It is an excellent manure, abounding with the salts of potash and lime. It should be reduced to powder before spreading and digging in.

LIME or **LINDEN-TREE.** *Ti'lia.*

LIME-LOOPER MOTH. *Geometra.*

LIME-WATER. To forty gallons of clean water, half an hour before using, put one peck of fresh-slaked lime. As soon as it is clear it is fit for use.

A watering-pot containing four gallons will water a bed of four feet by thirty feet, or rows of cauliflowers, cabbages, &c., of double the length.

LIMNA'NTHEMUM. (From *limne*, a swamp, lake, or pool, and *anthemon*, a flower; literally, the flower of the pool. Nat. ord. Gentianaceæ.)

Hardy, or tender stove, floating aquatics, which, for convenience' sake, may be planted in pots submerged a little way below the surface of a pond or tank, but some of them very soon spread all over the pond, floating loosely in the water, necessitating the reduction of their numbers. Offsets. Any loamy soil, leaf-mould, and sand.

L. gemina'tum (twin). 1. Yellow. June. Australia. 1806.
,, *humboldtia'num* (Humboldtian). White and yellow. July to September. S. Amer. 1856. Stove.
,, *i'ndicum* (Indian). Yellow. Tropics of both Worlds. 1792. Stove.
,, *lacuno'sum* (ditch). Yellow. June. N. Amer. 1812. Hardy.
,, *nymphæoi'des* (Nymphæa-like). See L. PELTATUM.
,, *pelta'tum* (shield-shaped). ½. Yellow. Summer. Europe (Britain). Hardy.

LIMNA'NTHES. (From *limne*, a marsh, and *anthos*, a flower. Nat. ord. *Indian Cresses* [Geraniaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Hardy trailing annuals, from California. Seeds in April, in a moist and shady situation.

L. a'lba (white). ½. White. July. 1843.
„ *Dougla'sii* (Douglas's). 1. Yellow. July. 1833.
„ *ro'sea* (rosy). See L. DOUGLASII.
„ *sulphu'rea* (sulphur). See L. DOUGLASII.

LIMNO'BIUM. (From *limne*, a marsh or pool, and *bios*, life; the plants live and float on fresh water, like the Frog-bit. Nat. ord. Hydrocharidaceæ.)

Stove aquatic, floating freely in the water, but may be confined to a spot by a piece of wood. Offsets.

L. bogote'nse (Bogota). ½. White. Colombia. 1879.

LIMNO'CHARIS. (From *limne*, a marsh, and *chairo*, to delight in; water-plants. Nat. ord. *Alismads* [Alismaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Stove, perennial, yellow-flowered aquatic, from Brazil. Divisions, runners, and seeds; tubs or cisterns, in a stove, or the shallow part of an aquarium. Summer temp., 60° to 90°; winter, 55° to 60°.

L. emargina'ta (notched). 1½. July. 1822.
„ *fla'va* (yellow). See L. EMARGINATA.
„ *Humbo'ldtii* (Humboldt's). See HYDROCLEIS COMMERSONI.
„ *Plumie'ri* (Plumier's). See L. EMARGINATA.

LIMODO'RUM. (An old name used by Tournefort for something. Nat. ord. Orchidaceæ.)

L. a'ltum (tall). See BLETIA VERECUNDA.
„ *callo'sum* (beautiful). See PHAIUS CALLOSUS.
„ *diu'rnum* (daily). See CYMBIDIUM DIURNUM.
„ *ebu'rneum* (ivory). See ANGRÆCUM EBURNEUM.
„ *falca'tum* (sickle-shaped). See ANGRÆCUM FALCATUM.
„ *macula'tum* (spotted). See NEPHELAPHYLLUM PULCHRUM.
„ *plantagi'neum* (plantain-like). See CYRTOPODIUM PLANTAGINEUM.
„ *Tankervi'lliæ* (Mrs. Tankerville's). See PHAIUS GRANDIFOLIUS.
„ *tubero'sum* (tuberous). See CALOPOGON PULCHELLUS.

LIMO'NIA. (From *limoun*, the Arabic name of the citron. Nat. ord. *Citronworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Evergreens, with white flowers. Seeds in a hotbed, and seedlings grafted the same season, with the most desired varieties; cuttings of any shoots, young or ripened, in spring or summer, in sandy soil, under glass, and in a few weeks plunged in bottom-heat; peat, loam, dried cow-dung, and a few pieces of charcoal. For *acidi'ssima*, winter temp., 35° to 45°; summer, 60° to 80°; the others will succeed against a wall, in the south of England, protected in winter; and in other districts they require a greenhouse.

L. acidi'ssima (most-acid). 4. India. 1808.
„ *austra'lis* (southern). See CITRUS AUSTRALIS.
„ *citrifo'lia* (orange-leaved). 4. China. 1800.
„ *crenula'ta* (scolloped-*leaved*). See L. ACIDISSIMA.
„ *parviflo'ra* (small-flowered). See GLYCOSMIS PENTAPHYLLA.
„ *sca'ndens* (climbing). See LUVU'NGA SCANDENS.

LIMONIA'STRUM. (From *leimon*, a grassy plain, and *astron*, a star; in allusion to the place where it grows. Nat. ord. Plumbaginaceæ.)

Nearly hardy shrubby plants. Cuttings under a hand-light during summer. Loam, peat, and sand.

L. articula'tum (jointed). 2–3. Blue. July to September. Mediterranean region. 1731.
„ „ *denuda'tum* (denuded). 2–3. Purple. July. Sicily. 1640.
„ *monopé'talum* (one-petaled). See L. ARTICULATUM.

LIMO'NIUM MONOPE'TALUM. See LIMONIASTRUM ARTICULATUM. For other species of Limonium, see STATICE.

LIMOSE'LLA. Mudwort. (From *limus*, mud; where it grows. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Sibthorpia.)

Hardy annual. Seeds in a marsh, or near a pond or rivulet.

L. aqua'tica (water). ½. Flesh. August. Britain.

LINA'NTHUS. (From *linon*, flax, and *anthos*, a flower. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Gilia.)

L. dicho'tomus (forked-*branched*). See GILIA DICHOTOMA.

LINA'RIA. Toadflax. (From *linon*, flax; referring to the resemblance of the leaves. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Antirrhinum.)

All by seed at the end of March, and the perennials also by division, and cuttings of the young shoots under a hand-light, in sandy soil; light, sandy loam suits them all. A few like a cold pit in winter; they are good rockwork plants.

HALF-HARDY HERBACEOUS, &c.

L. circina'ta (curled-*leaved*). See L. SAGITTATA.
„ *fru'ticans* (sprouting). See NEMESIA FRUTICANS.
„ *frutico'sa* (shrubby). 2. Yellow. May. S. Africa. 1816. Greenhouse.
„ *sagitta'ta* (arrow-shaped). ½. Yellow. June. Morocco. 1833. Evergreen.
„ *scopa'ria* (broom). See L. SPARTIOIDES.
„ *spartioi'des* (Spartium-like). 1. Yellow. June. Canary Islands. 1816. Evergreen.
„ *triornitho'phora* (three-birds-bearing). 1. Purple. August. Portugal. 1710.
„ *villo'sa* (shaggy). 1. Blue. July. Spain. 1786.

HARDY EVERGREENS.

L. acuti'loba (acute-lobed). See L. VULGARIS.
„ *æquitri'loba* (equal-three-lobed). ½. Purple. June. Sardinia. 1829.
„ *alpi'na* (alpine). ½–1. Blue. July, August. Europe. 1750.
„ *Cymbala'ria* (Cymbalaria). ½. Violet. May. England.
„ „ *a'lba* (white). ½. White. June. Gardens.
„ „ *globo'sa* (globose). ½. Lilac. 1909. Makes a globose tuft.
„ „ *variega'ta* (variegated-*leaved*). ½. Violet. June. Gardens.
„ *hepaticæfo'lia* (Hepatica-leaved). 1/12. White or lilac. Summer. Corsica; Sardinia.
„ *pa'llida* (pale). ½. Pale purple or lilac. Italy.
„ *pilo'sa* (hairy-*leaved*). ½. Purple. August. Italy.
„ „ *longicalcara'ta* (long-spurred). Stems shorter. Spurs longer.
„ *pube'scens* (downy). See L. PILOSA.
„ *saxa'tilis* (rock). ½. Yellow. August. Portugal. 1819.

HARDY HERBACEOUS.

L. antirrhinifo'lia (Antirrhinum-leaved). See L. CAVANILLESII.
„ *antirrhinoi'des* (Antirrhinum-like). See L. CAVANILLESII.
„ *Cavanille'sii* (Cavanilles's). ½–¾. Purple. July. Spain. 1897.
„ *dalma'tica* (Dalmatian). 1–2. Yellow. June, July. Dalmatia. 1731. Evergreen.
„ *galioi'des* (Galium-like). 2. Blue. July. S. Europe.
„ *genistæfo'lia* (broom-leaved). 2. Yellow. July. Austria. 1704.
„ *hi'ans* (gaping). 1. Yellow. July. S. Europe. 1818.
„ *linifo'lia* (flax-leaved). 1. Yellow. July. Caucasus. 1820.
„ *macrou'ra* (long-tailed). 1. Yellow. August. Crimea. 1822.
„ *margina'ta* (margined). Yellowish. August. Barbary. 1820.
„ *monspessula'na* (Montpelier). See L. REPENS.
„ *Panci'ci* (Pancic's). ½. Canary-yellow. Orient. 1902. Not the true *L. Pancici*, of Janka.
„ *pro'cera* (tall). 4. Pale blue. July.
„ *purpu'rea* (purple). 1. Purple. August. S. Europe. 1648.
„ *re'pens* (creeping). 1–3. Purple. July. Europe (Britain).
„ „ *a'lba* (white). 1–3. White. July.
„ *silenifo'lia* (Silene-leaved). 3. Yellow. July. Armenia. 1819.

L. stria'ta (striped). See L. REPENS.
„ *vulga'ris* (common). 1–2. Yellow. August. Britain.
„ „ *Pelo'ria* (Peloria). 1. Yellow. Flowers regular. Britain.

HARDY ANNUALS.

L. ægypti'aca (Egyptian). 1½. Yellow, purple. July. Egypt. 1771.
„ *a'lbifrons* (white-faced). 1. Purple, white. Orient.
„ *alsinifo'lia* (Alsine-leaved). ½. Blue. June. Corsica. 1824.
„ *amethy'stea* (amethyst). 1. Blue, yellow. July. Spain. 1728.
„ *antica'ria* (foremost). Spain.
„ *arena'ria* (sand). ½. Yellow. July. S. Europe. 1823.
„ *arve'nsis* (corn). 1. Purple, blue. July. S. Europe. 1816.
„ *biparti'ta* (two-parted). ½–1. Violet-purple. Summer. N. Africa. 1815.
„ *bipuncta'ta* (two-dotted). 1. Yellow. July. Spain. 1749.
„ *Broussoné'tii* (Broussonet's). 1. Yellow, finely spotted. Morocco.
„ *canade'nsis* (Canadian). 1. Violet. July. N. Amer. 1812.
„ *cauca'sica* (Caucasian). ½. Yellow. July. Caucasus. 1818.
„ *chalepe'nsis* (Aleppo). 1. White. June. Levant. 1680.
„ *cirrho'sa* (tendriled). ½. Pale blue. July. Egypt. 1771.
„ *creta'cea* (chalky). 1. July. Siberia. 1827.
„ *dealba'ta* (whited). See L. LANIGERA.
„ *delphinioi'des* (larkspur-like). See L. SAPPHIRINA.
„ *diffu'sa* (spreading). See L. MULTICAULIS.
„ *elatinoi'des* (Elatine-like). ½. Yellow. August. N. Africa. 1821.
„ *fla'va* (yellow). ½. Yellow. July. N. Africa. 1820.
„ *glanduli'fera* (glanded). Purple. May. 1839.
„ *grandiflo'ra* (large-flowered). See L. DALMATICA.
„ *heterophy'lla* (various-leaved). 1½–3. Yellow, brown. July. Mediterranean region. 1825.
„ „ *stri'cta* (upright). 1. Yellow. July. Sicily. 1884.
„ *hi'rta* (hairy-*leaved*). 1. Purple. August. Spain. 1759.
„ *ita'lica* (Italian). S. Europe.
„ *lani'gera* (woolly). ½. Yellow. July. Portugal. 1818.
„ *linogri'sea* (flax-grey).
„ „ *purpu'rea* (purple). Purple, yellow. Morocco (?). 1877.
„ *Loesé'lii* (Losel's). See L. ODORA.
„ *mari'tima* (maritime) of gardens. See L. ORIGANIFOLIA.
„ *marocca'na* (Moroccan). 1. Violet-purple. Morocco. 1872.
„ *mi'nor* (smaller). See L. VISCIDA.
„ *minutiflo'ra* (minute-flowered). See L. ALBIFRONS.
„ *multicau'lis* (many-stalked). 1½. White. June. Levant. 1728.
„ *multipuncta'ta* (many-speckled), See L. BROUSSONETII.
„ *odo'ra* (scented). Yellow, brown. May. Orient. 1823.
„ *origanifo'lia* (marjoram-leaved). 1. Purple. June to October. S. Europe. 1785.
„ „ *crassifo'lia* (thick-leaved). ½–½. Blue-purple. S.W. Europe. 1868.
„ *pelisseria'na* (Pelisser's). 1. Violet. August. S. Europe. 1640. "Jersey Toad-flax."
„ *Pere'zii* (Perez's). See L. TOURNEFORTII.
„ *purpura'scens* (purplish). 1½. Purple. June. S. Europe. 1829. Biennial.
„ *pyrena'ica* (Pyrenean). See L. SUPINA.
„ *reticula'ta* (netted). 1–1½. Deep purple, netted. Portugal; N. Africa. 1788.
„ „ *au'reo-purpu'rea* (golden-purple). 1–1½. Crimson-purple, orange.
„ *rubrifo'lia* (red-leaved). 1. Blue. June. S. France. 1826.
„ *sapphiri'na* (sapphirine). 1½. Blue. August. Portugal. 1838.
„ *sibthorpia'na* (Sibthorpian). Greece.
„ „ *peloponnesi'aca* (Peloponnesian). Morea, Greece.
„ *si'mplex* (simple). See L. ARVENSIS.
L. spa'rtea (broom-like). 1. Yellow. August. Spain. 1772.
„ *stri'cta* (upright). See L. HETEROPHYLLA STRICTA.
„ *supi'na* (supine). 1. Yellow. Mediterranean region. 1821.
„ *thymifo'lia* (thyme-leaved). ½. Blue. June. S. Europe. 1818.
„ *Tournefo'rtii* (Tournefort's). Spain.
„ *triphy'lla* (three-leaved). 1. Yellow, purple. August. Sicily. 1596.
„ *tri'stis* (sad). 1. Brown. July. Spain. 1727.
„ „ *lu'tea* (yellow). 1. Yellow. August. Gardens.
„ *veno'sa* (veiny). See L. ODORA.
„ *versi'color* (various-coloured). 1. Purple, yellow. August. France. 1777.
„ *virga'ta* (twiggy). ½. Blue. June. N. Africa. 1817.
„ *vi'scida* (clammy). ½. Pale purple. July, August. Britain.
„ *visco'sa* (clammy). 1. Brown. July. Spain. 1786.

LINCO'NIA. (A commemorative name. Nat. ord. *Bruniads* [Brunlaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Brunia.)
Greenhouse evergreen shrubs, with white flowers, from South Africa. For culture, see DIO'SMA.
L. alopecuroi'dea (fox-tail-like). 2. May. 1816.
„ *cuspida'ta* (pointed-*leaved*). 2. May. 1825.
„ *thymifo'lia* (thyme-leaved). 2. May. 1825.

LINDELO'FIA. (Commemorative of *Frederic von Lindelof*, a German. Nat. ord. Boraginaceæ.)
Hardy, perennial herb. Seeds; divisions. Ordinary soil.
L. longifo'lia (long-leaved). See L. SPECTABILIS.
„ *specta'bilis* (showy). 1–1½. Bright blue. Summer. Himalaya. 1840.

LINDEN. *Ti'lia vulga'ris.*

LINDENBE'RGIA. (A commemorative name. Nat. ord. Scrophulariaceæ.)
Hardy or half-hardy herbs, with the aspect of Mimulus. Seeds, and divisions. Loam, leaf-mould, and sand.
L. grandiflo'ra (large-flowered). 1–1½. Yellow. Himalaya. 1900.
„ *Hooke'ri* (Hooker's). 1. Yellow. Himalaya. 1902.

LINDE'NIA. (Commemorative of *Jean Linden*, an eminent Belgian nurseryman. Nat. ord. Rubiaceæ.)
Evergreen stove shrubs. Cuttings of mature shoots in sand, in a close case, with bottom-heat. Loam, peat, and sand.
L. riva'lis (river-bank). 3. White. July. Guatemala. 1856.
„ *vitie'nsis* (Fijian). 3. White, fragrant. Fiji. 1883.

LINDE'RA. (Commemorative of *John Linder*, a Swedish botanist. Nat. ord. Lauraceæ.)
Hardy deciduous trees or shrubs. Cuttings in a cold frame in autumn. Ordinary garden soil.
L. Benzo'in (Benzoin). 5–8. Yellow, green. April. N. Amer. 1683.
„ *melissæfo'lia* (Melissa-leaved). 6. Green, yellow. April. N. Amer. 1810. "Jove's Fruit."

LINDHEI'MERA. (A commemorative name. Nat. ord. Compositæ.)
A hardy, erect, branching herb. Seeds, divisions. Ordinary garden soil.
L. texa'na (Texan). Yellow. July. Texas.

LI'NDLEYA. (Named after *Professor Lindley*. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Pentagynia*. Allied to Quillaja.)
Stove evergreen shrub. By seeds; ripe cuttings under a glass, in bottom-heat, and grafting on the Hawthorn. The same generic name is applied to very different plants, among the *Theads* and *Samyds*.
L. mespiloi'des (medlar-like). 12. White. July. Oaxaca. 1843.

LINDNE'RIA FIBRILLO'SA. See PSEUDOGALTONIA PECHUELII.

LINDSA'YA. (Named after *M. Lindsay*, an English botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Ferns, with brown spores. For culture, see FERNS.

STOVE.

L. adiantoi'des (maiden-hair-like). July. Isle of Luzon. 1840.
,, *conci'nna* (neat). July. Isle of Luzon. 1842.
,, *crena'ta* (crenate). British Guiana. 1863.
,, *cultra'ta* (knife-shaped). July. Isle of Luzon. 1840.
,, *decompo'sita* (decomposed). July. Malacca.
,, *dive'rgens* (diverging). Brown, yellow. July. Malaya; Borneo.
,, *e'legans* (elegant). See L. STRICTA ELEGANS.
,, *ensifo'lia* (sword-leaved). 1–2. Trop. Asia and Africa.
,, *falca'ta* (sickle-shaped). ½. May. Trinidad. 1819.
,, *guiane'nsis* (Guianan). May. Guiana. 1845.
,, *heterophy'lla* (various-leaved). ½–1½. India; Malaya.
,, *lanugino'sa* (woolly). Brown. July. Malaya; Trop. Australia, &c.
,, *ni'tens* (shining). 1½–2. May. Neilgherries to Polynesia.
,, *oblongifo'lia* (oblong-leaved). See L. PECTINATA.
,, *pectina'ta* (comb-like). May to July. Assam; Malaya.
,, *renifo'rmis* (kidney-shaped-*leaved*). July. Trinidad. 1826.
,, *retu'sa* (blunt-ended). June. Philippine Islands, &c.
,, *ri'gida* (stiff). 1. July. Malacca. 1839.
,, *stri'cta* (upright). July. Malacca. 1839.
,, ,, *e'legans* (elegant). An unbranched form.
,, *te'nera* (tender). Malacca.
,, *trapezifo'rmis* (diamond-shaped). 1. May. S. Amer. 1819.

GREENHOUSE.

L. linea'ris (narrow-*leaved*). ¾. May. N. Holland. 1820.
,, *me'dia* (intermediate). 1. May. N. Holland. 1823.
,, *microphy'lla* (small-leaved). ¾. May. N. Holland. 1820.

LING, or LING-HEATHER. *Callu'na vulga'ris.*

LININGS, or, as they might be more properly called, *Coatings*, are applications of fermenting dung to renew the heat in hotbeds made of dung. See HOTBED.

LINNÆ'A. (Named after *Linnæus*. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Abelia.)
Hardy trailer. Plants are easily obtained from its trailing-rooted stems. It should, whether in the front of a border or in a good-sized pot, be grown solely in peat or heath-soil, kept shady and moist.

L. borea'lis (northern). ¼. Flesh. June. Scotland.
,, ,, *america'na* (American.)

LINO'SPADIX. (From *lino*, to anoint, and *spadix*, the axis bearing the flowers. Nat. ord. Palmaceæ.)
Stove Palms. Seeds. Loam, peat, sand.

L. Leopo'ldii (Leopold's). Pacific Islands. 1903.
,, *Micholi'tzii* (Micholitz's). 4. Stemless. Malaya. 1895.
,, *petrickia'na* (Petrickian). New Guinea. 1898.

LINO'SYRIS VULGA'RIS. See ASTER LINOSYRIS.

LI'NUM. Flax. (From *linon*, flax. Nat. ord. *Flaxworts* [Linaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*.)
Annuals and biennials, by seed in the open border, in April; perennials, by seed, but principally by divisions in spring, and cuttings of young shoots under a hand-light; hardy shrubs, by cuttings in sandy soil, under a hand-light, in summer; greenhouse shrubs, cuttings in sand, under a bell-glass; for the latter, peat and loam. Winter temp., 38° to 45°. Many, however, such as *arbo'reum*, *salsoloi'des*, *tau'ricum*, &c., will thrive in the border, in the climate of London, with but little protection.

GREENHOUSE EVERGREENS.

L. æthio'picum (Ethiopian). See L. AFRICANUM.
,, *africa'num* (African). 1. Yellow. June. Cape of Good Hope. 1771.
,, *Chamisso'nis* (Chamisso's). 1. White. Chili. 1830.
,, *Cumi'ngi* (Cuming's). See L. MACRÆI.
,, *Macræ'i* (Macræ's). ¾. Orange. July. Chili. 1864.
,, *quadrifo'lium* (four-leaved). 2. Yellow. May. Cape of Good Hope. 1787.
,, *Si'msii* (Sim's). See L. ARBOREUM.
,, *suffrutico'sum* (sub-shrubby). 1. Pink. August. Spain. 1759.
,, *tetra'gynum* (four-styled). See REINWARDTIA TETRAGYNA.
,, *tri'gynum* (three-styled). See REINWARDTIA TRIGYNA.

HARDY ANNUALS AND BIENNIALS.

L. au'reum (golden). See L. GALLICUM.
,, *Berendie'ri* (Berendier's). See L. BERLANDIERI.
,, *Berlandie'ri* (Berlandier's). 2. Yellow, orange. September. Texas. 1835. Half-hardy.
,, *bi'color* (two-coloured). 1½. Yellow, blue. June. Morocco. 1820.
,, *ga'llicum* (French). ½. Yellow. June. Mediterranean region. 1820.
,, *grandiflo'rum* (large-flowered). 1. Red. June, July. Algeria. 1820. Annual.
,, ,, *ru'brum* (red). Colour brighter.
,, *ri'gidum* (stiff-*leaved*). 1. Pale yellow. July. Missouri. 1807.
,, *stri'ctum* (erect). 1. Yellow. June. S. Europe. 1759. Biennial.
,, *usitati'ssimum* (most-common). 1½. Blue. June. Europe (Britain). "Common Flax."

HARDY EVERGREENS.

L. arbo'reum (tree). 1. Yellow. May. Crete. 1788.
,, *salsoloi'des* (Salsola-like). 1. White, pink eye. June. S. Europe. 1810.
,, *tau'ricum* (Taurian). 1½. Yellow. June. Tauria. 1818.

HARDY HERBACEOUS.

L. agre'ste (field). See L. ANGUSTIFOLIUM.
,, *alpi'num* (alpine). ½. Blue. July. Austria. 1739.
,, ,, *a'lbum* (white). White. July. Gardens.
,, *alta'icum* (Altaic). 1. Blue. July. Altai. 1829.
,, *a'nglicum* (English). See L. PERENNE.
,, *angustifo'lium* (narrow-leaved). 1. Purple. July. England.
,, *ascyrifo'lium* (Ascyrum-leaved). See L. HIRSUTUM.
,, *austri'acum* (Austrian). 1. Blue. June. Austria. 1775.
,, *Babingto'nii* (Babington's). See L. SELAGINOIDES.
,, *campanula'tum* (bell-shaped). ½–1. Yellow. July. Europe. 1795.
,, *capita'tum* (*round*-headed). 1. Yellow. June. Austria. 1816.
,, *davu'ricum* (Dahurian). 1. Yellow. June. Dahuria. 1816.
,, *decu'mbens* (lying-down). 1½. Red. June. N. Africa. 1817.
,, *diffu'sum* (spreading). ½. Blue. June. 1823.
,, *extraaxilla're* (extra-axillary). 1½. Blue. Hungary.
,, *fla'vum* (yellow). ¾. Yellow. July. Austria. 1793.
,, *glandulo'sum* (glandular). See L. CAMPANULATUM.
,, *hirsu'tum* (hairy). 1½. Blue. July. S. Europe; Asia Minor. 1759.
,, *hypericifo'lium* (St. John's-wort-leaved). See L. HIRSUTUM.
,, *Lewi'sii* (Lewis's). See L. PERENNE.
,, *margina'tum* (*white*-margined). See L. AUSTRIACUM.
,, *mari'timum* (sea). 2. Yellow. July. S. Europe. 1596.
,, *mexica'num* (Mexican). June. Mexico. 1838. Half-hardy.
,, *mono'gynum* (united-styled). 2. White. July. New Zealand. 1822.
,, *monta'num* (mountain). See L. ALPINUM.
,, *narbone'nse* (Narbonne). 2. Blue. May. S. France. 1759.

L. nervo'sum (nerved). 1½. Blue. June. Hungary. 1822.
„ *nodiflo'rum* (knotted-flowered). ½. White. May. Italy. 1759.
„ *palle'scens* (palish). 1. Lilac. January. Siberia. 1831.
„ *pere'nne* (perennial). 1–1½. Blue. June, July. Europe (Britain).
„ „ *a'lbum* (white). 1–1½. White. June, July. Gardens.
„ *refle'xum* (bent-back-*leaved*). 1½. Blue. July. S. Europe. 1777.
„ *selaginoi'des* (Selago-like). ½. Purple. July. Argentina. 1837.
„ *sibi'ricum* (Siberian). See L. PERENNE.
„ *squamulo'sum* (scaly). See L. AUSTRIACUM.
„ *tenuifo'lium* (slender-leaved). 1½. Pink. June. Europe. 1759.
„ *visco'sum* (clammy). 2. Purple. July. S. Europe. 1818.
„ *virginia'num* (Virginian). 1. Yellow. July. N. Amer. 1807.

LION'S EAR. *Leono'tis.*

LION'S FOOT. *Leontopo'dium.*

LION'S TAIL. *Leono'tis Leonu'rus.*

LIPA'RIA. (From *liparos*, unctuous; referring to the shining leaves. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Priestleya.)

Greenhouse evergreens, with orange flowers, from South Africa. Cuttings of young shoots in sand, under a bell-glass, but care taken to prevent damping; fibrous loam and turfy peat, with sand and a little charcoal; watering and draining carefully attended to. Winter temp., 40° to 48°.

L. pa'rva (small). 2. March. 1843.
„ *sphæ'rica* (globe-*flowered*). 4. July. 1794.
„ *villo'sa* (villous). See PRIESTLEYA VESTITA.

LI'PARIS. (From *liparos*, unctuous; referring to the leaves. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids. Fibrous peat, sphagnum, charcoal, and broken pots, in shallow, open baskets. Summer temp., 60° to 90°; winter, 55° to 60°. There are some hardy terrestrial species not worth cultivating.

L. abbrevia'ta (shortened). Green, white. Java. 1844.
„ *ala'ta* (winged). Mexico. 1843.
„ *a'nceps* (two-edged). Yellowish-green. China. 1837.
„ *atropurpu'rea* (dark-purple) of Lindley. India, Ceylon. 1865.
„ *atropurpu'rea* (dark-purple) of Ridley. ½. Reddish-purple. Penang. 1908.
„ *bitubercula'ta* (two-tubercled). Himalaya.
„ *Bowke'ri* (Bowker's). S. Africa.
„ *Cai'llei* (Caille's). ½–¾. French Guinea. 1909.
„ *cuneila'bris* (wedge-lipped). Australia.
„ *cylindro'stachys* (cylindrical-spiked). See L. LONGIPES.
„ *decursi'va* (decursive). Green, white. S. Africa. 1884.
„ *di'scolor* (two-coloured). Green, brown. May. Demerara. 1836.
„ *di'sticha* (two-ranked). India and Mascarene Islands.
„ *ela'ta* (tall). Trop. Amer.
„ „ *rufi'na* (reddish). W. Trop. Africa.
„ *e'legans* (elegant). 1–1½. Greenish, orange-red. Malaya. 1886.
„ *eleganti'ssima* (most elegant). 1881.
„ *elli'ptica* (elliptic). W. Ind.; Mexico. 1879.
„ *ferrugi'nea* (rusty-*lipped*). Green. January. Penang. 1848.
„ *flave'scens* (yellowish). Yellow. Bourbon.
„ *folio'sa* (leafy). See L. REFLEXA.
„ *formosa'na* (Formosan). Dark brown, green, purple. Formosa. 1880.
„ *fu'lgens* (shining). Bright red. Philippines (?). 1889.
„ *gro'ssa* (coarse). Brownish-yellow. Burma. 1883.
„ *guinee'nsis* (Guinea). W. Trop. Africa.
„ *latifo'lia* (broad-leaved). Light ochre. Java. 1885.
„ *liliifo'lia* (lily-leaved). Brown-purple. June. N. Amer. "American Tway Blade."
„ *Læsel'ii* (Lœsel's). Soft yellow. July. Europe (England). Fen Orchis.
L. lo'ngipes (long-stalked). 1½. Green, orange-red. India. 1838.
„ „ *pe'ndula* (drooping). 1. Pale green. India.
„ „ *spathula'ta* (spathulate). Pale green. India. 1842.
„ *minutiflo'ra* (minute-flowered). See L. LONGIPES SPATHULATA.
„ *multiflo'ra* (many-flowered). Burma.
„ *nervo'sa* (nerved). Japan and China.
„ *odora'ta* (scented). Pale green. Trop. and subtrop. Asia.
„ *parado'xa* (paradoxical). See L. ODORATA.
„ *pe'ndula* (drooping). See L. LONGIPES PENDULA.
„ *plantagi'nea* (plantain-like). Himalaya.
„ *Prai'nii* (Prain's). Assam.
„ *priochi'lus* (saw-lipped). See MICROSTYLIS VERSICOLOR.
„ *purpura'scens* (purplish). Purple. Bourbon.
„ *refle'xa* (reflexed). ½. Green. September. Australia. 1823.
„ *rhodochi'la* (red-lipped). ½. Light green; lip reddish-crimson. Java. 1908.
„ *saundersia'na* (Saundersian). Green, violet. Jamaica. 1872.
„ *spathula'ta* (spathulate). See L. LONGIPES SPATHULATA.
„ *stricklandia'na* (Stricklandian). Pale greenish. Assam. 1880.
„ *tabula'ris* (table-like). See L. ATROPURPUREA of Lindley.
„ *tricallo'sa* (three-callused). Yellow, dull purple. Borneo. 1879.
„ *tri'stis* (dull). Brown. Ceylon.
„ *Walke'riæ* (Mrs. Walker's). ½. Purple. Ceylon.
„ *Warpu'ri* (Warpur's). ½. Light green, dark green. Madagascar. 1908.
„ *zeyla'nica* (Cingalese). Pale green. Ceylon.

LI'PARIS. This name is also applied to a moth, often named *Liparis dispar*, but more properly *Hypogymna dispar*. It is occasionally extremely destructive to all sorts of trees, including fruit, street, and forest trees. The male is smoky brown, and the female yellowish-white. The caterpillar is reddish-brown, with a line of reddish tubercles on each side. The Gipsy Moth, as it is called, is not so common in this country as it has been in former times, and the caterpillars being large and conspicuous, they should be hand-picked when seen.

LIPO'STOMA CAMPANULIFLO'RUM. See COCCOCYPSELUM CAMPANULIFLORUM.

LI'PPIA. (Commemorative of *Augustus Lippi*, a French traveller. Nat. ord. Verbenaceæ.)

Greenhouse and half-hardy, deciduous shrubs. *L. citriodo'ra* will live out in the milder parts of the country against a wall. Cuttings in July and August in sandy soil in a cold frame or hand-light, and in March in heat. Loam, leaf-mould, and sand.

L. asperifo'lia (rough-leaved). 2–3. Red. July. S. Amer. 1820.
„ *citriodo'ra* (lemon-scented). 2–3. Lilac. August. S. Amer. 1784. "Scented Verbena."
„ *nodiflo'ra* (node-flowering). 1. White to pale purple. Summer. Tropics of both Worlds.
„ *re'ptans* (creeping). 1. White, red. July. W. Ind. 1847.

LIQUIDA'MBAR. (From *liquidus*, liquid, and *ambar*, amber; referring to the gum called liquid storax produced by some species. Nat. ord. *Witch Hazels* [Hamamelidaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

Hardy, and half-hardy deciduous trees. Cuttings, but layers chiefly; also by imported seeds, which should not be taken out of the catkins until they are to be sown; if exposed to sun or fire-heat the catkins crack, and the seeds easily shake out. They often require a year to send up their seedlings; moist, loamy soil.

L. formosa'na (Formosan). 10. China and Japan. Half-hardy.
„ *imbe'rbe* (beardless). See L. ORIENTALIS.
„ *orienta'lis* (oriental). 6. March. Asia Minor. 1759.
„ *styraci'flua* (storax-flowing). 60. March. N. Amer. 1683. "Sweet Gum."

LIQUID-MANURE is the most advantageous form in which fertilisers can be applied by the gardener to his crops. It is the most economical, most prompt, and most

efficient mode. The manure is presented to the roots in one of the only forms in which the roots can imbibe food, and the manure is spread regularly through the texture of the soil. If, instead of digging-in stable-manure, each crop was watered occasionally with liquid-manure, the produce would be finer and more abundant.

"I have often employed with decided effect, in my own garden, for vines, peach, and standard apple-trees, liquid-manure, prepared either by mixing one part by weight of cow-dung with four parts of water, or the collected drainage of the stable and cow-house. It has been found advantageous to plants cultivated in stoves to apply even a liquid-manure, composed of six quarts of *soot* to a hogshead of water; and although this is a very unchemical mixture, yet it has been found by Mr. Robertson to be peculiarly grateful and nourishing to pines, causing them to assume an unusually deep, healthy green; and for stove, mulberry, vine, peach, and other plants, the late Mr. Knight, of Downton, employed a liquid-manure, composed of one part of the dung of domestic poultry and four to ten parts of water, with the most excellent result."—*Johnson on Fertilisers.*

Guano Liquid-manure.—Ten gallons of water will readily dissolve, or keep suspended in a state of minute division, about 50 lb. weight of guano. When applied to plants not more than five ounces should be added to that quantity of water. If it be made stronger, it injures or kills the plants to which it is applied.

Sheep's-dung, if employed for making liquid-manure, should be a peck to thirty gallons.

When *cow-dung* is used, boiling water should be first poured upon it, as it is apt to be full of destructive larvæ.

Sulphate of ammonia, and any other salt of ammonia, must not be used more than a quarter of an ounce to each gallon.

The rule applicable to all these liquid-manures is—*Give it weak, and often.*

LIQUIRI'TIA OFFICINA'LIS and L. OFFICINA'RUM. See GLYCYRRHIZA GLABRA.

LIQUORICE. *Glycyrrhi'za.*

LIRIODE'NDRON. Tulip-tree. (From *lirion*, a lily, and *dendron*, a tree. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Hardy deciduous tree, with yellow and red flowers, from North America. Generally by seeds, which, if sown in the autumn, usually come up the succeeding spring, but if sown in spring, generally remain a year in the ground; varieties by layers, grafting, and budding; deep, rich, loamy soil.

L. tulipi'fera (tulip-bearing). 60. June. 1663.
,, ,, *au'reo-margina'ta* (golden-edged). Leaves variegated with yellow.
,, ,, *chine'nsis* (Chinese).
,, ,, *conto'rta* (twisted).
,, ,, *fastigia'ta* (upright). Habit of the Lombardy Poplar.
,, ,, *obtusifo'lia* (blunt-leaved). 60. June. 1663.

LI'RIOPE. (*Liriope*, a mythological nymph. Nat. ord. Hæmodoraceæ.)

Evergreen herb, hardy in the milder parts of the country. Divisions. Loam, peat, and sand, when grown in pots.

L. graminifo'lia (grass-leaved). See L. SPICATA.
,, *spica'ta* (spiked). 1. Blue. Autumn. China; Cochin-China. 1821.

LISIA'NTHUS. (From *lusis*, dissolution, and *anthos*, a flower; the bitter principle is used as a tonic and febrifuge. Nat. ord. Gentianaceæ.)

Seeds in spring, in a hotbed, and cuttings of shrubby kinds in sandy soil, under a bell-glass; sandy loam and peat. Summer temp., 60° to 80°; winter, 50° to 55°. Young plants raised in heat one year, and safely kept over the winter in a cool stove or a warm greenhouse, and potted in spring, will bloom beautifully in summer.

STOVE ANNUALS.

L. acuta'ngulus (acute-angled). 6. Yellow. July. Peru. 1820. Biennial.
,, *ala'tus* (winged). 1½. White. July. Mexico. 1824.
,, *angustifo'lius* (narrow-leaved). Green. May. Venezuela.
L. erythrope'nsis (red). See EUSTOMA RUSSELLIANUM.
,, *grandifo'rus* (large-flowered). 3. Yellow. June. Trinidad. 1818. Biennial.
,, *Ku'nthii* (Kunth's). See L. ANGUSTIFOLIUS.
,, *Œrste'dii* (Œrsted's). See L. ALATUS.
,, *russellia'nus* (Duke of Bedford's). See EUSTOMA RUSSELLIANUM.

STOVE EVERGREENS.

L. cordifo'lius (heart-leaved). See LEIANTHUS LONGIFOLIUS.
,, *glaucifo'lius* (milky-green-leaved). See EUSTOMA SILENIFOLIUM.
,, *latifo'lius* (broad-leaved). See LEIANTHUS LATIFOLIUS.
,, *longifo'lius* (long-leaved). See LEIANTHUS LONGIFOLIUS.
,, *Ophiorrhi'za* (snake-root). See METTERNICHIA PRINCIPIS.
,, *Pri'nceps* (chief). 4. Crimson. New Grenada. 1849.
,, *pu'lcher* (beautiful). 5. Scarlet. New Grenada. 1846.
,, *sple'ndens* (shining). Red. June. New Grenada. 1846. Trailer.
,, *umbella'tus* (umbelled). See LEIANTHUS UMBELLATUS.

LISSA'NTHE. (From *lissos*, smooth, and *anthos*, a flower. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Leucopogon.)

Greenhouse evergreen shrubs, with white flowers, and all from Australia. Cuttings of the points of shoots in April and May, in sand, under a bell-glass; chiefly sandy, fibrous peat. Temp., 40° to 45°, when resting and flowering; a higher temperature and a closer atmosphere, when making their wood, after flowering and pruning.

L. cilia'ta (hair-fringed). See BRACHYLOMA CILIATUM.
,, *daphnoi'des* (Daphne-like). See BRACHYLOMA DAPHNOIDES.
,, *sa'pida* (savoury). 4. June. 1824.
,, *stella'ta* (starry). See BRACHYLOMA DAPHNOIDES.
,, *strigo'sa* (bristly). 3. June. 1824.
,, *subula'ta* (awl-shaped). See L. STRIGOSA.
,, *verticilla'ta* (whorled). See LEUCOPOGON VERTICILLATUS.

LISSOCHI'LUS. (From *lissos*, smooth, and *cheilos*, a lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cyrtopera.)

Stove orchids. Division in spring, when fresh growth commences and potting takes place; fibrous peat, a little fibrous loam, dried leaf-mould, and plenty of drainage. Summer temp., 60° to 90°; winter, 55° to 60°.

L. Anderso'ni (Anderson's). 1½. Sulphur-yellow; lip white, with purple keels. Gold Coast. 1910.
,, *arena'rius* (sand). Green, purple-brown, mauve-purple, yellow. Trop. Africa. 1898.
,, *crista'tus* (crested). Uganda.
,, *dile'ctus* (select). 2–3. Rose, purple. Congo. 1886.
,, *gigante'us* (giant). 3–4. Lilac, yellow, purple. Trop. Africa. 1888.
,, *Græ'ffi* (Græff's). 3–4. Green, brown, yellow. Trop. Africa. 1899.
,, *grani'ticus* (granitic). 3–4. Golden-yellow, violet. Abyssinia. 1894.
,, *Horsfa'llii* (Horsfall's). Purple-brown, white. Trop. Africa. 1865.
,, *Kre'bsii* (Kreb's). 2. Green, purple, yellow. Natal. 1867.
,, ,, *pa'llida* (pale). Colours much paler.
,, ,, *purpu'rea* (purple). Dark green, maroon-purple, bright yellow. S. Africa. 1885.
,, *lu'teus* (yellow). 1½. Yellow. May. Cape of Good Hope. 1822.
,, *Maho'ni* (Mahon's). 6–8. Green, brown, rosy-pink, yellow. Uganda. 1905.
,, *parvifo'rus* (small-flowered). 1. Pale red. December. Algoa Bay. 1822.
,, *purpura'tus* (purple). 2–4½. Rose and purple. Trop. Africa. 1903.
,, *ro'seus* (rosy). Rose. February. Sierra Leone. 1841.
,, *Sanderso'ni* (Sanderson's). 5–6. Green, white, mauve-purple. Natal. 1885.
,, *specio'sus* (showy). 2. Yellow. June. Cape of Good Hope. 1818.

L. streptopé'talus (twisted-petaled). Yellow. December. Cape of Good Hope. 1826.
„ *styli'les* (styled-lipped). Rose; lip spotted. Comoro Isles. 1885.
„ *Uga'ndæ* (Uganda). 3–4. Yellow, brown. Uganda. 1905.

LI'STERA. Tway-blade. (Commemorative of *Dr. Martin Lister*, a British naturalist.)
Hardy terrestrial orchids. Offsets. Loam, leaf-mould, and sand, with plenty of peat for *L. corda'ta*.
L. corda'ta (heart-shaped). ½. Purple. June. Britain.
„ *ova'ta* (egg-shaped). 1–2. Green. June, July. Britain.

LISTRO'STACHYS. (From *listroo*, to level, and *stachus*, a spike; form of the spikes. Nat. ord. Orchidaceæ.)
The genus is included in Angræcum by some authorities. See ANGRÆCUM for treatment.
L. bracteo'sa (large-bracted). ½–¾. Pale yellow-green. Mascarene Islands. 1902.
„ *dactylo'ceras* (finger-horned). ½. W. Trop. Africa. 1909.
„ *fimbria'ta* (fringed). Translucent white. Uganda. 1906.
„ *forcipa'ta* (pincer-like). ½. Pellucid white. W. Trop. Africa. 1908.
„ *hama'ta* (hooked). ¾. White. Long spur-hooked. W. Trop. Africa. 1901.
„ *imbrica'ta* (imbricate). White, small. Gold Coast. 1910.
„ *kindtia'na* (Kindtian). ½. Yellowish. Congo. 1908.
„ *ri'ngens* (gaping). Yellowish-white. Cameroons. 1878.
„ *Sede'ni* (Seden's). White. E. Trop. Africa. 1878.
„ *vandæfo'rmis* (Vanda-formed). 1–1½. Yellow. W. Trop. Africa. 1908.
„ *Why'lei* (Whyte's). White, brown, fragrant. Uganda. 1908.

LISTS, for fastening trees against walls, are usually merely shreds of woollen cloth cut into lengths, varying from two to four inches. Strips of very thin sheet-lead are preferable, as not harbouring insects. Wires and twine have been recommended to tie the branches to the walls; but the process is tedious, and cuts are inflicted, inducing gum and canker. Shreds of a black, blue, or red colour look best, harmonising with that of the leaves. If old lists are re-employed, they should be previously boiled, to destroy the larvæ of insects.

LISYA'NTHUS. See LISIANTHUS.

LITA'NTHUS. (From *litos*, small or simple, and *anthos*, a flower; in allusion to the diminutive size of the plant. Nat. ord. Liliaceæ.)
The smallest known plant of the order, a bulb requiring greenhouse treatment. Offsets. Loam, leaf-mould, and a liberal quantity of sand.
L. pusi'llus (puny). ½. White. August. S. Africa. 1870.

LITHOSPE'RMUM. Gromwell. (From *lithos*, a stone, and *sperma*, a seed. Nat. ord. *Boragewort*s [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Echium.)
Annuals and biennials, by seed in common garden soil, in April; perennials, by division, seed, and cuttings of young shoots; shrubby species, by cuttings, and by seeds; indeed, all of them will soon multiply themselves by seeds in suitable places; *sca'brum* and *di'stichum* will require protection in winter, and a little heath-soil joined to the loam.

HARDY ANNUALS, &c.

L. dispe'rmum (two-seeded). See ROCHELIA STELLULATA.
„ *linea'tum* (lined). 1. Purple. July. Greece. 1826. Biennial.
„ *tenuiflo'rum* (slender-flowered). ½. Blue. May. Egypt. 1796.

HARDY EVERGREENS.

L. graminifo'lium (grass-leaved). 3½. Blue. May. Italy. 1825.
„ *petræ'um* (rock). See MOLTKIA PETRÆA.
L. prostra'tum (lying-flat). 1. Blue. June. France. 1825. Trailer.
„ *rosmarinifo'lium* (rosemary-leaved). 1½. Blue. September. Italy. 1883.

HARDY HERBACEOUS.

L. angustifo'lium (narrow-leaved). ½. Yellow. June. N. Amer. 1812.
„ *cane'scens* (hoary). ¾. Orange. May. N. Amer. 1826.
„ *cobre'nse* (Cobran). Mexico.
„ *di'stichum* (two-rowed). 1½. Yellow, white. May. Cuba. 1806. Half-hardy.
„ *frutico'sum* (shrubby). 2. Blue. May. S. Europe. 1683.
„ *Gasto'ni* (Gaston's). ½. Blue, purple, white. Pyrenees. 1871.
„ *hi'rtum* (hairy). 2. Orange. N. Amer. 1812. "Hairy Puccoon."
„ *inci'sum* (incised). See L. ANGUSTIFOLIUM.
„ *latifo'lium* (broad-leaved). 2. Yellow. June. N. Amer. 1825.
„ *margina'tum* (margined). See MERTENSIA OBLONGIFOLIA.
„ *multiflo'rum* (many-flowered). N.W. Amer.
„ *officina'le* (shop). 2. Yellow. June. Britain.
„ „ *latifo'lium* (broad-leaved). See L. LATIFOLIUM.
„ *orienta'le* (eastern). 2. Yellow. June. See ALKANNA ORIENTALIS.
„ *pilo'sum* (pilose). See L. MULTIFLORUM.
„ *purpu'reo-cæru'leum* (purplish-blue). 1. Purple. May. England.
„ *sca'brum* (rough). 1½. White. September. Cape of Good Hope. 1822. Half-hardy.
„ *seri'ceum* (silky). See L. CANESCENS.
„ *strigo'sum* (bristly). 1. Blue. July. Tauria. 1820.
„ *tincto'rium* (dyer's). See ALKA'NNA TINCTO'RIA.
„ *villo'sum* (shaggy). 1. Blue. July. S. France. 1817.

LITHRÆ'A. (From *luthron*, black blood; referring to the juice staining black. Nat. ord. *Anacards* or *Terebinths* [Anacardiaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*. Allied to Rhus.)
Greenhouse evergreen trees. See RHUS for cultivation.
L. Arœiri'nha (Arœirinha). See L. MOLLEOIDES.
„ *cau'stica* (caustic). See L. VENENOSA.
„ *Mo'lle* (Molle). S. Amer.
„ *molleoi'des* (Molle-like). Chili.
„ *veneno'sa* (poisonous). 40. Pale yellow. Chili. 1832

LITOBRO'CHIA. (A commemorative name. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Stove Ferns. Now referred to Pteris. See FERNS.
L. aculea'ta (prickly-*stemmed*). 10. Brown. August. W. Ind. 1793.
„ *alcyo'nis* (king-fisher-winged). 2. Brazil. 1864.
„ *a'mpla* (large). Brown, pale yellow. May. W. Ind.
„ *areola'ta* (tessellated). Malaya. 1860.
„ *auri'ta* (eared). See L. INCISA AURITA.
„ *biauri'ta* (two-eared). 4. W. Trop. Africa, Trop. Amer. 1842.
„ *co'mans de'nsa* (dense). Norfolk Island, New Caledonia. 1879.
„ *davallioi'des* (Davallia-like). Yellow. May.
„ *decu'rrens* (running-down). Brown, yellow. July. Brazil.
„ *denticula'ta* (toothed). 2. Brown. July. Brazil. 1824.
„ *ela'ta* (tall). Trop. Amer. to Ecuador.
„ *grandifo'lia* (large-leaved). 2. Brown. August. W. Ind. 1793.
„ *hænkea'na* (Hænke's). Brown, yellow. June.
„ *hirsu'ta* (hairy). 1. Brown. June. W. Ind. 1793.
„ *inci'sa* (cut). 3. Brown, yellow. Australia. 1823.
„ „ *auri'ta* (eared). Lowest pair of pinnules simple.
„ *interme'dia* (intermediate). Brown, yellow. June. Isle of Luzon.
„ *leptophy'lla* (slender-leaved). 2. Brown. July. Brazil. 1824.
„ *macro'ptera* (large-winged). Brown, yellow. June. W. Ind.
„ *no'bilis* (noble). 2. S. Amer. 1862.
„ *Oriza'bæ* (Orizaban). Mexico. 1858.
„ *peda'ta* (doubly-lobed). 1. Brown. June. Jamaica. 1793.

L. podophyl'lia (*duck's-foot*). Brown, yellow. June. W. Ind.
„ *poli'ta* (polished). 6. Brown, yellow. May. Jamaica. 1841.
„ *robu'sta* (robust). 1884.
„ *spinulo'sa* (spiny). Brown, pale yellow. W. Ind.
„ *splen'dens* (shining). Brown, pale yellow. June. W. Ind.
„ *tripartl'ta* (three-parted). Polynesia, Malaya. 1865.
„ *undula'ta* (undulated). Fiji. 1867.
„ *Vespertilio'nis* (bat-*winged*). See L. INCISA.

LITSE'A. (Adopted from the Japanese. Nat. ord. Lauraceæ.)
Greenhouse, half-hardy and stove trees. Cuttings in sand, in bottom-heat. Loam, with a little peat and sand.
L. cupula'ris (small-cupped). China.
„ *ferrugi'nea* (rusty). Malaya and Java.
„ *genicula'ta* (kneed). 4–6. Yellow. April. N. Amer. 1759. Hardy. "Pond Spice."
„ *glau'ca* (glaucous). 10–20. White or pale yellow. Japan. 1800.
„ *japo'nica* (Japanese). 2–4. White. Japan. 1843.
„ *Sebi'fera* (Sebifera). 10. Yellow, green. May. E. Ind.; Malaya. 1820.
„ *Tetranthe'ra* (Tetranthera). 4–8. Yellow. Malaya. 1824.
„ *tomento'sa* (felted). 3–4. India.
„ *zeyla'nica* (Cingalese). Trop. Asia and Australia.

LITTÆ'A GEMINIFLO'RA. See AGAVE GEMINIFLORA.

LITTO'NIA. (In honour of *Dr. S. Litton*, professor of botany, Dublin. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
A stove bulb. Offsets. Light garden soil.
L. mode'sta (unassuming). 2½. Orange. April. S. Africa. 1853.
„ „ *Kei'tii* (Keit's). A stronger growing plant.

LIVERY. Soil that is dug or moved about whilst wet is liable to set close together like mortar, and is said to be livery, or like liver.

LIVISTO'NA. (Named after *P. Murray, of Livingston*, near Edinburgh. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Corypha.)
Greenhouse and stove Palms. Seeds in a hotbed; rich, sandy loam. Summer temp., 60° to 80°; winter, 50° to 60°.
L. alti'ssima (tallest). Java. 1868.
„ *austra'lis* (southern). 80. White. Australia. 1824.
„ *borbo'nica* (Bourbon). See L. CHINENSIS.
„ *chine'nsis* (Chinese). 8–40. China and Japan. 1816.
„ *Dru'dei* (Drude's). Country unknown.
„ *ene'rvis* (nerveless). Appears a mistake for *L. ine'rmis*.
„ *Hoogendo'rpii* (Hoogendorp's). Java. 1874.
„ *hu'milis* (humble). 6. Australia. 1824.
„ *ine'rmis* (unarmed). See L. HUMILIS.
„ *jenkinsia'na* (Jenkinsian). Assam. 1845.
„ *Leicha'rdtii* (Leichardt's). See L. HUMILIS.
„ *Mari'æ* (Maria's). Young leaves and stalks copper-red. S. Australia. 1908.
„ *mauritia'na* (Mauritian). See L. CHINENSIS.
„ *olivæfo'rmis* (olive-shaped). Java.
„ *Ramsa'yi* (Ramsay's). See LICUALA MUELLERI.
„ *rotundifo'lia* (round-leaved). Leaves small, round. Java.
„ *subglobo'sa* (subglobose). Leaves rounded. Java.
„ *Woga'nii* (Wogan's). Country unknown.
„ *Woodfo'rdii* (Woodford's). 40. Polynesia. 1898.

LLA'VEA. (Commemorative of *M. la Llave*, its discoverer. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
A stove fern. Spores. Loam, peat, and sand.
L. cordifo'lia (heart-leaved). 2–3. Mexico, at an altitude of 7500 ft. 1858.

LLOY'DIA. (Named after *Mr. Lloyd*, an English botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Calochortus.)
Hardy biennial. Division of the bulbs in spring; a dry, sandy loam, in front of a border of flowers.
Ll. alpi'na (alpine). ¼. White, streaked purple. May. Europe (Wales). 1789.
„ *sero'tina* (late) and *Ll. stria'ta*. See Ll. ALPINA.

LOAM is a very indefinite term, almost every cultivator of the soil associating it with a different explanation. In some parts of England *clay* is so called, and in others it is employed to designate *brick-earth!* As usually employed, it really is only synonymous with the word soil; for it has to be qualified by the terms turfy, sandy, clayey, and chalky, just as turf, sand, clay, or chalk predominates. *Hazel loam* is a rich, friable soil, having a dark brown, or hazel colour, owing to the predominance of decaying vegetable matters.
In this work we use the term *loam* to describe a soil that is easily worked at any season, being sufficiently retentive, yet not too retentive, of water. *Maiden loam* is used often among gardeners to describe the fat earth forming the top spit of pasture-ground, and used by them for composts: that with a yellowish-brown colour is most preferred. *Sandy loams* are the easiest worked, and yield the earliest produce; *chalky loams*, if the chalk does not abound too much, are early and fertile; in fact, no soil will continue fertile without calcareous matter; and *clayey loams* are bad to work, either in wet or dry weather, being wet and sticky in the one case, and hard and cracking in the other. Fine late crops, however, are produced from such soils, especially when the surface is moved to prevent cracking in hot weather.

LOA'SA. (Meaning unknown; probably a commemorative name. Nat. ord. *Loasads* [Loasaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)
Curious flowers, that would be very interesting were it not for the poisonous, stinging property possessed by the leaves. The annoyance and danger combined have limited their culture. They will all fare the better by being raised in a gentle hotbed in April, though most of them will flower freely if sown in a warm place the end of that month; but in a cold autumn they would be cut down in their prime; light soil.

ANNUALS.

L. acanthifo'lia (spiny-leaved) of Lindley. See L. PLACEI.
„ *a'lba* (white). 1. White. July. Chili. 1831.
„ *ambrosiæfo'lia* (Ambrosia-leaved). See L. HISPIDA.
„ *bi'color* (two-coloured). White, red. July, August Trop. Amer. 1852.
„ *bryoniæfo'lia* (bryony-leaved). Chili.
„ *cocci'nea* (scarlet). See L. LATERITIA.
„ *grandiflo'ra* (large-flowered). See BLUMENBACHIA GRANDIFLORA.
„ *hi'spida* (roughly-hairy). 2. Yellow. July, August. Peru. 1830.
„ *mura'lis* (wall). See BLUMENBACHIA INSIGNIS.
„ *ni'tida* (shining). 2. Yellow. July. Chili. 1822.
„ *palma'ta* (hand-shaped). See BLUMENBACHIA INSIGNIS.
„ *pa'tula* (spreading). See BLUMENBACHIA INSIGNIS.
„ *pi'cta* (painted). White, yellow. July, August. Peru. 1848.
„ *Pla'cei* (Place's). 4. Yellow. July. Chili. 1822.
„ *prostra'ta* (prostrate). Yellow, red. Chili. 1879.
„ *schlimia'na* (Schlimian). 2. Yellow. Venezuela. 1854.
„ *tri'color* (three-coloured). 2. White, red, yellow. Chili.
„ *volu'bilis* (twining). See GRAMMATOCARPUS VOLUBILIS.
„ *vulca'nica* (volcanic). 2. White, yellow, red. July to September. Colombia. 1877.
„ *Walli'sii* (Wallis's). See L. VULCANICA.

GREENHOUSE BIENNIALS.

L lateri'tia (red). 20. Red. May. Tucuman. 1835.
„ *Pentla'ndii* (Mr. Pentland's). 4. Orange. August. Peru. 1840.

GREENHOUSE EVERGREENS.

L. inca'na (hoary). 2½. White. October. Peru. 1820.
„ *lu'cida* (bright-*leaved*). White. June.

LOAVING. See HEADING.

LOBE'LIA. (Named after *M. Lobel*, a botanist, physician to James I. Nat. ord. *Bellflowers* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Seeds of hardy kinds in open border, in April; greenhouse annuals and biennials, by seed in hotbed, in April;

herbaceous kinds, whether hardy or requiring protection, by dividing the roots or suckers in spring, after growth has commenced; shrubby kinds, by small cuttings of the young shoots; indeed, all of them may be so propagated; sandy loam, leaf-mould, and a little peat suit the tenderest kinds, and for the strong-growing, herbaceous sorts, such as *sple'ndens* and *cardina'lis*, it is scarcely possible to make the soil too rich by top-dressings of rotten dung; the soil itself should be light. The finest of the species must be kept in a cold pit or greenhouse during the winter; Dortmanna has been grown in peat and gravel, in a pot, plunged in a cistern or slowly running stream.

Hardy Annuals.

L. a'nceps (two-edged). ½. Blue. June. Cape of Good Hope. 1818.
„ *campanula'ta* (bell-*flowered*). ½. Blue. June. Cape of Good Hope. 1821.
„ *cliffortia'na* (Clifford's). 1½. Pink. July. N. Amer.
„ *fenestra'lis* (windowed). ½. Blue. July. Mexico. 1824.
„ *serrula'ta* (saw-edged). See L. URENS.
„ *u'rens* (stinging). ½. Blue. June. Europe (England). 1820.

Greenhouse Annuals.

L. bi'color (two-coloured). See L. ERINUS.
„ *gra'cilis* (slender). 1. Dark blue. July, N. S. Wales. 1801.
„ *Laure'ntia* (Laurentian). See LAURENTIA MICHELII.
„ *si'mplex* (simple-*stalked*). See L. DEBILIS.
„ *de'bilis* (weak). ½. Blue. July. S. Africa. 1794. Biennial.

Greenhouse Herbaceous.

L. ala'ta (winged-*stalked*). See L. ANCEPS.
„ *argu'ta* (sharp-*notched*). See L. SALICIFOLIA.
„ *bellidiflo'ra* (daisy-flowered). ½. Blue. S. Africa. 1790.
„ *bellidifo'lia* (daisy-leaved). See L. BELLIDIFLORA.
„ *Bridge'sii* (Mr. Bridges'). 4. Pink. June. Chili. 1836.
„ *cæru'lea* (blue). See L. CORONOPIFOLIA.
„ *campanuloi'des* (Campanula-like). See L. RADICANS.
„ *capita'ta* (headed). See L. TRIQUETRA.
„ *cardina'lis* (cardinal-*flower*). 3. Scarlet. July. Virginia. 1629.
„ *Cavanille'sii* (Cavanilles'). 3. Red. June. Chili. 1825.
„ „ *lu'tea* (yellow). Yellow. 1903.
„ *coronopifo'lia* (Coronopus-leaved). ½. Blue. July. Cape of Good Hope. 1752.
„ *crena'ta* (scolloped-*leaved*). ½. Blue. April. Cape of Good Hope. 1794.
„ *decu'mbens* (lying-down). See L. ANCEPS.
„ *denta'ta* (toothed). 1. Blue. June. N. Holland. 1824.
„ *di'scolor* (two-coloured). Blue. August. Swan River. 1818.
„ *erinoi'des* (Erinus-like). See LAURENTIA ERINOIDES.
„ *Eri'nus* (Erinus). ½. Blue. July. Cape of Good Hope. 1752.
„ „ *compa'cta* (compact). ½. Blue. June. Gardens.
„ „ *compa'cta a'lba* (white-compact). ½. White. June. Gardens. 1847.
„ „ *grandiflo'ra* (large-flowered). ½. Blue. June. Gardens. 1841.
„ „ *lu'cida* (shining). Blue, white. June. Gardens.
„ *exce'lsa* (tall). 4–6. India.
„ *fu'lgens* (shining). 3. Scarlet. July. Mexico. 1809.
„ „ *Marrya'ttæ* (Mrs. Marryatt's). 3. Crimson, purple. May. 1847.
„ „ *multiflo'ra* (many-flowered). 4. Scarlet. May. 1847.
„ „ *pyramida'lis* (pyramidal). 4. Scarlet. May. 1847.
„ *heterodo'nta* (various-toothed). 3. Pale green. Colombia. 1904.
„ *heterophy'lla* (various-leaved). 2. Blue. September. Van Diemen's Land. 1837.
„ „ *ma'jor* (larger). 3. Blue. June. Swan River. 1840.
L. hirsu'ta (hairy). ½. Blue. July. Cape of Good Hope. 1759.
„ *hypocraterifo'rmis* (salver-shaped). See ISOTOMA BROWNII.
„ *i'gnea* (fiery). See L. FULGENS.
„ *ilicifo'lia* (holly-leaved). See L. PURPURASCENS.
„ *infla'ta* (inflated). N. Amer. "Indian Tobacco."
„ *interte'xta* (interwoven). Central Africa.
„ *Krau'ssii* (Krauss's). 1½. Blue. January. Dominica. 1828.
„ *laxiflo'ra* (lax-flowered). 1½–3. Red, yellow. April. Mexico. 1835.
„ *littora'lis* (shore). See PRATIA ANGULATA.
„ *longiflo'ra* (long-flowered). See ISOTOMA LONGIFLORA.
„ *lu'tea* (yellow). ½. Yellow. S. Africa. 1774.
„ *mi'nima* (least). See LAURENTIA MINUTA.
„ *minu'ta* (minute). See LAURENTIA MINUTA.
„ *mo'llis* (soft). Purple. June. Dominica. 1828.
„ *monta'na* (mountain). See PRATIA MONTANA.
„ *mucrona'ta* (spine-pointed-*leaved*). 3. Bright crimson. August. Chili. 1831.
„ *multiflo'ra* (many-flowered). Purple. June. Swan River. 1838.
„ *nicotianæfo'lia* (Nicotiana-leaved). White. India. 1866.
„ *peduncula'ta* (*long*-flower-stalked). 1. Blue. October. N. S. Wales. 1819.
„ *persicæfo'lia* (peach-leaved). 1. Purple. June. W. Ind. 1824. Stove.
„ *physaloi'des* (Physalis-like). See COLENSOA PHYSALOIDES.
„ *pube'scens* (downy). ½. Blue. September. Cape of Good Hope. 1780.
„ *purpura'scens* (purplish). 1. Blue. July. N. S. Wales. 1809.
„ *purpu'rea* (purple). August. Valparaiso. 1825.
„ *pyramida'lis* (pyramidal). 4. Blue. September. Nepaul. 1822.
„ *radi'cans* (rooting). ½. White. June. Himalaya; China. 1820.
„ *Rhynchope'talum* (beak-petaled). Trop. Africa.
„ *rugulo'sa* (wrinkled). See PRATIA ANGULATA.
„ *salicifo'lia* (willow-leaved). 2. Blue. September. Chili. 1824.
„ *secu'nda* (one-sided). ½. White. May. S. Africa. 1794.
„ *senecioi'des* (Senecio-like). See ISOTOMA AXILLARIS.
„ *seta'cea* (short-bristled). ½. Blue. June. Cape of Good Hope. 1816.
„ *Si'msii* (Sims's). 1. Blue. October. Cape of Good Hope. 1819.
„ *sple'ndens* (shining). 3. Scarlet. June. Mexico. 1814.
„ „ *Kerne'ri* (Kerner's). Violet-purple. Costa Rica. 1889.
„ *tene'lla* (slender) of Linnæus. ½. Blue. July. S. Africa. 1794.
„ *tenu'ior* (more slender). 1–1½. Blue. July, August. Australia. 1838.
„ *texe'nsis* (Texan). See L. FULGENS.
„ *thapsoi'dea* (mullein-like). See HAYNALDIA THAPSOIDEA.
„ *Thunbe'rgii* (Thunberg's). See L. CORONOPIFOLIA.
„ *trigo'na* (three-angled). India.
„ *trigonocau'lis* (three-angled-stemmed). 1. Blue. July. Australia. 1858.
„ *trique'tra* (triangular). 1. Blue. July. Cape of Good Hope. 1774.
„ *umbella'ta* (umbelled). 1. Blue. June. 1818.
„ *variifo'lia* (variable-leaved). 1. Yellow. S. Africa. 1812.
„ *zeyla'nica* (Ceylon). 1. Blue. June. India; Ceylon.

Greenhouse Evergreens.

L. assu'rgens (rising). 3. Scarlet. August. W. Ind. 1787.
„ *begoniæfo'lia* (Begonia-leaved). See PRATIA BEGONIFOLIA.
„ *corymbo'sa* (corymbose). White. June. S. Africa. 1824. Trailer.
„ *decu'rrens* (running-down). 3. Purple. July. Chili. 1826.
„ *gigante'a* (gigantic). See SIPHOCAMPYLUS GIGANTEUS.

L. heteroma'lla (diversely-haired). See L. TRIQUETRA.
„ *linea'ris* (narrow-*leaved*). ½. Blue. Cape of Good Hope. 1791.
„ *macula'ta* (spotted). See PRATIA ANGULATA.
„ *odora'ta* (fragrant). See PRATIA HEDERACEA.
„ *pinifo'lia* (pine-leaved). 1½. Blue. June. Cape of Good Hope. 1782.
„ *purpu'rea* (purple). 1. Purple. June. Valparaiso. 1825. Stove.
„ *robu'sta* (robust). 3. Blue. August. Hayti. 1830. Stove.

HARDY HERBACEOUS.

L. amœ'na (pleasing). 3. Blue. July. N. Amer. 1812.
„ *claytonia'na* (Clayton's). See L. SPICATA.
„ *cœle'stis* (heavenly). See L. FENESTRALIS.
„ *colora'ta* (coloured-*leaved*). See L. AMŒNA.
„ *cri'spa* (curled). See L. FENESTRALIS.
„ *Dortma'nna* (Dortmanna). 1. Pale blue. July. Britain. "Water Lobelia."
„ *glandulo'sa* (glanded). 2½. Blue. September. New Carolina. 1840.
„ *Ka'lmii* (Kalm's). 1. Blue. July. Carolina. 1820.
„ *lacu'stris* (lake). See L. DORTMANNA.
„ *linnæoi'des* (Linnæa-like). ½. White, purple beneath. New Zealand. 1910.
„ *Nutta'llii* (Nuttall's). 1. Blue. July. N. Amer. 1824.
„ *paludo'sa* (marsh). Pale blue. July. N. Amer.
„ *polyphy'lla* (many-leaved). 4½. Purple. August. Valparaiso. 1829.
„ *pube'rula* (mossy). 1. Pale blue. June. N. Amer. 1800.
„ „ *glabe'lla* (smoothish). ½. Purple, blue. July. Louisiana. 1832.
„ *ramo'sa* (branching). See L. TENUIOR.
„ *sessilifo'lia* (stalkless-leaved). 3. Violet-blue. Manchuria. 1882.
„ *spica'ta* (spiked). 2. Blue. June. N. Amer. 1824.
„ *syphyli'tica* (syphilitic). 2. Light blue. September. Virginia. 1665.
„ „ *a'lba* (white). 3. White. August.
„ *ten'ella* (delicate) of Bivona. See LAURENTIA TENELLA.
„ *Tu'pa* (Tupa). 3–5. Red. July, August. Chili. 1824.

LOBLOLLY-BAY. *Gordo'nia lasia'nthus.*

LOBOSTE'MON. (From *lobos*, the lower part or lobe of the ear, and *stemon*, a stamen; in allusion to the scale or pencil of hairs at the base of the stamens. Nat. ord. Boraginaceæ. Allied to Echium.)

Greenhouse evergreens or subshrubby plants. Seeds; layers; cuttings in sand under a hand-light, in April and May, but not kept very close. Fibrous loam, peat, and sand.

L. arge'nteus (silvery). 3. Blue. June. S. Africa. 1789.
„ *capita'tus* (headed). 2. Red. June. S. Africa. 1819.
„ *cauda'tus* (tailed). 1. Red. July. S. Africa. 1819.
„ *feroci'ssimus* (fiercest). 6. Blue. June. S. Africa. 1794.
„ *formo'sus* (beautiful). 3–5. Pale indigo-blue; filaments rose-pink. Canaries. 1787.
„ *frutico'sus* (shrubby). 3. Pink. May. S. Africa. 1759.
„ *glaucophy'llus* (glaucous-leaved). 2. White or violet. May. S. Africa. 1791.
„ *hi'spidus* (hispid). 2. White. June. S. Africa. 1818.
„ *læviga'tus* (smooth). 2. Blue. July. S. Africa. 1774.
„ *sphæroce'phalus* (globe-headed). White. July. S. Africa. 1824.
„ *spica'tus* (spiked). ½. White. July. S. Africa. 1791.
„ *strigo'sus* (soft-haired). 2. Violet. August. S. Africa. 1821.
„ *verruco'sus* (warty). 3. White. July. S. Africa. 1822.

LOCHE'RIA. See ACHIMENES.

LOCKHA'RTIA. (Commemorative of *David Lockhart*, a traveller and collector. Nat. ord. Orchidaceæ.)

Stove epiphytical Orchids. Offsets. Should be grown on rafts or blocks. Summer temp., 65° to 90°; winter, 60° and drier.

L. acu'ta (acute). ½. Yellow. Trinidad. 1834.
„ *amœ'na* (lovely). ½. Yellow, purple. Costa Rica.
L. e'legans (elegant). ½. Yellow, purple. Trinidad. 1817.
„ *luni'fera* (moon-bearing). ½. Yellow. Mexico. 1839.
„ *pa'llida* (pale). ½. Pale orange. Panama. 1854.
„ *verruco'sa* (warty). 1. Yellow, red. Guatemala. 1841.

LOCUST-TREE. *Hymenæ'a* and *Cerato'nia Si'liqua.*

LODDIGE'SIA. (Named after *Conrad Loddiges*, the founder of the well-known nursery at Hackney. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Hypocalyptus.)

Greenhouse evergreen. Cuttings of the points of the shoots in April, in sandy soil, under a bell-glass; sandy peat and a little loam. Winter temp., 40° to 48°; a cool place in summer.

L. oxalidifo'lia (Oxalis-leaved). 1½. Pale purple. June. S. Africa. 1802.

LODOI'CEA. (Named after *Laodice*, the daughter of Priam and Hecuba. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Diœcia*, 12-*Polyandria*.)

Stove Palm. Seeds in a strong, moist heat; loam and peat. Summer temp., 60° to 90°, with much moisture in the atmosphere; winter, 58° to 60°.

L. sechella'rum (Seychelles'). 80. Seychelle Islands. "Double Cocoa-nut."

LŒSE'LIA. (Commemorative of *John Lœsel*, a botanist. Nat. ord. Polemoniaceæ. Allied to Polemonium.)

Shrubby or subshrubby greenhouse plants. Cuttings in sand under a hand-light. Fibrous loam, peat, and sand.

L. cæru'lea (blue). 1–2. Blue. Mexico. 1824.
„ *cocci'nea* (scarlet). 2–3. Scarlet. Mexico. 1824.
„ *glandulo'sa* (glandular). 2–3. Red. Mexico. 1825.

LOGA'NIA. (Named after *J. Logan*, a distinguished botanist. Nat. ord. *Loganiads* [Loganiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Fargæa.)

Greenhouse evergreens, with white flowers, from Australia. Stiff side-shoots, getting well ripened at the base, in sandy soil, under a bell-glass, in summer; sandy loam and fibrous peat, kept more open still by pieces of charcoal. Winter temp., 38° to 45°. In summer the pots protected from strong sunshine.

L. floribu'nda (bundle-flowered). 2. April. 1797.
„ *latifo'lia* (broad-leaved). 3. 1816.
„ *revolu'ta* (rolled-back-*leaved*). See L. FLORIBUNDA.

LOGWOOD. *Hæmato'xylon.*

LOISELEU'RIA. (Commemorative of *Loiseleur-Deslongchamps*, a French botanist. Nat. ord. Ericaceæ.)

A diminutive, hardy, evergreen shrub, suitable for the rockery. Divisions, layers; cuttings in sandy peat under a hand-light. Peat and sand.

L. procu'mbens (procumbent). ¼. White and pink. May and June. Arctic and Alpine Europe (Scotland). "Alpine Azalea."

LOMAGRA'MME. (From *loma*, an edge, and *gramme*, writing; referring to the appearance and position of the spore or seed-cases on the leaves. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove fern. See FERNS.

L. pteroi'des (brake-like). Brown. May. Isle of Luzon. 1840.

LOMA'RIA. (From *loma*, an edge; referring to the position of the spore or seed-cases on the leaves. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

All brown-spored. See FERNS.

HARDY.

L. alpi'na (alpine). Temperate S. Amer., New Zealand, Falkland Isles, &c. 1843.
„ *Spi'cant* (spiked). 1. June. Britain.

GREENHOUSE.

L. anta'rctica (antarctic). Magellan. 1843.
„ *attenua'ta* (thin). 1. August. 1838.
„ *austra'lis* (southern). See BLECHNUM AUSTRALE.

L. Ba'nksii (Banks's). Pinnæ oblong, obtuse. New Zealand.
„ *Be'llii* (Bell's). New Caledonia. 1865.
„ *blechnoi'des* (Blechnum-like). ½. Chili. Allied to *L. lanceola'ta*.
„ *borya'na* (Boryan). W. Ind. to Falkland Islands. 1843.
„ „ *cycadioi'des* (cycad-like). S. Africa. 1875.
„ *cilia'ta* (eye-lashed). New Caledonia. Allied to *L. gi'bba*. 1866.
„ „ *gra'ndis* (grand). Pinnæ as wide as in *Blechnum brasiliense*. 1897.
„ „ *Ma'yi* (May's). Soon forms a stem. 1904.
„ *costarice'nsis* (Costa Rican). 2–3. Mountains of Costa Rica. 1909.
„ *crenula'ta* (finely-notched). Chili. 1862.
„ *cycadifo'lia* (cycad-leaved). Juan Fernandez.
„ *Dalgai'rnsiæ* (Mrs. Dalgairn's). Tree Fern, with blackish trunk. S. Africa. 1877.
„ *di'scolor* (two-coloured). Australia to New Zealand.
„ „ *bipinnati'fida* (twice-cut). Australia. 1878.
„ *dobroyde'nsis* (Dobroydan). Australia. 1875.
„ *drapsia'na* (Drapsian). 1905.
„ *du'ra* (hard). Chatham Islands. Allied to *L. lanceola'ta*. 1866.
„ *elonga'ta* (elongated). See L. PATERSONI ELONGATA.
„ *falca'ta* (sickle-shaped). 2. July. Van Diemen's Land. 1823.
„ *fluvia'tilis multi'fida* (much-cut). New Zealand to S. Australia. 1879.
„ *Fra'seri* (Fraser's). New Zealand. 1843.
„ *gi'bba* (swollen). 2–3. Stem 1–3. New Caledonia; Aneitum. 1862.
„ *Gillie'sii* (Gillies's). See L. PROCERA.
„ *lanceola'ta* (spear-head-shaped). ½. September. N. Holland. 1830.
„ *Lechle'ri* (Lechler's). See L. PROCERA LECHLERI.
„ *magella'nica* (Magellan). See L. BORYANA.
„ *nu'da* (naked). 2. June. Van Diemen's Land. 1822.
„ *Paterso'ni* (Paterson's). ½. September. N. Holland. 1830.
„ „ *elonga'ta* (elongated). Barren and fertile frond deeply cut. Neilgherries to New Zealand.
„ *pro'cera* (tall). 3. July. New Zealand. 1822.
„ „ *chile'nsis* (Chilian). 3. Chili.
„ „ *Lechle'ri* (Lechler's). 3. Chili. 1866.
„ „ *longifo'lia* (long-leaved). 3. June. W. Ind. 1810.
„ „ *vesti'ta* (clothed). Midribs densely clothed with scales. Isle of Luzon.
„ *punctula'ta* (finely-dotted). 1½–2½. S. Africa.
„ „ *Kre'bsii* (Kreb's). Natal. 1854.

STOVE.

L. chile'nsis (Chilian). See L. PROCERA CHILENSIS.
„ *longifo'lia* (long-leaved). See L. PROCERA LONGIFOLIA.
„ *onocleoi'des* (Onoclea-like). July. Jamaica. 1824.
„ *sorbifo'lia* (Sorbus-leaved). August. W. Ind. 1793.
„ *vesti'ta* (clothed). See L. PROCERA VESTITA.

LOMARIO'PSIS. (Derived from *Lomaria*, and *opsis*, resemblance. Nat. ord. Filices.)
Greenhouse fern. Division; spores. Loam, peat, and sand.
L. heteromo'rpha (various-formed). New Zealand.

LOMA'TIA. (From *loma*, an edge; referring to the winged edge of the seeds. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Telopea.)
Greenhouse evergreens. Cuttings of firm young shoots early in spring, or late in summer, in sand, under a bell-glass; sandy peat, with a little loam. Winter temp., 38° to 40°.
L. Bidwi'llii (Bidwill's). 6–8. Australia.
„ *denta'ta* (toothed). 3. Chili. 1824.
„ *eleganti'ssima* (most-elegant). 3. New Zealand. 1862.
„ *ferrugi'nea* (rusty). 6–8. Green, red. China.
„ *heterophy'lla* (various-leaved). See L. SILAIFOLIA.
„ *ilicifo'lia* (holly-leaved). 3. July. N. Holland. 1824.
„ *longifo'lia* (long-leaved). 6–9. White. Australia. 1816.
„ *obli'qua* (oblique). 5–10. White. Chili. 1909.
„ *pinnatifo'lia* (pinnate-leaved). See L. FERRUGINEA.
„ *quercifo'lia* (oak-leaved). See L. LONGIFOLIA.
L. silaifo'lia (Silaus-leaved). 2. Orange. July. N. S. Wales. 1792.
„ *tinctu'ria* (dyer's). 2. N. Holland. 1822.

LOMATOPHY'LLUM. (From *loma*, an edge or margin, and *phullon*, a leaf; in allusion to the cartilaginous often coloured edges of the leaves. Nat. ord. Liliaceæ. Allied to Haworthia.)
Warm greenhouse evergreen succulents. Offsets. Fibrous loam and peat, with some lime rubbish and sand, enriched with a little well-decayed manure.
L. borbo'nicum (Bourbon). 2–3. Yellow, rusty-red. Bourbon and Mauritius. 1766.
„ *ma'crum* (long). Yellow-red. Mauritius.
„ *rufoci'nctum* (red-edged). Yellow-red. Mauritius.
„ *Saunde'rsii* (Saunders's). Mauritius. 1871.

LONCHI'TIS. (From *lonche*, a lance; the shape of the leaves, or fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Stove Ferns, with brown spores, from the Tropics. Some species are now joined to Litobrochia. See FERNS.
L. auri'ta (eared). See L. PUBESCENS.
„ *gla'bra* (smooth). See L. PUBESCENS GLABRA.
„ *lindenia'na* (Lindenian). See L. PUBESCENS.
„ *longifo'lia* (long-leaved). Trop. Amer.
„ *pube'scens* (downy). July. Mauritius.
„ „ *gla'bra* (smooth). Frond thinner, less hairy. S. Africa.
„ *sorbifo'lia* (Sorbus-leaved). W. Ind.

LO'NAS. (Derivation obscure. Nat. ord. Compositæ.)
A hardy, branching annual with dense corymbs of rayless flowers. Seeds. Ordinary garden soil.
L. inodo'ra (scentless). 1. Bright yellow. Mediterranean region.

LONCHOCA'RPUS. (From *lonche*, a lance, and *carpos*, a fruit; shape of seed-pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Dalbergia.)
Stove evergreen trees, with purple flowers, except where specified otherwise. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a sweet bottom-heat, in May; turfy loam and fibrous peat, with sand and charcoal to keep it open, though pressed firmly together. Summer temp., 60° to 85°; winter, 55° to 60°.
L. Barte'ri (Barter's). 15. Pale rose. Trop. Africa.
„ *Bla'ckii* (Black's). Australia.
„ *cyane'scens* (bluish). Pale blue. Trop. Africa. "Yoruba Indigo."
„ *dominge'nsis* (St. Domingo). See L. SERICEUS.
„ *latifo'lius* (broad-leaved). 20. Trop. Amer. 1808.
„ *macrophy'llus* (large-leaved). See L. SERICEUS.
„ *pube'scens* (downy). 25. Purple. Caracas. 1824.
„ *pyxida'rius* (box). See L. SERICEUS.
„ *ro'seus* (rosy). 16. Red. S. Amer. 1700.
„ *se'pium* (hedge). 30. S. Amer. 1820.
„ *seri'ceus* (silky). 20. Red. Trop. Amer. 1820.
„ *specio'sus* (showy). S. Africa.
„ *viola'ceus* (violet). 12. S. Amer. 1759.

LONDON PRIDE. *Saxi'fraga umbro'sa.*

LONICE'RA. (Named after *Adam Lonicer*, a German botanist. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Includes Caprifolium.)
Hardy deciduous shrubs. By cuttings and layers in the autumn; with all the succulent, pithy-stemmed kinds, the latter mode is the best, as cuttings are apt to rot; when planted they should have a shady, sheltered situation; good, loamy soil.
L. affi'nis (allied). 10. White, changing to yellow. China; Japan. 1904.
„ *Albe'rtii* (Albert's). See L. SPINOSA.
„ *alpi'gena* (alpine). 6. Yellow. April. European Alps; Himalaya. 1596.
„ „ *na'na* (dwarf). 2.
„ „ *sibi'rica* (Siberian). 5. Yellow. April. Siberia. 1810.
„ *Altma'nni* (Altmann's). Turkestan.
„ *Amhe'rstii* (Amherst's). Himalaya.
„ *angustifo'lia* (narrow-leaved). 5. Pale yellow. April. N. India. 1847.

L. arizo'nica (Arizonian). 2. Yellow, tinged scarlet. Mountains of Arizona. 1909.
„ *brachy'poda* (short-stalked). See L. JAPONICA FLEXUOSA.
„ *cæru'lea* (blue-*berried*). 4. Yellow. May. Switzerland. 1629.
„ *canade'nsis* (Canadian). See L. CILIATA.
„ *cane'scens* (hoary). 10. April. Europe.
„ *Caprifo'lium* (goat-leaf). 6–10. Yellowish. May to June. Europe (Britain).
„ „ *ru'bra* (red). 10. Red. May, June. S. Europe.
„ *chine'nsis* (Chinese). See L. JAPONICA CHINENSIS.
„ *chrysa'ntha* (yellow-flowered). Yellow. Amurland.
„ *cilia'ta* (hair-fringed). 4. White, red. April. N. Amer. 1824. "Fly Honeysuckle."
„ „ *a'lba* (white-*berried*). 4. White, red. April. N. Amer. 1824.
„ *cilio'sa* (eye-lashed). 20. Orange. July. W.N. Amer. 1824.
„ *confu'sa* (confused). 10–14. Red. June. China. 1806.
„ *conjuga'lis* (yoked). W.N. Amer.
„ *deflexi'calyx* (deflexed-calyxed). 3. Yellow. China. 1904.
„ *depre'ssa* (depressed). 1–2. Alpine Himalaya.
„ „ *Myrti'llus* (Whortleberry-like).
„ *dioi'ca* (dicœcious). 6. Purple. June. N. Amer. 1776.
„ *di'scolor* (two-coloured). See L. ORIENTALIS.
„ *diversifo'lia* (various-leaved). See L. QUINQUELOCULARIS.
„ *Dougla'sii* (Douglas's). 20. Orange. July. N. Amer. 1824. Climber.
„ *etru'sca* (Etruscan). 10–15. Yellow. May. S. Europe.
„ „ *supe'rba* (superb). 20–30. Larger and finer. 1903.
„ *Ferdina'ndi* (Ferdinand's). 4–8. Pale yellow. Mongolia; China. 1905.
„ „ *beissneria'na* (Beissnerian). Fruit red. Leaves larger. China. 1908.
„ *fla'va* (yellow). 8–10. Yellow. June. S. Carolina. 1810.
„ *flave'scens* (yellowish). 3–5. Sulphur to citron-yellow. British Columbia. 1888.
„ *flexuo'sa* (zigzag). See L. JAPONICA FLEXUOSA.
„ *floribu'nda* (free-flowering). 3. Pale rose. Turkestan. 1889.
„ *fragranti'ssima* (very-fragrant). 6–10. White. February. China. 1845.
„ *gibbiflo'ra* (bulging-flowered). Manchuria. 1889.
„ *gigante'a* (giant). 4–6. Yellow. August. 1882.
„ *Gira'ldii* (Girald's). 10–15. Dull red. Western China. 1907.
„ *glabra'ta* (smooth). Himalaya.
„ *glau'ca* (sea-green). 4–6. Purple. June. N. Amer. 1776.
„ *graci'lipes* (slender-stalked). Japan.
„ *gra'ta* (pleasing). 10–20. Red. July. N. Amer. 1730. Evergreen.
„ *He'nryi* (Dr. Henry's). Creamy-yellow, reddish, bronze. Hupeh, China. 1911. Evergreen climber.
„ *hildebrandia'na* (Hildebrandian). 10. Crimson. Upper Burma. 1893. Greenhouse.
„ *hirsu'ta* (hairy). 10. Yellow. June. N. Amer. 1822.
„ *hi'spida* (hispid). 3–6. Yellow. May. Turkestan; Siberia.
„ *hispi'dula* (rather hispid). Rose. July. N.W. Amer. 1833.
„ *ibe'rica* (Iberian). 6. Orange. April. Iberia. 1824.
„ *implе'xa* (interwoven). 8. Red, yellow. July. Minorca. 1772. Evergreen.
„ „ *balea'rica* (Balearic). 8. Cream. June. Minorca.
„ *involucra'ta* (involucred). 3. Yellow. April. Hudson Bay. 1824.
„ „ *hu'milis* (dwarf). Flowers smaller. Plant dwarfer. Colorado. 1900.
„ „ *sero'tina* (late). Mountains of California. 1906.
„ *ita'lica* (Italian). 10. Purple, yellow. June. Garden origin.
„ „ *ru'bra* (red). 10. Red. June.
„ *japo'nica* (Japanese). 15. Red. June. China and Japan. 1806. Evergreen.
„ „ *au'reo-reticula'ta* (golden-netted). Leaves netted with yellow.

L. japo'nica chine'nsis (Chinese). 15. Yellow, red. China. 1869.
„ „ *flexuo'sa* (flexuous). 15. Yellow, red. Leaves more pointed. Japan. 1806.
„ „ *halliа'na* (Hallian). 10–15. Yellow, floriferous.
„ *Kareli'ni* (Karelin's). Central Asia.
„ *Kesselri'ngii* (Kesselring's). 2–3. Red, white. Kamtschatka. 1890.
„ *Korolko'wii* (Korolkow's). 3–4. Yellowish-white. Berries orange-red. Turkestan. 1894.
„ „ *auro'ra* (aurora). 3–4. Rose. 1910.
„ *Ledebou'rii* (Ledebour's). See L. INVOLUCRATA.
„ *longiflo'ra* (long-flowered). 10. Yellow, white. July. China. 1826. Climber.
„ *Maa'cki* (Maack's). 4–10. White. Manchuria. 1884.
„ *macra'ntha* (large-flowered). 15. Orange. July. Himalaya. 1806. Evergreen.
„ *macrophy'lla* (large-leaved).
„ „ *ru'bra* (red). Dull red. 1870.
„ *Maximowi'czii* (Maximowicz's). 10. Purple. Amurland. 1869.
„ *micra'ntha* (small-flowered). 4–6. Pale pink, yellowish. 1889.
„ *microphy'lla* (small-leaved). 4. Siberia. 1818.
„ *Morro'wi* (Morrow's). Japan.
„ *myrtilloi'des* (Myrtillus-like). 3–5. White, reddish. Himalaya. 1907.
„ *nervo'sa* (nerved). China.
„ *ni'gra* (black). 4. Pale yellow. April. Switzerland. 1597.
„ „ *campaniflo'ra* (bell-flowered). 4. Yellow. May. N. Amer.
„ *nummulariæfo'lia* (money-leaved). Orient.
„ *oblongifo'lia* (oblong-leaved). 3. White. April. N. Amer. 1823.
„ *orienta'lis* (eastern). 16. Yellow. June. Iberia. 1825.
„ „ *puni'ceus* (crimson). Crimson. May. N. Amer. 1822.
„ *parviflo'ra* (small-flowered). See L. GLAUCA of Hill.
„ *pilea'ta* (thinly-hairy). 1. Cream, greenish. Central and W. China. 1904.
„ *Pericly'menum* (woodbine). 20. Yellow. May to June. Europe (Britain). "Woodbine; Honeysuckle."
„ „ *be'lgica* (Dutch). 20. Yellow. June. "Dutch Honeysuckle."
„ „ *quercifo'lia* (oak-leaved). 20. Yellow, red. June.
„ „ *sero'tina* (late). 20. Yellow, red. June. "Late Red Honeysuckle."
„ „ *variega'ta* (variegated). 15. Yellow, red. June. Britain.
„ *pube'scens* (downy). See L. HIRSUTA.
„ *puni'cea* (scarlet). See SYMPHORICARPUS PUNICEUS.
„ *purpura'scens* (purplish). Pale purple. Subalpine Himalaya.
„ *pyrena'ica* (Pyrenean). 4. White. Pyrenees. 1739.
„ *quinquelocula'ris* (five-celled). 4. Yellow. May. Himalaya. 1843.
„ *regelia'na* (Regelian). Amurland.
„ *retu'sa* (blunt-end-leaved). 6. White, becoming yellowish. Western China. 1907.
„ *rupi'cola* (rock-inhabiting). Himalaya.
„ *ruprechtia'na* (Ruprechtian). Light yellow. Manchuria. 1870.
„ *segrezie'nsis* (Segrezian). The *L. diversifolia* of gardens. Origin uncertain. 1889.
„ *sempervi'rens* (evergreen). 20. Scarlet. Early summer. S. United States. 1656. "Trumpet Honeysuckle."
„ „ *Bro'wnii* (Brown's). 20. Bright scarlet. May.
„ „ *ma'jor* (larger). 20. Scarlet. May.
„ „ *mi'nor* (smaller). 15. Scarlet. June. Carolina. 1656.
„ *spino'sa* (spiny). 3–4. Rosy-lilac. Turkestan. 1882.
„ *sple'ndida* (splendid). 4–6. Yellowish-white. Spain. 1890.
„ *Standi'shii* (Standish's). 3–6. White. China. 1860.
„ *stipula'ta* (stipuled). See PENTAPYXIS STIPULATA.
„ *Sulliva'ntii* (Sullivant's). N.E. United States.
„ *syringa'ntha* (Syringa-flowered). 3–4. Pale pink. China. 1892.
„ *tangu'tica* (Tangutic). 3–4. Yellowish. N. China. 1891.

L. tata'rica (Tartarian). 10. Pink. April. Russia. 1752.
„ „ *albiflo'ra* (white-flowered). 10. White. May. Pyrenees. 1739.
„ „ *grandibractea'ta* (large-bracted). Seedling with large bracts. 1891.
„ „ *latifo'lia* (broad-leaved). 10. Pink. April.
„ „ *lu'tea* (yellow-*flowered*). 10. Yellow. April.
„ „ *rubriflo'ra* (red-flowered). 10. Red. April. Russia. 1752.
„ „ *splé'ndens* (splendid). 1889.
„ *thibe'tica* (Tibetan). 3. Rose-tinted. Tibet. 1897.
„ *tomente'lla* (finely-felted). 10–12. White, tinted pink. Temperate Himalaya. 1849.
„ *tragophy'lla* (goat-leaved). 10. Golden-yellow, becoming reddish. Central China. 1908. Twiner.
„ *translu'cens* (translucent). 3–4. Yellow. Himalaya. 1889.
„ *utahe'nsis* (Utah). 3–5. Greenish-yellow. Utah. 1907.
„ *villo'sa* (shaggy). See L. HIRSUTA.
„ *webbia'na* (webbian). See L. ALPIGENA.
„ *Xylo'steum* (fly). 8. Yellow. June. England.
„ „ *leucoca'rpum* (white-berried). 8. Yellow. June. Britain.
„ „ *melanoca'rpum* (black-berried). 8. Yellow. June. Britain.
„ „ *xanthoca'rpum* (yellow-berried). 8. Yellow. June. Britain.

LOOKING-GLASS PLANT. *Heritie'ra.*

LOOSESTRIFE. *Lysima'chia* and *Ly'thrum.*

LOPE'ZIA. (Named after *J. Lopez*, a Spanish botanist. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Circæa.)

Annuals, from Mexico, all of which thrive the better if sown on a light hotbed in the middle of March, and are transplanted in the middle of May; light soil.

L. corda'ta (heart-*leaved*). 1½. Purple. August. 1821.
„ *corona'ta* (coroneted). 1½. Red. August. 1805.
„ *Galeo'ttii* (Galeott's). Red. Mexico.
„ *grandiflo'ra* (large-flowered). 2–3. Carmine-rose. Mexico. 1879.
„ *hirsu'ta* (hairy). 1½. Red. August. 1796.
„ *linea'ta* (streaked-*leaved*). 3. Rose. February. 1839.
„ *macrophy'lla* (large-leaved). 2. Red. Guatemala. Greenhouse.
„ *mexica'na* (Mexican). See L. RACEMOSA.
„ *minia'ta* (vermilion). 2. Red, rose, violet. Mexico; Guatemala. 1907. Greenhouse. Shrub.
„ *pu'mila* (dwarf). ½. Red. August. 1824.
„ *racemo'sa* (racemed). 1½. Red. August. 1792.

LOPHA'NTHUS. (From *lophos*, a crest, and *anthos*, a flower; referring to the middle lobe of the flower. Nat. ord. *Labiates*, or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Mentha.)

Hardy herbaceous perennials, from North America, except one. Seeds sown in April; cuttings of the young shoots at the same time, in a shady place, in sandy soil, under a hand-light; division of the plant in spring; good garden soil.

L. anisa'tus (anise-scented). 3. Blue. July. 1826.
„ *chine'nsis* (Chinese). 1½. Purple. Northern Asia.
„ *nepetoi'des* (Nepeta-like). 5. Yellow, white. July. 1692.
„ *scrophulariæfo'lius* (figwort-leaved). 5. Pink. July. 1800.
„ *urticæfo'lius* (nettle-leaved). 2. Blue. July. 1826.

LO'PHIOLA. (A diminutive of *lophos*, a crest; referring to the crested sepals, or flower-leaves. Nat. ord. Hæmadoraceæ. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Anigozanthos.)

Hardy herbaceous perennial. Division of the roots in autumn or spring; peaty soil, in a damp, shady situation.

L. au'rea (golden-*flowered*). 1½. Yellow. June. N. Amer. 1811.

LOPHI'RA. (From *lophos*, a crest; referring to two of the sepals finally expanding into crested wings. Nat. ord. *Dipterocarpads* [Dipterocarpaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

This is the Scrubby Oak of Sierra Leone, a handsome tree, with panicled yellow flowers. Endlicher founded the order on it because it is "allied to nothing yet known." A tropical evergreen shrub; cuttings of firm young wood in sand, under a bell-glass, and in a sweet bottom-heat; sandy loam and fibrous peat. Summer temp., 60° to 90°; winter, 50° to 60°.

L. africa'na (African). See L. ALATA.
„ *ala'ta* (winged). 10. Yellow. June. Sierra Leone. 1822.

LOPHO'LEPIS PILOSELLOI'DES. See POLYPODIUM PILOSELLOIDES.

LOPHOSO'RUS PRUINA'TA (frosted). See ALSOPHILA PRUINATA.

LOPHOSPE'RMUM. (From *lophos*, a crest, and *sperma*, a seed; the seeds are furnished with a crested wing. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Mostly now referred to Maurandia.)

L. a'tro-sangui'neum (dark-bloody). See RHODOCHITON VOLUBILE.
„ *erube'scens* (blushing). See MAURANDIA ERUBESCENS.
„ *sca'ndens* (climbing) of D. Don. See MAURANDIA SCANDENS.
„ *sca'ndens* (climbing) of Sweet. See MAURANDIA ERUBESCENS.

LOPHY'RUS. Pine Sawfly. The caterpillars of *Lophyrus Pini* sometimes do a great deal of damage to young woods of Scotch Fir, by eating the leaves and bark of the young shoots. The sawflies make their appearance early in the summer, and the females lay their eggs in the leaves by cutting a slit, laying a few eggs and covering them with resinous matter. The caterpillars hatch in three weeks and proceed to devour the leaves, on which they feed for eight weeks. When full fed they form cocoons in crevices of the bark, and amongst moss and leaves beneath the trees. The caterpillars hibernate in the cocoons, but ultimately pupate and again attain the winged state early in summer. The easiest remedy is to rake up the leaves and moss beneath the trees in winter, and burn the same to destroy the cocoons, with the caterpillars in them. They are often found in enormous numbers amongst the fallen pine needles. Another species, *L. rufus*, has also been known to attack Scotch Firs. The winged insect appears in August, but similar remedies would apply to both. On young trees the caterpillars may be squeezed in the hand, wearing gloves, or they may be sprinkled with naphtha.

LOPI'MIA MALACOPHY'LLA. See PAVONIA VELUTINA.

LOQUAT, or **JAPAN QUINCE.** (*Eriobo'trya japo'nica.*) It ripens its fruit with a moderate amount of heat in this country. Some varieties are said to succeed on the open wall; but it must be in such mild localities as the warmer parts of Devon or Cornwall. The temperature of the peach-house—or what is sometimes called the intermediate-house—will, however, suit it; and as to wintering, it requires little more than the exclusion of frost. As the growth of this, for dessert purposes, has never been, as far as we are aware, systemised in this country, we can only offer a few general hints as to its culture. It has been affirmed that it succeeds best grafted on the quince, and it is very probable; for it belongs to the same natural order, *Appleworts*, in addition to which, individuals from the genera *Pyrus*, *Amelanchier*, *Mespilus*, and even the *Photi'nia serrula'ta*, being itself an evergreen, present most likely stocks.

Grafting is recommended, in order to check its excessively robust character; for in its natural growth it would be too coarse for ordinary hothouses. Grafting, therefore, or any of the expedients resorted to in pear culture, may be had recourse to. It may be readily propagated from seed, and doubtless by cuttings, and will grow in any ordinary soil. We would, however, use no manurial matters, but simply peat and strong loam, the latter predominating.

LORA'NTHUS. (From *lorum*, a thong, and *anthos*, a flower, in allusion to the leathery leaves. Nat. ord. Loranthaceæ.)

Evergreen, parasitical shrub, of the Mistletoe family, which may be grown by sowing or fixing the berries on the roots of Beech trees, where they are not covered with soil.

L. fla'vidus (yellowish). 1–2. Yellowish. New Zealand. 1885.

„ *floribu'ndus* (free-flowering). See NUYTSIA FLORIBUNDA.

LORD ANSON'S PEA. *La'thyrus nervo'sus.*

LORD HARRINGTON'S YEW. *Cephalota'xus peduncula'ta.*

LORDS AND LADIES. *A'rum macula'tum.*

LORE'YA. (Named after *M. Lorey*, a botanist, author of the Flora of Burgundy. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Miconia.)

Stove evergreen tree. Cuttings of young shoots in April, in sand, over sandy peat, and that extra well drained; sandy peat, a little fibrous loam, and pieces of charcoal and broken freestone. Summer temp., 60° to 85°; winter, 50° to 55°.

L. arbore'scens (tree-like). 30. White. July. Guiana. 1822.

LORINSE'RIA AREOLA'TA. See WOODWARDIA AREOLATA.

LOROPE'TALUM. (From *lorum*, a thong, and *petalon*, a petal, in allusion to the long, strap-shaped petals. Nat. ord. Hamamelidaceæ.)

A deciduous, ornamental, hardy or half-hardy shrub, well suited for pot culture for conservatory and greenhouse decoration. Seeds; cuttings in sandy soil in a gentle heat. Any light rich soil.

L. chine'nse (Chinese). 3–5. White. Spring. China. 1881.

LOTE. *Zi'zyphus Lo'tus.*

LO'TUS. Bird's-foot Trefoil. (From the *lotus* of Theophrastus, which is *Zi'zyphus Lo'tus*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Trifolium.)

Annuals, by seed at the beginning of April; a very few require the assistance of a gentle hotbed, and transplanting afterwards; herbaceous and semi-shrubby, low-trailing plants, by division, and cuttings in summer under a hand-light, in a shady place. These are very useful for banks and rock-works. Greenhouse and frame kinds, by cuttings of young shoots in sandy soil, under a hand-light or frame; light, sandy soil for all.

STOVE ANNUAL.

L. i'ndicus (Indian). See ROTHIA TRIFOLIATA.

GREENHOUSE HERBACEOUS PERENNIALS.

L. arge'nteus (silvery). ½. June. N. Africa. 1827.
„ „ *angustifo'lius* (narrow-leaved). ½. July. 1827.
„ *austra'lis* (southern). Pink. July. Australia. 1800.
„ *glau'cus* (milky-green). 1. June. Madeira. 1777.
„ *microphy'llus* (small-leaved). See INDIGOFERA GRACILIS.
„ *sessilifo'lius* (stalkless-leaved). 1. July. Teneriffe. 1820.

GREENHOUSE EVERGREENS.

L. anthylloi'des (Anthyllis-like). ½. Dark purple. June. S. Africa. 1812.
„ *a'tro-purpu'reus* (dark purple). See L. ANTHYLLOIDES.
„ *Berthole'tii* (Bertholet's). 1–2. Scarlet. May. Canaries. 1881. Pendulous.
„ *cre'ticus* (Cretan). 1½. June. Levant. 1680.
„ *gebe'lia* (*mountain*). 1. May. Aleppo. 1816.
„ *Jacobæ'us* (St. James's *Island*). 2. Dark brown. July. Cape de Verd Islands. 1714.
„ „ *lu'teus* (yellow-*flowered*). 2. July.
„ *peliorhy'nchus* (stork's-beak). See L. BERTHOLETII.
„ *specta'bilis* (showy). See DORYCNIUM SPECTABILE.

HARDY ANNUALS.

L. angusti'ssimus (narrowest-*podded*). 1. May. Britain.
„ *ara'bicus* (Arabian). ½. Pink. July. Arabia. 1773.
„ *arena'rius* (sand). ½. April. Teneriffe. 1831.
„ *biflo'rus* (two-flowered). ½. Yellow. July. Italy. 1818.
„ *cilia'tus* (hair-fringed). ½. July. Sicily. 1812.
„ *coimbrice'nsis* (Coimbra). ½. White, red. June. Portugal. 1800.
„ *cytisoi'des* (Cytisus-like). 1. June. S. Europe. 1752.
„ *decu'mbens* (lying-down). See L. TENUIFOLIUS.
„ *Diosco'ridis* (Dioscorides'). See L. PEREGRINUS.
„ *edu'lis* (eatable). ½. July. Italy. 1759.
„ *glabe'rrimus* (very smooth). See L. COIMBRICENSIS.
„ *gra'cilis* (slender). See L. ANGUSTISSIMUS.
„ *hi'spidus* (hispid). 1½. Yellow. June. Europe (England). 1804.
„ *odora'tus* (sweet-scented). See L. HISPIDUS.
„ *ornithopodioi'des* (bird's-foot-like). ½. Yellow. Mediterranean region.
„ *peregri'nus* (spreading). ½. July. S. Europe. 1658.
„ *pusi'llus* (small). ½. July. S. Europe. 1816.
„ *tenuifo'lius* (slender-leaved). ½. Yellow. July. Europe. 1816.
„ *Tetragono'lobus* (Tetragonolobus). 1. Dark brown-purple. July. Mediterranean region. 1769.

HARDY HERBACEOUS PERENNIALS.

L. conjuga'tus (joined). ½. Purple. July. Mediterranean region. 1759.
„ *cornicula'tus* (small-horned). 1½. June. Britain.
„ „ *alpi'nus* (alpine). ½. June. Switzerland. 1819.
„ „ *crassifo'lius* (thick-leaved). ½. August. S. Europe. 1812.
„ „ *flo're-ple'no* (double-flowered). ½. July. Gardens.
„ *depre'ssus* (depressed). See L. CORNICULATUS.
„ *flexuo'sus* (zigzag). ½. July. Europe. 1816.
„ *Forste'ri* (Forster's). See L. CORNICULATUS.
„ *hirsu'tus* (hairy). This is *Dorycnium hirsutum*.
„ *ma'jor* (greater). See L. ULIGINOSUS.
„ *mari'timus* (maritime). See L. SILIQUOSUS.
„ *palu'stris* (marsh). ½. June. Crete. 1821.
„ *pedunicula'tus* (*long*-flower-stalked). See L. ULIGINOSUS.
„ *pinna'tus* (pinnate). See HOSACKIA BICOLOR.
„ *portosancta'nus* (Porto Santo). July. Porto Santo. 1789. Evergreen shrub.
„ *Requie'ni* (Requien's). 1. Yellow. July. Italy. 1837.
„ *siliquo'sus* (long-podded). ½. Yellow. July. Mediterranean region. 1836.
„ *suave'olens* (sweet-scented). ½. July. S. France. 1816.
„ *tenuifo'lius* (slender-leaved). July. Europe. 1837.
„ *te'nuis* (slender). 1. July. Britain. 1816.
„ *uligino'sus* (bog). June. Europe (Britain). 1836.
„ „ *villo'sus* (shaggy). 1. June. Switzerland. 1817.

LOTUS, SACRED. *Nelu'mbium.*

LOTUS-TREE. *Diospy'ros Lo'tus.*

LOU'REA. (Named in commemoration of *Professor Loureiro* of Portugal. Nat. ord. Leguminosæ.)

A stove herb. Seeds. Fibrous loam, peat, and sand.

L. Vespertilio'nis (bat-winged). Pale purple. Trop. regions.

LOU'RYA. (A commemorative name. Nat. ord. Liliaceæ.)

Stove evergreen herbs with the habit of Aspidistra. Seeds, divisions. Fibrous loam, leaf-mould, a little well-rotted manure and sand.

L. campanula'ta (bell-shaped). 2. Yellow-white, with black disc. Cochin-China. 1889.
„ *panicula'ta* (panicled). Yellowish. Cambodia. 1888.

LOUSE. See APHIS.

LOUSEWORT. *Pedicula'ris.*

LOVE-APPLE, or TOMATO. *Lycope'rsicum escule'ntum.*

Varieties.—Of the *Red*—Earliest of All, Chemin Rouge,

Early Ruby, Duke of York, Winter Beauty, Pear-shaped, Cherry-shaped. Of the *Yellow*—Sunbeam, Golden Nugget, Golden Perfection, Large Yellow, Cherry Yellow.

Soil.—Rich, light, and on a dry subsoil. Sea-weed may be applied with advantage to the border on which it is grown, as may kelp, or common salt in small quantities. The situation must be sheltered.

Sowing.—Sow at the close of March or early in April, in a hotbed or stove. The hotbed must be of a moderate durability, earthed about six inches deep. In a hothouse, sow in pots or boxes set on the flues, or round the edges of the pits.

In whatever situation, sow thin, and not buried more than a quarter of an inch. The plants, when two or three inches high, must be thinned to three inches apart, and those removed pricked at the same distances, in a similar bed to that from which they were removed. Another plan more frequently pursued is to sow seeds in pots or pans of light soil, and to place them in any warm house with a night temperature of 55° to 60°. When the seedlings are 2 in. or 3 in. high they are potted off singly in thumb pots, watered and shaded till established. They must afterwards have plenty of light to prevent drawing, and before the roots get pot bound they are placed in 3 in. pots, and later on may get another shift into 4½ in. pots, if the weather is too cold to plant out immediately. About the end of May or beginning of June they are planted out against walls, fences, or in the open, 2 ft. to 3 ft. apart in the lines, and 4 ft. between the lines. Water and shade during midday must be afforded until they are established; and if the nights are cold during the first week or two, the shelter of a hand-glass, or even of a garden-pot, is advantageous.

The training may commence as soon as the plants are a foot long, and continued throughout their growth. Tomatoes, whether outdoors or under glass, give most satisfaction when restricted to one stem. Throughout the summer clear away all lateral shoots, as well as thin the leaves, so as to expose the fruit to the full influence of the sun.

The berries begin to ripen about the middle of August, and continue to do so until October, or the arrival of the first frosts, which always destroy the plants.

To obtain Seed.—Some of the forwardest berries must be left until perfectly ripe. It must be separated from the pulp by washing, as directed for the Cucumber.

LOVE GRASS. *Eragro'stis.*

LOVE-IN-A-MIST. *Nige'lla.*

LOVE-IN-IDLENESS. *Vi'ola tri'color.*

LOVE-LIES-BLEEDING. *Amara'ntus cauda'tus.*

LOVE-TREE. *Ce'rcis Siliqua'strum.*

LOW'EA. (Named after *Rev. Mr. Lowe*, travelling Bachelor of the University of Cambridge. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Trigynia*. Now united to Rosa.)

L. berberifo'lia (berberry-leaved). See ROSA SIMPLICIFOLIA.

LOW'IA. (Commemorative of *Mr. H. Low*, a traveller and collector. Nat. ord. Scitaminaceæ.)

Stove herbs grown for their flowers and foliage. Seeds and divisions. Fibrous loam, leaf-mould, some decayed cow manure and sand.

L. longiflo'ra (long-flowered). 3. Purplish, white. Perak. 1896.

„ *maxillarioi'des* (Maxillaria-like). 1. Purple, green. Malay Peninsula.

LOXOCO'CCUS. (From *loxos*, slanting, and *kokkos*, a berry; in allusion to the shape of the fruit. Nat. ord. Palmaceæ.)

A stove Palm. Seeds. Fibrous loam, with a third of peat and sand.

L. rupi'cola (rock-loving). 20–40. Blood-red. Leaves 5 ft. to 6 ft. Ceylon. 1878.

LOXOGRA'MMA. (From *loxos*, slanting, and *gramma*, writing; referring to the spore or seed-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Fern. See FERNS.

L. lanceola'ta (spear-head-*leaved*). Yellow. May. E. Ind.

LOXSO'MA. (From *loxos*, slanting or oblique, and *soma*, a body; in allusion to the short, oblique ring to the sporangia or spore-cases. Nat. ord. Filices.)

Greenhouse fern, with evergreen fronds. See FERNS.

L. Cunningha'mi (Cunningham's). 1–1½. Fronds leathery. New Zealand.

LOZOTENIA ROSARIA is a small moth, of which the caterpillar feeds upon the leaves of the rose-tree. Mr. Curtis says that "the eggs are laid in the summer or autumn, and hatch with the opening leaves; and the little caterpillar begins at once to form a residence by drawing two or more leaflets together, on which it feeds. This operation soon points out where the caterpillar is; and the best method which we know of getting rid of it is hand-picking, which should be practised as soon as the operation of the caterpillar becomes visible."

LUBI'NIA. (Named after *M. St. Lubin*, a French botanist. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. United to Lysimachia.)

L. a'tro-purpu'rea (dark purple). See LYSIMACHIA NUTANS.

„ *spathula'ta* (spathulate). See LYSIMACHIA MAURITIANA.

LU'CANUS CE'RVUS. The Stag Beetle may easily be recognised by its long, bony jaws, which are toothed and resemble the horns of the stag. Large numbers may sometimes be seen flying amongst trees during May and June evenings. They are mostly black, but some are reddish-brown. The female is smaller, with shorter jaws. The larvæ live in decaying wood, but rarely, if ever, do harm to the live wood of healthy trees.

LUCU'LIA. (From *luculi swa*, the native name. Nat. ord. *Cinchonads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Hymenodictyon.)

Greenhouse evergreens, from the Himalayas. Cuttings of the young shoots getting a little firm, about Midsummer, in sand, over sandy peat, well drained, and covered with a bell-glass, set in a close pit or frame, and in a fortnight supplied with a little bottom-heat; peat and loam, both fibrous, with sand and pieces of charcoal to keep it open. As soon as established as a little plant, which it will be by the following spring, to be transferred at once to a good large pot; a conservatory-bed, however, is the place where it flourishes and shows off to the best advantage, blooming in the autumn, winter, and spring months. It should also be tried against a conservative wall.

L. grati'ssima (most-welcome). 9. Pink. 1823.

„ *pincia'na* (Pince's). 5. White. 1843.

LUCU'MA. (The Peruvian name. Nat. ord. *Sapotads* [Sapotaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Sapota.)

Stove evergreen trees, with white flowers. Cuttings of the ripe shoots in sand, under a bell-glass, and in heat; rich, fibrous, sandy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

L. Bonpla'ndia (Bonpland's). 40. Cuba. 1822.

„ *delicio'sa* (delicious). 25–30. Green. Colombia. 1855.

„ *Ha'rtii* (Hart's). Trinidad.

„ *mammo'sa* (nippled). 50. S. Amer. 1739.

„ *multiflo'ra* (many-flowered). W. Indies.

„ *obova'ta* (reversed-egg-*leaved*). 40. Peru. 1822.

„ *salicifo'lia* (willow-leaved). 40. Mexico. 1823.

„ *seri'cea* (silky). Australia.

LU'DIA. (From *ludo*, to sport; referring to the various forms of leaf of *L. heterophy'lla*. Nat. ord. *Bixads* [Bixaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Prockia.)

Stove evergreen shrubs, with yellow flowers, from Mauritius. Cuttings of half-ripened shoots in sand, under a bell-glass, in bottom-heat; fibrous loam, with a little peat, and dried cow-dung. Summer temp., 60° to 85°; winter, 50° to 55°.

L. heterophy'lla (various-leaved). See L. SESSILIFLORA.

„ *sessiliflo'ra* (stalkless-flowered). 4. July. 1820.

LUDO'VIA. (Commemorative of *Louisa*, a Queen of Spain. Nat. ord. Cyclanthaceæ.)

Stove evergreens resembling dwarf Palms. Seeds, divisions. Loam, peat, and sand.

L. crenifo'lia (notched-leaved). White. Leaves plaited, leathery. Brazil. 1893.
„ *funi'fera* (cord-bearing). See CARLUDOVICA FUNIFERA.
„ *lancæfo'lia* (lance-leaved). Pale yellow. Guiana. 1862.
„ *latifo'lia* (broad-leaved). See CARLUDOVICA LATIFOLIA.

LUEDDEMA'NNIA. (Commemorative of *Herr Lueddemann*. Nat. ord. Orchidaceæ.)

Warm house Orchids. Divisions. Sphagnum, fibrous peat, leaf-mould, some nodules of charcoal, and a little sand, in baskets.

L. Lehma'nni (Lehmann's). Salmon, orange. Colombia. 1880.
„ *Pescato'rei* (Pescatore's). Yellow, red. July. Colombia. 1848.
„ *sanderia'na* (Sanderian). Cream, white, with purple blotches. Colombia. 1897.
„ „ *a'lba* (white). See LACÆNA BICOLOR ALBA.
„ *tri'loba* (three-lobed). 1. Yellow, spotted madder brown. S. Amer. 1895.

LUE'HEA. (Named after *Luehe*, a German botanist. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*. Allied to Sparmannia.)

Stove evergreens. Cuttings of half-ripened shoots, two inches in length, in sand, under a bell-glass, and plunged in bottom-heat; fibrous peat and sandy loam. Summer temp., 60° to 80°; winter, 48° to 55°.

L. caracasa'na (Caracasan). Caracas. 1847. Shrub.
„ *paniculata* (panicled). 10. Rosy. April. Brazil. 1828 Climber.

LU'FFA. Towel Gourds. (From the Arabic *louff*, the native name being adopted for *Luffa ægyptiaca*. Nat. ord. Cucurbitaceæ.)

Climbing, stove, ornamental gourds, the fibrous tissue of the fruit being used as scrubbing brushes, washing sponges, and ornamental articles. The seeds are purgative and used in medicine. Seeds. Loam, leaf-mould, a little manure and sand.

L. acuta'ngula (acute-angled). Yellow. India and Malaya.
„ *ægypti'aca* (Egyptian). Yellow. July, August. Tropics.
„ *cylí'ndrica* (cylindrical). See L. ÆGYPTIACA.
„ *echina'ta* (hedgehog). Yellow. July. S. Africa.
„ *Forska'lii* (Forskal's). Sulphur - yellow. July. Arabia. 1893.
„ *macroca'rpa* (large-fruited). See L. ÆGYPTIACA.
„ *penta'ndra* (five-stamened). See L. ÆGYPTIACA.
„ *pu'rgans* (purging). Yellow. July, August. Trop. Amer.
„ *sphæ'rica* (spherical). Yellow. July. S. Africa.

LU'HEA. See LUEHEA.

LUI'SIA. (Name not explained. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Vanda.)

Stove orchids. Detaching the side-shoots; a block of wood covered with moss, or elevated above a pot, with sphagnum, peat, crocks, &c. Temperature, 60° to 90°, when growing in summer, with a moist atmosphere; 50° to 60° in winter, and dry; 60° to 90° in spring, and rather dry, to start the flower-buds, kept cooler afterwards, and excited again when the flowering is over.

L. alpi'na (alpine). See VANDA ALPINA.
„ *amesia'na* (Amesian). Greenish-yellow, spotted dull red. Burma. 1890.
„ *brachy'stachys* (short-spiked). Yellowish. N. India.
„ *Ca'ntharis* (Cantharis). Green and purple. Lip like a small beetle. Burma. 1895.
„ *macro'tis* (large-eared). Yellow-green, violet. Himalaya. 1869.
„ *micro'ptera* (small-winged). Straw-coloured, purple. Himalaya. 1870.
„ *platyglo'ssa* (flat-lipped). See L. TERETIFOLIA.
L. Psy'che (Psyche). Green, purple. Burma. 1865.
„ *te'res* (round). Greenish, lined purple, dark purple. Japan. 1903.
„ *teretifo'lia* (round-leaved). Purple, white. Trop. Asia.
„ *trichorhi'za* (hair-rooted). Himalaya.
„ *vo'lucris* (winged). Yellow, brown-purple. Himalaya. 1893.
„ *zeyla'nica* (Cingalese). Ceylon.

LU'MA. See MYRTUS.

LUMNI'TZERA. (Named after *Lumnitzer*, a botanical author. Nat. ord. Labiatæ.)

Lumnitzera proper is maintained as a genus, but is not in cultivation.

L. tenuiflo'ra (slender-flowered). See OCIMUM SANCTUM.

LUNA'RIA. Moonwort, or Honesty. (From *luna*, the moon; referring to the shape of the seed-vessels. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Alyssum.)

Hardy plants, and flowering in May; seeds and divisions in spring. Common garden soil.

L. a'nnua (annual). 2–4. Light purple. Europe. 1570. Biennial.
„ „ *albiflo'ra* (white-flowered). White. 1570.
„ „ *corcyre'nsis* (Corfu). Blue. Corfu. 1910.
„ „ *variega'ta* (variegated). Variegated yellow-white. 1894.
„ *bie'nnis* (biennial). See L. ANNUA.
„ *redivi'va* (revived). 3. Light purple. 1596. Herbaceous perennial.

LUNGWORT. *Pulmona'ria.*

LUPINA'STER PENTAPHY'LLUS. See TRIFOLIUM LUPINASTER.

LUPINE. *Lupi'nus.*

LUPI'NUS. Lupine. (From *lupus*, a wolf; devastates land as the wolf does the fold; literally, destroyer. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

They are generally arranged into annuals, perennials, and frame evergreen shrubs; but they all produce seed so freely that it is easiest to propagate them by that means, only the evergreens, instead of being sown in the open ground, should have the assistance of a gentle hotbed to rear them before planting them out. If such kinds as *muta'bilis* and *Cruckshа'nkii* are sown in August, and kept in pots all the winter in a pit, they make splendid specimens on a lawn the following summer.

HALF-HARDY EVERGREENS.

L. a'lbifrons (white-countenanced. *Herbage hoary*). See L. CHAMISSONIS.
„ *arbo'reus* (tree). 6. Yellow. July. California. 1793.
„ *arbu'stus* (shrub). See L. LAXIFLORUS.
„ *arve'nsis* (field). 1½. Lilac. April. Peru. 1843. Biennial.
„ *bimacula'tus* (twin-spotted). See L. SUBCARNOSUS.
„ *canalicula'tus* (channelled). 4. Blue. July. Buenos Ayres. 1828.
„ *Chamisso'nis* (Chamisso's). 1. Blue. September. N.W. Amer. 1833.
„ *Cruckshа'nkii* (Cruckshank's). 5. Variegated. July. Peru. 1829.
„ *fa'llax* (deceiving). 3–5. Violet. August. California. 1894.
„ *inca'nus* (hoary-*herbaged*). Pale lilac. July. Buenos Ayres. 1830.
„ *macroca'rpus* (large-fruited). See L. ARBOREUS.
„ *mexica'nus* (Mexican). 2. Blue. February. Mexico. 1819. Biennial.
„ *multiflo'rus* (many-flowered). 4. Blue. July. Monte Video. 1810.
„ *muta'bilis* (changeable). 5. Blue, yellow. July. Bogota. 1819.
„ *pulche'llus* (pretty). 3. Blue, purple. July. Mexico. 1828.
„ *tomento'sus* (*thick*-downed). 6. Pink, white. July. Peru. 1825.
„ *versi'color* (party-coloured). 2. Pink, blue. July. Mexico. 1825.

HARDY ANNUALS.

L. affi'nis (related). ½. Deep blue. June. California. 1848.
„ *a'lbus* (white). 3. White. July. Levant. 1596.
„ *angustifo'lius* (narrow-leaved). 2. Blue. July. Spain. 1686.
„ *Barke'ri* (Mr. Barker's). 3. Blue, pink. July. Mexico. 1839.
„ *bi'color* (two-coloured). See L. MICRANTHUS.
„ *bracteola'ris* (bracted). 1½. Blue. July. Monte Video. 1820.
„ *Cosenti'ni* (Cosentin's). Sicily.
„ *densiflo'rus* (dense-flowered). ½. White, pink. July. California. 1833.
„ *Ehrenbe'rgii* (Ehrenberg's). 3. Blue. June. Mexico. 1843. Biennial.
„ *e'legans* (elegant). 2. Violet, rose. June. Mexico. 1831.
„ *exalta'tus* (tall). Mexico. 1832.
„ *Hartwe'gii* (Mr. Hartweg's). 3. Blue, pink. July. Mexico. 1838.
„ *hilaria'nus* (Hilarian). Brazil.
„ *hirsuti'ssimus* (most-hairy). ½. Red. July. California. 1838.
„ *hirsu'tus* (hairy). 2. Blue. July. S. Europe. 1629.
„ *leptoca'rpus* (slender-fruited). 3. Purple. June. Mexico. 1839. Biennial.
„ *leptophy'llus* (slender-leaved). 2. Blue, lilac. July. California. 1833.
„ *linifo'lius* (flax-leaved). See L. RETICULATUS.
„ *lu'teus* (yellow). 2. Yellow. July. Sicily. 1596.
„ *Menzie'sii* (Menzies'). See L. DENSIFLORUS.
„ *micra'nthus* (small-flowered). ½. Purple, blue. May. N. Amer. 1826.
„ *microca'rpus* (small-podded). 1½. Blue. April. N.W. Amer. 1821.
„ *muta'bilis* (changeable). Blue, purple, white. Colombia.
„ *na'nus* (dwarf). 1. Blue. July. California. 1833.
„ *pilo'sus* (shaggy). 3. Flesh. July. S. Europe. 1710.
„ *platte'nsis* (Plattan). N.W. Amer.
„ *pube'scens* (downy). 2. Violet, blue. June. Quito. 1844. Biennial.
„ *pusi'llus* (little). ½. Pale blue. July. N.W. Amer. 1817.
„ *ramosi'ssimus* (much-branched). 3. Crimson, blue. Chimborazo.
„ *reticula'tus* (netted). 2. Blue. July. Europe. 1799.
„ *Te'rmis* (Termis). 3. White. June. Egypt. 1802.
„ *texe'nsis* (Texan). See L. SUBCARNOSUS.
„ *va'rius* (variable). 3. Blue, white. July. S. Europe. 1596.

HARDY PERENNIALS.

L. arge'nteus (silvery). White. June. N.W. Amer. 1826.
„ *a'ridus* (dry). 1. Purple, blue. August. N.W. Amer. 1827.
„ *grandifo'lius* (large-leaved). See L. POLYPHYLLUS.
„ *latifo'lius* (broad-leaved). See L. RIVULARIS.
„ *laxiflo'rus* (loose-flowered). 1. Blue, pink. N.W. Amer. 1826.
„ *le'pidus* (pretty). ½. Blue, pink. August. British Columbia. 1826.
„ *leucophy'llus* (white-leaved). 2. Pink. July. N.W. Amer. 1826.
„ *littora'lis* (shore). 1. Blue, pink. July. British Columbia. 1826.
„ *lu'cidus* (shining-*leaved*). 2. Purple. July. N.W. Amer.
„ *macrophy'llus* (large-leaved). See L. POLYPHYLLUS.
„ *Michene'ri* (Michener's). ½. Dull purple or brown-green. California. 1894.
„ *moritzia'nus* (Moritzian). See L. ELEGANS.
„ *nootkate'nsis* (Nootka Sound). 2. Purple. July. Nootka Sound. 1794.
„ *orna'tus* (ornamented). 2. Blue, pink. May. British Columbia. 1826.
„ *pere'nnis* (*smooth*-perennial). 2. Blue. June. N. Amer. 1658.
„ *plumo'sus* (feathery). See L. LEUCOPHYLLUS.
„ *polyphy'llus* (many-leaved). 4. Blue. June. California. 1826.
L. polyphy'llus albiflo'rus (white-flowered). 4. White. July. California. 1826.
„ „ *Moerhei'mi* (Moerheim's). Rose to deep rose. 1908.
„ „ *ro'seus* (rosy). Pale to deep pink. 1904.
„ *rivula'ris* (river-side). 3. White, purple. April. California. 1831.
„ *Sabi'nii* (Sabine's). 3. Yellow. N.W. Amer. 1827.
„ *seri'ceus* (silky). 1. Purple. May. N.W. Amer. 1826.
„ *subcarno'sus* (fleshyish-*leaved*). 1. Blue, white. July. Texas. 1835.
„ *tri'stis* (sad-*coloured*). 4. Pale brown. July. N. Amer.
„ *villo'sus* (shaggy). ½. Pink. July. Carolina. 1787.

LUVU'NGA. (The Sanskrit name. Nat. ord. Rutaceæ.) Greenhouse climber. Cuttings in sand in a close case, with bottom-heat. Loam, peat, and sand.
L. sca'ndens (climbing). 6. India; Malaya. 1800.

LUXEMBE'RGIA. (Named after the *Duke of Luxemberg*. Nat. ord. *Ochnads* [Ochnaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)
Stove evergreen shrubs, yellow-flowered, from Brazil. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a gentle bottom-heat; peat and loam. Summer temp., 60° to 75°; winter, 48° to 55°. They require a constant liberal supply of moisture.
L. cilio'sa (hair-fringed-*leaved*). 4. June. 1841.
„ *cormybo'sa* (corymbed). See L. POLYANDRA.
„ *polya'ndra* (many-stamened). 5. May. Brazil.

LUZURIA'GA. (Commemorative of *I. M. Ruiz de Luzuriaga*, a Professor of Botany. Nat. ord. Liliaceæ.)
Greenhouse shrubs, but *L. radicans* is half-hardy. Divisions. Loam, peat, and sand.
L. ere'cta (erect). 1½. White. Chili.
„ *margina'ta* (margined). 1½. White. Chili. Fragrant.
„ *radi'cans* (rooting). 1–3. White. June to August. Chili. 1878.

LYCA'STE. (Named after a beautiful woman of Sicily. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Maxillaria.)
Stove orchids. Division of the plant, as growth is commencing; open baskets, in sphagnum, fibrous peat, and pieces of charcoal. Summer temp., 60° to 90°; winter, 50° to 60°.
L. aroma'tica (aromatic). Orange. May. Mexico. 1828.
„ „ *retu'sa* (blunt-*lipped*). 1. Yellow. May. Brazil.
„ *ayeria'na* (Ayerian). Green, drooping. Peru. 1895.
„ *Barringto'niæ* (Barrington's). Yellow, brown. April. Jamaica. 1790.
„ *brevispa'tha* (short-spathed). See L. CANDIDA.
„ *ca'ndida* (white). White, green. Central Amer. 1852.
„ *chryso'ptera* (golden-winged). Orange, yellow. Mexico. 1850.
„ *cilia'ta* (hair-fringed). July. Brazil. 1838.
„ *cinnabari'na* (cinnabar). White, apricot-red. Peru. 1893.
„ *cochlea'ta* (shell-like). Orange. Trop. Amer.
„ *Colle'yi* (Colley's). Brown. July. Demerara. 1836.
„ *consobri'na* (cousin-german). Mexico.
„ (*Paphi'nia*) *crista'ta* (crested). White, purple. British Guiana. 1843.
„ „ *modiglia'na* (Modiglian). White. Brazil. 1888.
„ *costa'ta* (ribbed). Peru. 1842.
„ *crini'ta* (hairy). 1. Yellow, brown. March. Mexico. 1840.
„ *crue'nta* (blood-coloured). 1. Orange, crimson. March. Guatemala. 1841.
„ *denningia'na* (Denningian). White-green, red-brown. S. Amer. 1876.
„ *De'ppei* (Deppe's). 1. Yellow, brown. June. Xalapa. 1828.
„ „ *præ'stans* (excelling). Large, finely-coloured. 1898.
„ „ *punctati'ssima* (much-spotted). Lip with five purple blotches. 1882.
„ *dowia'na* (Dowian). Brown, yellow-white. Costa Rica. 1874.
„ (*Paphi'nia*) *gra'ndis* (grand). Red-purple. October. Brazil.
„ *fulve'scens* (tawny). 2. Brown, orange. Colombia.

L. gigante'a (gigantic). 2. Greenish. August. Guayaquil. 1848.
„ *Harriso'niæ* (Mrs. Harrison's). See BIFRENARIA HARRISONIÆ.
„ *hennisia'na* (Hennisian). Green, white. Colombia. 1906.
„ *imschootia'na* (Imschootian). Pale brown, yellow, red. 1893.
„ (*Co'lax*) *jugo'sa* (joined). White, purple. Brazil. 1867.
„ *la'nipes* (woolly-flower-stalked). Purple, green. Guayaquil. 1848.
„ *lasioglo'ssa* (woolly-lipped). Green, yellow. Guatemala. 1872.
„ *la'ta* (broad). Green, white. Peru. 1910.
„ *lawrencea'na* (Lawrencean). See L. CANDIDA.
„ *leuca'ntha* (white-flowered). White, green. Central Amer. 1850.
„ *lindenia'na* (Lindenian). White, red-purple. S. Amer.
„ *Linguе'lla* (small-tongued). Green-white. Peru. 1871.
„ *Locu'sta* (Locust). Green, white. Peru. 1879.
„ *Lucia'ni* (Lucian's). Pale brown, pink, white. 1893.
„ *macrobu'lbon* (large-bulbed). Yellow, crimson. Colombia. 1850.
„ *macrophy'lla* (large-leaved). Green, brown, white. December. Mexico. 1837.
„ „ *measuresia'na* (Measuresian). Richly-spotted with purple. Bolivia. 1887.
„ *macropo'gon* (large-bearded). Orange. Costa Rica. 1888.
„ *mesochla'na* (middle-robed). Green. Peru. 1853.
„ *micheli'a'na* (Michelian). Yellow. Segments broader than *L. aromatica*. Mexico. 1900.
„ *peruvia'na* (Peruvian). Tawny-brown, white. Peru. 1910.
„ *pla'na* (flat-*flowered*). See L. MACROPHYLLA.
„ *Puy'dtii* (Puydt's). Green, brown, violet. Brazil. 1880.
„ *Ra'ndi* (Rand's). Purple-red, barred with white.
„ *Rogerso'ni* (Rogerson's). White, rose-pink, ruby-red. 1901.
„ *rossia'na* (Rossian). Green-yellow, orange-yellow, brown. Trop. Amer. 1893.
„ (*Paphi'nia*) *rugo'sa* (wrinkled). Yellow, purple. Colombia. 1879.
„ „ *Kalbre'yeri* (Kalbreyer's). Yellow, brown-purple. Colombia. 1880.
„ „ *sanderia'na* (Sanderian). Soft yellow, brown, white. Colombia. 1879.
„ *schilleria'na* (Schillerian). Green, white. Central Amer.
„ „ *Lehma'nni* (Lehmann's). Lip spotted with rosy-carmine. Colombia. 1890.
„ „ *magni'fica* (magnificent). Sepals olive; petals and lip white. 1904.
„ *Ski'nneri* (Skinner's). 1. White, crimson. October. Guatemala. 1842.
„ „ *a'lba* (white). White. October. Guatemala. 1841.
„ *smeea'na* (Smeean). White, purple. 1883.
„ *sulphu'rea* (sulphur). Sulphur, spotted with red and purple. 1882.
„ *tetrago'na* (four-angled). ¾. Greenish. Brazil. 1842.
„ *tri'color* (three-coloured). Pale rose. Guatemala. 1852.
„ „ *a'lbens* (whitish). Sepals pale green; petals white. 1906.
„ *Tunsti'lli* (Tunstill's). Sepals rose; petals white; lip ruby-red. 1901.
„ *tyria'nthina* (bright violet). See BIFRENARIA TYRIANTHINA.
„ (*Co'lax*) *vi'ridis* (green). Green. Brazil.
„ *Witti'gii* (Wittig's). White, purple, violet-purple. Brazil. 1878.
„ *xytrio'phora* (pot-bearing). Brown, yellow, purple. Ecuador. 1868.

LY'CHNIS. (From *luchnos*, a lamp; referring to the brilliancy of the flowers. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)

The hardy herbaceous are chiefly cultivated; seed, division, and cuttings under a hand-light of the young shoots, as growth commences, in spring. Small side-shoots may be obtained from flowering stems, but they do not answer so well; rich, sandy loam. They require dividing often in spring, and fresh soil to grow in. *Grandiflo'ra* requires protection in a cold pit in winter; double flowers require more attention in changing the soil than single ones.

TENDER KINDS.

L. corona'ta (crowned). See L. GRANDIFLORA.
„ *grandiflo'ra* (large-flowered). 1½. Red. July. China. 1774. Greenhouse herbaceous.
„ *muta'bilis* (changeable). Pink. June. Andes. 1844. Stove evergreen.

HARDY ANNUALS.

L. Cœli-ro'sa (rose of heaven). 1. Flesh. July. Levant. 1713.
„ *Githa'go* (Githago). 1–2. Purple. July, August. Britain. "Corn Cockle."
„ *nicæe'nsis* (Nicean). 3. White, red. June. Nice. 1796.

HARDY HERBACEOUS.

L. a'lba (white). 1½–2. White. June to September. Britain. "White Campion."
„ „ *mu'ltiplex* (double). White. June to July.
„ „ *ro'sea* (rosy). White, red. June to September. Britain.
„ *alpi'na* (alpine). ½. Pink. April. Europe (Scotland).
„ *apе'tala* (petal-less). 1½. White. June. Lapland. 1810.
„ „ *pauciflo'ra* (few-flowered). White. June. Siberia. 1817.
„ *bungea'na* (Bungean). 1. Scarlet. July, August. China. 1834.
„ *chalcedo'nica* (Chalcedonian). 2. Scarlet. June. Russia. 1596.
„ „ *a'lba* (white). 2. White. June. Russia.
„ „ *flo're-a'lbo-ple'no* (double-white-flowered). 2. White. June. Gardens.
„ „ *flo're-ple'no* (double-flowered). Scarlet. June. Russia.
„ *corona'ria* (crowned). 3. Red. July. Italy. 1596.
„ „ *a'lba* (white). 3. White. July.
„ „ *ple'na* (double). 1½. Red. July.
„ „ *ru'bra* (red). Red. July.
„ *co'rsica* (Corsican). ½. Red. June. Corsica. 1818.
„ *dioi'ca* (dicœcious). 1–2. Rose-purple. June to August. Britain. "Red Campion."
„ „ *ple'na* (double). 1–2. Rose-purple. June, July. Britain.
„ *diu'rna* (day-*flowering*). See L. DIOICA and variety.
„ *Flo's-cu'culi* (cuckoo-flower). 1½. Pink. July. Britain.
„ „ *albiflo'ra* (white-flowered). 1½. White. July. Britain.
„ „ *ple'na* (double). 1. Pink. July.
„ „ *ru'bra-ple'na* (double-red). Red.
„ *Flo's-Jo'vis* (flower-of-Jove). 1½. Red. July. Europe. 1726.
„ *Fortu'nei* (Fortune's). See SILENE FORTUNEI.
„ *fu'lgens* (shining). 1½. Scarlet. June. Siberia. 1822.
„ *fu'lgida* (shining). See L. CHALCEDONICA.
„ *haagea'na* (Haagean). 1–1½. Scarlet. July. Japan. 1859. Hybrid.
„ *helve'tica* (Swiss-*alpine*). See L. ALPINA.
„ *himalaye'nsis* (Himalayan). Himalaya.
„ *læ'ta* (joyful). See SILENE LÆTA.
„ *Laga'scæ* (Lagasca's). ½. Purple-rose. Spain. 1867.
„ *negle'cta* (neglected). See L. VISCARIA.
„ *nu'tans* (nodding). Sikkim.
„ *pauciflo'ra* (few-flowered). Siberia.
„ *pyrena'ica* (Pyrenean). ½. White. June. Pyrenees. 1819.
„ *Sarto'ri* (Sartor's). 1. Purple. China (?). 1906.
„ *Se'nno* (Senno). 1½. Deep red. Japan.
„ *sibi'rica* (Siberian). ½. White. June. Siberia. 1817.
„ *Siebo'ldii* (Siebold's). See L. FULGENS.
„ *specio'sa* (showy). Soft orange-scarlet. Japan. 1870.
„ *vesperti'na* (evening-*flowering*). See L. ALBA and varieties.
„ *Visca'ria* (clammy). 1. Pink. May. Britain.

L. Visca'ria a'lba (white). Pure white. An old plant reintroduced. 1908.
„ „ *ple'na* (double). 1. Red. May. Britain.
„ „ *sple'ndens* (splendid). Double, deep rose.
„ *yunnane'nsis* (Yunnan). ½–1. White. Yunnan, China. 1903.

LYCIOPLE'SIUM PUBE'RULUM and **L. PUBIFLO'RUM.** See LATUA VENENOSA.

LY'CIUM. Box Thorn. (From *lukion*, an ancient name of no meaning. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Juanulloa.)

Cuttings of ripened shoots in autumn or spring, under a hand-light; common, sandy loam. The tender kinds require protection. They are mostly of a free, rambling, half-climbing character; and *europæ'um* and its congeners are thus well fitted for covering arbours, unsightly walls, &c.; *a'frum* does well on a conservatory wall, and its fruit is pretty, and it blooms very freely.

EVERGREENS.

L. carolinia'num (Carolina). 4. Blue. July. Carolina. 1806. Hardy shrub.
„ *cine'reum* (ash-coloured). 5. Violet. June. Cape of Good Hope. 1818. Greenhouse shrub.
„ *ho'rridum* (horrid. *Very prickly*). 3. White. July. Cape of Good Hope. 1791. Greenhouse shrub.
„ *te'nue* (slender). 4. Violet. June. Cape of Good Hope. 1819. Greenhouse shrub.

DECIDUOUS CLIMBERS.

L. a'frum (African Tea Tree). 10. Violet. June. Cape of Good Hope. 1712. Tree.
„ *ba'rbarum* (Barbary). 12. Violet. June. Barbary. 1696.
„ *carno'sum* (fleshy). 4. Violet. April. S. Africa. 1795. Shrub.
„ *chile'nse* (Chilian). Chili.
„ *chine'nse* (Chinese). 6. Purple. July. China.
„ „ *ine'rme* (unarmed). Spineless. 1908.
„ „ *variega'tum* (variegated). Leaves variegated with yellow.
„ *europæ'um* (European). 12. Pink. June. S. Europe. 1730.
„ „ *chrysoca'rpum* (yellow-fruited). 12. May.
„ „ *sphæroca'rpum* (round-fruited). 12. May.
„ *fuchsioi'des* (Fuchsia-like). See IOCHROMA FUCHSIOIDES.
„ *gesneroi'des* (Gesnera-like). See IOCHROMA GESNEROIDES.
„ *grevillea'num* (Grevillean). Argentina.
„ *halimifo'lium* (Halamus-leaved). Origin unknown.
„ *japo'nicum* (Japanese). See SERISSA FŒTIDA.
„ *lanceola'tum* (spear-head-*leaved*). See L. CHINENSE.
„ *microphy'llum* (small-leaved). 4. Violet. June. Cape of Good Hope. 1795.
„ *pa'llidum* (pale). Green, tinged purple. Berries red. New Mexico. 1888.
„ *rhombifo'lium* (diamond-leaved). China.
„ *Ri'chii* (Rich's). California.
„ *ri'gidum* (stiff). See L. CARNOSUM.
„ *ruthe'nicum* (Russian). 6. White. Siberia. 1804.
„ „ *ca'spicum* (Caspian). July. Caspian Sea.
„ *Sha'wii* (Shaw's). 8. Pink. July. Cape of Good Hope. 1700. Greenhouse climber.
„ *subglobo'sum* (subglobular). Violet. Country unknown.
„ *tetra'ndrum* (four-stamened). 4. Violet. June. Cape of Good Hope. 1810.
„ *trewia'num* (Trew's). See L. CHINENSE.
„ *turbina'tum* (top-shaped). See L. CHINENSE.
„ *vulga're* (common). 8–15. Pink. June. Temperate parts of Old World. 1730.

LYCOMO'RMIUM. (From *mormolukeion*, a hideous spectre or mask, the roots of the word being transposed. Nat. ord. Orchidaceæ.)

Warm house Orchids. Division when young roots are just commencing. Sphagnum, fibre of peat and sand.

L. ceri'num (waxy). 1. Yellow. Central Amer. 1835.
„ *gutta'tum* (spotted). Yellow, purple. S. Amer. 1837.

LYCOPE'RDON. Puffballs. A genus of fungi, more or less globular, white and fleshy in the early stages of growth. The Giant Puffball (*L. giganteum*) in this stage is eaten by some, and considered a dainty, but is doubtfully wholesome after it matures and the spores ripen. Finally they become brown, burst, and give off clouds of spores, like puffs of smoke, when struck.

LYCOPE'RSICUM. Love-apple, or Tomato. (From *lukos*, a wolf, and *persicum*, a peach. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.) See LOVE-APPLE.

All annuals, except *peruvia'num*, and natives of South America. Seeds in a hotbed, in March, potted once or twice, and planted out in May; *esculе'ntum* generally against walls or palings, in order that the fruit may be ripened for sauce and soups; rich soil; the plant must be well thinned by stopping all the laterals, and finally the top, when all the fruit that will ripen has been set. To have the fruit is the object.

L. cerasifo'rme (cherry-shaped). 3. Green. July. 1800.
„ „ *lu'teum* (yellow-*fruited*). 3. Green. July. 1596.
„ *commuta'tum* (changed). See L. PERUVIANUM.
„ *esculе'ntum* (eatable). 3. Green. July. S. Amer. 1596.
„ „ *chrysoca'rpum* (yellow-fruited). 3. Green. July 1596.
„ „ *erythroca'rpum* (red-fruited). 3. Green. July. 1596.
„ „ *leucoca'rpum* (white-fruited). 3. Green. July. 1596.
„ *Humbo'ldtii* (Humboldt's). 3. Yellow. August. Brazil. 1822.
„ *peruvia'num* (Peruvian). 3. Yellow. May. 1818. Stove herbaceous.
„ *procu'mbens* (lying-down). 1. Cream. July. 1700.
„ *pyrifo'rme* (pear-shaped). 3. Yellow. August. 1823.
„ *racemi'gerum* (raceme-bearing). 3–4. Yellow-green. N. Amer. " Red Currant Tomato."

LYCOPO'DIUM. Club Moss. (From *lukos*, a wolf, and *pous*, a foot; the roots having a resemblance to that animal's paw. Nat. ord. *Lycopods* [Lycopodiaceæ]. Linn. 24-*Cryptogamia*, 3-*Lycopodineæ*.)

Stove, greenhouse or hardy, evergreen perennials, very suitable for Wardian cases, and the native, hardy ones for peaty spots on the rockery. All delight in loose, fibrous, or spongy peat. The stove and greenhouse species should be shaded. Divisions or cuttings in spring. A large number of species, formerly included in the genus, are now referred to Selaginella, which see.

L. aloifo'lium (Aloe-leaved). E. Ind.
„ *alpi'num* (alpine). ½. Europe (Britain).
„ *anno'tinum* (year-old). ½. Europe (Britain).
„ *a'podum* (stemless). See SELAGINELLA APUS.
„ *brasilie'nse* (Brazilian). See SELAGINELLA FLEXUOSA.
„ *cæ'sium* (blue). See SELAGINELLA UNCINATA.
„ „ *arbo'reum* (tree). See SELAGINELLA WILDENOVII.
„ *circina'le* (circular). See SELAGINELLA INVOLVENS.
„ *clava'tum* (clubbed). Stems trailing, 2–4 ft. long. Europe (Britain).
„ *complana'tum* (flattened). Europe.
„ *corda'tum* (heart-shaped). See SELAGINELLA CORDIFOLIA.
„ *cra'ssum* (thick). Peru.
„ *denticula'tum* (toothletted). See SELAGINELLA DENTICULATA.
„ *dicho'tomum* (forked). W. Ind.
„ *flabella'tum* (fan-shaped). See SELAGINELLA FLABELLATA.
„ *Galeo'tii* (Galeott's). See SELAGINELLA GALEOTTII.
„ *gnidioi'des* (Gnidium-like). 1. S. Africa.
„ *innunda'tum* (flooded). ¼. Europe (Britain).
„ *lepidophy'llum* (slender-leaved). See SELAGINELLA LEPIDOPHYLLA.
„ *luci'dulum* (shining). ½. N. Amer.
„ *mandiocca'num* (Mandioccan). Mexico. 1871.
„ *moorea'num* (Moorean). 1. Brazil. 1892.
„ *numularifo'lium* (money-wort-leaved). 3. Malaya, &c.
„ *peruvia'num* (Peruvian). Peru.
„ *Phlegma'ria* (Phlegmaria). 3. Tropics.
„ *plumo'sum* (plumose). See SELAGINELLA PLUMOSA.
„ *pseu'do-squarro'sum* (false-spreading). 1–3½. Trop. Polynesia (?). 1908.

L. Scho'ttii (Schott's).
„ *selaginoi'des* (Selago-like). See SELAGINELLA SPINOSA.
„ *Sela'go* (Selago). ½. Europe (Britain).
„ *serra'tum* (sawed). Japan.
„ *squarro'sum* (spreading). Leaves spreading. Trop. Asia. 1881.
„ *stoloni'ferum* (stolon-bearing). See SELAGINELLA FLEXUOSA.
„ *stri'ctum* (upright). Madagascar.
„ *taxifo'lium* (yew-leaved). 2. Trop. Amer.
„ *tetrago'num* (four-angled). ½. Peru.
„ *tetra'stichum* (four-ranked). Java. 1869.
„ *ulicifo'lium* (Ulex-leaved). 2. Stems pendulous. Himalaya. 1880.
„ *va'rium* (varying). Tasmania.
„ *volu'bile* (twining). New Zealand.
„ *Willdeno'vii* (Wildenow's). See SELAGINELLA WILLDENOVII.

LYCO'PSIS. (From *lukos*, a wolf, and *ops*, the eye; a fanciful comparison of the blue flowers to the eye of a wolf. Nat. ord. Boraginaceæ.)

Hardy annuals, easily reared from seeds in ordinary garden soil.

L. arve'nsis (field). 1–2. Blue. July, August. Europe (Britain).
„ *orienta'lis* (oriental). 2. Blue. July, August. S. Europe. 1796.
„ *variega'ta* (variegated). 1. Blue. June, July. Caucasus. 1683.

LYCO'RIS. (The name of a woman in Roman history. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Vallota.)

Hardy bulbs, from China and Japan. *L. au'rea* is a pretty bulb, with greyish leaves, requiring a deep, sandy-soiled border; but, as it grows all the winter, it is best kept in a pot. *Radia'ta* is a shy bloomer. For culture, see AMARYLLIS.

L au'rea (golden). 1. Yellow. August. 1777.
„ *incarna'ta* (flesh-coloured). 1–1½. Pale flesh to bright rose, fragrant. Central China. 1906.
„ *radia'ta* (rayed). 1½. Pink. June. 1758.
„ „ *pu'mila* (dwarf). ½. Pink. Central China. 1902.
„ *sangui'nea* (blood-coloured). 1–1½. Carmine. Japan. 1888.
„ *Sewerzo'wi* (Sewerzow's). See UNGERNIA TRISPHÆRA.
„ *Sprengé'ri* (Sprenger's). Rose-pink to purple-rose. Japan (?). 1902.
„ *squami'gera* (scale-bearing). 2–3. Rose. Japan. 1888.
„ *strami'nea* (straw-coloured-*flowered*). Striped. June. 1847.
„ *Terracia'nii* (Terracian's). Crimson, edged white when fading. 1889.

LYGODI'CTYON. (From *Lygodium* and *dictuon*, a net; in allusion to the netted veins. Nat. ord. Filices.)

A handsome, climbing fern, requiring stove treatment. Divisions. Loam, peat, and sand, with plenty of moisture in summer.

L. Forsté'ri (Forster's). Fronds pinnate. Polynesia. 1882.

LYGO'DIUM. Snake's Tongue. (From *lugodes*, flexible; referring to the twining habit. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove climbing Ferns. See FERNS.

L. articula'tum (jointed). Brown, yellow. May. New Zealand. 1844.
„ *circina'tum* (curled). 6. Brown. August. E. Ind. 1823.
„ *flexuo'sum* (zigzag). Brown, yellow. May. E. Ind. 1834.
„ *hasta'tum* (halbert-shaped). See L. VOLUBILE.
„ *japo'nicum* (Japanese). Brown, yellow. May. Japan. 1830.
„ *mexica'num* (Mexican). Brown. Mexico. 1831.
„ *palma'tum* (hand-shaped). 6. Brown. August. N. Amer.
„ *polymo'rphum* (many-form). See L. VENUSTUM.
„ *reticula'tum* (netted). See LYGODICTYON FORSTERI.
„ *sca'ndens* (climbing). 6. Brown. May. E. Ind. 1793.
„ „ *Fulché'ri* (Fulcher's). Pinnæ larger. Polynesia. 1882.
L. venu'stum (pleasing). Brown, yellow. May. S. Amer. 1820.
„ *volu'bile* (twining). 6. Brown. August. W. Ind. 1810.

LIMNOPHY'TON. (From *limnos*, a brook, and *phuton*, a plant; the habitat of the plant. Nat. ord. Alismaceæ. Allied to Sagittaria.)

Stove aquatic herb with arrow-shaped leaves and persistent sepals. Seeds, divisions in spring. Rich, loamy soil in a tank or tub.

L. obtusifo'lium (blunt-leaved). 2. White. July. Trop. Asia and Africa. 1804.

LYO'NIA. (Named, by Nuttall, after *J. Lyon*, an American collector of plants. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Andromeda.)

Hardy white-flowered evergreens, from North America. Chiefly by layers, in a damp, peat border; also by seeds in sandy peat, best under hand-lights, and sparingly covered; sandy peat, and cool situation. Several species of Andromeda should be moved to this genus.

L. capreæfo'lia (tendril-leaved). See L. LIGUSTRINA.
„ *fascicula'ta* (bundled). 20. White. April. Jamaica. 1824. Stove.
„ *ferrugi'nea* (rusty). 3. June. 1734.
„ *frondo'sa* (leafy). See L. LIGUSTRINA.
„ *jamaice'nsis* (Jamaican). 2–6. White. June. Jamaica. 1793. Stove.
„ *ligustri'na* (privet-leaved). 3–8. White. June. N. Amer. 1746.
„ „ *pube'scens* (downy). Leaves downy. June.
„ „ *salicifo'lia* (willow-leaved). See L. LIGUSTRINA.
„ *multiflo'ra* (many-flowered). See L. LIGUSTRINA.
„ *panicula'ta* (panicled). See L. LIGUSTRINA.
„ *ri'gida* (stiff). See L. FERRUGINEA.
„ *rubigino'sa* (rusty). 5–8. White. July. W. Ind. 1736. Stove.
„ *salicifo'lia* (willow-leaved). See L. LIGUSTRINA.

LYO'NSIA. (Named after *J. Lyons*, who first taught botany to Sir Joseph Banks. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Parsonsia.)

Greenhouse evergreen twiner. Cuttings of the young shoots in sand, under a glass, and in a close frame, in April; sandy peat, with a little fibrous loam. Winter temp., 40° to 48°.

L. strami'nea (straw-coloured). 6. Striped. June. Australia. 1820.

LYPE'RIA. (From *luperos*, sad; from the dullness of some of the flowers. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Manulea.)

Greenhouse evergreens, from South Africa. By seed in a slight hotbed, in March and April, and cuttings of young shoots in spring and autumn, in sandy soil, under a hand-glass; sandy loam; the protection of a cold pit or greenhouse in winter.

L. arge'ntea (silvery). 1½. White. August. 1801. Annual.
„ *fra'grans* (fragrant). ½. White, purple. June. 1776.
„ *peduncula'ta* (*long*-flower-stalked). 1½. White. August. 1790.
„ *pinnati'fida* (leaflet-like-*leaved*). ½. Purple. July. 1840.
„ *tri'stis* (sad). 1. Dull purple. May. 1825.
„ *viola'cea* (violet). 2. Violet. July. 1816.

LYSI'CHITUM. (From *lusis*, the act of loosing or freeing, and *chiton*, a tunic; the spathe is spread open so that the spadix is exposed. Nat. ord. Araceæ.)

Hardy Aroid, and perennial. Seeds; divisions in spring. Any good loamy, well-drained soil in a shady situation, and moist soil. It is highly interesting and ornamental.

L. camtschatce'nse (Kamtschatkan). 1–2½. Yellow. May. Asia; N. Amer. 1903.
„ „ *a'lbum* (white). Pure white. 1909.

LYSIMA'CHIA. Loosestrife. (From *lusis*, concluding, and *mache*, strife; supposed soothing qualities. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

All yellow-flowered, except where otherwise mentioned. Division in spring, and cuttings of the young shoots under a hand-light, in sandy loam, in a shady corner. There are a few annuals and biennials not worth culture.

GREENHOUSE.

L. a'tro-purpu'rea (dark purple). 1. Dark purple. August. Levant. 1820. Herbaceous.
„ *ca'ndida* (white). See L. OBOVATA.
„ *macula'ta* (spotted). ½. June. N. Holland. 1822. Evergreen trailer.
„ *nu'tans* (nodding). 2. Red or purple. July. S. Africa. 1820.
„ *obova'ta* (obovate). 1. White. June. India; China. 1846. Herbaceous.

HARDY HERBACEOUS.

L. acroade'nia (top-glanded). See L. DECURRENS.
„ *affi'nis* (related). 2½. July.
„ *angustifo'lia* (narrow-leaved). See L. STRICTA.
„ *azo'rica* (Azorean). See L. NEMORUM.
„ *bary'stachys* (dense-spiked). 1–2. White. Japan. 1881.
„ *brachy'stachys* (short-spiked). See L. BARYSTACHYS.
„ *bulbi'fera* (bulb-bearing). See L. STRICTA.
„ *capita'ta* (headed). See L. THYRSIFLORA.
„ *cilia'ta* (hair-fringed). See STEIRONEMA CILIATUM.
„ *clethroi'des* (Clethra-like). 2–3. White. Japan. 1869.
„ *cri'spidens* (crisped-toothed). ½. Rose-pink. Central China. 1903.
„ *davu'rica* (Dahurian). Siberia.
„ *decu'rrens* (decurrent). China and Japan.
„ *du'bia* (doubtful). 1. Purple. Asia Minor, Persia, &c.
„ *Ephe'merum* (transient). 2. White. August. Spain. 1730.
„ *Fortu'nei* (Fortune's). China and Japan.
„ *Fra'seri* (Fraser's). 1. Yellow. July. N. Amer.
„ *He'nryi* (Dr. Henry's). ½. Yellow. Central China. 1903.
„ *hy'brida* (hybrid). See STEIRONEMA HETEROPHYLLUM.
„ *java'nica* (Javanese). See L. DECURRENS.
„ *lanceola'ta* (lance-shaped). See L. FRASERI.
„ *Leschenau'ltii* (Leschenault's). India.
„ *linear'loba* (linear-lobed). See L. MAURITIANA.
„ *lobelioi'des* (Lobelia-like). 1. White. July. North of India. 1840.
„ *longifo'lia* (long-leaved). See STEIRONEMA LONGIFOLIUM.
„ *mauritia'na* (Mauritian). 2. White. China. 1856.
„ *nemo'rum* (grove). ½. Yellow. June to August. Europe (Britain). "Yellow Pimpernel."
„ *Nummula'ria* (moneywort-like). ½. June. Britain. Evergreen. "Creeping Jenny."
„ *paludo'sa* (marsh). See L. VULGARIS.
„ *paridifo'rmis* (Paris-like). 1. Bright yellow. July. Central China. 1891.
„ *puncta'ta* (dotted). 1½. July. Europe. 1658.
„ *quadrifo'lia* (four-leaved). 2. July. N. Amer. 1794.
„ *ramo'sa* (branched). Himalaya.
„ *salicifo'lia* (willow-leaved). See L. EPHEMERUM.
„ *stenose'pala* (narrow-sepaled). 2–3. White. Central China. 1903.
„ *stri'cta* (erect). 1½. July. N. Amer. 1781.
„ *thyrsiflo'ra* (thyrse-flowered). 1½. June. England. Aquatic.
„ *verticilla'ta* (whorled). See L. PUNCTATA.
„ *vulga'ris* (common). 2–4. Yellow. July, August. Europe (Britain).

LYSINE'MA. (From *lusis*, freeing, and *nema*, a filament. The stamens not adhering to the sides of the corolla, as is usual in this Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Epacris.)

Greenhouse evergreen shrubs, from Australia. Cuttings of the young shoots, getting firm at the base—short shoots a couple of inches in length are the best—in sand, under a bell-glass, in the beginning of summer; rough, sandy peat, with pieces of charcoal, broken bricks, and freestone, and well-drained. Winter temp., 40° to 45°.

L. attenua'tum (thin). See L. PUNGENS.
„ *cilia'tum* (eye-lashed). 2. Pink. March. 1823.
L. conspi'cuum (conspicuous). 3. March. 1824.
„ *lasia'nthum* (hairy-flowered). 2. Pink. March. 1820.
„ *pentape'talum* (five-petaled). See L. CILIATUM.
„ *pu'ngens* (pungent). 2. White. March. 1804.
„ „ *ru'brum* (red). 2. Red. March. 1804.

LYSIONO'TUS. (From *lusis*, freeing, and *notos*, the back; seed-vessel opening from the back. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Agalmyla.)

Stove herbaceous. Seeds in light, sandy soil, in a hot-bed, in spring; division of the plant at the same time; peat and loam. Summer temp., 60° to 75°; winter, 45° to 50°.

L. carno'sa (fleshy). 1½. White, tinged with lilac. China. 1900.
„ *longiflo'ra* (long-flowered). See ÆSCHYNANTHUS LONGIFLORUS.
„ *serra'ta* (sawed). 1–2. Pale lilac or pale blue. Subtropical Himalayas.
„ *ternifo'lia* (three-leaved). See L. SERRATA.

LYSISTI'GMA. (From *lusis*, freeing or separation, and *stigma*, the stigma; in allusion to the stigmas being free or 3–6 lobed. Nat. ord. Araceæ. Referred by the genera Plantarum to Taccarum.)

L. peregri'num (foreign). See TACCARUM CYLINDRICUM.

LY'THRUM. (From *luthron*, black-blood; the prevailing purple colour of the flowers. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

All purple-flowered, except *linea're*. Seeds of annuals, in the common border, in spring; perennials, by division at the same time. *Ala'tum* is an old resident of the greenhouse, propagated by division and cuttings of the young shoots, or the points of old ones, and forms a fair bed of purple for the flower-garden in summer, requiring the greenhouse or cold frame in winter. The following are all hardy herbaceous, except *ala'tum*, just mentioned, and *Hyssopifo'lia* and *Græ'feri*, which are hardy annuals.

L. ala'tum (wing-*stalked*). 3. July. N. Amer. 1800.
„ *diffu'sum* (spreading). See L. SALICARIA.
„ *frutico'sum* (shrubby). See WOODFORDIA FLORIBUNDA.
„ *Græ'feri* (Græffer's). 1½. July. Italy. 1800.
„ *Hyssopifo'lia* (hyssop-leaved). ½–1½. Pink. June to September. Temperate regions (England).
„ *lanceola'tum* (spear-head-*leaved*). See L. ALATUM.
„ *linea're* (narrow-*leaved*). 1½. White. July. N. Amer. 1812.
„ *myrtifo'lium* (myrtle-leaved). 2. July. N. Amer. 1820.
„ *Salica'ria* (willow-like). 4. July. Britain.
„ „ *ro'sea* (rosy). Deep, bright rose.
„ *thymifo'lia* (thyme-leaved) of Allioni. See L. GRÆFFERI.
„ *tomento'sum* (woolly). See L. SALICARIA.
„ *virga'tum* (twiggy). 3. July. Austria. 1776.
„ *Vulnera'ria* (Vulneraria). See L. ALATUM.

M

MAA'CKIA AMURE'NSIS. See CLADRASTIS AMURENSIS.

MA'BA. (From the native name. Nat. ord. *Ebenads* [Ebenaceæ]. Linn. 22-*Dicœcia*, 6-*Hexandria*. Allied to Diospyros.)

Stove evergreen shrubs. Cuttings of half-ripened shoots in May, under a glass, in sand, over fibrous peat, and a very slight bottom-heat; peat and loam.

M. buxifo'lia (box-leaved). 1½. Yellow. Asia and Trop. Africa. 1810. Stove.
„ *lauri'na* (laurel-like). 3. July. Australia. 1824.
„ *natale'nsis* (Natal). S. Africa.

MACADA'MIA. (Commemorative of *John Macadam* of Victoria. Nat. ord. Proteaceæ.)

Greenhouse, evergreen tree of economic importance in Queensland. Cuttings of mature shoots in peat and sand, under a bell-glass, and kept covered till the callus forms, when a gentle bottom-heat may be given. Peat, loam, and sand.

M. ternifo'lia (three-leaved). 5–30. Australia. 1869. "Queensland Nut."

MACARA'NGA. (The native name of the plant. Nat. ord. Euphorbiaceæ.)

Stove trees with large leaves. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and plenty of sand.

M. kilimandscha'rica (Kilimandjaran). Leaves bronze when young. German E. Africa. 1904.
„ *occidenta'lis* (western). S. Africa.
„ *portea'na* (Portean). 10–30. Philippines. 1888.
„ *Roxbu'rghii* (Roxburgh's). India.
„ *sacci'fera* (sack-bearing). Branches covered with tawny-yellow hairs. Congo. 1910.

MACBRI'DEA. (Named after *Dr. Macbride*, of S. Carolina. Nat. ord. *Labiates*, or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Melittis.)

Greenhouse evergreen. Cuttings of young shoots, getting firm at their base, in May; loam and a little sandy peat, well drained.

M. pu'lchra (pretty). Red-striped. July. Carolina. 1804.

MACFADYE'NA. (A commemorative name. Nat. ord. Bignoniaceæ.)

Vigorous evergreen stove climbers, with showy flowers. Seeds; cuttings of short, stiff side-shoots in summer, inserted in sand and placed in a close case with bottom-heat. Loam, peat, and sand.

M. bracteo'sa (large-bracted). 8. White. Guiana. 1823.
„ *corymbo'sa* (corymbed). 6. Yellow. Trinidad. 1824.
„ *denta'ta* (toothed). Known in gardens as *Bignonia Fraseri*. 1903.
„ *uncina'ta* (hooked). Panama.

MACHÆRANTHE'RA. (From *makaira*, a bent sword, and *anthera*, an anther; alluding to the shape of that part of the flower. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

M. tanacetifo'lia (tansy-leaved). 1. Purple. July. New Mexico. 1851. This is *A'ster tanacetifo'lius*.

MACHÆ'RIUM. (From *makaira*, a bent pod; in allusion to the shape of the winged pod. Nat. ord. Leguminosæ.)

Tall evergreen shrubs or trees, requiring stove treatment. Cuttings of half-ripe wood, in sand, placed in a close case with bottom-heat. Loam, peat, and sand. The trees are the rosewoods of Southern Brazil.

M. acule'atum (prickly). 12. Brazil. 1824.
„ *arbo'reum* (tree). 6. White. S. Amer. 1823.
„ *fi'rmum* (firm). 40–60. Leaves finely divided. Brazil.
„ *micro'pterum* (small-winged). 10. White. July. Gardens of Teneriffe. 1820.
„ *robiniæfo'lium* (Robinia-leaved). 6. St. Vincent. 1824.
„ *Ti'pa* (Tipa). 40–80. Leaves light, elegant. Southern Brazil. 1900.

MACKA'YA. (Commemorative of *Dr. J. F. Mackay*, a superintendent of the Dublin University Botanic Garden. Nat. ord. Acanthaceæ. Now referred to Asystasia.)

M. be'lla (pretty). See ASYSTASIA BELLA.

MACLEA'NIA. (Named after *John Maclean, Esq.*, of Lima, a British merchant, and a distinguished patron of botany. Nat. ord. *Cranberries* [Vacciniaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Thibaudia.)

Greenhouse evergreens. Cuttings under a hand-light or bell-glass of the points of the shoots, when getting firm at their base, in sand, and kept close in a cold pit, a little air left under the glass, if placed in a slight hotbed; sandy loam and fibrous peat. Winter temp., 40° to 48°.

M. angula'ta (angled). 3. Red, yellow. June. Peru. 1842.
„ *cocci'nea* (scarlet). 2–3. Scarlet, yellow. Mexico and Peru. 1851.
„ *corda'ta* (heart-*leaved*). Orange. Peru. 1848.
„ *longiflo'ra* (long-flowered). 5. Red. May. Peru. 1844.
„ *pu'lchra* (beautiful). Scarlet, yellow. Colombia. 1874. Stove.
„ *puncta'ta* (spotted). Red, yellow. Ecuador. 1848.
„ *speciosi'ssima* (very showy). Scarlet, yellow. Colombia. 1864. Stove.
„ *tenuifo'lia* (thin-leaved). See M. LONGIFLORA.

MACLEA'YA. (Named after *A. Macleay*, a British naturalist. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. United to Bocconia.)

M. corda'ta (heart-*leaved*). See BOCCONIA CORDATA.

MACLU'RA. (Named after *W. Maclure*, a North American geologist. Nat. ord. *Nettleworts* [Urticaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria*. Allied to Broussonetia.)

Cuttings of ripe shoots under a glass, in heat; *auranti'aca* by cuttings of the root and layers; soil, peat and loam. Although *aurantiaca* is hardy it requires a warm situation.

M. aurantia'ca (*Osage*-orange). 20. N. Amer. 1818. Hardy deciduous.
„ „ *iné'rmis* (unarmed). A spineless variety. 1896.
„ *Plumie'ri* (Plumier's). See CHLOROPHORA TINCTORIA PLUMIERI.
„ *tincto'ria* (dyer's). See CHLOROPHORA TINCTORIA.
„ *tricuspida'ta* (three-pointed). China. 1864.

MACO'DES. (Derivation not very clear. Nat. ord. Orchidaceæ.)

Terrestrial stove orchids with very handsome foliage. Divisions or cuttings when growth is commencing, under a bell-glass in the stove. Fibrous peat, sphagnum, bits of charcoal, and sand.

M. java'nica (Javanese). Orange-red, yellow. Leaves velvety olive, with green veins. Java. 1888.
„ *Peto'la* (Petola). Leaves velvety olive, with yellow netting. Java. 1859.
„ *sanderia'na* (Sanderian). Leaves dark olive-green, netted yellow. Sunda Islands.
„ *Vei'tchii* (Veitch's). Philippine Islands.

MACRADE'NIA. (From *makros*, long, and *aden*, a gland; referring to the long process of the pollen-masses. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Notylia.)

Stove orchids. Division when growth is commencing; fibrous peat, charcoal, and broken pots and sphagnum; the plants raised above the pot requiring a strong, moist heat in the orchid-house when growth is proceeding, and cooler and drier when resting.

M. Brassa'volæ (Brassavola-like). White, yellow, purple. Guatemala. 1864.
„ *lute'scens* (clay-coloured). ½. Olive. November. Trinidad. 1821.
„ *tria'ndra* (three-anthered). Pale green, red inside. Guiana; Cuba.

MACRÆ'A. See VIVIANIA.

MACRA'NTHUS. (From *makros*, long, and *anthos*, a flower. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. See MUCUNA.

M. cochinchine'nsis (Cochin-China). See MUCUNA COCHINCHINENSIS.

MACROCHI'LUS FRYA'NUS. See MILTONIA SPECTABILIS.

MACROCHO'RDIUM. See ÆCHMEA.

MACROCNE'MUM. (From *makros*, long, and *kneme*, a leg; referring to the flower-stalks. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Portlandia.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, and in a brisk bottom-heat; peat and fibrous loam, well drained. Winter temp., 55° to 60°; summer, 60° to 85°.

M. cocci'neum (scarlet). See WARSCEWICZIA COCCINEA.
„ *jamaice'nse* (Jamaica). 14. White. Jamaica. 1806.
„ *tincto'rium* (dyeing). See CONDAMINEA TINCTORIA.

MACROLO'BIUM. (From *makros*, long, and *lobos*, a pod; it has long pods. Nat. ord. Leguminosæ.)

Stove evergreen tree or shrub. Cuttings in sand in a close frame, with bottom-heat. Loam, peat, and sand.

M. Vua'pa (Vuapa). 10. Violet. May. Trop. Amer. 1823.

MACROME'RIA. (From *makros*, long, and *meris*, a part; referring to the unusual length of the stamens. Nat. ord. *Boragewort* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Half-hardy evergreen shrub, requiring the protection of a cold pit in winter; seeds and divisions in spring; sandy loam and fibrous peat.

M. exse'rta (projecting-*stamened*). 3. Yellow. September. Mexico. 1846.

MACRO'PIPER EXCE'LSUM. See PIPER EXCELSUM.

MACROPO'DIA. (From *makros*, large, and *pous, podos*, a foot; in allusion to the thick rhizomes. Macropidia is considered the correct spelling of the word. Nat. ord. Hæmodoraceæ.)

A greenhouse herb, with the habit of Anigozanthus. Divisions in spring. Fibrous loam and peat in equal parts, with sand.

M. fuligino'sa (sooty). See M. FUMOSA.
„ *fumo'sa* (smoky). 2–3. Dusky yellow. June. Australia.

MACROSCE'PIS. (From *makros*, large, and *skepe*, a wrapper. Nat. ord. Asclepiadaceæ.)

Evergreen stove twiners. Seeds; cuttings of side-shoots in sand, with bottom-heat. Loam, peat, and sand.

M. elli'ptica (elliptic). Olive-green. Brazil. 1898.
„ *obova'ta* (obovate). Brownish. Autumn. Mexico; Trop. Amer.

MACROSPHY'RA. (From *makros*, large, and *sphura*, a hammer; in allusion to the large stigma. Nat. ord. Rubiaceæ.)

Evergreen, stove shrub. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, peat, and sand.

M. longi'styla (long-styled). 3–5. Green, white. Trop. Africa. 1845.

MACROSTI'GMA TUPISTROI'DES. See TUPISTRA SQUALIDA.

MACRO'STYLIS. (From *makros*, long, and *stulis*, a style, or female organ. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Agathosma.)

Greenhouse evergreen shrubs, from South Africa. Cuttings of young shoots getting firm, in April or May, in sand, under a bell-glass, and kept in a close place, but without bottom-heat; sandy peat and fibrous loam, but most of the former. Winter temp., 40° to 48°.

M. barba'ta (bearded). See M. LANCEOLATA.
„ *barbi'gera* (beard-bearing). Lilac. April. 1826.
„ *corda'ta* (heart-*leaved*). See AGATHOSMA IMBRICATA.
„ *lanceola'ta* (lance-shaped). 2. White. May. 1810.
„ *obtu'sa* (blunt-*leaved*). See M. SQUARROSA.
„ *ova'ta* (egg-shaped). 2. Purple. May. 1774.
„ *squarro'sa* (spreading). Lilac. April. 1774.
„ „ *oblo'nga* (oblong). 2. Purple. May. 1774.

MACROTO'MIA. (From *makros*, large, and *tomion*, a piece cut off. Nat. ord. Boraginaceæ.)

Hardy and half-hardy perennials suitable for the rockery. Seeds; cuttings in sand in a cold frame kept close during July and August. Loam, leaf-mould, and sand, or any rich light soil.

M. Bentha'mi (Bentham's). 1–3. Brownish-purple. Himalaya. 1888.
„ *Cephalo'tes* (Cephalotes). Golden-yellow. Greece; Asia Minor. 1896.
„ *echioi'des* (Echium-like). ½–¾. Yellow, with five dark spots. June. Orient.

MACRO'TROPIS. (From *makros*, long, and *tropis*, a keel; referring to the length and name of the lower part of a pea-flower. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Sophora.)

Greenhouse evergreen shrubs, from China. Cuttings of small side-shoots, taken off in spring, in sand, under a bell-glass; seeds sown in a slight hotbed, and potted off when up; peat and loam, in equal divisions. Winter temp., 40° to 48°.

M. fœ'tida (fetid). See ANAGYRIS SINENSIS.
„ *inodo'ra* (scentless). See ANAGYRIS INODORA.

MACROZA'MIA. (From *makros*, large, and *Zamia*. Nat. ord. Cycadaceæ.)

Stove or greenhouse evergreens, preferring a moist atmosphere when making their young leaves. Imported seeds or plants; occasionally offsets may be detached. Fibrous loam, peat, and sand.

M. calo'coma (beautiful-haired). See MICROCYCAS CALOCOMA.
„ *cora'llipes* (red-stalked). See M. SPIRALIS CORALLIPES.
„ „ *gyra'ta* (twisted). See M. SPIRALIS.
„ *cyli'ndrica* (cylindrical). Australia. 1874.
„ *Deniso'ni* (Denison's). See M. PEROFFSKYANA.
„ *eleganti'ssima* (very elegant). Australia. 1873.
„ *erio'lepis* (woolly-scaled). See M. PEROFFSKYANA.
„ *exce'lsa* (tall). S. Africa. 1869.
„ *Fra'seri* (Fraser's). Stem 4–5 ft. in girth. Australia. 1846.
„ *Ho'pei* (Hope's). 40–60. Australia. 1865.
„ *Macdonne'lli* (Macdonnell's). See M. FRASERI.
„ *Macke'nzii* (Mackenzie's). Trunk thick. Australia. 1877.
„ *Macle'yi* (Macleay's). See M. SPIRALIS.
„ *magni'fica* (magnificent). Australia. 1870.
„ *Miquе'lii* (Miquel's). Australia. 1876.
„ „ *oblongifo'lia* (oblong-leaved). Leaflets broader.
„ *Moo'rei* (Moore's). Australia.
„ *Pau'li-Guilie'lmi* (Paul-William's). Australia. 1874.
„ *peroffskya'na* (Peroffskyan). Australia. 1870.
„ *perowskia'na* (Perowskian). See M. PEROFFSKYANA.
„ *plumo'sa* (plumy). See M. PAULI-GUILIELMI.
„ *spira'lis* (spiral). 2–3. July. Australia. 1796.
„ „ *cora'llipes* (coral-stalked). Leaf-stalk reddish-brown near the base. 1872.
„ „ *ebu'rnea* (ivory). Australia. 1873.
„ *tridenta'ta* (three-toothed). See M. MIQUELII.
„ „ *oblongifo'lia* (oblong-leaved). See M. MIQUELII OBLONGIFOLIA.

MADAGASCAR NUTMEG. *Agathophy'llum.*

MADAGASCAR POTATO. *Sola'num Angui'vi.*

MAD-APPLE. *Sola'num Melonge'na.*

MADA'RIA. See MADIA.

MADDER. *Ru'bia tincto'rum.*

MA'DIA. (The Chilian name of *M. sati'va*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Layia.)

Hardy annuals. Seeds in a slight hotbed, in March or April, and afterwards transplanted or sown in the middle of May, on a warm border, where they are to bloom; any garden soil, if not fully exposed to the midday sun, for then there will be no danger of a rusty appearance.

M. capita'ta (headed). See M. SATIVA CONGESTA.
„ *corymbo'sa* (corymbed). See M. ELEGANS.
„ *e'legans* (elegant). 1½. Yellow. August. N.W. Amer. 1831.
„ *sati'va* (cultivated). Yellow. July. Chili. 1794. "Madia Oil Plant."
„ „ *conge'sta* (crowded). Flowers in a head.
„ „ *racemo'sa* (racemed). Flowers in a raceme.
„ *visco'sa* (clammy). See M. SATIVA.

MADWORT. *Aly'ssum.*

MÆ'SA. (From *maas*, the Arabic name of one of the species. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Ardisia.)

Stove evergreen shrubs, with white blossoms. By seeds, which are a considerable time in vegetating; by cuttings of the half-ripened shoots in sand, over sandy peat, under a bell-glass, and in bottom-heat; peat and loam. Winter temp., 50° to 60°; summer, 60° to 85°.

M. arge'ntea (silvery). 5. April. Himalaya. 1818.
„ *Bœobo'trys* (Bœobotrys). 5. White. March. 1830.
„ *i'ndica* (Indian). 5. November. India. 1817.
„ *macrophy'lla* (large-leaved). 12. June. Himalaya. 1818.
„ *nemora'lis* (wood). See M. BÆOBOTRYS.
„ *pube'scens* (downy). 4. June. India. 1824.
„ *rugo'sa* (wrinkled). 3–4. White. Himalaya.
„ *tomento'sa* (felted). See M. MACROPHYLLA.

MAGNO'LIA. (Named after *Professor Magnol*, of Montpelier. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

A noble genus, all white-flowered, except where otherwise mentioned. Propagated by seeds, layers, grafting, and budding; and each of these modes best suits different kinds. Seeds of most of the American kinds are easily

procured thence, and from France, where, in their clearer sky, the trees thrive better, and ripen their seeds, which they seldom do with us. The seeds should be sown in a hotbed, in spring, and a little patience should be exercised until the seedlings make their appearance, when they must be successively potted, and kept several years in a cold pit in winter. Though the most vigorous plants are thus raised, yet, as they are long in blooming, preference is usually given to plants raised from layers of all the stronger-growing kinds. These are generally laid down in the autumn, and the best part of two years generally elapses before they are fit to be moved, when they should be potted, and kept in a pit until well established. No one should purchase a young plant, except in a pot, as the few, but large, fleshy roots are easily injured. Some of the more succulent-stemmed kinds, with large pith, can neither be easily layered nor grafted—such as *tripe'tala* and *macrophy'lla*. For these seedlings are the best, and the seed ripens freely in different parts of France. Most of the varieties and the weaker species may be budded, and grafted, and inarched on the stronger-growing, more easily reared kinds. *Obova'ta* and *acumina'ta* are much used for this purpose. In most cases it requires a considerable time to effect the union. In many cases, where inarching is resorted to, two years must elapse before the separation can be effected safely. The tenderer Chinese and Asiatic species require, in general, protection in winter; the former a cold pit or greenhouse, the latter a wall, &c. They are propagated by layers, and also by cuttings, as well as seeds. The cuttings should be of ripe shoots, and inserted in sand, under a glass. Many kinds, however, will propagate by the herbaceous-like young shoots; but more attention to shading, &c., is required. All delight, when planted out, in a deep, sandy soil, quite dry, and enriched with peat and a little leaf-mould. *Glau'ca*, however, generally thrives best in a peaty soil rather retentive of moisture.

Tender Evergreens.

M. Champio'ni (Champion's). See M. PUMILA.
„ *compre'ssa* (compressed). See MICHELIA COMPRESSA.
„ *fusca'ta* (brown-*stalked*). See MICHELIA FUSCATA.
„ „ *anonæfo'lia* (Anona-leaved). See MICHELIA FUSCATA ANONÆFOLIA.
„ *odorati'ssima* (sweetest-scented). See TALAUMA CANDOLLEI.
„ *pu'mila* (dwarf). 3. White. China and Java. 1786.

Hardy Evergreens.

M. Delava'yi (Delavay's). Pure white, egg-shaped. Yunnan, China. 1903.
„ *grandiflo'ra* (large-flowered). 20. August. Carolina. 1734.
„ „ *angustifo'lia* (narrow-leaved). 20. July. Paris. 1825.
„ „ *biflo'ra* (two-flowered). Flowers in pairs, opening in succession. 1885.
„ „ *cri'spa* (curled). 20. June. N. Amer.
„ „ *elli'ptica* (oval). 20. August. Carolina. 1734.
„ „ *exonie'nsis* (Exeter). 20. August. N. Amer.
„ „ *ferrugi'nea* (rusty). 20. August. N. Amer.
„ „ *lanceola'ta* (spear-head-*leaved*). 20. August. Carolina. 1734.
„ „ *obova'ta* (reversed-egg-*leaved*). 20. August. Carolina. 1734.
„ „ *præ'cox* (early). 20. August. N. Amer.
„ „ *pravertia'na* (Pravertian). Habit pyramidal; fruits red. 1903.
„ „ *rotundifo'lia* (round-leaved). 20. August. N. Amer.
„ *Ko'bus* (Kobus). Purple, white. July. Japan. 1804.
„ „ *borea'lis* (northern). Leaves, flowers, and fruits larger than the type. Japan. 1908.

Hardy Deciduous.

M. acumina'ta (pointed-*leaved*). 60. Yellow, green. June. N. Amer. 1736. "Cucumber Tree."
„ „ *Cando'llii* (De Candolle's). 60. June. N. Amer. 1736.
„ „ *corda'ta* (heart-shaped). 40. June. S. United States. 1801.
„ „ *ma'xima* (largest-*leaved*). 60. June. N. Amer. 1736.
„ *auricula'ta* (ear-*leaved*). See M. FRASERI.
M. Campbe'llii (Campbell's). 40–50. Rose-pink, white within. E. Himalaya. 1868.
„ *conspi'cua* (conspicuous). 5–30. White. March. China and Japan. 1789. "Yulan."
„ „ *di'scolor* (two-coloured). See M. OBOVATA DISCOLOR.
„ „ *obova'ta* (obovate). See M. OBOVATA.
„ „ *soulangea'na* (Soulangean). See M. SOULANGEANA.
„ *corda'ta* (heart-*leaved*). See M. ACUMINATA CORDATA.
„ *Fra'seri* (Fraser's). 20–50. Pale yellow. April, May. S. United States. 1786.
„ „ *pyramida'ta* (pyramidal). See M. FRASERI.
„ *glau'ca* (milky-green). 20. July. N. Amer. 1688. "Swamp Bay."
„ „ *burchellia'na* (Burchell's-*double*). 20. June.
„ „ *gordonia'na* (Gordon's-*double*). 20. June. 1750.
„ „ *ma'jor* (larger). See M. THOMPSONIANA.
„ *globo'sa* (globose). 6–15. White, fragrant. Stamens bright red. Sikkim and W. China. 1906.
„ *gra'cilis* (slender). See M. KOBUS.
„ *halliа'na* (Hallian). See M. STELLATA.
„ *hypoleu'ca* (white beneath). 40–60. Creamy. Japan. 1865.
„ *Le'nnei* (Lenne's). 4–8. Deep rose. (*M. conspicua* × *M. obova'ta*.)
„ *macrophy'lla* (large-leaved). 30. July. N. Amer. 1800.
„ *Norbe'rtii* (Norbert's). (*M. conspicua* × *M. obovata*.)
„ *obova'ta* (obovate). 6. Purple. May. China. 1790.
„ „ *di'scolor* (two-coloured). 6. Purple outside, white within. May. China. 1790.
„ *parvifo'ra* (small-flowered). White, marked with crimson. Japan. 1888.
„ „ *mi'nor* (lesser). Smaller in all its parts. Japan. 1888.
„ *purpu'rea* (purple). See M. OBOVATA DISCOLOR.
„ *pyramida'ta* (pyramidal). See M. FRASERI.
„ *salicifo'lia* (willow-leaved). 10–20. Leaves silvery-white beneath. N. Japan. 1902.
„ *soulangea'na* (Soulangean). 10–30. White, tinted purple. (*M. conspicua* × *M. obovata*.)
„ „ *Nieme'tzi* (Niemetz's). An erect-branched variety. 1907.
„ „ *ni'gra* (black). Dark crimson-purple. (*M. conspicua* × *M. obovata*.)
„ *stella'ta* (starry). 2–6. White; petals numerous. March, April. Japan. 1878.
„ *supe'rba* (superb). (*M. conspicua* × *M. obovata*.)
„ *thompsonia'na* (Thompsonian). Cream. June. 1808. (*M. glauca* × *M. tripetala* ?).
„ *tripe'tala* (three-petaled). 30. May. N. Amer. "Umbrella Tree."
„ *Umbre'lla* (Umbrella). See M. TRIPETALA.
„ *Watso'ni* (Watson's). 4–8. Creamy-white; filaments blood-red. Japan. 1891.
„ *Wiesne'ri* (Wiesner's). 8–10. Pure white, fragrant. Japan. 1890.
„ *Yu'lan* (Yulan). See M. CONSPICUA.

MAGPIE MOTH. See ABRAXAS GROSSULARIÆ.

MAHARA'NGA EMO'DI. See ONOSMA EMODI.

MAHE'RNIA. (An anagram of *Hermannia*, an allied genus. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*.)

Greenhouse evergreen shrubs, about two feet high, from South Africa. Cuttings of young shoots, an inch or two in length, in sandy soil, under a glass any time in summer; fibrous loam and sandy peat, with lumps of charcoal and broken pots, intermixed when grown in pots. In summer they will do in the flower-garden, and did the flowers look up a little more, they would be very interesting; from their habit they are seen to best advantage in a pot.

M. chrysa'ntha (golden-flowered). 1. Yellow. S. Africa. 1868. Decumbent.
„ *difu'sa* (spread-out). 1. Yellow. May. Cape Colony. Trailing.
„ *glabra'ta* (smooth). Yellow. June. 1789.
„ *grandiflo'ra* (large-flowered). Red. June. 1791.
„ „ *Burche'llii* (Burchell's). Leaves less divided.
„ *heterophy'lla* (various-leaved). Yellow. May. 1731.
„ *inci'sa* (cut-*leaved*). Yellow, white. July. 1792.
„ *oxalidiflo'ra* (Oxalis-flowered). Yellow. June. 1817.
„ *pulche'lla* (neat). Reddish. July. 1792.

M. ru'tila (red). Orange-red. August. S. Africa. Procumbent.
,, *vernica'ta* (varnished). Vermilion. July. 1816.
,, *verticilla'ta* (whorled). Yellow. July. 1820.
,, *vesica'ria* (bladdery). Yellow. June. 1818.

MAHOGANY-TREE. *Swiete'nia Mahago'ni.*

MAHO'NIA. A synonym of *Be'rberis.*

M. Aquifo'lium. See BERBERIS AQUIFOLIUM.
,, *argu'ta* (acute). See BERBERIS ARGUTA.
,, *diversifo'lia* (divers-leaved). See BERBERIS AQUIFOLIUM.
,, *fascicula'ris* (bundled). See BERBERIS AQUIFOLIUM FASCICULARIS.
,, *gluma'cea* (scaly). See BERBERIS NERVOSA.
,, *re'pens* (creeping). See BERBERIS REPENS.
,, *rotundifo'lia* (round-leaved). See BERBERIS AQUIFOLIUM ROTUNDIFOLIA.

MAHU'REA. (The native name. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Stuartia.)

Stove evergreen tree. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a moderate bottom-heat, any time in summer; sandy peat and fibrous loam. Winter temp., 50° to 60°; summer, 60° to 80°.

M. palu'stris (marsh). 15. Purple. May. Guiana.

MAIDEN-HAIR. *Passiflo'ra Adia'ntum*, and *Adia'ntum Capi'llus-Ve'neris*, &c.

MAIDEN-HAIR-TREE. *Gi'nkgo bi'loba.*

MAIDEN PLUM. *Comocla'dia.*

MAIDEN TREE is a seedling tree which has not been grafted. The term is also applied to fruit-trees and roses, during the first year from the graft or bud.

The time which elapses before seedlings attain a bearing age is very various. The pear requires from twelve to eighteen years; the apple, five to thirteen; plum and cherry, four to five; vine, three to four; raspberry, two; and the strawberry, one.

MAIA'NTHEMUM. (From *maios*, May, and *anthemon*, a flower. Nat. ord. Liliaceæ.)

A dwarf fibrous-rooted creeping herb, suitable for the rockery. Divisions in spring. Ordinary garden soil.

M. bifo'lium (two-leaved). See M. CONVALLARIA.
,, *Convalla'ria* (Lily-of-the-Valley-like). ½. White. May. N. temperate regions (England). "Two-leaved Lily of the Valley."

MAIE'TA. (The native name. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Medinilla.)

Stove evergreen shrub. Cuttings of young shoots, getting a little firm, in sandy soil, and in bottom-heat, in April and May; peat and loam, with a little charcoal and brick-rubbish. Winter temp., 50° to 60°; summer, 60° to 80°.

M. guiane'nsis (Guianan). 2. White. Guiana. 1824.

MAI'RIA. (Derivation not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Aster.)

Half-hardy herbaceous plants, from South Africa; seeds, and division in spring; requiring the protection of a dry, cold pit in winter; sandy loam and a little peat.

M. crena'ta (scolloped-*leaved*). ½. Lilac or purple. April to July. 1820.
,, *taxifo'lia* (yew-leaved). ½–1½. Yellow, purple. July. 1816.

MAJE'TA. See MAIETA.

MAJORA'NA. See ORIGANUM.

MALABAI'LA. (Commemorative of *Count Malabaila von Canal*, of Prague, in the kingdom of Bohemia. Nat. ord. Umbelliferæ.)

Hardy border perennials. Seeds. Ordinary garden soil.

M. obtusifo'lia (blunt-leaved). 1. Green. July. Greece; Asia Minor. 1819.
,, *Opo'ponax* (Opoponax). See OPOPONAX CHIRONIUM.
,, *pimpinellæfo'lia* (Pimpinella-leaved). 2. Yellow. July. Caucasus. 1818

MALABAR LEAF. *Cinnamo'mum ine'rs.*

MALABAR NIGHTSHADE. *Base'lla.*

MALABAR ROSE. *Hibi'scus Ro'sa-malaba'rica*, which is *H. hi'rtus.*

MALACHADE'NIA. (From *malache*, a mallow, and *aden*, a gland. Nat. ord. Orchidaceæ. Properly it is a Bulbophyllum.)

M. clava'ta (clubbed). Green, brown. Brazil. 1839.

MALACHODE'NDRON. See STUARTIA.

MALA'XIS. (From *mala'xis*, delicate; referring to the whole plant. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Calypso.)

Terrestrial orchids, growing in sandy peat, and in moist places; division of the roots.

M. cauda'ta (tailed). See BRASSIA CAUDATA.
,, *liliifo'lia* (Lily-leaved). See LIPARIS LILIIFOLIA.
,, *ophioglossoi'des* (Ophioglossum-like). See MICROSTYLIS OPHIOGLOSSOIDES.
,, *paludo'sa* (marsh). ½. Yellow, green. July. England. Hardy.
,, *Partho'ni* (Parthon's). See MICROSTYLIS HISTIONANTHA.

MALAY APPLE. *Euge'nia malacce'nsis.*

MALCO'LMIA. (Named after *W. Malcolm*, mentioned by Ray. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Hesperis.)

Hardy annuals, blooming in June, if sown early in April; but a succession may be kept up by sowing in the three following months; common garden soil. *Arena'ria*, *chi'a*, *incrassa'ta*, and *mari'tima* are the handsomest.

M. africa'na (African). ½. Purple. Africa. 1744.
,, *arena'ria* (sand). Violet. Algiers. 1804.
,, *bi'color* (two-coloured). Greece.
,, *chi'a* (Chian. *Dwarf-branching*). 1. Purple. Chio. 1732.
,, *ero'sa* (gnawed-*leaved*). ½. Portugal. 1818.
,, *flexuo'sa* (flexuous). 1. Purple. Greece. 1820.
,, *incrassa'ta* (thick-*leaf-stalked*). See M. FLEXUOSA.
,, *interme'dia* (intermediate). See M. AFRICANA.
,, *la'cera* (torn-*leaved*). White, yellow. S. Europe. 1780.
,, *la'xa* (loose). 2. Purple. Siberia. 1820.
,, *lito'rea* (shore). 1. White, yellow. S. Europe. 1683.
,, *lyra'ta* (lyre-shaped). ½. Purple. Cyprus. 1820.
,, *mari'tima* (sea-*side*). ½. Violet. S. Europe. 1713. "Virginian Stock."
,, *parvifo'ra* (small-flowered). ½. Lilac. S. Europe. 1823.
,, *pulche'lla* (pretty). 1. Red. July. Syria. 1827.
,, *runcina'ta* (runcinate). Purple. Caspian Sea. 1795.
,, *taraxacifo'lia* (dandelion-leaved). See M. RUNCINATA.

MALE FERN. *La'strea Fi'lix-ma's.*

MALESHE'RBIA. (Named after a French patron of botany. Nat. ord. *Passion-flowers* [Passifloraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse annuals, from Chili. Seeds sown in a hotbed, in March, seedlings pricked off, potted, and flowered in the greenhouse; sandy peat and fibrous loam, with a little very reduced leaf-mould.

M. fascicula'ta (fascicled). See GYNOPLEURA FASCICULATA.
,, *hu'milis* (humble). See GYNOPLEURA HUMILIS.
,, *linearifo'lia* (narrow-leaved). See GYNOPLEURA LINEARIFOLIA.
,, *thyrsiflo'ra* (thyrse-flowered). Yellow. July. 1832.

MALLO'TUS. (From *mallotos*, fleecy, or woolly; alluding to the woolly fruit. Nat. ord. Euphorbiaceæ.)

Stove and greenhouse evergreen shrubs or small trees. Cuttings in sand, in a close case, with bottom-heat. Loam, peat, and sand.

M. cochinchine'nsis (Cochin-chinese). India and China.
,, *japo'nicus* (Japanese). China and Japan. 1866.
,, *panicula'tus* (panicled). See M. COCHINCHINENSIS.
,, *philippine'nsis* (Philippines). Trop. Asia.

MALLOW. *Ma'lva.*

MALLOW ROSE. *Hibi'scus Moscheu'tos.*

MA'LOPE. (From *malos*, soft, or tender; referring to the texture of the leaves. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Hardy annuals, with purple flowers. Seeds sown under a glass, in March, or in the open border towards the end of April; earlier, if the ground is sandy and early.

M. malacoi'des (mallow-like). 1. June. S. Europe. 1710.
„ „ *sinua'ta* (wavy-*edged*). July. 1710.
„ *tri'fida* (three-cleft). 2. July. Spain; N. Africa. 1808.
„ „ *a'lba* (white). White.
„ „ *grandiflo'ra* (large-flowered). Flowers larger.

MALORTI'EA. (A commemorative name. Nat. ord. Palmaceæ.)

Stove Palms. Seeds. Loam, peat, and sand, with plenty of water in summer and a moist atmosphere.

M. gra'cilis (graceful). 2. Costa Rica. 1862.
„ *koschnya'na* (Koschnyan). Spadix not branched. Costa Rica. 1901.
„ *si'mplex* (simple). 2. Spadix branched. Costa Rica. 1861.

MALQUE'TIA. (A commemorative name. Nat. ord. Apocynaceæ.)

Stove evergreen shrubs or trees, with white or greenish yellow flowers. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

M. asia'tica (Asiatic). Japan.
„ *Tamaquari'na* (Tamaquarina). 4. Yellow. October. Brazil. 1793.

MALPI'GHIA. (Named after *Professor Malpighi*, of Pisa. Nat. ord. *Malpighiads* [Mapighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*. Allied to Galphimia.)

Stove evergreen shrubs. Cuttings of young shoots almost ripe, but with leaves attached, except at the joint cut through, in sand, under a bell-glass, and in bottom-heat, in summer; sandy peat and fibrous loam. Winter temp., 50° to 55°; summer, 60° to 85°.

M. angustifo'lia (narrow-leaved). 6–9. Pale rose. July. W. Ind.
„ *aquifo'lia* (holly-leaved). 7. Pink. August. S. Amer. 1759.
„ *biflo'ra* (two-flowered). See M. PUNICIFOLIA.
„ *cocci'gera* (berry-bearing). 2. Pink. W. Ind.
„ *gla'bra* (smooth-*leaved*). 16. Rose. May. W. Ind. 1755. "Barbados Cherry."
„ *inca'na* (hoary). Rose. Campeachy. 1742.
„ *macrophy'lla* (large-leaved). Red, pink. July. Brazil. 1820.
„ *me'dia* (medium). W. Ind. This is *Bunchosia media*.
„ *ni'tida* (glossy-*leaved*). See BUNCHOSIA NITIDA.
„ *polysta'chya* (many-spiked). W. Ind. This is *Bunchosia polystachya*.
„ *punicifo'lia* (pomegranate-leaved). 12. Rose. W. Ind. 1690.
„ *u'rens* (stinging). 6–8. Pale rose. W. Ind.

MA'LUS. See PY'RUS.

MA'LVA. Mallow. (From *malacho*, to soften; referring to their emollient qualities. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Hardy annuals, by seeds in the open border in April; perennial herbaceous, such as *monroa'na*, &c., by seeds under a hand-light, by division in spring, and by cuttings of the young shoots under a hand-light; stove and greenhouse species, by cuttings, generally inserted in sandy soil, under a hand-light; these last are best grown in rich, fibrous loam and peat, and require merely the common treatment suitable to greenhouse and stove.

GREENHOUSE HERBACEOUS.

M. angula'ta (angled). 1. Purple. July. 1830.
„ *campanuloi'des* (Campanula-like). ½. Blush. October. N. Amer. 1825.
„ *purpura'ta* (purpled). See MALVASTRUM CAMPANULATUM.

GREENHOUSE EVERGREENS.

M. amœ'na (pleasing). See MALVASTRUM CALYCINUM.
„ *angustifo'lia* (narrow-leaved). See SPHÆRALCEA ANGUSTIFOLIA.
M. aspe'rrima (roughest). See MALVASTRUM ASPERRIMUM.
„ *balsa'mica* (balsamic). See MALVASTRUM CAPENSE BALSAMICUM.
„ *bryonifo'lia* (bryony-leaved). See MALVASTRUM BRYONIFOLIUM.
„ *calyci'na* (large-calyxed). See MALVASTRUM CALYCINUM.
„ *campanula'ta* (bell-*flowered*). See MALVASTRUM CAMPANULATUM.
„ *cape'nsis* (Cape). See MALVASTRUM CAPENSE.
„ *capita'ta* (headed). See MALVASTRUM CAPITATUM.
„ *creca'na* (Crecan). See MALVASTRUM COCCINEUM GROSSULARIÆFOLIUM.
„ *divarica'ta* (divaricate). See MALVASTRUM DIVARICATUM.
„ *fra'grans* (fragrant). See MALVASTRUM FRAGRANS.
„ *fra'grans* (fragrant) of Bot. Mag. See MALVASTRUM CAPENSE BALSAMICUM.
„ *grossulariæfo'lia* (gooseberry-leaved). See MALVASTRUM GROSSULARIÆFOLIUM.
„ *la'ctea* (milk-coloured). See MALVASTRUM VITIFOLIUM.
„ *lateri'tia* (brick-red) of Hooker. See MALVASTRUM LATERITIUM.
„ *lime'nsis* (Liman). See MALVASTRUM LIMENSE.
„ *martensia'na* (Martensian). Rose-coloured. Australia. 1864.
„ *minia'ta* (red). 4. Red veins. June. S. Amer. 1698.
„ *obtusi'loba* (blunt-lobed). See SPHÆRALCEA OBTUSILOBA.
„ *odora'ta* (scented). See MALVASTRUM CAPENSE.
„ *peruvia'na* (Peruvian). See MALVASTRUM PERUVIANUM.
„ *prostra'ta* (prostrate). See MODIOLA MULTIFIDA.
„ *refle'xa* (reflexed). See MALVASTRUM TRIDACTYLITES.
„ *retu'sa* (bent-back-*leaved*). See MALVASTRUM CALYCINUM.
„ *sherardia'na* (Sherardian). See SIDA SHERARDIANA.
„ *stri'cta* (erect). See MALVASTRUM STRICTUM.
„ *tridactyli'tes* (three-fingered). See MALVASTRUM TRIDACTYLITES.
„ *umbella'ta* (umbelled). See SPHÆRALCEA UMBELLATA.

STOVE HERBACEOUS.

M. dominge'nsis (Domingo). See MALVASTRUM TRICUSPIDATUM.
„ *tricuspida'ta* (three-spined). See MALVASTRUM TRICUSPIDATUM.

STOVE EVERGREENS.

M. abutiloi'des (Abutilon-like). See SPHÆRALCEA ABUTILOIDES.
„ *borbo'nica* (Bourbon). See MALVASTRUM TRICUSPIDATUM.
„ *cocci'nea* (scarlet). See MALVASTRUM COCCINEUM.
„ *conci'nna* (neat). 5. Lilac. May. S. Amer. 1835.
„ *sca'bra* (rough-*stemmed*). See MALVASTRUM SCABRUM.
„ *scopa'ria* (broom-like). See MALVASTRUM RUGELII.
„ *spica'ta* (*simple*-spiked). See MALVASTRUM SPICATUM.
„ *tomento'sa* (woolly). 3. Yellow. July E. Ind. 1820.

HARDY ANNUALS.

M. cri'spa (curled). 5. White. June. Syria. 1573.
„ *Duriæ'i* (Duriæ's). Purple. Algeria.
„ *hasta'ta* (halbert-shaped). 1½–2. Rose-violet. Mexico. 1893.
„ *lu'cida* (shining). See M. SYLVESTRIS.
„ *mauritia'na* (Mauritanian). See M. SYLVESTRIS.
„ *Mulle'rii* (Muller's). See LAVATERA TRILOBA.

HARDY HERBACEOUS.

M. A'lcea (Alcea). 2–3. Soft rose. July. Europe. 1829.
„ „ *fastigia'ta* (upright). 3. Red. July. Italy. 1820.
„ *alceoi'des* (Alcea-like). See M. ALCEA.
„ *arbo'rea* (tree). See LAVATERA ARBOREA.
„ *auranti'aco-ru'bra* (orange-red). 3. Orange-red. N.W. Amer. 1871.
„ *borea'lis* (northern). 3. White, red. June. Europe; N. Asia. 1820.
„ *carolinia'na* (Carolinian). See MODIOLA MULTIFIDA.
„ *geranioi'des* (Geranium-like). See MODIOLASTRUM GERANIOIDES.
„ *Henni'ngii* (Henning's). See M. BOREALIS.

M. involucra'ta (involucrated). See CALLIRHOË INVOLUCRATA.
„ *ita'lica* (Italian). See M. ALCEA.
„ *lateri'tia* (brick-coloured). See MALVASTRUM LATERITIUM.
„ *monroa'na* (Monro's). See SPHÆRALCEA MUNROANA.
„ *More'nii* (Moreni's). See M. ALCEA FASTIGIATA.
„ *moscha'ta* (musk). 2. Flesh. June. Britain.
„ „ *a'lba* (white). 2. White. June. Britain. 1881.
„ „ *undula'ta* (waved). 2. White. July.
„ *oxy'loba* (sharp-lobed). Orient.
„ *Papa'ver* (Papaver). See CALLIRHOË PAPAVER.
„ *parvifio'ra* (small-flowered). Pink. Europe.
„ *puncti'a* (dotted). See LAVATERA PUNCTATA.
„ *rivula'ris* (stream-bank). See SPHÆRALCEA ACERIFOLIA.
„ *rotundifo'lia* (round-leaved). ½. Pale pink. Europe (Britain).
„ *sylve'stris* (wild). 2–5. Purple. June to September. Europe (Britain). "Mallow."
„ *zebri'na* (zebra-striped). See M. SYLVESTRIS.

MALVA'STRUM. (From *Malva*, and *astrum*, a star; literally, star Malva. Nat. ord. Malvaceæ.)

Greenhouse evergreen herbs or subshrubs, and hardy herbs. Greenhouse species by cuttings in light sandy soil under a bell-glass or hand-light, and the hardy ones by division in spring or seeds. Loam, leaf-mould, and sand for the greenhouse ones; ordinary soil or the rockery for the hardy ones.

M. aspe'rrimum (very rough). 3. Red. July. S. Africa. 1796.
„ *bryonifo'lium* (bryony-leaved). 4. Purple. July. S. Africa. 1731.
„ *calyci'num* (large-calyxed). 3–4. Purple or pink. April. S. Africa. 1796.
„ *campanula'tum* (bell-shaped). 1–1½. Pink, lilac, or pale red. Chili. 1825.
„ *cape'nse* (Cape). 3–10. Red, white, or purple. June. S. Africa. 1713. Plant aromatic.
„ „ *balsa'micum* (balsamic). 4. Pink or red. July. S. Africa. 1759.
„ „ *Lindemu'thii* (Lindemuth's). Rose-red, shaded violet. Leaves variegated with yellow. 1903.
„ *capita'tum* (headed). 2. Red. April. Argentina. 1798.
„ *cocci'neum* (scarlet). ½. Scarlet. July. N.W. Amer. 1811. Hardy.
„ „ *grossulariæfo'lium* (gooseberry-leaved). 1½. Red. July to September. United States. 1835.
„ *divarica'tum* (spreading). White, with a purple spot on each petal. June. S. Africa.
„ *fra'grans* (fragrant). 3. Scarlet. June. S. Africa. 1759. Plant with balsamic odour.
„ *Gillie'sii* (Gillies'). ½. Bright red. June to September. Parana. 1885. Hardy.
„ *grossulariæfo'lium* (gooseberry-leaved). 3–6. Rose. June. S. Africa.
„ *hypoma'darum* (bald-beneath). 2–10. White, with five rose blotches. February, March. S. Africa. 1808.
„ *lateri'tium* (brick-red). ½. Red. September. Uruguay. 1840. Hardy.
„ *lime'nse* (Liman). 1. Pink. Chili. Hardy.
„ *munroa'num* (Munroan). See SPHÆRALCEA MUNROANA.
„ *peruvia'num* (Peruvian). 2–3. Pink. June to October. Mexico.
„ *Ruge'lii* (Rugel's). 6. Yellow. April. N. Amer. 1782.
„ *sca'brum* (rough). 4. Yellow. June. Peru. 1798.
„ *spica'tum* (spiked). 2. Orange. July. Tropics.
„ *stri'ctum* (upright). 3. White. April. S. Africa. 1805.
„ *tricuspida'tum* (three-pointed). 1. Yellow. July. Tropics of both Worlds. 1726. Biennial.
„ *tridactyli'tes* (three-fingered). 3. Pink. July. S. Africa. 1791.
„ „ *gla'bra* (smooth). Pink or rosy-purple. April. S. Africa. 1794.
„ *vitifo'lium* (vine-leaved). 4. White. January. Mexico. 1780.

MALVAVI'SCUS. (From *malva*, the Mallow, and *viscus*, glue; referring to the mucilage with which it abounds. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Stove evergreen trees. Cuttings of the somewhat stubby side-shoots in sand, under a bell-glass, and in heat; but the bell-glass must be elevated at night, to prevent damping; fibrous peat, and sandy, lumpy loam. Winter temp., 50°; summer, 60° to 85°.

M. arbo'reus (tree). 12. Scarlet. S. Amer. 1714.
„ *mo'llis* (soft). 12. Scarlet. August. Mexico. 1780.
„ *pilo'sus* (shaggy). See M. ARBOREUS.

MAMESTRA. Cabbage Moths. The winged form of *Mamestra Brassicæ* makes its appearance in May and June, during the evenings, flying about in gardens, and laying its eggs on a great variety of plants, but preferring Cabbages, Cauliflowers, and other vegetables of that class. The caterpillars hatch in a few days, and are at first green, but may become more or less shaded with black on the back, or variegated with flesh-coloured markings. If numerous they are very destructive, devouring the leaves and penetrating into the heart of Cabbages and Cauliflowers, which they render useless by their excrement. The moth is 1¾–1¾ in. in expanse. The fore-wings are dark grey, much marked with black, with two spots near the edges and a very wavy white line near the end of each. The moth continues on the wing from May till July.

Another species, *Mamestra oleracea*, more correctly named *Hadena oleracea*, makes its appearance in June, and lays its eggs on a great variety of low-growing plants, including such vegetables as Cabbages, Lettuces, Broccoli, and whatever may be in the ground at the time. The caterpillar is ochreous-brown, dotted with white, with a brown line on the back, and a bright yellow line on either side, edged with a dark colour. It feeds during August and September, and passes into the soil, where its cocoon may be found during the winter while digging. The moth is a little under to a little over 1¼ in. in expanse. The fore-wings are dull, dark red, with two deep orange spots near the edges, and a pale wavy line near the ends.

Needless to say, the Cabbage ground and that near the vegetable quarters should be kept perfectly clear of weeds that would afford food and shelter to the caterpillars. Hand-picking when they appear on the leaves is a tedious but very effective remedy, and if children were employed to collect the caterpillars it could be done at moderate cost, and thus save a vast amount of trouble in the following year. After attaining a certain size the caterpillars often go down to the ground by day and feed at night. A ring of gas-lime, that has been exposed to the air for two months before being put round the base of the stem, has been found serviceable in preventing the caterpillars from crawling up again.

MAMILLA'RIA. (From *mamilla*, the diminutive of *mamma*, a teat; in allusion to the prominences on the angles of the stem. Nat. ord. Cactaceæ.)

Dwarf plants, composed of an assemblage of tubercles, somewhat resembling the teats of animals; these are generally terminated with bunches of hairy bristles, and between them the flowers appear. To grow them successfully, they should be fresh dressed, or repotted, in sandy loam and peat, with a fair portion of brick rubbish and cow-dung, old and dried, in April or May; afterwards kept in a temperature of from 75° to 90°, with plenty of atmospheric moisture, but little or no water given to the roots until they are rooting freely; then water may be given, and the stimulus to growth continued for two or three months, when moisture must be gradually withdrawn, even when the sun heat is allowed to remain in as great a degree to consolidate the tissues; and in the end of autumn the atmosphere must be gradually cooled, to enable the plants to stand dry, and in a dry atmosphere, and a temperature of from 45° to 50° during the winter. No shade will be required, unless just after potting, before fresh growth is made. Those who try them in windows may easily give them the above treatment by placing them in a close box or pit for two months in summer. Easily propagated by offsets and protuberances. Their greatest enemy is the red spider; plenty of syringing when growing in summer, and steaming with sulphur from the hot-water pipes at other times, is the best remedy. Water somewhat liberally in summer, when in flower and growing; little or none must be given at other times.

M. acanthophle'gma (flame-spined). Pink. Mexico. 1846.
„ *aloi'des* (Aloe-like). See ANHALONIUM PRISMATICUM.

M. angui'nea (snake-like). Mexico.
„ *angula'ris* (angled). See M. COMPRESSA.
„ *arizo'nica* (Arizonan). See M. RADIOSA ARIZONICA.
„ *atra'ta* (dark). See M. RHODANTHA.
„ *aulacothe'le* (furrow-nippled). Mexico.
„ *au'riceps* (golden-headed). Mexico.
„ *autumna'lis* (autumnal). Country unknown.
„ *barba'ta* (bearded). Pale red, with central violet stripes. Mexico.
„ *Berge'nii* (Bergen's). Mexico.
„ *bi'color* (two-coloured). Purple or red. June. Mexico. 1823.
„ *bocasa'na* (Bocasan). Mexico.
„ *Bo'ckii* (Bock's). Mexico.
„ *bœdekeria'na* (Bœdekerian). White, with tawny stripes. Country unknown. 1910.
„ *bombyci'na* (silken). Radial spines silky. Mexico. 1910.
„ *Brandege'ei* (Brandege's). Greenish-yellow. California. 1901.
„ *Bussle'ri* (Bussler's). White. Mexico. 1902.
„ *calcara'ta* (spurred). Yellow, red. Texas.
„ *campto'tricha* (curved-haired). Yellowish-white. Mexico. 1905.
„ *ca'ndida* (white). See M. SPHÆROTRICHA.
„ *Ca'put-Medu'sæ* (Medusa's-head). See M. SEMPERVIVI.
„ *celsia'na* (Celsian). Red. July. Mexico.
„ *centrici'rrha* (spur-tendrilled). Apricot. July. Mexico. 1844.
„ „ *glabre'scens* (smoothish).
„ „ *hopferia'na* (Hopferian).
„ „ *macrothe'le* (long-nippled).
„ *cerati'tes* (horned). Carmine. Mexico. 1909.
„ *chionoce'phala* (snowy-headed). Rose-red. Mexico. 1906.
„ *chlora'ntha* (green-flowered). Greenish. Texas. 1883.
„ *chrysaca'ntha* (golden-spined). Yellow. Mexico. 1827.
„ *chrysa'ntha* (golden-flowered). See M. CHRYSACANTHA.
„ *cirrhi'fera* (tendril-bearing). Mexico.
„ „ *dive'rgens* (diverging).
„ „ *glabre'scens* (smoothish).
„ *Cla'va* (nail). Yellow. Mexico.
„ *cocci'nea* (scarlet). Scarlet. May. Chili. 1827.
„ *columna'ris* (columnar). See M. POLYTHELE.
„ *compre'ssa* (compressed). Mexico.
„ *co'nica* (conical). July. S. Amer. 1808.
„ *cono'psea* (cone-like). Mexico.
„ *cordi'gera* (heart-bearing). Areoles heart-shaped. 1910.
„ *corni'fera* (horn-bearing). Mexico. 1845.
„ *cornima'mma* (horn-teated). Light yellow, purple, orange-red. 1887.
„ *corona'ria* (garland). Scarlet. July. Mexico. 1817.
„ *crassispi'na* (thick-spined). Mexico.
„ *crocida'ta* (saffron). Mexico.
„ *cruci'gera* (cross-bearing). Beautiful purple. Mexico. 1832.
„ *dealba'ta* (whitened). Mexico. 1872.
„ *deci'piens* (deceiving). White. July. Mexico. 1845.
„ *delætia'na* (Delætian). Pale yellow. California. 1908.
„ *de'nsa* (dense). See M. ECHINATA.
„ *depre'ssa* (depressed) of Decandolle. See M. DISCOLOR.
„ *Dese'rti* (Desert's). California.
„ *diffi'cilis* (difficult). Flowers and fruits unknown. Mexico. 1908.
„ *di'scolor* (two-coloured). Red, green. July. S. Amer. 1800.
„ *dolichoce'ntra* (long-spurred). Purple. Mexico.
„ „ *Galeo'tti* (Galeott's).
„ „ *nigrispi'na* (black-spined).
„ *durange'nsis* (Durangan). Mexico.
„ *echina'ta* (hedgehog-spined). Reddish, white; fruit bright red. June. Mexico. 1830.
„ *Ehrenbe'rgii* (Ehrenberg's). Mexico.
„ *e'legans* (elegant). Mexico.
„ *elephan'tidens* (elephant-toothed). Mexico.
„ *elonga'ta* (elongated). Mexico.
„ „ *subcro'cea* (yellowish). Buff yellow. Mexico.
„ *emskætteria'na* (Emskœtterian). Tawny-yellow. Mexico. 1910.
„ *Fische'ri* (Fischer's). Yellow. Mexico.
„ *flave'scens* (yellowish). Yellow. Trop. Amer. 1811.
„ *floribu'nda* (free-flowering). Pink. Chili.

M. Fœrste'ri (Fœrster's). Mexico.
„ *formo'sa* (beautiful). Bright red. June. Mexico. 1847.
„ *fulvispi'na* (tawny-spined). Mexico.
„ *fusca'ta* (brown). Mexico.
„ *geminispi'na* (twin-spined). See M. ACANTHOPHLEGMA and M. BICOLOR.
„ *gigante'a* (giant). Greenish-yellow. Mexico. 1898.
„ *gladia'ta* (sword-shaped). Mexico. 1845.
„ *glau'ca* (glaucous). Mexico.
„ *glochidia'ta* (barbed). Mexico. 1829.
„ *glomera'ta* (crowded). Red. Island of St. Domingo. 1825.
„ *Goodri'chii* (Goodrich's). California and Mexico.
„ *gra'cilis* (graceful). Mexico.
„ „ *pulche'lla* (pretty).
„ *Gra'hami* (Graham's). Mexico.
„ *Gruso'ni* (Gruson's). Yellow. Mexico. 1889.
„ *guilleminia'na* (Williamina's). See M. DECIPIENS.
„ *haagea'na* (Haagean). Pink. July. Mexico.
„ *Ha'lei* (Hale's). California.
„ *heesea'na* (Heesean). Carmine-red. Mexico. 1896.
„ *Helicte'res* (bracelet). Rose. June. Mexico. 1827.
„ *Heyde'ri* (Heyder's). Mexico. 1880.
„ *hidalge'nsis* (Hidalgan). 1. Carmine. Mexico. 1907. Spines 4.
„ „ *bispi'na* (two-spined). Spines 2. 1907.
„ *hirsichtia'na* (Hirsichtian). Rose to dark red. 1897.
„ *hopferia'na* (Hopferian). Mexico.
„ *Hy'strix* (Hystrix). Mexico.
„ *impexi'coma* (uncombed-haired). See M. CORNIFERA.
„ *joosensia'na* (Joosensian). Small, yellow. Mexico. 1908.
„ *karwinskia'na* (Karwinskian). Mexico.
„ *kleinschmidtia'na* (Kleinschmidtian). Flowers unknown. Mexico. 1898.
„ *knippelia'na* (Knippelian). ½. Flowers and native country unknown. 1907.
„ *Krame'ri* (Kramer's). Mexico.
„ *lani'fera* (wool-bearing). Red. Mexico. 1823.
„ *lasiaca'ntha* (woolly-spined). Texas.
„ *lasia'ndra* (woolly-anthered). Green, white, striped red. Mexico.
„ „ *denuda'ta* (denuded). Green, white, striped red. Mexico. 1909.
„ *latima'mma* (broad-teated). See M. PYCNACANTHA.
„ *Lehma'nni* (Lehmann's). See M. RECURVA.
„ *le'nta* (slow). Stems half-globose. Mexico. 1906.
„ *littora'lis* (shore). Spines darker brown than in *M. matzatlanensis*. California (?). 1907.
„ *longima'mma* (long-teated). Yellow. June. Mexico.
„ „ *hexaca'ntha* (six-spined).
„ *longise'ta* (long-bristled). Mexico.
„ *macro'meris* (long-parted). Mexico.
„ *macrothe'le* (long-nippled). Yellow and violet. Mexico.
„ *magnima'mma* (large-teated). Mexico.
„ „ *arieti'na* (ram-horned).
„ *matzatlane'nsis* (Matzatlan). Brown, white, carmine-red. 1901.
„ *megaca'ntha* (great-spined). Mexico.
„ *meiaca'ntha* (smaller-spined). Mexico.
„ „ *longispi'na* (long-spined).
„ *micro'meris* (small-parted). Mexico.
„ *microthe'le* (small-nippled). Yellow and violet. Mexico.
„ *mi'nima* (smallest). Mexico.
„ *missourie'nsis* (Missourian). White. June, July. S. United States. 1818.
„ *mu'lticeps* (many-headed). Mexico.
„ *Mu'ndtii* (Mundt's). Brown-red, rose, carmine. Country unknown. 1903.
„ *muta'bilis* (changeable). Purple. June. Mexico.
„ *neumannia'na* (Neumannian). Mexico. 1845.
„ *ni'vea* (snowy). Mexico.
„ „ *longise'ta* (long-bristled).
„ *no'bilis* (noble). Mexico.
„ *nogale'nsis* (Nogalan). See M. RECURVATA.
„ *obcone'lla* (reverse-small-coned). See M. DOLICHOCENTRA.
„ *odieria'na* (Odierian). Mexico.
„ *Œttinge'nii* (Œttingen's). Flowers unknown. Mexico. 1898.
„ *Parkinso'nii* (Parkinson's). Yellow. June. Mexico.
„ *Peaco'ckii* (Peacock's). See M. DEALBATA.

M. pectina'ta (comb-like). Texas.
,, *Perri'ngii* (Perring's). See M. CELSIANA.
,, *petro'phila* (rock-loving). ½. Greenish-gold. Lower California. 1907.
,, *Pfeiffe'ri* (Pfeiffer's). See M. RHODANTHA.
,, *phæaca'ntha* (dusky-spined). Mexico.
,, *phellospe'rma* (cork-seeded). Arizona and Mexico.
,, *phymatothe'le* (bud-nippled). Mexico. 1846.
,, *plumo'sa* (plumy). Mexico. 1901.
,, *polye'dra* (many-seated). Pink. June, July. Mexico.
,, *polygo'na* (many-angled). Mexico.
,, *polythe'le* (many-nippled). Red. August. Mexico. 1838.
,, *Po'ndii* (Pond's). California.
,, *prisma'tica* (prismatic). See ANHALONIUM PRISMATICUM.
,, *proli'fera* (proliferous). White. June, July. S. Amer. 1800.
,, *pseudoperbe'lla* (false-very-pretty). Flowers solitary. Fruit deep red. Mexico. 1909.
,, *pulche'lla* (pretty). Purple. June, July. Mexico.
,, *pu'lchra* (beautiful). Rose. June, July. Mexico. 1826.
,, *Purpu'si* (Purpus's). Coral-red. Mountains of Colorado. 1894.
,, *pusi'lla* (puny). See M. STELLATA.
,, *pycnaca'ntha* (dense-spined). ½. Pale yellow. June, July. Mexico.
,, *pyramida'lis* (pyramidal). See M. RHODANTHA.
,, *pyrrhoce'phala* (fire-headed). Red. June, July. Mexico.
,, ,, *Donkela'rii* (Donkelar's).
,, *quadra'ta* (four-sided). Chili. 1827.
,, *quadrispi'na* (four-spined). Mexico. 1838.
,, *ra'dians* (radiating). Mexico. 1845.
,, *radio'sa* (radiating). Arizona and California.
,, ,, *arizo'nica* (Arizonan).
,, *ramosi'ssima* (much-branched). Flowers unknown. Country unknown. 1908.
,, *recu'rva* (recurved). ½. Straw-coloured. Mexico. 1836.
,, *recurva'ta* (recurvate). Mexico.
,, *rhodaca'ntha* (red-spined). Red. June, July. Mexico (?).
,, *rhoda'ntha* (red-flowered). Mexico. 1835.
,, *Ru'stii* (Rust's). Spines 20–22. Honduras. 1905.
,, *sangui'nea* (blood-red). Dark red. Mexico. 1883.
,, *Schee'rii* (Scheer's). Texas and Mexico.
,, *Schelha'sii* (Schelhas's). White. June, July. Mexico.
,, *schiedea'na* (Schiedean). White. June, July. Mexico. 1845.
,, *Schmi'dtii* (Schmidt's). Country unknown.
,, *scolymoi'des* (Scolymus-like). Yellow and purple. July. Mexico.
,, *seitzia'na* (Seitzian). Mexico.
,, *Sempervi'vi* (Sempervivum-like). Mexico.
,, ,, *tetraca'ntha* (four-spined).
,, *se'nilis* (old). Orange-red, flushed with violet. June. Mexico.
,, *Se'nkii* (Senk's). See M. MUTABILIS.
,, *spæthia'na* (Spæthian). Rose-red. Mountains of Colorado. 1894.
,, *specio'sa* (showy) of G. Don. Red. Chili. 1827.
,, *sphæro'tricha* (spherical-haired). Red. June, July. Mexico.
,, *spinosi'ssima* (very-spiny). Red. June, July. Mexico.
,, ,, *bru'nnea* (brown).
,, *ste'lla-aura'ta* (golden-starred). Yellow. June, July. Mexco.
,, *stella'ta* (starry). Pink or pale red. May. S. Amer. 1815.
,, ,, *elonga'ta* (elongated).
,, ,, *te'nuis* (slender).
,, ,, *texa'na* (Texan).
,, *strami'nea* (straw-coloured). See M. FLAVESCENS.
,, *strobilifo'rmis* (cone-formed). Mexico.
,, ,, *cæspita'tia* (tufted). Habit tufted. 1909.
,, ,, *durispi'na* (hard-spined). Mexico. 1907.
,, ,, *pube'scens* (downy). Spines 30 or more, snow-white. Mexico. 1907.
,, ,, *rufispi'na* (red-spined). Brownish. Mexico. 1907.
,, *subechina'ta* (somewhat-spiny). Mexico.
,, ,, *interme'dia* (intermediate).
,, *te'nuis* (slender). White. May, June. S. Mexico. 1830.
M. texa'na (Texan). See M. STELLATA TEXANA.
,, *tetraca'ntha* (four-spined). Warm rose. June, July. Mexico.
,, *trichaca'ntha* (hairy-spined). Spines hairy. Mexico. 1904.
,, *tuberculo'sa* (tubercled). Texas and Mexico.
,, *turbina'ta* (top-shaped). Pale yellow, with red points. July. Mexico.
,, *uberifo'rmis* (teat-formed). White. June, July. Mexico. 1846.
,, *uncina'ta* (hooked). Red, white. June, July. Mexico. 1846.
,, *unise'ta* (one-bristled). Flowers not seen. Country unknown. 1904.
,, *ve'tula* (oldish). Pale scarlet. Mexico. 1835.
,, *villi'fera* (long-hair-bearing). Mexico.
,, *vi'ridis* (green). Mexico.
,, ,, *Præ'lii* (Præl's).
,, *vivi'para* (viviparous). Red. N. Amer. 1811.
,, *webbia'na* (Webbian). Mexico.
,, *Wilco'xii* (Wilcox's). Arizona.
,, *wildia'na* (Wildian). Rose. July, August. Mexico.
,, ,, *crista'ta* (crested).
,, *Willia'msii* (Williams'). See ANHALONIUM WILLIAMSII.
,, *xantho'tricha* (yellow-haired). Rosy-purple. Mexico.
,, *zephyranthoi'des* (Zephyranthes-like). Mexico.
,, *zuccarinia'na* (Zuccarinian). Mexico. 1845.

MAMME'A. Mammee-tree. (The native name. Nat. ord. *Guttifers* [Guttiferaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Garcinia.)

Cultivated in the West Indies and South America for its fruit, called the Mammee Apple, or Wild Apricot, said to rival the Mangosteen. Stove evergreen tree, with white flowers. Cuttings of the half-ripened shoots in sand, under a bell-glass, and in bottom-heat; fibrous, sandy loam, and a little dried leaf-mould. Winter temp., 50° to 55°; summer, 60° to 80°.

M. africa'na (African). See OCHROCARPUS AFRICANUS.
,, *america'na* (American). 60. S. Amer. 1730.

MANCINE'LLA. See HIPPOMANE MANCINELLA.

MANDARIN ORANGE. *Ci'trus no'bilis.*

MANDEVI'LLA. (Named after *H. J. Mandeville, Esq.*, our minister at Buenos Ayres. Nat ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Echites.)

Half-hardy evergreen climber. Generally by cuttings of the small, stiff side-shoots, when about three inches in length, taken off close to the old wood, and inserted in sand, under a bell-glass, and in a mild bottom-heat; peat and loam. Winter temp., 40° to 48°; does little good as a pot-plant, but is splendid when planted out and allowed room in a greenhouse or conservatory, where fine climbers are prized.

M. suave'olens (sweet-scented). 20. White. June. Buenos Ayres. 1837.

MANDIRO'LA. See ACHIMENES.

MANDRAGO'RA. (From *mandragoras*, an herb possessing narcotic properties, a mandrake. Nat. ord. Solanaceæ.)

Hardy perennial herbs of more interest than beauty. Seeds; offsets are not readily obtainable. Ordinary garden soil.

M. autumna'lis (autumnal). ½. Pale blue. September. Mediterranean region.
,, *interme'dia* (intermediate). Intermediate between *M. autumnalis* and *M. officinarum*.
,, *officina'rum* (officinal). ½. Pale blue. April and May. Mediterranean region. "Medicinal Mandrake."
,, *præ'cox* (early). 1. Yellow. Spring. S. Europe. 1819.
,, *verna'lis* (spring). See M. OFFICINARUM.

MANE'TTIA. (Named after *X. Manetti*, an Italian botanist. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Bouvardia.)

Stove evergreen climbers. In a cool greenhouse they thrive only in summer; cuttings of the young shoots in sandy soil, under a bell-glass; such kinds as *cocci'nea* also by division of the fleshy, tubercled-like roots as growth is commencing; sandy peat and fibrous loam. Winter temp., 45° to 50°; summer, 60° to 85°.

M. bi'color (two-coloured). See M. LUTEO-RUBRA.
,, *cocci'nea* (scarlet). See M. LYGISTUM.
,, *cordifo'lia* (heart-leaved). 5. Scarlet. August. Brazil.
,, *gla'bra* (smooth-*surfaced*). See M. CORDIFOLIA.
,, *infla'ta* (inflated). 3–5. Scarlet, yellow. S. Brazil. 1904. Closely allied to *M. luteo-rubra*.
,, *lu'teo-ru'bra* (yellow-red). 3–4. Scarlet, yellow. March. Brazil. 1843.
,, *Lygi'stum* (Lygistum). 20. Pink to scarlet. March. Cuba. 1822.
,, *mi'cans* (glittering). 3–5. Scarlet. Brazil. 1880.
,, *splæ'ndens* (splendid). Crimson. May. Caracas. 1840.
,, *unifo'ra* (one-flowered). 3. Rose. November. St. Martha. 1844.

MANGI'FERA. Mango-tree. (From *mango*, the Hindoo name of the fruit, and *fero*, to bear. Nat. ord. *Anacards* [Anacardiaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)

The Mango is the most esteemed fruit in India, having a grateful perfumed flavour. Stove evergreen trees. Cuttings of the nearly ripe shoots in sand, under a glass, and in heat; peat and rich loam. Winter temp., 50° to 60°; summer, 60° to 90°.

M. fœ'tida (fetid). 20. Red. Malaya. 1824.
,, *i'ndica* (Indian). 20. White. July. India and Malaya. 1690. "Mango."
,, *oppositifo'lia* (opposite-leaved). See BOUEA BURMANICA.

MANGLE'SIA. (Named after *Captain Mangles*, and his brother, *Robert Mangles, Esq.*, of Sunning Hill, distinguished patrons of botany. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. United to Grevillea.)

M. cunea'ta (wedge-shaped). See GREVILLEA GLABRATA.
,, *glabra'ta* (smooth). See GREVILLEA GLABRATA.
,, *vesti'ta* (clothed). See GREVILLEA VESTITA.

MANGLI'LLA. See MYRSINE.

MANGO GINGER. *Cu'rcuma ama'da.*

MANGOSTEEN. *Garci'nia.*

MANGO-TREE. See MANGI'FERA.

MANGROVE. *Rhizo'phora.*

MANICA'RIA. (From *manica*, a glove, referring to the spathe, or rolling leaf which surrounds the flower-stem. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 9-*Enneandria*.)

Stove Palm. Seeds in a strong heat, in a hotbed; rich, sandy loam. Winter temp., 55° to 65°; summer, 65° to 90°.

M. saccifera (bag-bearing). 30. S. Amer. 1823.

MA'NIHOT. (The Brazilian name of the root. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 7-*Heptandria*. Allied to Jatropha.)

Stove evergreen shrubs, except *digita'ta*, which only requires a greenhouse. Cuttings of mature wood in sand and placed in a close case with bottom-heat. Fibrous loam, peat, some nodules of charcoal and sand.

M. æsculifo'lia (chestnut-leaved). 3. Mexico. 1826.
,, *Ai'pi* (Aipi). Trop. Amer. "Sweet Cassava."
,, *carthagine'nsis* (Carthaginian). 3. July. Carthagena. 1820.
,, *digita'ta* (finger-*leaved*). Blue, green. July. Australia. 1820.
,, *fœ'tida* (fetid). 3. Brown. Mexico. 1824.
,, *Glazio'vii* (Glaziou's). Brazil. "Ceara Rubber."
,, *gra'cilis* (slender). Brown, green. July. Brazil. 1822.
,, ,, *tenuifo'lia* (slender-leaved). Blue, brown. June. Brazil. 1822.
,, *palma'ta* (hand-shaped). Brazil.
,, *sinua'ta* (wavy-*edged*). Brown. July. Brazil. 1824.
,, *tenuifo'lia* (thin-leaved). See M. GRACILIS TENUIFOLIA.
,, *utili'ssima* (most-useful). 3. July. Brazil. 1739. "Bitter Cassava."

MANNA. *Alha'gi.*

MANNA ASH. *Fra'xinus O'rnus.*

MANTI'SIA. Opera Girls. (Named after an insect, *Mantis*, to which the flowers have been compared. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Ginger.)

Stove herbaceous evergreens, from the East Indies. Division of the roots, as growth commences; sandy peat and fibrous loam, well drained. Winter temp., 48° to 55°; summer, 60° to 85°.

M. saltato'ria (dancing). 1. Purple. July. 1808.
,, *spathula'ta* (spathulate). 1. Blue. June. 1823.

MANU'LEA. (From *manus*, the hand; from a faint resemblance in the divisions of the flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Chænostoma.)

Greenhouse evergreens, from South Africa. Several species are taken from this genus and added to Lyperia. Seeds, sown in spring, in a slight hotbed; cuttings of the young shoots, firm at their base, in sand, under a bell-glass, but without bottom-heat; sandy loam and peat, and leaf-mould. Winter temp., 38° to 48°.

M. Cheira'nthus (wallflower). 1. Orange. August. 1795.
,, *corda'ta* (heart-*leaved*). See CHÆNOSTOMA CORDATUM.
,, *fœ'tida* (fetid). See CHÆNOSTOMA FŒTIDUM.
,, *hi'spida* (roughly-hairy). See CHÆNOSTOMA HISPIDUM.
,, *oppositifo'lia* (opposite-leaved). See CHÆNOSTOMA HISPIDUM.
,, *peduncula'ta* (long-stalked). See LYPERIA PEDUNCULATA.
,, *pinnati'fida* (pinnately-cut). See LYPERIA PINNATIFIDA.
,, *ru'bra* (red). 1½. Red. June. 1790.
,, *viola'cea* (violet). See LYPERIA VIOLACEA.
,, *visco'sa* (clammy). See SPHENANDRA VISCOSA.

MANURES are either animal, vegetable, or mineral. They directly assist the growth of plants, by entering into their composition, by absorbing and retaining moisture from the atmosphere, by absorbing the gases of the atmosphere, and by stimulating the vascular system of the plants. Manures indirectly assist vegetation, by killing predatory vermin and weeds, by promoting the decomposition of stubborn organic remains in the soil, and by protecting plants from violent changes of temperature.

All these properties seldom, if ever, occur in one species of manure; but each is usually particularised by possessing one or more in a superior degree. That is the most generally applicable manure which is composed of matters essential to the growth of plants: the chief of these are carbon, hydrogen, and oxygen; therefore all animal and vegetable substances are excellent manures. It would evidently be of great benefit if every plant could be manured with the decaying parts of its own species. This rule might be so far followed as that the stems of potatoes, peas, &c., could be dug respectively into the compartments where those crops are intended to be grown in the following year; but such manure requires the addition of ammoniacal salts.

Some manures ameliorate a soil by absorbing moisture from the atmosphere. This property is, at least, as beneficial to ground that is aluminous as to that which is siliceous; for it is equally useless to either during periods of plentiful rain; but in the drought of summer, when moisture is much wanting to plants, it is beneficial to both; in very dry seasons it is even of greater importance to clayey than to light soils; for vegetation on the former suffers more from long-continued drought than on the latter, the surface of the clayey soil becoming caked and impervious to air, the only grand source of compensatory moisture that is available to the languishing plants, and which is more open to those which grow on light, and, consequently, more pervious soils.

The following table of the comparative absorbent powers of many manures is extracted chiefly from *An Essay on the Use of Salt in Agriculture*, by Mr. Cuthbert Johnson:—

Horse-dung evaporated previously to dryness, at a temperature of 100°, absorbed during an exposure of three hours to air saturated with moisture at 62°, 145 parts; putrefied tanners' bark, under similar circumstances (66°), 145 parts; unputrefied tanners' bark, 115 parts; cow-dung, 130 parts; pig-dung, 120; sheep-dung, 81; pigeon-dung, 50; refuse marine salt (60°), 49½; soot (68°), 36; burnt clay, 29; the richest soil

(in one hour), 23; coal-ashes, 14; lime (part carbonate), 11; crushed rock-salt, 10; gypsum, 9; chalk, 4.

The absorbing power of a manure is much influenced by the state in which it is presented to the atmosphere. In a finely divided state mere capillary attraction assists it; hence the importance of keeping the soil frequently stirred by hoeing, &c. But a mere mass of cotton, by means of capillary attraction, will absorb moisture from the air; yet it parts with it at a very slight elevation of temperature. It is of importance, therefore, to ascertain which are the manures that not only absorb but retain moisture powerfully. The following results of our experiments throw some light on this point:—

Pig-dung evaporated to dryness at a temperature of 106°, and then moistened with six parts of water, required for being reduced to dryness again, at the above temperature, 135 minutes; horse-dung under similar circumstances, 90; common salt, 75; soot, 75; rich soil, 32; chalk, 29; poor soil (siliceous), 23; gypsum, 18.

These experiments point out a criterion by which we easily ascertain the comparative richness of any two given soils or manures: the most fertile will be most absorbent and retentive.

Some manures increase the growth and vigour of plants by stimulating their absorbent and assimilating organs. The stimulating powers of excrementitious manures arise from the salts of ammonia they contain.

Sir H. Davy found vegetation assisted by solutions of muriate of ammonia (sal-ammoniac), carbonate of ammonia (volatile salt), and acetate of ammonia. Night soil, one of the most beneficial of manures, surpasses all others in the abundance of its ammoniacal constituents in the proportion of three to one. It may be observed, that the nearer any animal approaches to man in the nature of its food, the more fertilising is the manure it affords. We have no doubt that a languishing plant—one, for example, that has been kept very long with its roots out of the earth, as an orange-tree recently imported from Italy—might be most rapidly recovered, if its stem and branches were steeped in a tepid, weak solution of carbonate of ammonia; and when planted, an uncorked phial of the solution were suspended to one of the branches, to impregnate the atmosphere slightly with its stimulating fumes.

Manures are also of benefit to plants by affording some of the gases of the atmosphere to their roots in a concentrated form. A soil, when first turned up by the spade or plough, has generally a red tint, of various intensity, which, by a few hours' exposure to the air, subsides into a grey or black hue. The first colour appears to arise from the oxide of iron which all soils contain, being in the state of the red or protoxide; by absorbing more oxygen during the exposure, it is converted into the black or peroxide. Hence one of the benefits of frequently stirring soils; the roots of incumbent plants abstract the extra dose of oxygen, and reconvert it to the protoxide. Coal-ashes, in common with all carbonaceous matters, have the power of strongly attracting oxygen. Every gardener may have observed how rapidly a bright spade of iron left foul with coal-ashes becomes covered with rust or red oxide.

Manures assist plants by destroying predatory vermin and weeds. This is not a property of animal and vegetable manures—they foster both these enemies of our crops. Salt and lime are very efficient destroyers of slugs, snails, grubs, &c.

Stable-manure, and all decomposing animal and vegetable substances, have a tendency to promote the decay of stubborn organic remains in the soil, on the principle that putrescent substances hasten the process of putrefaction in other organic bodies with which they come in contact. Salt, in a small proportion, has been demonstrated by Sir J. Pringle to be gifted with a similar septic property; and that lime rapidly breaks down the texture of organised matters is well known.

There is no doubt that rich soils, or those abounding in animal and vegetable remains, are less liable to change in temperature with that of the incumbent atmosphere than those of a poorer constitution. This partly arises from the colour of the soils. Some manures, as salt, protect plants from suffering by sudden reductions of temperature, by entering into their system, stimulating and rendering them more vigorous, impregnating their sap, and, consequently, rendering it less liable to be congealed.

MAPA'NIA. (Derivation not explained. Nat. ord. Cyperaceæ.)

A stove sedge used as a fine foliage plant. Seeds; divisions. Fibrous loam, leaf-mould, or peat and sand.

M. hu'milis (low). Leaves dark green above, tinged with purple beneath. Malaya. 1879.
,, *lu'cida* (shining). See M. HUMILIS.
,, *pandanifo'lia* (Pandanus-leaved). 4. Leaves arching, green, 2 ft. long. 1897.

MAPLE. *A'cer.*

MA'PPA PORTEA'NA. See MACARANGA PORTEANA.

MARANHAO NUTS. *Bertholle'tia.*

MARA'NTA. Arrow-root. (Named after *B. Maranti*, an Italian botanist. Nat. ord. *Marants* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Canna.)

A kind of arrow-root is obtained from the rhizomes, or fleshy roots, of some of the species. Stove evergreens; division of the roots in spring; rich, sandy loam, with nodules of peat. Winter temp., 50° to 60°; summer, 60° to 85°.

M. Albe'rti (Albert's). Leaves peculiarly variegated. 1906.
,, *ama'bilis* (lovely). Brazil.
,, *angustifo'lia* (narrow-leaved). See STROMANTHE TONCKAT.
,, *arge'ntea* (silvery). Leaves silvery-grey, with deep green lines. Brazil. 1884.
,, *argyræ'a* (silvery). See CALATHEA ARGYRÆA.
,, *arundina'cea* (reed-like). 4–8. White. S. Amer. "Arrowroot."
,, ,, *variega'ta* (variegated). 2. Leaves banded with green and white. 1886.
,, *asymme'trica* (unsymmetrical). Leaves dark green, with silvery-grey bands. 1882.
,, *Baraqui'nii* (Baraquin's). See CALATHEA BARAQUINIANA.
,, *be'llula* (little-pretty). See CALATHEA BELLULA.
,, *bi'color* (two-coloured). ¾. White. July. Brazil. 1823.
,, ,, *devosia'na* (Devosian).
,, ,, *kerchovea'na* (Kerchovian). ¼. Leaves with 4–5 brown blotches. Brazil. 1879.
,, ,, *makoya'na* (Makoyan). ½. Leaves pale green, with dark green blotches.
,, ,, *massangea'na* (Massangean). Leaves bluish-green, purple.
,, ,, *mi'nor* (smaller). ¼. White. April. S. Amer. 1828.
,, *Bino'ti* (Binot's). See CALATHEA ZEBRINA BINOTI.
,, *Chantrie'ri* (Chantrier's). Leaves grey-green, with oval-oblong bands of deep green. Brazil. 1897.
,, *chimboracе'nsis* (Chimboracan). See CALATHEA CHIMBORACENSIS.
,, *Closo'nii* (Closon's). Leaves dark green, variegated with pale yellow. Brazil. 1908.
,, *conci'nna* (neat). See CALATHEA LEOPARDINA.
,, *conspi'cua* (conspicuous). Leaves small, with yellow-green bands. Brazil. 1885.
,, *depre'ssa* (depressed). ¼. Leaves with chocolate-brown blotches. Brazil. 1880.
,, *fascia'ta* (bundled). See CALATHEA FASCIATA.
,, *Fascina'tor* (Fascinator). ½. Leaves silvery in the centre, purple beneath. Brazil. 1894.
,, *Gla'dioli* (Gladiolus). See MYROSMA GLADIOLI.
,, *gratio'sa* (favoured). Leaves silvery-grey, with green bands. Brazil. 1884.
,, *iconi'fera* (image-bearing). Foliage plant. 1887.
,, *illu'stris* (lustrous). See CALATHEA ILLUSTRIS.
,, *i'ndica* (Indian). See M. ARUNDINACEA.
,, *insi'gnis* (remarkable). 1½. Leaves bright-green, with olive-green markings. Brazil. 1902.
,, *Jacqui'ni* (Jacquin's). See STROMANTHE LUTEA.
,, *Kegelja'ni* (Kegeljan's). See CALATHEA KEGELJANI.
,, *kerchovea'na* (Kerchovean). See M. BICOLOR KERCHOVEANA.
,, *kummeria'na* (Kummerian). See MYROSMA KUMMERIANUM.
,, *legrellia'na* (Legrellian). See CALATHEA LEGRELLIANA.
,, *Leo'næ* (Leona's). ¼. Leaves green, with grey variegation. 1893.
,, *leopardi'na* (leopard-spotted). See CALATHEA LEOPARDINA.

M. leptosta'chya (slender-spiked). Brazil.
,, *leuconeu'ra* (white-nerved). Leaves with light green midrib, purple beneath. Brazil. 1874.
,, *liebrechtsia'na* (Liebrechtsian). 3. Leaves large, green. Congo Free State. 1900.
,, *lindenia'na* (Lindenian). See CALATHEA LINDENIANA.
,, *linea'ta* (lined). See CALATHEA ORNATA ALBO-LINEATA.
,, ,, *ro'sea* (rosy). See CALATHEA ORNATA ROSEO-LINEATA.
,, *lujaia'na* (Lujaian). 3–4. Leaves large, green, purple beneath. Congo Free State. 1900.
,, *luschnathia'na* (Luschnathian). Brazil. 1857. This is *Ctenanthe lushnathiana*.
,, *maje'stica* (majestic). See CALATHEA ORNATA MAJESTICA.
,, *ma'jor* (greater). 3. Leaves green. 1896.
,, *makoya'na* (Makoyan). See C. BICOLOR MAKOYANA.
,, *malacce'nsis* (Malacca). See ALPINIA MALACCENSIS.
,, *massangea'na* (Massangean). See M. BICOLOR MASSANGEANA.
,, *Maze'llii* (Mazell's). Leaves with two wide grey bands. Peru. 1871.
,, *mi'nor* (smaller). Leaves with six distant blotches of red-brown. Brazil. 1897.
,, *musa'ica* (mosaic). Leaves glossy green, with numerous veins. Brazil. 1884.
,, *nigrocosta'ta* (black-ribbed). See CALATHEA NIGROCOSTATA.
,, *ni'tens* (shining). Leaves pale green, barred with dark green lines. Brazil. 1880.
,, *ni'tida* (shining). ½–¾. Leaves pale green, with dark green patches. Brazil. 1884.
,, *obli'qua* (twisted-*leaved*). 2. Red. July. Guiana. 1803. See ISCHNOSIPHON OBLIQUUS.
,, *oliva'ris* (olive-coloured). See M. BICOLOR MAKOYANA.
,, *Oppenhei'mii* (Oppenheim's). Gardens.
,, *orbifo'lia* (round-leaved). See CALATHEA ORBICULATA.
,, *orna'ta* (adorned). See CALATHEA ORNATA.
,, *paci'fica* (pacific). See CALATHEA PACIFICA.
,, *pardi'na* (pard-like). See CALATHEA VILLOSA.
,, *pi'cta* (painted). Leaves with greenish-yellow area above, purple beneath. 1897.
,, *pictura'ta* (pictured). See CALATHEA PICTURATA.
,, *poli'ta* (polished). ½. Leaves pale green, with dark green blotches. Brazil. 1884.
,, *portea'na* (Portean). See STROMANTHE PORTEANA.
,, *prasi'na* (Leek-green). See CALATHEA MEDIO-PICTA.
,, *Pri'nceps* (chief). See CALATHEA PRINCEPS.
,, *pulche'lla* (pretty). See CALATHEA PULCHELLA.
,, *rega'lis* (royal). See CALATHEA ORNATA REGALIS.
,, *riedelia'na* (Riedelian). Brazil. 1858.
,, *ro'seo-pi'cta* (rosy-painted). See CALATHEA ROSEO-PICTA.
,, *sagorea'na* (Sagorean). Leaves banded with deep green. 1862.
,, *sanderia'na* (Sanderian). See CALATHEA SANDERIANA.
,, *sangui'nea* (blood-red). See STROMANTHE SANGUINEA.
,, *Seema'nni* (Seemann's). Leaves satiny emerald-green, midrib white. 1872.
,, *smara'gdina* (emerald-green). See ISCHNOSIPHON SMARAGDINUS.
,, *specio'sa* (showy). Leaves bright green, banded with greenish-white. Brazil. 1884.
,, *specta'bilis* (showy). See STROMANTHE SANGUINEA.
,, *sple'ndida* (splendid). See CALATHEA SPLENDIDA.
,, *stria'ta* (striped). Leaves lined with white. Philippines. 1864.
,, *tigri'na* (tiger-striped). 1. Leaves rich olive-green, with grey midrib. Brazil. 1904.
,, *Tou'chat* (Touchat). See STROMANTHE TONCKAT.
,, *undula'ta* (wavy). See CALATHEA UNDULATA.
,, *Va'nden He'ckei* (Van den Hecke's). See CALATHEA VANDENHECKEI.
,, *variega'ta* (variegated). 1. July. S. Amer. 1825.
,, *Vei'tchii* (Veitch's). See CALATHEA VEITCHIANA.
,, *virgina'lis* (virginal). See CALATHEA VIRGINALIS.
,, *vitta'ta* (striped). See CALATHEA VITTATA.
,, *Wagne'ri* (Wagner's). See CALATHEA ROSEO-PICTA WAGNERI.
,, *Walli'sii* (Wallis's). See CALATHEA WALLISII.
,, *Warscewi'czii* (Warscewicz's). See CALATHEA WARSCEWICZII.
,, *Wio'ti* (Wiot's). See CALATHEA WIOTIANA.
,, *zebri'na* (zebra-striped). See CALATHEA ZEBRINA.

MARA'TTIA. (Commemorative of *J. F. Maratti*, an Italian botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove evergreen ferns. Division in spring or by spores. Fibrous loam, fibrous peat, and sand. Winter temp., 55° to 60°; summer, 60° to 85°.

M. ala'ta (winged). 1½. Brown. August. Jamaica. 1793.
,, ,, *læ'vis* (smooth). Rachis smooth; teeth blunt. Jamaica. 1793.
,, *attenua'ta* (attenuated). New Caledonia. 1863.
,, *Bu'rkei* (Burke's). 2–2½. Stem prickly. Colombia. 1897.
,, *cicutæfo'lia* (Cicuta-leaved). Brown, yellow. Brazil. 1843.
,, ,, *raddia'na* (Raddian). Brazil. 1878.
,, *Coope'ri* (Cooper's). See M. ATTENUATA.
,, *e'legans* (elegant). See M. FRAXINEA.
,, *fraxi'nea* (ash-like). 8. Brown, yellow. Trop. and subtrop. Africa.
,, ,, *purpura'scens* (purplish). 6. A reduced fleshy form. Ascension Island.
,, ,, *purpura'scens crista'ta* (crested). See M. FRAXINEA PURPURASCENS.
,, *Kaulfu'ssii* (Kaulfuss's). 5–7. Fronds four times divided. W. Ind. to Brazil.
,, *læ'vis* (smooth). See M. ALATA LÆVIS.
,, *la'xa* (loose). Mexico.
,, *purpura'scens* (purplish). See M. FRAXINEA PURPURASCENS.
,, *raddia'na* (Raddian). See M. CICUTÆFOLIA RADDIANA.
,, *stanleya'na* (Stanleyan). Leaf-stalks with brown-red pubescence. Congo. 1903.

MARCGRA'VIA. (Commemorative of *Georg Marcgraf*, a writer on natural history. Nat. ord. Ternstrœmiaceæ.)

Stove climbing and self-clinging shrub. Cuttings in sand in a warm case. Loam, peat, and sand.

M. du'bia (doubtful). See M. UMBELLATA.
,, *i'ndica* (Indian). Probably a species of Pothos. 1884.
,, *parado'xa* (paradoxical). See MONSTERA TENUIS.
,, *umbella'ta* (umbelled). Leaves of two forms. Trop. Amer.

MARGINS of streams and other waters must always accord with the pleasure-grounds in which they are placed. Art, therefore, must imitate each in its proper place, not always by a studious picturesque arrangement of the marginal accompaniments in each case, but by excavating the groundwork, planting the trees and shrubs, and leaving the rest to the motion of the waves of the water. After the effects of one winter, stones or gravel may be deposited in spots suitable for stony or gravelly shores.

MARGYRICA'RPUS. (From *margaron*, a pearl, and *karpos*, a seed-vessel; referring to the pearly succulent fruit. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Agrimonia and Acæna.)

Hardy or half-hardy evergreen shrub. Cuttings of half-ripened shoots in April or May, in sand, under a bell-glass, and in bottom-heat; sandy peat, with pieces of charcoal. Winter temp., 48° to 55°; summer, 60° to 85°.

M. seto'sus (bristly). 2. Green. Chili. 1829. "Pearl Berry."

MARIA'LIA. See TOVOMI'TA.

MARIA'NTHUS. (From *Maria*, Mary, and *anthos*, a flower; dedicated to the Virgin Mary. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Sollya.)

Greenhouse deciduous climbers. Cuttings of young side-shoots in sand, under a bell-glass, in May; sandy loam, fibrous peat, with potsherds and charcoal, to keep the soil rather open. Winter temp., 40° to 45°.

M. cærule'o-puncta'tus (*orange*-blue-spotted). 4. Blue. April. Swan River. 1840.
,, *drummondia'nus* (Drummondian). Lilac. Australia. 1865.
,, *frutico'sus* (shrubby). Swan River. 1841.
,, *ri'ngens* (gaping). Yellow-red. November. Australia.
,, *te'nuis* (slender). 12. Blue. July. Australia. 1825.

MA'RICA. (From *maraino*, to flag; referring to the ephemeral nature of the flowers, which last hardly a day. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Iris.)

Greenhouse herbaceous evergreens. By seed, sown in a slight hotbed in spring; by offsets, in abundance, though seed ripens very freely; sandy loam, peat, and leaf-mould.

M. aphy'lla (leafless). See BOBARTIA APHYLLA.
„ *brachy'pus* (short-stalked). 1½. Bright yellow, banded brown. Trinidad. 1871.
„ *cæru'lea* (blue). 2. Blue. May. Brazil. 1818.
„ *cæle'stis* (sky-blue). 3. Blue. Brazil. 1829.
„ *gladia'ta* (sword-shaped). See BOBARTIA GLADIATA.
„ *gra'cilis* (slender). 2. Yellow, blue. August. Brazil. 1830.
„ *Hele'næ* (Helen's). Blue and white, 5 in. across. Brazil. 1905.
„ *hu'milis* (low). 1–1½. Yellowish-white, barred red-brown. S. Brazil. 1825.
„ „ *lu'tea* (yellow). See M. LUTEA.
„ *iridifo'lia* (Iris-leaved). See SISYRINCHIUM IRIDIFOLIUM.
„ *longifo'lia* (long-leaved). Striped. August. Brazil. 1830.
„ *lu'tea* (yellow). 1½. Bright yellow, barred red-brown. S. Brazil. 1840.
„ *martinice'nsis* (Martinique). See TRIMEZA LURIDA.
„ *northia'na* (North's). 4. Yellow. June. Brazil. 1789.
„ „ *splе'ndens* (splendid). More brightly coloured. Brazil. 1895.
„ *occidenta'lis* (western). Flowers smaller and leaves shorter than *M. northiana*. Peru. 1892.
„ *paludo'sa* (marsh). 1. White. July. Guiana. 1792.
„ *plica'ta* (plaited). See ELEUTHERINE PLICATA.
„ *Sabi'ni* (Captain Sabine's). See M. CÆRULEA.
„ *spatha'cea* (large-spathed). See BOBARTIA SPATHACEA.

MARIGOLD. *Cale'ndula officina'lis.*

Varieties.—Single, Common double, Largest very double, Double lemon-coloured, Great Childing, Small Childing. The single-flowered, and those which have the darkest orange colour, possess the most flavour.

Soil.—Light, dry, poor, and unshaded. In rich ground they grow larger, but lose much of their flavour.

Sow any time from the close of February until June; or in autumn, during September. If left to themselves, they multiply from the self-sown seed. Sow in drills, ten inches apart; the plants to be left where raised, being thinned to ten or twelve inches asunder; but when the seedlings are two or three inches in height, they may be removed into rows at similar distances as above. Water must be given moderately every other day in dry weather until established.

Gathering.—The flowers, which the spring-raised plants will produce in the June of the same year, but those of autumn not until that of the following one, will be fit to gather for keeping in July, when they are fully expanded, as well as for use when required. Before storing, they must be dried perfectly.

MARIGOLD, AFRICAN. *Tage'tes ere'cta.*

MARIGOLD, FRENCH. *Tage'tes pa'tula.*

MARIGOLD, GREAT CAPE. *Dimorphothe'ca hy'brida.*

MARIGOLD, MARSH. *Ca'ltha palu'stris.*

MA'RILA. (From *marile*, live embers, or sparks; referring to pellucid dots on the leaves, or yellow fringe round the seed-pod. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia*. Allied to Mahurea.)

Stove evergreen shrub. Cuttings of shoots, when short, and getting firm at their base; sandy peat and loam, well-drained, and open. Winter temp., 50° to 55°; summer, 60° to 80°.

M. racemo'sa (racemed). 12. Yellow, green. August. W. Ind. 1827.

MARI'SCUS. (From *mar*, a swamp; in allusion to the place where it grows. Nat. ord. Cyperaceæ.)

Greenhouse evergreen herb. Divisions. Loam, leaf-mould, sand.

M. Gra'ntii (Grant's). Flower-heads globular. Natal. 1898.
„ *umbile'nsis* (Umbilian). See M. GRANTII.

MARJORAM. (*Ori'ganum.*) *O. Majora'na*, Sweet or Summer Marjoram. *O. heracleo'ticum*, Winter Marjoram. *O. Oni'tes*, Common or Pot Marjoram.

Soil.—Light, dry, and moderately fertile. The situation cannot be too open.

Propagation.—The Sweet Marjoram is propagated solely by seeds; the others by seed, as well as by parting their roots, and slips of their branches. Sow from the end of February, if open weather, to the commencement of June; but the early part of April is best. Portions of the rooted plants, slips, &c., may be planted from February until May, and during September and October.

Sow in drills, six inches apart, the seed being buried not more than a quarter of an inch deep. When the seedlings are two or three inches high, thin to six inches, and those removed may be pricked in rows at a similar distance. Those of the annual species (*O. Majora'na*) are to remain; but those of the perennials, to be finally removed during September, water being given at every removal, and until the plants are established.

Plant slips, &c., in rows ten or twelve inches apart, where they are to remain; they must be watered moderately every evening, and shaded during the day until they have taken root. In October the decayed parts of the perennials are cut away, and some soil from the alleys scattered over the bed about half an inch in depth, the surface of the earth between the stools being previously stirred gently. The tops and leaves of all the species are gathered when green, in summer and autumn, for use, in soups, &c.; and a store of the branches are cut and dried in July or August, just before the flowers open, for winter's supply.

Seed.—If a plant or two are left ungathered from the Pot Marjoram, the seed ripens in the course of the autumn. But the others seldom ripen their seed in this country; consequently it is usually obtained from the south of France or Italy.

Forcing.—When the green tops are much in request, a small quantity of seed of the Summer Marjoram is sown in January or February, in a moderate hotbed.

MARKET-GARDENER, one who grows garden produce for sale.

MARKING FRUIT. *Anaca'rdium.*

MARL is a compound of chalk (carbonate of lime) with either siliceous sand or alumina. In the first instance it is a siliceous marl, best applied to heavy soils; and in the latter a clayey marl, adapted for light lands. Slaty and shell-marls are varieties of the siliceous. The relative proportions of the constituents vary indefinitely, the chalk amounting to from 15 to 75 per cent. The quantity applied per acre must also vary greatly, according to the object to be attained. To render a light soil more tenacious, 100 tons per acre of clayey marl are not too much; neither is the same quantity of siliceous marl an excess, if applied to a heavy soil to render it more friable.

MA'RLEA. (From *marlija*, the Indian name. Nat. ord. *Dogwoods* [Cornaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Nyssa.)

Greenhouse evergreen and hardy shrubs. Cuttings of shoots, or rather, short, stubby side-shoots, taken off with a heel, in sand, under glass; peat and loam. Winter temp., 40° to 48°.

M. begoniæfo'lia (Begonia-leaved). 4–6. Yellowish. China. 1824.
„ „ *platanifo'lia* (Platanus-leaved). 5–6. White. China and Japan. Hardy, deciduous.

MARRU'BIUM. Horehound. (From the Hebrew *marrob*, bitter juice. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Hardy herbaceous perennials. Division of the roots in spring; by slips, in a shady place, or shaded for a time, and by seeds; common garden soil.

M. affi'ne (related). See M. LEONUROIDES.
„ *Aly'sson* (Alysson). 1½. Purple. July. Spain. 1597.
„ *a'pulum* (not-closed). See M. VULGARE LANATUM.
„ *astraca'nicum* (Astrachan). 1. Blue. Asia Minor.
„ *candidi'ssimum* (whitest). 2. White. July. Levant. 1732.
„ *catariæfo'lium* (catmint-leaved). 1½. Purple. July. Levant. 1819.

M. lana'tum (woolly). 1. Purple. July. Altaic Siberia. 1820.
„ *leonuroi'des* (Leonurus-like). 1½. Purple. July. Caucasus. 1819.
„ *panno'nicum* (Pannonian). Eastern Europe.
„ *peregri'num* (foreign). Europe; Asia Minor.
„ *propi'nquum* (related). White. June. Caucasus. 1836.
„ *Pseu'do-dicta'mnus* (false dittany). See BALLOTA PSEUDO-DICTAMNUS.
„ *remo'tum* (remote). See M. PANNONICUM.
„ *vulga're* (common). 2. White. July. Britain.
„ „ *lana'tum* (woolly). White. August. Britain.

MARSCHA'LLIA. (Named after *H. Marschall*, a botanical author. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Half-hardy herbaceous plants, with purplish flowers, from Carolina. Division of the plants in spring, or slips of the shoots in sandy soil, under a hand-light, in April and May; common, sandy loam; *angustifo'lia* likes the addition of peat; they require a dry, elevated place in winter, and the protection of an evergreen bough, or a cold, dry pit, with plenty of air.

M. angustifo'lia (narrow-leaved). 2. July. 1800.
„ *cæspito'sa* (tufted). 1. Purple, white. July. Texas. 1837.
„ *lanceola'ta* (spear-head-*leaved*). 1½. June. 1812.
„ *latifo'lia* (broad-leaved). 1½. June. 1806.

MARSDE'NIA. (Named after *W. Mardsen*, author of a History of Sumatra. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Pergularia.)

Stove evergreen or hardy shrubs; *flave'scens* is a pretty climber; *M. ere'cta* is hardy on a wall. Cuttings in sand, under a bell-glass, in April or May, and a very slight bottom-heat; sandy loam, with a little leaf-mould or peat. Winter temp., 45° to 55°; summer, 60° to 75°.

M. Cundura'ngo (Cundurango). White. Colombia. "Condor Vine."
„ *ere'cta* (upright). 10. White. July. Syria. 1597.
„ *flave'scens* (yellowish). 20. Yellowish. August. Australia. 1830.
„ *Imthu'rnii* (Imthurn's). Purple. British Guiana. 1904.
loniceroi'des (honeysuckle-like). 8. Scarlet. July. Brazil. 1825.
„ *macula'ta* (spotted-*leaved*). 20. Green, purple. June. New Grenada. 1834.
„ *suave'olens* (sweet-scented). 2. White. July. Australia. 1816.
„ *tenaci'ssima* (toughest). Yellow. June. E. Ind. 1806.
„ *tincto'ria* (dyer's). Yellow. Trop. Africa.

MARSH CINQUEFOIL. *Potenti'lla palu'stris.*

MARSH MALLOW. *Althæ'a.*

MARSH MARIGOLD. *Ca'ltha palu'stris.*

MARSI'LEA. (Commemorative of *Count L. F. Marsigli*, of the Bologne Academy of Sciences. Nat. ord. Marsileaceæ.)

Half-hardy aquatics, most often grown in stove and greenhouse tanks. Divisions. Loam, leaf-mould, and sand.

M. Drummo'ndii (Drummond's). Australia.
„ „ *sa'lvatrix* (safe).
„ *hirsu'ta* (hairy). Australia.
„ *macro'pus* (long-stalked). Texas.
„ *quadrifolia'ta* (four-leaved). Europe and Asia.
„ *sa'lvatrix* (safe). See M. DRUMMONDII SALVATRIX.

MARTAGON. *Li'lium Ma'rtagon.*

MARTINE'ZIA. (Commemorative of *Balthassar Martinez*, a Spaniard. Nat. ord. Palmaceæ.)

Stove Palms. Seeds. Loam, peat, and a little sand.

M. Aipha'nes (Aiphanes). Venezuela.
„ *caryotæfo'lia* (Caryota-leaved). 30–50. Colombia. 1845.
„ *coralli'na* (coral-red). Martinique.
„ *ero'sa* (gnawed). W. Ind. 1871.
„ *granate'nsis* (New-Grenadan). Colombia. 1874.
„ *leucophæ'a* (dusky-white). Colombia. 1875.
„ *lindenia'na* (Lindenian). 15. Colombia. 1869.

MARTY'NIA. (Named after *Dr. Martyn*, once professor of botany at Cambridge. Nat. ord. *Pedaliads* [Pedaliaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Pedalium.)

Greenhouse or half-hardy annuals. Seeds, sown in a strong but sweet bottom-heat, in March; plants pricked off as soon as they can be handled, kept close and warm, and, when increasing in size, shifted and hardened off by degrees, to enable them to bloom in a cool stove, a warm greenhouse, or in the open garden.

M. a'nnua (annual). See M. PROBOSCIDEA.
„ *Craniola'ria* (Craniolarian). See CRANIOLARIA ANNUA.
„ *dia'ndra* (two-anthered). 1½. Red. July. New Spain. 1731.
„ *fra'grans* (fragrant). 2. Crimson. June. Mexico. 1840.
„ *hirtila'bia* (hairy-lipped). Yellow, purple. Colombia.
„ *longiflo'ra* (long-flowered). See ROGERIA LONGIFLORA.
„ *lu'tea* (yellow). 1½. Yellow. July. Brazil. 1825.
„ *probosci'dea* (proboscis-like). ¾. Light blue. July. N. Amer. 1738. "Elephant's Trunk."
„ *viola'cea* (violet). See M. FRAGRANS.

MARVEL OF PERU. *Mira'bilis.*

MASCARENHA'SIA. (Commemorative of *Don Mascarenhas*, the discoverer of Bourbon in 1545. Nat. ord. Apocynaceæ.)

Evergreen stove shrub. Cuttings of side-shoots, getting firm, in sand, and placed in a close case with bottom-heat. Fibrous loam, peat, and sand.

M. curnowia'na (Curnowian). Bright carmine. Madagascar. 1881.

MASDEVA'LLIA. (Named after *J. Masdevall*, a Spanish botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Octomeria.)

Stove orchids. Division in spring; peat, sphagnum, rotten wood, and charcoal; plants elevated above the pots or baskets. Winter temp., 55° to 60°; summer, 60° to 90°.

M. abbrevia'ta (shortened). White, with fewer violet specks than *M. polysticta*. Peru. 1878.
„ *acrochordo'nia* (top-string-toothed). Inner face of sepals warted. Ecuador. 1885.
„ *æqui'loba* (equal-lobed). Pale red. Peru. 1860.
„ *ama'bilis* (lovely). ¾. Crimson. Colombia. 1874.
„ „ *linea'to-stria'ta* (line-striped). Pink, orange, purple. 1875.
„ *anchori'fera* (anchor-bearing). See SCAPHOSEPALUM ANCHORIFERUM.
„ *angula'ta* (angled). Yellowish, chocolate-brown. Ecuador. 1898.
„ *Armi'nii* (Armin's). Rose, shaded with purple. Colombia. 1882.
„ *astu'ta* (artful). See M. ERYTHROCHÆTE.
„ *attenua'ta* (attenuated). Greenish-white, yellow. Costa Rica. 1871.
„ *a'viceps* (bird's-head). Green, yellow. Brazil. 1871.
„ *backhousea'na* (Backhousean). See M. CHIMÆRA BACKHOUSEANA.
„ *barlæa'na* (Barlæan). Bright red. Peru. 1876.
„ *be'lla* (pretty). Purple-brown, creamy-yellow. Colombia. 1878.
„ *Benedi'cti* (Benedict's). See M. HOUTTEANA.
„ *biflo'ra* (two-flowered). White, with blackish-purple spot, and purple rib. 1890.
„ *bogote'nsis* (Bogotan) of gardens.
„ *Bonpla'ndii* (Bonpland's). Colombia.
„ *bre'vis* (short). See SCAPHOSEPALUM BREVE.
„ *Bruchmü'lleri* (Bruchmüller's). See M. CORIACEA.
„ *burbidgea'na* (Burbidgean). Greenish-yellow, with brown spots, yellow. Colombia. 1893.
„ *burfordie'nsis* (Burfordian). White, dotted claret, purple. 1900.
„ *calo'ptera* (beautiful-winged). Peru.
„ *calu'ra* (beautiful-tailed). Bluish-purple, with obtuse warts. Costa Rica. 1883.
„ *campyloglo'ssa* (curved-tongued). Greenish-white, with nine purple dots. Colombia. 1878.
„ *ca'ndida* (white). See M. TOVARENSIS.
„ *Carde'ri* (Carder's). ¼. Whitish, with dark purple spots. Colombia. 1883.
„ *cauda'ta* (tailed). ½. Pale yellow, spotted with purple. Colombia. 1875.

M. cauda'ta xantho'corys (yellow-helmeted). Yellow, brown. 1882.
„ *Chesterto'ni* (Chesterton's). Greenish-yellow, orange, with black spots. Colombia. 1883.
„ *Chimæ'ra* (Chimæra). 1–2. Blackish, dotted, hairy. Colombia. 1880.
„ „ *backhousea'na* (Backhousean). Large, bright purple-brown. Colombia. 1879.
„ „ *ere'cta* (erect). Flower-scape erect.
„ „ *Gorgo'na* (Gorgon). Canary-yellow, spotted with red-purple; lip tinted orange-red.
„ „ *Rœ'zlii* (Rœzl's). Blackish India-purple, smooth. Colombia. 1880.
„ „ *se'nilis* (old-man). Red-brown, white, with mauve-brown spots. 1886.
„ „ *seve'ra* (grave). Maroon, pale yellow. Colombia. 1875.
„ „ *spe'ctrum* (spectre). Colombia. 1875.
„ „ *Walli'sii* (Wallis's). 1. Yellow, spotted dull blood-red. Colombia. 1872.
„ „ *Walli'sii discoi'dea* (disc-like). Sepals with a white disc near their apices. 1881.
„ *ci'vilis* (civil). Yellow, brown, and purple. Peru. 1864.
„ *cocci'nea* (scarlet). 1. Scarlet, with violet gloss. April. Colombia.
„ „ *armeni'aca* (apricot). Apricot, veined with flame-red. Colombia.
„ „ *conchiflo'ra* (shell-flowered). A large flowered form, with concave lateral sepals.
„ „ *denisonia'na* (Denisonian).
„ „ *Henderso'ni* (Henderson's).
„ „ *lilaci'na* (lilac). 1. Pale purple, with darker veins.
„ „ *Linde'ni* (Linden's). 1. Magenta. Colombia. 1871.
„ „ *rosa'cea* (rosy). 1. Rosy.
„ „ *walkeria'na* (Walkerian).
„ „ *Wi'nnii* (Winn's).
„ *conchiflo'ra* (shell-flowered). See M. COCCINEA CONCHIFLO'RA.
„ *coria'cea* (leathery). ½. Pale yellow, brown-purple. Colombia. 1872.
„ *cornicula'ta* (small-horned). 1. Dark cinnamon-brown. Colombia. 1878.
„ *costarice'nsis* (Costa-Rican). ½. White, with yellow tails. Costa Rica. 1890.
„ *cuculla'ta* (hooded). Blackish-purple, whitish, yellow. Colombia. 1883.
„ *Cu'lex* (flea). See PLEUROTHALLIS MACROBLEPHARIS.
„ *cupula'ris* (cup-like). Light brown, dark brown, ochreous. Costa Rica. 1888.
„ *Davi'sii* (Davis's). 1. Bright yellow. Peru. 1874.
„ *daya'na* (Dayan). See CRYPTOPHORANTHUS DAYANUS.
„ *demi'ssa* (drooping). Yellow, with brownish-purple lines. Costa Rica. 1887.
„ *Deniso'ni* (Denison's). See M. COCCINEA DENISONIANA.
„ *deo'rsa* (turned-downwards). Light yellow, blotched purple-brown, purple. Colombia. 1900.
„ *eclyptra'ta* (shieldless). Rich orange-yellow. 1895.
„ *Edua'rdi* (Eduard's). ½. Red. Colombia. 1880.
„ *elepha'nticeps* (elephant-headed). Yellow, purple. Colombia.
„ *Ephi'ppium* (Ephippium). 1. Pale yellow, dark purple-brown. Colombia. 1874.
„ *erina'cea* (prickly). Ochre, dark purple, orange. Colombia. 1881.
„ *erythrochæ'te* (red-cloaked). 1. White, light yellow, reddish-purple. Colombia. 1882.
„ *Estra'dæ* (Estrada). Yellow-white, violet-purple.
„ „ *delica'ta* (pale). Yellow and pale purple. 1882.
„ *fascia'ta* (bundled). Top sepal hooded. Colombia. 1881.
„ *fenestra'ta* (windowed). See CRYPTOPHORANTHUS ATROPURPUREUS.
„ *fla'veola* (yellowish). Light yellow. Costa Rica. 1884.
„ *forgetia'na* (Forgetian). Flowers small. Northern Brazil. 1895.
„ *floribu'nda* (many-flowered). ½. Brownish-yellow. November. Brazil. 1843.
„ *fra'grans* (fragrant). Flowers cupped, yellowish. Colombia. 1893.
„ *fulve'scens* (tawny). Buff, brown, orange-yellow, white. Colombia. 1890.
„ *galeotia'na* (Galeottian). See M. FLORIBUNDA.
„ *Garga'ntua* (Gargantua). Leather yellow, purple, white. Colombia. 1876.
M. gaskellia'na (Gaskellian). See M. ERYTHROCHÆTA.
„ *gemma'ta* (gemmed). ½. Ochreous, with orange tails. Colombia. 1883.
„ *gibbero'sa* (hump-backed). See SCAPHOSEPALUM GIBBEROSUM.
„ *gracile'nta* (somewhat-graceful). See CRYPTOPHORANTHUS GRACILENTUS.
„ *Gusta'vi* (Gustav's). Pale yellow, dark purple. Colombia. 1875.
„ *guttula'ta* (small-spotted). ½. Yellow-white, spotted with purple. Ecuador (?). 1890.
„ „ *acanthifo'lia* (spiny-leaved). Rich violet-rose. 1883.
„ „ *atrosangui'nea* (dark-blood-red). Glowing crimson. Colombia.
„ „ *Grave'siæ* (Mrs. Graves's). Pure white. 1892.
„ „ *imperia'lis* (imperial). Crimson-magenta. 1882.
„ „ *minia'ta* (vermilion). Vermilion, flushed scarlet. Colombia.
„ „ *rega'lis* (royal). Glowing crimson. 1883.
„ *harrya'na* (Harryan). See M. COCCINEA.
„ *Henderso'ni* (Henderson's). See M. COCCINEA HENDERSONI.
„ *hetero'ptera* (various-winged). Yellow, black-purple. Colombia. 1875.
„ *hierogly'phica* (hieroglyphical). Brown, purple-brown. Colombia. 1882.
„ *houttea'na* (Houttean). ¾. White, brown-purple. Colombia. 1874.
„ *Hu'bschii* (Hubsch's). See MAXILLARIA HUBSCHII.
„ *Hypodi'scus* (Hypodiscus). Purple-violet; white crests on veins. 1878.
„ *i'gnea* (fiery). 1. Glowing orange-red. Colombia. 1871.
„ „ *auranti'aca* (golden). Orange-red.
„ „ *Boddæ'rti* (Boddært's). Yellow, crimson-red. Colombia. 1879.
„ „ *marshallia'na* (Marshallian). Glowing red, yellow. Colombia. 1872.
„ „ *massangea'na* (Massangean). Darker scarlet. Colombia.
„ „ *stobartia'na* (Stobartian). Nerves mauve-purple. 1881.
„ *inæqua'lis* (unequal). ½. Pale, nearly white. Colombia. 1874.
„ *infla'ta* (inflated). Orange-yellow. Colombia. 1881.
„ *infra'cta* (broken). Whitish-yellow. April. Brazil. 1835.
„ „ *purpu'rea* (purple). Rich purple-mauve. 1883.
„ *iono'charis* (violet-elegance). ½. White, purple. Peru. 1875.
„ *Klabocho'rum* (The Klabochs'). Blackish-grey, white inside. S.W. Amer. 1876.
„ *la'ta* (broad). Reddish-brown, with yellowish tails. Central Amer. 1877.
„ *lauchea'na* (Lauchean) of gardens.
„ *Lawre'ncei* (Lawrence's). See M. GUTTULATA.
„ *Lehma'nni* (Lehmann's). ½. Orange-yellow. Ecuador. 1877.
„ *leontoglo'ssa* (lion-tongued). Lemon, ochre, dark purple, white. Colombia. 1881.
„ *Linde'ni* (Linden's). See M. COCCINEA LINDENI.
„ *livingstonea'na* (Livingstonian). Pale yellow, purple-brown. Panama. 1874.
„ *longicauda'ta* (long-tailed). See M. INFRACTA.
„ *longise'pala* (long-sepaled). See M. MACRURA.
„ *Lo'wii* (Low's). White, spotted purple, maroon-purple. Colombia. 1890.
„ *ludibu'nda* (playful). Light yellow, spotted purple, dark yellow. Colombia. 1882.
„ *macrochi'la* (long-lipped). Yellow-green, spotted black, orange. Colombia. 1890.
„ *macroda'ctyla* (long-fingered). Yellowish, black-purple. Colombia. 1872.
„ *macru'ra* (long-tailed). 1. Light brown, with purple-brown markings. Colombia. 1877.
„ „ *ma'xima* (largest). Flowers larger and darker. Colombia. 1903.
„ *macula'ta* (spotted). Yellow, purple. Colombia. 1873.
„ „ *fla'va* (yellow). Tawny yellow tailed.
„ *margine'lla* (small-edged). White, green, orange. 1883.
„ *mela'nopus* (black-stalked). White, purple, yellow. Peru. 1874.

M. melanoxa'ntha (black-yellow). Yellow, brown. Colombia. 1875.
„ *milita'ris* (military). Yellow, cinnabar. Colombia. 1880.
„ *moorea'na* (Moorean). Yellowish, reddish, chocolate-brown. Venezuela. 1884.
„ *musco'sa* (mossy). Pale buff-yellow; lip sensitive. Colombia. 1875.
„ *myriosti'gma* (myriad-spotted). See M. FLORIBUNDA.
„ *nidi'fica* (nest-making). ½. Yellow, tinted purple. Ecuador. 1880.
„ *Norma'nni* (Norman's). See M. REICHENBACHIANA.
„ *Nycteri'na* (Nycterina). Yellow, red-brown. Colombia. 1873.
„ *obrienia'na* (O'Brienian). Yellow, spotted with maroon. 1890.
„ *ochtho'des* (protuberanced). See SCAPHOSEPALUM OCHTHODES.
„ *ortgiesia'na* (Ortgiesian). ½. Greenish-white, with purple nerves. 1908.
„ *pachya'ntha* (thick-flowered). Ochre or greenish-brown. Colombia. 1884.
„ *pachyu'ra* (thick-tailed). Yellow, brown-red. West S. Amer. 1874.
„ *parlatorea'na* (Parlatorean). Salmon outside, scarlet within. Colombia. 1879.
„ *Peristе'ria* (Peristeria). ½. Yellow, purple-brown. Colombia. 1873.
„ *peruvia'na* (Peruvian). Red-purple, white, lilac. Peru. 1906.
„ *pictura'ta* (ornamented). Whitish, with green veins and tails, spotted. Venezuela. 1882.
„ *platyglo'ssa* (broad-tongued). Light yellow. Colombia. 1882.
„ *platyra'chis* (broad-rachised). See PLEUROTHALLIS PLATYRACHIS.
„ *polysti'cta* (many-speckled). ½. White, speckled with violet. N. Peru. 1874.
„ „ *crassicauda'ta* (thick-tailed). Tails short, stout. 1882.
„ *polysti'cta* (many-speckled) of Hooker f. See M. MELANOPUS.
„ *porce'lliceps* (small pig-headed). Yellowish, speckled brown, white. Colombia. 1883.
„ *psittaci'na* (parrot-like). See M. HOUTTEANA.
„ *pulvina'ris* (cushioned). See SCAPHOSEPALUM PULVINARE.
„ *pu'mila* (dwarf). Peru.
„ *puncta'ta* (spotted). See SCAPHOSEPALUM PUNCTATUM.
„ *pusi'lla* (puny). Yellowish, with purple-brown blotches. Colombia. 1893.
„ *Pusi'ola* (Pusiola). 1/12. Flowers small, yellow. Colombia. 1887.
„ *racemo'sa* (racemed). Colombia.
„ *radio'sa* (radiating). Brown, yellow, blackish-purple. Colombia. 1877.
„ *reichenbachia'na* (Reichenbachian). Yellow, purple-brown. Costa Rica. 1875.
„ „ *auranti'aca* (orange). Lateral sepals rich orange. 1883.
„ *Rœ'zlii* (Rœzl's). See M. CHIMÆRA RŒZLII.
„ *rolfea'na* (Rolfean). Crimson-brown, with yellow tails. Costa Rica. 1890.
„ *ro'sea* (rosy). Rich rose-purple. Peru. 1880.
„ *Schli'mii* (Schlim's). 2. Yellow, mottled with brownish-red. Venezuela. 1883.
„ *schrœderia'na* (Schrœderian) of gardens. Dark purple, white. 1890.
„ *se'nilis* (old-man). See M. CHIMÆRA SENILIS.
„ *seve'ra* (grave). See M. CHIMÆRA SEVERA.
„ *Shuttlewo'rthii* (Shuttleworth's). See M. CAUDATA.
„ *si'mula* (flat-nosed). Pale purple. Colombia. 1875.
„ *soro'rcula* (somewhat-sisterly). Greenish, purple, white, dark purple. 1887.
„ *spe'ctrum* (spectre). See M. CHIMÆRA SPECTRUM.
„ *sple'ndida* (splendid). Rich scarlet, with a violet tinge, white. Andes. 1878.
„ *striate'lla* (finely-striated). White, striped cinnamon, yellow. Colombia. 1886.
„ *swertiæfo'lia* (Swertia-leaved). See SCAPHOSEPALUM SWERTIÆFOLIUM.
„ *Tondu'zii* (Tonduz's). Citron, white; tails yellow. 1906.
„ *to'rta* (twisted). Ochre, spotted and striped purple; tails twisted. Colombia. 1883.
M. tovare'nsis (Tovaran). ½. White. Venezuela. 1865.
„ „ *moorea'na* (Moorean). Tails orange-red. 1895.
„ *triangula'ris* (triangular). Ochreous, with brownish purple spots. Colombia. 1882.
„ *triariste'lla* (three-awned). Brown and yellow, whitish. Costa Rica. 1876.
„ *trichæ'te* (three-cloaked). See M. GEMMATA.
„ *tri'color* (three-coloured). Purple. Colombia. 1882.
„ *tridactyli'tes* (three-fingered). Yellow, brownish-purple; tails orange. Colombia. 1883.
„ *Triglo'chin* (three-barbed). ½. Red, pale yellow; tails yellow. Ecuador. 1878.
„ *Trochi'lus* (wren). See M. EPHIPPIUM.
„ *Troglody'tes* (Troglodytes). Whitish, purple-brown, yellow. Colombia. 1877.
„ *tubea'na* (Tubean). 1. Violet-brown, yellow. Ecuador. 1878.
„ *tubulo'sa* (tubular). White. July. Venezuela.
„ *urosta'chya* (tail-spiked). Dark brown, with orange markings. 1882.
„ *veitchia'na* (Veitchian). Orange-scarlet, flushed violet. Peru. 1867.
„ „ *biflo'ra* (two-flowered). Twin-flowered. 1883.
„ „ *grandiflo'ra* (large-flowered). Flowers much larger. 1882.
„ *veli'fera* (sail-bearing). Green, brown, yellow; tails yellow. Colombia (?). 1874.
„ *veluti'na* (velvety). ½. Rose-violet, white. Colombia. 1875.
„ *veno'sa* (veiny). Straw-yellow, spotted with dull purple. Colombia. 1901.
„ *Vesperti'lio* (bat). Pale yellow, spotted brownish-purple; tails yellow. Colombia. 1877.
„ *wageneria'na* (Wagenerian). ½. Yellow. Venezuela. 1852.
„ *Walli'sii* (Wallis's). See M. CHIMÆRA WALLISII.
„ „ *discoi'dea* (discoid). See M. CHIMÆRA WALLISII DISCOIDEA.
„ *Wendla'ndii* (Wendland's). White, with 2–3 mauve lines outside. Colombia. 1887.
„ *winnia'na* (Winnian). India-purple. 1881.
„ *xanthi'na* (yellow). ½. Yellow, dark violet, whitish. Colombia. 1880.
„ „ *a'lbida* (whitish). White. 1900.
„ *xanthoda'ctyla* (yellow-fingered). Greenish-white, violet; tails yellow. 1877.
„ *xiphe'res* (sword-wearing). ½. Greenish-brown; tails purple-brown. Colombia. 1902.

MASSA'NGEA. (Commemorative of *M. Massange de Louvrex*, a notable horticulturist of Belgium. Nat. ord. Bromeliaceæ.) Now referred to Caraguata.
M. hierogly'phica (hieroglyphical). See TILLANDSIA HIEROGLYPHICA.
„ *Linde'ni* (Linden's). See CARAGUATA LINDENI.
„ *morrenia'na* (Morrenian). See CARAGUATA MORRENIANA.
„ *musa'ica* (mosaic). See CARAGUATA MUSAICA.
„ *santovie'nsis* (Santovian). Brazil. 1882.
„ *tigri'na* (tiger-striped). See TILLANDSIA HIEROGLYPHICA.
„ *vitta'ta* (striped). See CARAGUATA VITTATA.

MASSO'NIA. (Named after *F. Masson*, a botanical traveller in South Africa. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Lachenalia.)
Very small bulbs, with white flowers, from South Africa. Seeds or offsets, in spring; sandy loam, and a little peat or leaf-mould; grown in a pit, or in a warm border, the bulbs being taken up when ripened, and kept in bags or drawers; if in pots, kept dry until vegetation commences.
M. amygdali'na (Almond-scented). 1889.
„ *angustifo'lia* (narrow-leaved). ½. April. 1775.
„ *brachy'pus* (short-stalked). 1874.
„ *ca'ndida* (white). ½. April.
„ *corda'ta* (heart-shaped). White, with pale red throat. December.
„ *corona'ta* (crowned). See M. SANGUINEA.
„ *corymbo'sa* (corymbose). See HYACINTHUS CORYMBOSUS.
„ *echina'ta* (prickly-*leaved*). ½. May. 1790.
„ *ensifo'lia* (sword-leaved). See POLYXENE PYGMÆA.
„ *grandiflo'ra* (large-flowered). See M. OBOVATA.
„ *jasminiflo'ra* (jasmine-flowered). S. Africa.

M. lanceæfo'lia (lance-leaved). White, with pale red throat. December.
,, *latifo'lia* (broad-leaved) of Linnæus. ½. March. 1775.
,, *latifo'lia* (broad-leaved) of Ker-Gawler. See M. SANGUINEA.
,, *longifo'lia* (long-leaved). ½. March.
,, *murica'ta* (warted). April. 1790.
,, *obova'ta* (obovate). ½. October. 1725.
,, *odora'ta* (scented). ½–½. White, fragrant. 1871.
,, *pauciflo'ra* (few-flowered). S. Africa.
,, *pustula'ta* (pustuled). ½. February. 1790.
,, *sangui'nea* (blood-red). ½. White; filaments suffused with red. 1775.
,, *sca'bra* (rough). See M. PUSTULATA.
,, *undula'ta* (wavy-*leaved*). See LACHENALIA PUSILLA.
,, *uniflo'ra* (one-flowered). 1870.
,, *viola'cea* (violet). See POLYXENE PYGMÆA.

MASSO'WIA GARDNE'RI. See SPATHIPHYLLUM GARDNERI.

MAST. The fruit of the Beech (*F'agus sylva'tica*).

MASTACA'NTHUS SINE'NSIS. See CARYOPTERIS MASTACANTHUS.

MAT. See BASS.

MATHI'OLA. See MATTHIOLA.

MATO'NIA. (Commemorative of *Dr. Maton*. Nat. ord. Filices.)
Stove evergreen fern of great beauty. Spores. Fibrous loam, peat, charcoal, and sand.
M. pectina'ta (comb-like). 1½–2. Frond fan-shaped. Mount Ophir, Malacca. 1839.

MATRICA'RIA. (From *matrix, matricis*, a female; in reference to its former use in uterine affections. Nat. ord. Compositæ.)
Hardy annual or evergreen perennial herb. Seeds; divisions and cuttings of the perennials. Ordinary garden soil.
M. cauca'sica (Caucasian). See CHRYSANTHEMUM CAUCASICUM.
,, *exi'mia grandiflo'ra au'rea* (golden). Garden variety of *Chrysa'nthemum Parthe'nium*.
,, ,, *pyramida'lis* (pyramidal). Garden variety of *Chrysa'nthemum Parthe'nium*.
,, *gla'bra* (smooth). Morocco.
,, *grandiflo'ra* (large-flowered). 1½. Yellow. June. S. Africa. 1820. Greenhouse.
,, *inodo'ra* (scentless). 1–1½. White, with yellow disc. Summer. Europe (Britain).
,, ,, *flo're-ple'no* (double-flowered). 1–2. Double white, highly ornamental. 1880.
,, *mari'tima* (maritime). 1. White. July. Europe (Britain). Biennial.
,, *Parthe'nium* (Parthenium). See CHRYSANTHEMUM PARTHENIUM.
,, ,, *au'reum* (golden). Leaves yellow. See CHRYSANTHEMUM PARTHENIUM AUREUM.
,, *præ'cox* (early). 1. White. June. Asia Minor; Persia. 1818.
,, *Tchihatche'wii* (Tchihatcheff's). ½–1. White, with yellow disc. Turkish Armenia. 1869. Evergreen.

MATTHI'OLA. *Stock Gilliflower*. (Named after *P. Matthioli*, an Italian botanist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)
The annuals, such as the Ten-week Stocks, may be sown from March to May for summer decoration, and in August and September, to stand over the winter for spring early flowering. For the latter purpose, none beat the Intermediate, Queens, Bromptons, and other biennials. Sow in June, plant in sheltered places, and in pots, to be kept in cold pits, and turned out early in spring. Seeds are recommended to be saved from the neighbourhood of double flowers, which we consider of no importance. The only true theory to get double flowers is to leave few seeds on a plant, and give it very high cultivation, and as much sunshine as possible. For fine flowering, all these prefer rich, light soil. The best of them may be successfully preserved by cuttings under a hand-light, and then kept in a cold pit in winter. The shrubby greenhouse kinds are easily propagated by cuttings, and delight in a rich, sandy soil.

HARDY ANNUALS.

M. acau'lis (stemless). See M. HUMILIS.
,, *a'nnua* (annual. *Ten-week Stock*). 2. Various. August. S. Europe. 1731. This is a garden race of *M. inca'na*.
,, ,, *a'lba* (white). 1½. White. July. S. Europe.
,, ,, *flo're-ple'no* (double-flowered). 1½. Red. July.
,, *bico'rnis* (two-horned). 1. Pink. Summer. Greece; Asia Minor.
,, *græ'ca* (Grecian. *Wallflower-leaved*). See M. INCANA GLABRATA.
,, *hu'milis* (dwarf). ½. Red. June. Egypt. 1823.
,, *li'vida* (livid). Livid, purple. July. Egypt. 1820.
,, *longipe'tala* (long-petaled). See M. OXYCERAS.
,, *oxy'ceras* (sharp-horned). 1. Red, yellow. June. Syria and Persia. 1818.
,, *parviflo'ra* (small-flowered). ½. Purple. July. Morocco. 1799.
,, *tricuspida'ta* (three-pointed-*leaved*). ½. Purple. July. Barbary. 1739.

HARDY BIENNIALS.

M. chine'nsis (Chinese). See M. SINUATA GLABRA ALBIFLORA.
,, *coronopifo'lia* (buckhorn-leaved). 1. Purple or violet. June. Sicily. 1819.
,, *fenestra'lis* (window). 1. Purple. July. Crete. 1759.
,, *oye'nsis* (Oyan). See M. SINUATA GLABRA ALBIFLORA.
,, *si'cula* (Sicilian). See M. INCANA.
,, *simplicicau'lis* (single-stemmed). See M. INCANA.
,, *sinua'ta* (scollop-*leaved*). 1. Dingy red. July. England.
,, ,, *gla'bra albiflo'ra* (smooth, white-flowered). N.W. France. 1900.
,, ,, *oye'nsis* (Oyan). See M. SINUATA GLABRA ALBIFLORA.
,, *tata'rica* (Tartarian). 1. Red, yellow. July. Tartary. 1820.

GREENHOUSE EVERGREENS.

M. fra'grans (fragrant). 2. Livid. June. Crimea. 1823.
,, *glabra'ta* (smooth). See M. INCANA GLABRATA.
,, ,, *flo're-ple'no* (double-flowered). See M. INCANA GLABRATA FLORE-PLENO.
,, ,, *purpu'rea* (purple). See M. INCANA GLABRATA PURPUREA.
,, *inca'na* (hoary. *Queen's Stock*). 1. Purple. August. England.
,, ,, *a'lba* (white-*branching*). 1. August.
,, ,, *cocci'nea* (scarlet). 1. Scarlet. August. England. "Brompton Stock."
,, ,, *glabra'ta* (smooth). 2. White. August.
,, ,, *glabra'ta flo're-ple'no* (double-flowered). 2. White, purple. August.
,, ,, *glabra'ta purpu'rea* (smooth-purple). 2. Purple. August.
,, ,, *mu'ltiplex* (double). 1. Variegated. August. England.
,, *madere'nsis* (Madeira). Violet. May. Madeira.
,, *odorati'ssima* (sweetest-scented). 2. Livid. June. Persia. 1795.
,, ,, *fra'grans* (fragrant). See M. FRAGRANS.
,, *torulo'sa* (twisted). Purple. July. S. Africa. 1816.
,, *tri'stis* (dark-*flowered*). 1½. Livid. June. S. Europe. 1768. "Night-scented Stock."
,, *va'ria* (variable). S. Europe.

MAURA'NDIA. (Named after *Professor Maurandy*, of Carthagena. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Greenhouse evergreen twiners, from Mexico. Seeds sown in a slight hotbed, in spring; and cuttings of shoots in sandy soil, in spring or autumn; rich, sandy loam, with a little peat or leaf-mould; will flourish in a cool greenhouse, and in summer on wires, and fences, and pillars in the open air.
M. antirrhiniflo'ra (snapdragon-flowered). See ANTIRRHINUM MAURANDIOIDES.
,, *barclaya'na* (Barclay's). 10. Blue, white. July. 1825.
,, ,, *a'lba* (white-*flowered*). 10. White. Year. 1842.
,, ,, *semperflo'rens* (ever-flowering). See M. SEMPERFLORENS.

M. erĕ'cta (erect). Mexico. 1882.
„ *erubĕ'scens* (reddish). 8–12. Rosy. August. Mexico. 1830.
„ *sca'ndens* (climbing). 8–12. Purple, violet. July, August. Mexico.
„ „ *Henderso'ni* (Henderson's). Violet-purple, white.
„ *semperflo'rens* (ever-flowering). 10. Purple or violet. July. Mexico. 1796.

MAU'RIA. (Named after *A. Mauri*, an Italian botanist. Nat. ord. *Anacards* or *Terebinths* [Anacardiaceæ]. Linn. 21-*Monœcia*, 7-*Octandria*. Allied to Duvaua.)
Stove evergreen trees, with pinkish flowers, from Peru. Cuttings of ripe shoots in heat, under a hand-glass; common loam and a little peat; usual stove treatment.
M. heterophy'lla (variously-leaved). 20. 1822.
„ *simplicifo'lia* (plain-leaved). 20. 1822.

MAURI'TIA. (Named after *Prince Maurice*, of Nassau. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Dicœcia*, 6-*Hexandria*.)
Stove Palms. Seeds in a hotbed, in spring; rich, fibrous, sandy loam. Winter temp., 55°; summer, 60° to 90°.
M. arma'ta (armed). 40. Brazil. 1824.
„ *flexuo'sa* (zigzag-*spiked*). 40. White, green. Surinam. 1816.
„ *vini'fera* (wine-bearing). 40. Maranham. 1823.

MAXILLA'RIA. (From *maxillæ*, the jaws of an insect; referring to a resemblance of the columns and labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids. Divisions of the plant in spring; fastened on wood covered with sphagnum, or raised in baskets filled with sphagnum, old wood, turfy peat, and charcoal. Winter temp., 55° to 65°; summer, 60° to 90°. Dry in winter; moist when growing.
M. acia'ntha (acute-flowered). Costa Rica.
„ *acicula'ris* (needle-shaped). Brown-red. Brazil. 1837.
„ *acutipe'tala* (acute-petaled). Central Amer.
„ *a'lba* (white). White. W. Ind.
„ *angustifo'lia* (narrow-leaved). See M. VARIABILIS.
„ *arachni'tes* (spider). Yellowish, ochre. Colombia. 1880.
„ *aroma'tica* (aromatic). See LYCASTE AROMATICA.
„ *a'tro-purpu'rea* (dark purple). See BIFRENARIA ATRO-PURPUREA.
„ *a'tro-ru'bens* (dark red). Dark red. July.
„ *Augu'sta-Victo'ria* (Augusta-Victoria). White; lip yellow, marked with purple. 1898.
„ *au'reo-fu'lva* (golden brown). See BIFRENARIA AUREO-FULVA.
„ *barba'ta* (bearded). See BIFRENARIA VITELLINA.
„ *Barringto'niæ* (Mrs. Barrington's). See LYCASTE BARRINGTONIÆ.
„ *Bino'ti* (Binot's). Yellow; lip dotted with purple. Brazil. 1906.
„ *bracte'scens* (large-bracted). See XYLOBIUM BRACTESCENS.
„ *brocklehurstia'na* (Brocklehurstian). See HOULLETIA BROCKLEHURSTIANA.
„ *callichro'ma* (beautiful-coloured). Venezuela.
„ *Camari'dii* (Camarid's). Costa Rica. 1863.
„ *ca'ndida* (whitened). White. April. Brazil. 1840.
„ *Ce'pula* (Cepula). See M. MADIDA.
„ *cilia'ta* (eye-lashed). See LYCASTE BARRINGTONIÆ.
„ *citri'na* (citron-coloured). Yellow. May. Mexico. 1840.
„ *conca'va* (concave). See XYLOBIUM INCANUM.
„ *crassifo'lia* (thick-leaved). Brazil. 1836.
„ *crista'ta* (crested-*lipped*). See LYCASTE CRISTATA.
„ *cro'cea* (saffron). ½. Saffron. Rio Janeiro.
„ „ *Lie'tzei* (Lietze's). Yellow, purple-brown outside. Brazil.
„ *crue'nta* (blood-coloured). See LYCASTE CRUENTA.
„ *cteno'stachys* (draught-oxen-spiked). Ochre. Costa Rica. 1870.
„ *cuculla'ta* (hooded). ½. Red-brown. Mexico. 1840.
„ *cunea'ta* (wedge-shaped). White, pink. 1844.
„ *de'nsa* (dense). See ORNITHIDIUM DENSUM.
„ *De'ppii* (Deppe's). See LYCASTE DEPPEI.
„ *dichro'ma* (two-coloured). White; lip brown-purple. Peru. 1898.
M. di'scolor (two-coloured). British Guiana.
„ *elega'ntula* (somewhat-elegant). Yellow, white, spotted with brown. 1897.
„ *elonga'ta* (elongated). See XYLOBIUM ELONGATUM.
„ *Endre'sii* (Endres's). Pale ochre, yellow, purple. 1886.
„ *ferdinandia'na* (Ferdinandian). Brazil.
„ „ *lu'teola* (yellowish). Larger, yellow. Brazil. 1906.
„ *fractiflĕ'xa* (broken-bent). Purple, white, red. Ecuador. 1881.
„ *fuca'ta* (dyed). White, purple, yellow. 1886.
„ *fune'rea* (funeral). Purple-brown. Brazil. 1903.
„ *fusca'ta* (swarthy). See M. FUCATA.
„ *galea'ta* (helmeted). See GONGORA GALEATA.
„ *gra'cilis* (graceful). ¾. Yellow, purple. Brazil.
„ *grami'nea* (grass-*leaved*). Yellow, red. Demerara.
„ *grandiflo'ra* (large-flowered). White, yellow. August. Peru. 1870.
„ *Harriso'niæ* (Mrs. Harrison's). See BIFRENARIA HARRISONIÆ.
„ „ *a'lba* (white). See BIFRENARIA HARRISONIÆ ALBA.
„ *houttea'na* (Houttean). Trop. Amer. 1858.
„ *Hue'bschii* (Huebsch's). White, yellow, mauve-purple. Ecuador. 1888.
„ *hyaci'nthina* (hyacinth-scented). See XYLOBIUM HYACINTHINUM.
„ *hypo'crita* (hypocritical) See XYLOBIUM HYPOCRITUM.
„ *iridifo'lia* (Iris-leaved). W. Ind.
„ *irrora'ta* (besprinkled). White, bordered and blotched purple, ochre. Andes. 1883.
„ *johnia'na* (Johnian). White, lilac, yellowish. Andes of Peru. 1910.
„ *jugo'sa* (ridged). See LYCASTE JUGOSA.
„ *Kalbre'yeri* (Kalbreyer's). Greenish-white, purple. Colombia. 1885.
„ *Lehma'nni* (Lehmann's). White, reddish-brown, chestnut. Ecuador. 1886.
„ *leontoglo'ssa* (lion's-tongue). See XYLOBIUM LEONTOGLOSSUM.
„ *lepido'ta* (scaly). Light yellow. Colombia. 1878.
„ *leptose'pala* (slender-sepaled). See M. SETIGERA.
„ *Linde'niæ* (Mme. Linden's). Milk-white, rose, yellow, reddish. 1894.
„ *longise'pala* (long-sepaled). Purple-green, greenish. Venezuela. 1890.
„ *lu'teo-a'lba* (yellowish-white). Yellow, white. June. Colombia.
„ *Lyo'nii* (Mrs. Lyon's). Purple, brown. Mexico. 1845.
„ *Maclea'ii* (MacLeay's). White, maroon. Guatemala. 1839.
„ *macrobu'lbon* (long-bulbed). See LYCASTE MACROBULBON.
„ *macrophy'lla* (long-leaved). See LYCASTE MACROPHYLLA.
„ *macru'ra* (long-tailed). See M. LONGISEPALA.
„ *ma'dida* (wet). ½. Pale brown. Brazil.
„ *margina'ta* (bordered). Dark yellow. June. Brazil.
„ *Melea'gris* (Guinea-fowl). Yellow, brown. May. Mexico.
„ *mira'bilis* (wonderful). Orange, crimson, brown, yellow. 1894.
„ *Mo'litor* (Molitor). Yellow, brown. 1887.
„ *moorea'na* (Moorean). Cream, maroon-purple. Guatemala. 1895.
„ *Muelle'ri* (Mueller's). Clear yellow; lip dotted with purple. 1890.
„ *nasa'lis* (nosed). Yellow, spotted with brown. Colombia. 1870.
„ *neophy'lla* (new-leaved). Yellow, spotted with brown. Colombia. 1878.
„ *nigre'scens* (blackish). Blackish. Colombia.
„ *obscu'ra* (obscure). See M. CUCULLATA.
„ *ochroleu'ca* (pale yellow). ¾. Yellowish. July. Rio Janeiro.
„ „ *lo'ngipes* (long-stalked).
„ *ornithoglo'ssa* (bird's-tongue). White. Mexico. 1842.
„ *pallidiflo'ra* (pale-flowered). See XYLOBIUM PALLIDIFLORUM.
„ *palmifo'lia* (palm-leaved). See XYLOBIUM DECOLOR.
„ *Parke'rii* (Parker's). ¾. Buff, white. April. Demerara. 1826.
„ *pa'rva* (small). Yellow. Brazil. 1895.
„ *pa'rvula* (very small). See BIFRENARIA PARVULA.
„ *phœnicanthe'ra* (purple-anthered). White or pale yellow, spotted purple. Brazil. 1908.

M. pi'cta (painted). ¾. Orange, red. December. Brazil.
„ „ *ma'jor* (larger). Yellow, white. December. Brazil. 1837.
„ *placanthe'ra* (couch-anthered). See M. VIRIDIS.
„ *porphyroste'le* (purple-handled). ½. Yellow, deep purple. Brazil. 1873.
„ *pra'stans* (excelling). Dull yellow, with brown spots. Guatemala. 1885.
„ *psittaci'na* (parrot-like). 1. Red, yellow. October. Mexico. 1835.
„ *pu'lla* (blackish). ½–¾. Straw-yellow, striped red-brown. Colombia. 1903.
„ *pu'mila* (dwarf). ½. Deep purple. British Guiana.
„ *puncta'ta* (spotted). ½. White-spotted. October. Brazil.
„ „ *a'lba* (white). White-spotted. October. Brazil. 1838.
„ „ *purpu'rea* (purple). Purple-spotted. October. Brazil. 1839.
„ *pu'ncto-stria'ta* (dotted-striated). Spotted and lined brown-red. Guatemala.
„ *pu'ngens* (prickly). See BIFRENARIA HARRISONIÆ.
„ *pusi'lla* (puny). Brownish-green, dark purple. 1908.
„ *racemo'sa* (racemed). See BIFRENARIA RACEMOSA.
„ *reichenheimia'na* (Reichenheimian). Pale yellow, purple. Costa Rica. 1871.
„ *revolu'ta* (revolute). See M. VARIABILIS.
„ *Rollisso'nii* (Rollisson's). See ZYGOPETALUM ROLLISSONII.
„ *rufe'scens* (reddish). Reddish-brown. Trinidad. 1836.
„ „ *fla'vida* (yellow). Yellow, red. Trinidad. 1869.
„ *sanderia'na* (Sanderian). Ivory-white, vinous-crimson, yellowish. Ecuador. 1887.
„ „ *fuerstenbergia'na* (Fuerstenbergian). Ivory-white, with few purple spots. 1894.
„ „ *xanthoglo'ssa* (yellow-tongued). Spots very numerous; lip yellowish. 1893.
„ *sangui'nea* (blood-red). Red-brown, yellow, purple-crimson. Central Amer. 1895.
„ *scabrili'nguis* (rough-tongued). See XYLOBIUM SCABRILINGUE.
„ *scu'rrilis* (buffoon-like). Sepals and petals blotched with blackish-brown. 1900.
„ *seti'gera* (bristle-bearing). 1. White, yellow. July. Colombia. 1846.
„ „ *pa'llida* (pale).
„ *Skinne'ri* (Skinner's). See LYCASTE SKINNERI.
„ *specio'sa* (showy). Yellowish, spotted with black-purple. Colombia. 1876.
„ *sple'ndens* (splendid). White, yellow. Peru. 1870.
„ *squa'lens* (dirty). See XYLOBIUM SQUALENS.
„ *squama'ta* (scaly) of gardens. See M. MUELLERI.
„ *stapelioi'des* (Stapelia-like). See ZYGOPETALUM STAPELIOIDES.
„ *Ste'lii* (Steel's). See SCUTICARIA STEELII.
„ *stria'ta* (striated). Greenish-yellow, striped brownish-purple; lip white. Peru. 1893.
„ „ *grandiflo'ra* (large-flowered). Larger, white, lined purple. 1896.
„ *tenuifo'lia* (slender-leaved). 1. Purple, yellow. June. Vera Cruz. 1837.
„ *tetrago'na* (four-angled). See LYCASTE TETRAGONA.
„ *triangula'ris* (three-angled). Brown, crimson. Guatemala.
„ *trilo'ris* (three-thonged). Dusky-brown. S. Amer. 1870.
„ *varia'bilis* (variable). Brownish-yellow. Mexico. 1852.
„ „ *lu'tea* (yellow). Yellow. Mexico.
„ „ *me'dia* (intermediate).
„ *varico'sa* (varicose). Bolivia. 1883.
„ *venu'sta* (lovely). Yellow, white, red. Colombia. 1862.
„ *vi'ridis* (green). ½. Green. May. Brazil. 1835.
„ *vitelli'na* (yolk-of-egg-coloured). See BIFRENARIA VITELLINA.
„ *Wagene'ri* (Wagener's). See XYLOBIUM CORRUGATUM.
„ *warrea'na* (Warre's). See WARREA TRICOLOR.
„ *xa'nthina* (yellow). See ZYGOPETALUM XANTHINUM.

MAXIMILIA'NA. (Named after *Prince Maximilian*. Nat. ord. *Palms* [Palmaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Cocos.)
Stove Palms. Seeds, in a hotbed; rich, sandy loam. Winter temp., 55° to 60°; summer, 60° to 85°.

M. caribæ'a (Caribæan). W. Ind.
„ *insi'gnis* (remarkable). Brazil.
„ *Ja'gua* (Jagua). Colombia.
„ *martia'na* (Martian). Brazil and Guiana.
„ *re'gia* (royal). See M. MARTIANA.

MAY. *Cratæ'gus Oxyaca'ntha.*

MAY APPLE. *Podophy'llum pelta'tum.*

MAY BUG. *Melolo'ntha vulga'ris.*

MAY FLOWER. *Convalla'ria maja'lis* and *Læ'lia maja'lis.*

MAYTE'NUS. (From *maiten*, the Chilian name. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*. Allied to Celastrus.)
Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass, in May; sandy peat and fibrous loam. Winter temp., 35° to 45°.
M. Boa'ria (Boaria). 10. White. Chili. 1822.
„ *chile'nsis* (Chilian). 12. Green, yellow. May. Chili. 1829.
„ *octogo'na* (eight-angle-*stemmed*). 6. White. October. Peru. 1786.
„ *verticilla'ta* (whorled). 6. White. October. Peru. 1823.

MAZE. See LABYRINTH.

MA'ZUS. (From *mazos*, a teat; referring to the tubercles in the opening or mouth of the flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Dodartia.)
Hardy and half-hardy perennials, with runners, below ground in the case of *M. Pumi'lio*, and above, in the case of *M. rugo'sus*. Seeds in hotbed, in March; seedlings hardened off, and transferred to the open ground in May.
M. Pumi'lio (dwarf). ½. Pale purple. June. Van Diemen's Land; New Zealand. 1823.
„ *rugo'sus* (wrinkly). ½. Yellow. Spring and summer. Himalaya; Malaya; China. 1780.

MEADOW-RUE. *Thali'ctrum.*

MEADOW-SAFFRON. *Co'lchicum.*

MEADOW-SWEET. *Spiræ'a Ulma'ria.*

MEASURES.

CORN MEASURE.

4 Gills	1 Pint	containing	34⅔	Cubic Inches
2 Pints	1 Quart	„	69⅓	„ „
4 Quarts	1 Gallon	„	277½	„ „
2 Gallons	1 Peck	„	554½	„ „
4 Pecks	1 Bushel	„	2218½	„ „
4 Bushels	1 Sack	„	5	Cubic Feet
8 Bushels	1 Quarter	„	10½	„ „
5 Quarters	1 Load	„	51¼	„ „

TIMBER MEASURE.

A load of timber, unhewn, is 40 cubic feet.
„ „ squared, „ 50 „ „
1 inch plank 600 square feet.

1½	„	400	„	„
2	„	300	„	„
2½	„	240	„	„
3	„	200	„	„
3½	„	170	„	„
4	„	150	„	„

LAND MEASURE.

The *English* statute acre contains 4840 square yards; the *Scotch*, 5760; the *Irish*, 7840; the *Devonshire*, customary, 4000; the *Cornish*, 5760; the *Lancashire*, 7840; the *Cheshire* and *Staffordshire*, 10,240; the *Wiltshire* tenantry, 3630. The *French* arpent is an English acre and three-fourths of a rood. The *Strasburg* acre is nearly half an English acre; the *Prussian* morgen is not quite three-fourths of an acre.

LONG MEASURE.

12	Inches	1 Foot
3	Feet	1 Yard
6	Feet	1 Fathom
5½	Yards	1 Pole
40	Poles	1 Furlong
8	Furlongs	1 Mile
3	Miles	1 League
69½	Miles	1 Degree

SQUARE MEASURE.

Inches.	Feet.	Yards.	Poles, Rods, or Perches.	Roods.	Acre.
144	1				
1,296	9	1			
39,204	272½	30¼	1		
1,568,160	10,890	1210	40	1	
6,272,640	43,560	4840	160	4	1

30 acres are 1 yard of land. 100 acres are 1 hide of land.
640 acres are 1 square mile.

CUBIC MEASURE.

1728 Cubic Inches make . . . . 1 Cubic Foot
27 „ Feet . . . . . 1 „ Yard
40 „ „ of Rough Timber } 1 Load
50 „ „ of Hewn „ }
108 „ „ . . . . . 1 Stack of Wood
128 „ „ . . . . . 1 Cord

HEAPED MEASURES.

Our market-gardeners, and retailers of fruit, potatoes, &c., generally vend their commodities as if the Act of Parliament, 5 & 6 Will. IV. c. 63, did not exist. By this statute selling by heaped measure is forbidden under a penalty of not more than 40s. for every such sale. Section 8 provides that, as some articles heretofore sold by heaped measure are incapable of being stricken, and may not inconveniently be sold by weight, it is enacted, that all such articles may henceforth be sold by a bushel-measure, corresponding in shape with the bushel prescribed by the 5 Geo. IV. c. 74, for the sale of heaped measure, or by any multiple or aliquot part thereof, filled in all parts as nearly to the level of the brim as the size and shape of the articles will admit; but nothing herein shall prevent the sale by weight of any article heretofore sold by heaped measure. The 5 Geo. IV. c. 74, thus referred to, enacts, by section 7, that for potatoes, fruit, &c., the bushel shall be made round, with a plain and even bottom, be 19½ inches from outside to outside, and capable of containing 80 lb. weight of water.

WOOD FUEL.

English Measure.—Wood-fuel is assized into shids, billets, faggots, fall-wood, and cord-wood. A shid is of fall-wood and cord-wood.

A shid is to be 4 feet long, and according as they are marked and notched, their proportion must be in the girth—viz. if they have but one notch, they must be 16 inches in the girth; if two notches, 23 inches; if three notches, 28 inches; if four notches, 33 inches; and if five notches, 38 inches about.

Billets are to be 3 feet long, of which there should be three sorts, namely, a single cask, and a cask of two. The first is 7 inches, the second 10 inches, and the third 14 inches about. They are sold by the hundred of five score.

Faggots are to be 3 feet long, and, at the band, of 24 inches about, besides the knot; of such faggots fifty go to the load.

Bavins and *spray-wood* are sold by the hundred, which are accounted a load. *Cord-wood* is the bigger sort of firewood; and it is measured by a cord or line, whereof there are two measures—that of 14 feet in length, 3 feet in breadth, and 3 feet in height; the other is 8 feet in length, 4 feet in height, and 4 feet in breadth.

MEASURE OF WOOD.

1000 Billets of Wood = 1 Cord.
10 Cwt. of Wood = 1 Cord.
1 Cord of Wood = ½ Chaldron of Coals.
100 lb. of Wood = 1 Quintal of Wood.

MECONO'PSIS. (From *mekon*, the poppy, and *opsis*, like. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Hardy herbaceous perennials. Divisions of the plant in spring, and seeds (which ripen freely), at the same time; rich, sandy soil.

M. aculea'ta (prickly). 1½–2. Blue-purple. Himalaya. 1864.
„ *be'lla* (pretty). ½–¾. Blue. Sikkim. 1904.
M. ca'mbrica (Welsh). 1. Yellow. June. England. "Welsh Poppy."
„ *crassifo'lia* (thick-leaved). See M. HETEROPHYLLA.
„ *diphy'lla* (two-leaved). See STYLOPHORUM DIPHYLLUM.
„ *disci'gera* (disc-bearing). 1. Sepals and petals unknown. W. Sikkim. 1906.
„ *gra'ndis* (grand). 1. Purple. Himalaya. 1900.
„ *Henri'ci* (Henric's). Purple-violet. Western China. 1906.
„ *heterophy'lla* (various-leaved). 1. Orange, red. California. 1833.
„ *integrifo'lia* (entire-leaved). ½–2½. Sulphur-yellow. W. China. 1895. Biennial.
„ *nepale'nsis* (Nepaul). 2–3. Pale yellow. Himalaya. 1866.
„ *panicula'ta* (panicled). Himalaya.
„ *petiola'ta* (leaf-stalked). See STYLOPHORUM DIPHYLLUM.
„ *pseudointegrifo'lia* (false-entire-leaved). 1. Sulphur-yellow. S.W. Tibet. 1904. Biennial.
„ *puni'cea* (scarlet). ½–2. Carmine or reddish-purple. W. China. 1904.
„ *quintuplinе'rvia* (five-nerved). ½–¾. Violet. Manchuria. 1876.
„ *racemo'sa* (racemed). 1½–2. Deep purple to pale lilac. W. China; Tibet. 1904.
„ *simplicifo'lia* (simple-leaved). 2–3. Blue. June, July. Himalaya. 1855.
„ *sinua'ta* (sinuate). Not in cultivation.
„ „ *latifo'lia* (broad-leaved). 1–4. Blue. Himalaya. 1908.
„ *Walli'chii* (Dr. Wallich's). 2½. Blue. June. Sikkim, Himalaya. 1876. "Satin Poppywort," "Blue Poppy."
„ „ *fu'sco-purpu'rea* (dusky-purple). Brownish-purple. Eastern Himalaya. 1884.

MECRA'NIUM. (Derivation not obvious. Nat. ord. Melastomaceæ.)

Stove evergreen shrub. Cuttings of stubby side-shoots in sand in a close propagating case. Fibrous loam, peat, and sand.

M. purpura'scens (purplish). 3. Purple. March. Jamaica. 1822.

MEDE'OLA. (Named after *Medea*, the sorceress. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Trillium.)

Hardy herbaceous. Division of the plant in spring; rich, sandy soil.

M. angustifo'lia (narrow-leaved) of Redoute. See GEITONOPLESIUM CYMOSUM.
„ *angustifo'lia* (narrow-leaved) of Miller. See ASPARAGUS MEDEOLOIDES.
„ *asparagoi'des* (Asparagus-like). See ASPARAGUS MEDEOLOIDES.
„ „ *myrtifo'lia* (Myrtle-leaved). Leaves very small. A variety of *Asparagus medeoloides*.
„ *virgi'nica* (Virginian). ½. Yellow. June. Virginia. 1759. "Indian Cucumber Root."

MEDIAN APPLE, or **CITRON.** *Ci'trus Me'dica.*

MEDICA'GO. Medick. (From *medike*, a name from Dioscorides. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Trifolium.)

Hardy, and all yellow-flowered, except where otherwise mentioned. Annuals, by seeds, in open border, in April; perennials, by seeds, division of the plant, and slips under a hand-light; shrubs, by cuttings of young shoots under a hand-light.

HARDY EVERGREEN SHRUB.

M. arbo'rea (tree. *Moon-trefoil*). 8. May. S. Europe. 1596.

HARDY HERBACEOUS PERENNIALS.

M. carstie'nsis (Carst). 1. July. Carinthia. 1789.
„ *creta'cea* (chalky). 4. July. Tauria. 1805.
„ *falca'ta* (sickle-*podded*). 2. July. England.
„ *glomera'ta* (clustered). 1. June. Italy. 1817.
„ *glutino'sa* (sticky). 1. June. Caucasus. 1817.
„ *mari'na* (sea). 1. July. S. Europe. 1596.
„ *procu'mbens* (trailing). See M. FALCATA.

M. prostra'ta (lying-down). ¾. June. Hungary. 1793.
„ *ruthe'nica* (Russian). 1½. Yellow. June. Siberia. 1759.
„ *sati'va* (cultivated). 2. Violet. June. England. "Lucerne."
„ „ *versi'color* (various-coloured). 2. Yellow, blue. June. Britain.
„ *suffruti'co'sa* (sub-shrubby). 2. Violet, yellow. June. Pyrenees. 1820.

HARDY ANNUALS.

M. aculea'ta (prickly). See M. TURBINATA.
„ *agre'stis* (field). ½. S. Europe.
„ *apicula'ta* (small-pointed). ½. Europe.
„ *ara'bica* (Arabic). See M. MACULATA.
„ *brachyca'rpa* (short-podded). See TRIGONELLA BRACHYCARPA.
„ *cancella'ta* (latticed). 1. July. Caucasus. 1818.
„ *catalo'nica* (Catalonian). ½. July. Catalonia. 1820.
„ *cilia'ris* (hair-fringed). 1. July. S. Europe. 1686.
„ *corona'ta* (crowned). 1. June. S. Europe. 1660.
„ *denticula'ta* (toothletted). ½. July. Europe (Britain).
„ *discifo'rmis* (disc-formed). ½. July. S. France. 1822.
„ *Echi'nus* (hedgehog). ½. July. S. France. 1818. "Calvary Clover."
„ *flexuo'sa* (zigzag). See M. DENTICULATA.
„ *Gera'rdi* (Gerard's). See M. RIGIDULA.
„ *He'lix* (Helix). ½. July. S. Europe. 1816.
„ *hi'spida* (coarsely-hairy). ½. S. Europe.
„ *hornemannia'na* (Hornemann's). ½. June. Morocco. 1818.
„ *interte'xta* (interwoven). 1. July. S. Europe. 1629.
„ *lacinia'ta* (jagged-*leaved*). ½. July. S. Europe. 1683.
„ *la'vis* (smooth). See M. HELIX.
„ *lappa'cea* (burdock-like). See M. DENTICULATA.
„ *littora'lis* (shore). ½. Mediterranean region.
„ *lupuli'na* (hop-like). 1. June. Britain. "Black Medick."
„ „ *polysta'chya* (many-spiked). Switzerland.
„ „ *unguicula'ta* (clawed). 1. July. Switzerland. 1816.
„ „ *Willdeno'vii* (Wildenow's). ½. Europe.
„ *macula'ta* (spotted). 1½. May. England. "Heart Clover."
„ *margina'ta* (bordered). See M. ORBICULARIS.
„ *mari'na* (marine). ½. July. Mediterranean region.
„ *mi'nima* (smallest). ½. July. Europe (Britain).
„ *minoca'rpa* (moss-fruited). See M. LUPULINA UNGUICULATA.
„ *molli'ssima* (softest). See M. MINIMA.
„ *Mu'rex* (Murex). ½. S.W. Europe. "Mollusk Medick."
„ *murica'ta* (point-covered). 1. June. England.
„ *orbicula'ris* (round-*podded*). 1. July. S. Europe. 1688.
„ *præ'cox* (early). ½. July. Provence. 1820.
„ *radia'ta* (radiating). See TRIGONELLA RADIATA.
„ *re'cta* (upright). See M. MINIMA.
„ *rigi'dula* (somewhat rigid). 1. July. Europe. 1816.
„ *rupe'stris* (rock). 1. June. Tauria. 1820.
„ *scutella'ta* (little-shield). ½. S. Europe. "Snail Medick."
„ *sibi'rica* (Siberian). 1. June. Siberia. 1817.
„ *sphæroca'rpa* (round-fruited). ½. July. Italy. 1818.
„ *spinulo'sa* (small-spined). See M. TUBERCULATA.
„ *stria'ta* (channelled). ½. July. S. France. 1820.
„ *tenorea'na* (Tenorean). ¾. July. Italy. 1820.
„ *tentacula'ta* (tentaculated). See M. TRUNCATULA.
„ *tricy'cla* (three-cycled). See M. STRIATA.
„ *trunca'tula* (somewhat truncate). 1. June. Europe. 1800.
„ *tubercula'ta* (tuberculate). ½. July. Mediterranean region. 1820.
„ *turbina'ta* (top-shaped). 1. July. S. Europe. 1680.

MEDICO'SMA. (From *medica*, the Citron, and *osme*, smell; in allusion to the smell of the flowers. Nat. ord. Rutaceæ.)

Greenhouse, evergreen tree, with Orange-scented flowers. Cuttings of side-shoots in sand in a gentle heat under a bell-glass. Fibrous loam, peat, and sand.

M. Cunningha'mii (Cunningham's). White. July. Australia. 1838.

MEDINI'LLA. (Named after *J. de Medinilla y Pineda*, governor of the Marianne Islands. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove evergreen shrubs, with rosy flowers. Cuttings of stumpy side-shoots root the safest, though cuttings of the young shoots root freely, when damping is avoided, in sand, with a little peat, under a bell-glass, and in a bottom-heat; peat and loam, fibrous and sandy. Winter temp., 48° to 55°; summer, 60° to 85°.

M. ama'bilis (lovely). Rose. Java. 1874.
„ *chiona'ntha* (snowy-flowered). Snow-white. Perak. 1906.
„ *Cummi'ngii* (Cumming's). Pink. Philippines.
„ *Curti'sii* (Curtis's). 2½. White, with purple anthers. March. Sumatra. 1883.
„ *erythrophy'lla* (red-leaved). See M. RUBICUNDA.
„ *exi'mia* (choice) of Siebold. See M. SIEBOLDIANA.
„ *farino'sa* (mealy). See M. VENOSA.
„ *javane'nsis* (Javanese). 4. December. Java. 1850.
„ *magni'fica* (magnificent). 3–5. Rosy-pink. May. Philippines.
„ „ *ru'bra* (red). Deep red. 1888.
„ *rubicu'nda* (red). 2. Rose. Leaves red. Malaya. 1837.
„ *sieboldia'na* (Siebold's). 3½. Rose. April. Moluccas.
„ *specio'sa* (showy). 4. July. Java. 1845.
„ *specio'sa* (showy) of Hooker. See M. CUMMINGII.
„ *Teysma'nni* (Teysman's) of gardens. See M. AMABILIS.
„ *veno'sa* (veiny). Pink. Leaves mealy when young. Malaya. 1865.

MEDLAR. *Py'rus germa'nica.*

Varieties.—Blake's Large; Dutch, largest fruit; Nottingham, small, but best flavoured; Stoneless, inferior, but keeps longer than others.

Propagation: by Seed.—This is a tedious mode, the seed usually lying two years before it germinates. Sow, immediately the fruit containing the seed decays, in common, light soil. Water the seedlings frequently in dry weather; thin them to two feet apart; and when four or five years old they will be fit for final planting.

By Layers.—This may be done in February and March, making use of shoots of the previous year. They will have rooted by the autumn.

Grafting and *Budding* may be done on the White Thorn; but the Pear is a better stock for the Medlar.

Soil.—A well-drained, but retentive loam suits it best.

Planting, Pruning, &c.—See the directions given for the PEAR.

Storing.—The fruit ought not to be gathered until November, for if the gathering is made before the fruit is fully matured, it shrivels without ripening in its decay. Spread them singly upon sand, the calyx, or open side downwards, and dipping the stalk end in a strong brine of common salt and water, which is said to check the occurrence of mouldiness.

MEDLAR, JAPANESE. *Eriobo'trya japo'nica.*

MEDUSA'S-HEAD. *Eupho'rbia Ca'put-Medu'sæ.*

MEGACLI'NIUM. (From *megas*, large, and *kline*, a bed; referring to the axis, or rachis, on which the flowers are borne. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cirrhopetalum.)

Stove orchids. Division of the plant in spring; shallow baskets in sphagnum, rotten wood, charcoal, and fibrous peat. Winter temp., 60°; summer, 60° to 90°.

M. arnoldia'num (Arnoldian). 1905.
„ *Bu'fo* (toad). Brown, purple. Summer. W. Trop. Africa. 1839.
„ *Cla'rkei* (Clarke's). Green and purple. W. Trop. Africa. 1891.
„ *ebu'rneum* (ivory). Yellowish-white, yellow. W. Africa. 1908.
„ *falca'tum* (sickle-shaped). 1. Yellow, red. March. W. Trop. Africa. 1824.
„ „ *ma'jus* (large). Yellow, red. March. 1833.
„ *fu'scum* (brown). Brownish-purple. 1910.
„ *imschootia'num* (Imschootian). 1. Yellow-green, spotted brown. Trop. Africa (?). 1895.
„ *leucorrha'chis* (white-rachised). Deep yellow. Trop. Africa (?). 1891.
„ *lute'scens* (yellowish). Honey-yellow. Gold Coast. 1910.

M. ma'ximum (largest). 1. Yellow, green. W. Trop. Africa. 1836.
„ *melanorrha'chis* (black-rachised). Brown, pale yellow. W. Trop. Africa. 1875.
„ *minu'tum* (minute). ½. Orange-red. Sierra Leone. 1893.
„ *Nummula'ria* (Nummularia). ½. Purplish. Cameroons. 1894.
„ *oxy'odon* (sharp-toothed). 1. Yellow, red. Madagascar. 1888.
„ *platyrha'chis* (broad-rachised). Greenish dotted with brown. British Central Africa. 1903.
„ *purpura'tum* (purple). Greenish, purple. W. Trop. Africa. 1871.
„ *purpu'reo-rha'chis* (purple-rachised). Dark brown. Congo. 1909.
„ *pusi'llum* (puny). Green and purple. E. Trop. Africa. 1894.
„ *Sanderso'ni* (Sanderson's). S. Africa.
„ *scabe'rulum* (finely-scabrous). ½. Dull purple, whitish-green. Pondoland. 1888.
„ *tri'ste* (sad). 1. Black-purple. Trop. Africa. 1894.
„ *veluti'num* (velvety). Purple. Yellow. W. Trop. Africa. 1845.

MEGARRHI'ZA. (From *megas*, great, and *rhiza*, a root; in allusion to the large, tuberous root. Nat. ord. Cucurbitaceæ. Now referred to Echinocystis.)
Hardy tuberous-rooted perennial. Seeds in gentle heat in spring. Rich, light soil.
M. califo'rnica (Californian). Yellow. Stems 20–30 ft. long. California. 1881. Now referred to *Echinocy'stis faba'cea.*

MEGA'SEA. See SAXIFRAGA.

MEIRACY'LLIUM. (From *meirakullion*, a little boy, the diminutive of *meirax*; in allusion to the small size of the plants. Nat. ord. Orchidaceæ.)
Stove epiphytes, best grown on blocks. Divisions. Sphagnum.
M. Ge'mma (Gemma). Amethyst. Mexico. 1869.

MELALEU'CA. (From *melas*, black, and *leukos*, white; referring to the colours of the old and young bark. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)
Evergreen shrubs, from Australia, except where otherwise mentioned. Cuttings of the shoots in May, as they are getting firm at their base, and not more than three inches in length, in sand, under a bell-glass; peat and loam, most of the latter, with a fair portion of sand, and nodules of charcoal. Winter temp., 38° to 45°. Many are about as hardy as a myrtle, and will stand against a conservatory wall with a little protection.

STOVE EVERGREENS.

M. Leucade'ndron (white tree). 15. White. Australia. 1796. "Cajeputi."
„ *mi'nor* (smaller). White. Australia. 1800. "Smaller Cajeputi."

GREENHOUSE EVERGREENS.

M. acero'sa (sharp-pointed). Purple. June.
„ *acumina'ta* (long-pointed). Australia.
„ *armilla'ris* (braceleted). 3–6. White. June. 1788.
„ *austra'lis* (southern) of gardens.
„ *callistemo'nea* (beautiful-stamened). See M. LATERITIA.
„ *calyci'na* (*large*-calyxed). 3. Purple. July. N. Amer. 1803.
„ *cuticula'ris* (cuticled). Australia.
„ *decussa'ta* (decussate-*leaved*). 4. Lilac. August. 1803.
„ *de'nsa* (thickly-*leaved*). 2. Purple. 1803.
„ *diosmifo'lia* (Diosma-leaved). 4. Reddish. June. 1794.
„ *dumo'sa* (bushy). 2.
„ *ericifo'lia* (heath-leaved). Yellow. June. Australia.
„ *erube'scens* (blushing-*stamened*). See M. ERICIFOLIA.
„ *exara'ta* (furrowed). Australia.
„ *Fra'seri* (Fraser's). See M. STRIATA.
„ *fu'lgens* (splendid). 6. Scarlet. August. 1803.
„ *genistifo'lia* (broom-leaved). 4. Red. 1793.
M. gibbo'sa (humped). Australia.
„ *glabe'rrima* (smoothest). Australia.
„ *globi'fera* (globe-bearing). 20–25. Australia.
„ *gra'ndis* (grand). 4.
„ *Huege'lii* (Huegel's). 1832.
„ *hypericifo'lia* (St. John's-wort-leaved). 3. Scarlet. July. 1792.
„ *imbrica'ta* (overlapping). Australia.
„ *inca'na* (hoary). 3. Yellow. July. 1817.
„ *juniperoi'des* (juniper-like). See M. NODOSA.
„ *lanceola'ta* (spear-head-*leaved*). See M. LEUCADENDRON.
„ *lateri'tia* (brick-red). Purple, rose. June.
„ *linea'ris* (linear). See CALLISTEMON LINEARIS.
„ *micro'mera* (small-parted). Australia.
„ *neriifo'lia* (Nerium-leaved). See TRISTANIA NERIIFOLIA.
„ *neso'phila* (island-loving). Australia.
„ *nodo'sa* (thick-noded) of Smith. 3. Striped. June. 1830.
„ *nodo'sa* (thick-noded) of Link. See. M. ERICIFOLIA.
„ *paludo'sa* (marsh). See CALLISTEMON SPECIOSUS.
„ *parvifo'ra* (small-flowered). See M. PREISSIANA.
„ *preissia'na* (Preiss's). Australia.
„ *pulche'lla* (neat). 2. Purple. July. 1803.
„ *Ra'dula* (file-like). Pink. May.
„ *salicifo'lia* (willow-leaved). See TRISTANIA NERIIFOLIA.
„ *sca'bra* (rough-*leaved*). 3. Purple. May. 1803.
„ *seria'ta* (row-ranged). Rose. June.
„ *spino'sa* (spiny). See M. THYMOIDES.
„ *squa'mea* (scaly-*calyxed*). 4. Lilac. June. 1805.
„ *squarro'sa* (spreading). 2. White. 1794.
„ *stria'ta* (channelled-*leaved*). 4. Purple. June. 1803.
„ *styphelioi'des* (Styphelia-like). 4. White. June. 1793.
„ *tetrago'na* (four-angled). See M. DECUSSATA.
„ *thymifo'lia* (thyme-leaved). 2. Purple. August. 1792.
„ *thymoi'des* (thyme-like). Yellow. June. Australia.
„ *thyoi'des* (Thuya-like). Australia.
„ *trichophy'lla* (hair-leaved). Pink. May.
„ *trine'rvia* (three-nerved). 3. 1816.
„ *uncina'ta* (hooked). Australia.
„ *vimi'nea* (twiggy). Australia.
„ *virga'ta* (twiggy). See BÆCKEA VIRGATA.
„ *Wilso'nii* (Wilson's). Reddish-purple. Australia. 1874.

MELAMPO'DIUM. (From *melas*, black, *pous*, a foot; in allusion to the black flower-stalks. Nat. ord. Compositæ.)
Hardy annual. Seeds. Ordinary soil.
M. divarica'tum (spreading), and *M. ovatifo'lium* (egg-shaped-leaved). See M. PALUDOSUM.
„ *paludo'sum* (marshy). Yellow. S. Amer. 1891.

MELANORRHŒ'A. (From *melas*, black, and *rheo*, to flow; referring to the juice becoming black varnish. Nat. ord. *Anacards* [Anacardiaceæ]. Linn. 23-*Polygynia*, 2-*Diœcia*.)
The black poisonous varnish of Martaban is the produce of this tree, the Theet-see, or Kheu of India. Stove evergreen tree. Cuttings of ripe shoots, with the leaves on, in sand, under a glass, and in heat; peat and loam. Winter temp., 55° to 60°; summer, 60° to 85°.
M. gla'bra (smooth). Burma.
„ *usita'ta* (common). 100. Red. Burma. 1829. "Black Varnish."
„ *usitati'ssima* (most useful). See M. USITA'TA.

MELANTHE'RA. (From *melas*, black, and *anthera*, an anther. Nat. ord. Compositæ.)
Stove herbs. Seeds and divisions. Loam, leaf-mould, and a little sand.
M. deltoi'dea (delta-like). 3. Yellow. July. Trop. Amer. 1799.
„ *hasta'ta* (halbert-shaped). 3–5. White. June. Trop. Amer. 1732.
„ „ *pandura'ta* (fiddle-shaped-leaved).

MELA'NTHIUM. (From *melas*, black, and *anthos*, a flower; referring to the dusky blossoms. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Veratrum.)

The Melanths are all more or less poisonous. Half-hardy bulbs, requiring the greenhouse or cold pit in winter, or the bulbs to be kept dry and at rest; propagated by offsets and seeds; sandy loam and peat.

M. cape'nse (Cape). See ANDROCYMBIUM LEUCANTHUM.
„ *cilia'tum* (hair-fringed). See DIPIDAX CILIATA.
„ *eucomoi'des* (Eucomus-like). See ANDROCYMBIUM EUCOMOIDES.
„ *grami'neum* (grassy). See ANDROCYMBIUM PUNCTATUM.
„ *hy'bridum* (hybrid). See M. VIRGINICUM.
„ *ju'nceum* (rush-*leaved*). See DIPIDAX TRIQUETRA.
„ *latifo'lium* (broad-leaved). See M. VIRGINICUM.
„ *massoniæfo'lium* (Massonia-leaved). See WHITEHEADIA LATIFOLIA.
„ *monoi'cum* (monœcious). See M. VIRGINICUM.
„ *monope'talum* (one-petaled). See WURMBEA CAPENSIS.
„ *parvifo'rum* (small-flowered). 2. Brown. June. N. Amer. 1811.
„ *phalangioi'des* (Phalangium-like). See ZYGADENUS MUSCITOXICUM.
„ *secu'ndum* (side-*flowering*). See DIPIDAX CILIATA.
„ *sibi'ricum* (Siberian). 1. Siberia. 1823.
„ *spica'tum* (spicate). See WURMBEA CAPENSIS.
„ *trique'trum* (three-sided). See DIPIDAX TRIQUETRA.
„ *unifio'rum* (one-flowered). See BÆOMETRA COLUMELLARIS.
„ *virgi'nicum* (Virginian). 3–5. Creamy-white, fading to brown. July. N. Amer. 1768. "Bunch Flower."
„ *vi'ride* (green). See ORNITHOGLOSSUM GLAUCUM.
„ *wu'rmbeum* (Wurmbean). See WURMBEA CAPENSIS.

MELASPHÆ'RULA. (From *melas*, black, and the diminutive of *sphaira*, a globe; literally, a little black ball, in allusion to the small black bulbs. Nat. ord. Iridaceæ.)

An ornamental, free-flowering greenhouse bulb. Seeds and offsets. Light, rich compost of loam, leaf-mould, some well-rotted cow manure and sand.

M. grami'nea (grass-like). White, pale purple. April. S. Africa. 1786.
„ *interme'dia* (intermediate), *iridifo'lia* (Iris-leaved), and *parvifio'ra* (small-flowered). See M. GRAMINEA.

MELA'STOMA. (From *melas*, black, and *stoma*, a mouth; the eatable berries stain the mouth a dark purple. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Osbeckia.)

Stove evergreens. Cuttings of the shoots in sandy peat, under a bell-glass, in heat; peat and loam, sandy and lumpy. Winter temp., 45° to 60°; summer, 60° to 85°.

M. affi'ne (related). See M. MALABATHRICUM.
„ *afzelia'num* (Afzelius's). See OSBECKIA MULTIFLORA.
„ *a'sperum* (rough). 6. Purple. June. E. Ind. 1815.
„ *Ba'nksii* (Sir J. Banks'). See M. MALABATHRICUM.
„ *ca'ndidum* (white). 4. Purple. China. 1824.
„ *corymbo'sum* (corymbed). See AMPHIBLEMMA CYMOSUM.
„ *cymo'sum* (cymed). See AMPHIBLEMMA CYMOSUM.
„ *dece'mfidum* (ten-cut). See M. SANGUINEUM.
„ *denticula'tum* (toothletted). See M. MALABATHRICUM.
„ *ecosta'tum* (ribless). See MICONIA ECOSTATA.
„ *elonga'tum* (elongated). 1. Purple. May. Sierra Leone. 1823.
„ *granulo'sum* (granular). See TIBOUCHINA GRANULOSA.
„ *heteroma'llum* (variable-haired). See TIBOUCHINA HETEROMALLA.
„ *hi'rtum* (hairy). See CLIDEMIA HIRTA.
„ *læviga'tum* (smooth). See MICONIA LÆVIGATA.
„ *macroca'rpum* (large-fruited). See M. MALABATHRICUM.
„ *malaba'thricum* (Malabar). 6. Purple. June. E. Ind. 1793.
„ *napale'nse* (Nepaul). See M. NORMALE.
„ *norma'le* (normal). 5. Lilac-rose. India, Malaya, and Polynesia. 1820.
„ *osbeckioi'des* (Osbeckia-like). See OSBECKIA OCTANDRA.
„ *pulverule'ntum* (powdered). Red. March. Sumatra. 1823.
„ *robu'stum* (robust) of gardens. Possibly a Miconia.
„ *sangui'neum* (bloody). 6. Purple. September. China. 1793.
„ *villo'sum* (shaggy). 3. White. July. Cochin-China. 1820.

MELHA'NIA. (After *Mount Melhan*, in Arabia Felix, where the first of them was discovered. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*. Allied to Pentapetes.)

Stove evergreen trees, with white or scarlet flowers. Cuttings of the half-ripened shoots in sandy peat, in a little bottom-heat, and under a bell-glass; sandy peat and a little loam. Winter temp., 50° to 60°; summer, 60° to 85°.

M. abyssi'nica (Abyssinian). 2. Scarlet. Abyssinia. 1805.
„ *Burche'llii* (Burchell's). 15 S. Africa. 1818.
„ *Erythro'xylon* (red-wood). 15. July. St. Helena. 1772.
„ *Melano'xylon* (black-wood). 2. July. St. Helena. Now extinct.

ME'LIA. Bead-tree. (*Melia*, the Manna Ash; referring to the resemblance of the leaves. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Seeds and cuttings of the ripe shoots in sand, under a bell-glass, and in a mild bottom-heat; sandy loam and fibrous peat. *Aze'darach* and *austra'lis* will stand against a wall in the south of the island. The monks formerly strung the fruit as *beads*.

GREENHOUSE EVERGREENS.

M. austra'lis (southern). See AZEDARACH.
„ *Aze'darach* (Azedarach). 45. Blue. July. India and China. 1656.
„ „ *umbraculi'fera* (umbrella-bearing). Tree with a drooping compact head. 1894.
„ *floribu'nda* (free-flowering). White. 1872.
„ *japo'nica* (Japanese). See M. AZEDARACH.

STOVE EVERGREENS.

M. Azadira'chta (Azadirachta). 60. White. July. E. Ind. 1759.
„ *compo'sita* (compound-*leaved*). 20. White, red. July. E. Ind. 1870.
„ *du'bia* (doubtful). 20–30. White, red. Trop. Asia, Africa, &c. 1810.
„ *excе'lsa* (lofty). 40. White. July. Malaya. 1819.
„ *guinee'nsis* (Guinea). See M. AZEDARACH.
„ *robu'sta* (robust). See M. DUBIA.
„ *sempervi'rens* (evergreen). See M. AZEDARACH.
„ *supe'rba* (superb). See M. DUBIA.

MELIA'NTHUS. Honey Flower. (From *meli*, honey, and *anthos*, a flower; the tubes contain a copious supply of honey-like juice. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

The natives obtain honey for food by shaking the branches of *Melia'nthus ma'jor* when in blossom. Evergreens, from South Africa. Cuttings of young shoots in sandy soil, under a hand-light; rich, sandy soil; require the protection of a greenhouse, cold pit, or a protective wall in winter.

M. como'sus (tufted). 3. Yellow. 1820.
„ *ma'jor* (greater). 10. Brown. June. 1688.
„ *mi'nor* (smaller). 2. Brown. June. 1696.
„ *pectina'tus* (comb-like). 3–6. Scarlet. S. Africa.
„ *trimenia'nus* (Trimenian). See M. PECTINATUS.

ME'LICA. Melic Grass. (An old name. Nat. ord. Gramineæ.)

Hardy perennial grasses, except *M. papilionacea*, which is half-hardy. The flower spikes may be cut and dried. Divisions. Ordinary soil.

M. alti'ssima (tallest). Spikelets green to purplish. S. Europe.
„ „ *atropurpu'rea* (dark purple). Spikelets dark purple.
„ *cilia'ta* (eye-lashed). Spikelets green or purple. Europe.
„ *papiliona'cea* (butterfly-like). Spikelets purplish. Argentina; Brazil. 1890.
„ *unifio'ra variega'ta* (variegated). Leaves striped with creamy-yellow.

MELI'CHRUS. (From *melichros*, honey-coloured; referring to glands on the flowers. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Styphelia.)

Greenhouse scarlet-flowered evergreens, from Australia. Cuttings of the shoots when two inches long, and a little hard at their base; side-cuttings, after pruning down, are the best; sandy peat. Winter temp., 38° to 45°.

M. me'dius (middle). See M. URCEOLATUS.
,, *rota'tus* (wheel-shaped). 1½. June. 1824.
,, *urceola'tus* (urn-shaped). 2. May. 1824.

MELICO'CCA. Honey-berry. (From *meli*, honey, and *kokkos*, a berry; referring to the sweetness of the fruit. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Talisia.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, in heat; peat and loam. Winter temp., 48° to 60°; summer, 60° to 80°.

M. austra'lis (southern). Australia. Greenhouse.
,, *bi'juga* (two-paired). 16. Yellow. Antilles. 1778. "Genip Tree."
,, *olivæfo'rmis* (olive-shaped). See TALISIA OLIVÆFORMIS.
,, *panicula'ta* (panicled). See HYPELATE PANICULATA.
,, *tri'juga* (three-paired). See SCHLEICHERA TRIJUGA.

MELI'COPE. (From *meli*, honey, and *kope*, an incision; referring to the nectary of notched glands. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Greenhouse evergreens. Cuttings of small side-shoots in sand, under a bell-glass, in May; sandy loam, with a little peat and leaf-mould. Winter temp., 40° to 48°.

M. Mantel'lii (Mantell's). White. New Zealand.
,, *terna'ta* (three-leafleted). 6. White. New Zealand. 1822.

MELI'CYTUS. (From *meli*, honey, and *kutos*, a cavity; referring to the cavity at the bottom of the stamens. Nat. ord. *Violads* [Violaceæ]. Linn. 22-*Diœcia*, 6-*Hexandria*. Allied to Hymenanthera.)

Greenhouse evergreen shrubs. Cuttings of shoots getting firm, in sand, under a bell-glass, in May; sandy peat, and a little loam. Winter temp., 38° to 45°.

M. lanceola'tus (lance-shaped). White. New Zealand.
,, *ramiflo'rus* (branch-flowered). 6. White. New Zealand. 1822.

MELILO'TUS. Melilot. (From *meli*, honey, and *lotos*, the honey-lotus. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Trifolium.)

Seed in common soil; *alba*, by seed and by cuttings, does best in a sheltered place, and is deserving of more cultivation.

M. a'lba (white). 2–10. White. July. Europe, &c. 1826.
,, *arbo'rea* (tree). See M. ALBA.
,, *brachy'loba* (short-podded). See TRIGONELLA BRACHYCARPA.
,, *cæru'lea* (sky-blue). See TRIGONELLA CÆRULEA.
,, *leuca'ntha* (white-flowered). 4. White. July. Europe.
,, *officina'lis* (shop). 1–4. Yellow. July. Britain.
,, *sibi'rica* (Siberian). See MEDICAGO SIBIRICA.
,, *suave'olens* (sweet-smelling). 3. Yellow. July. Dahuria. 1824.

MELIO'SMA. (From *meli*, honey, and *osme*, smell; in allusion to the scent of the flowers. Nat. ord. Sabiacæ. Allied to Sabia).

Hardy and half-hardy, or greenhouse trees or shrubs. Suckers; and perhaps cuttings of the roots. Fibrous loam, peat, and sand for the greenhouse ones; well-drained soil for the hardy ones.

M. myria'ntha (myriad-flowered). 10–15. White. China and Japan. Hardy.
,, *pu'ngens* (prickly). 5–10. India and Japan.
,, *Veitchio'rum* (Messrs. Veitch's). 40–50. White, in large panicles. Central China. 1910. Hardy.

MELI'SSA. Balm. (From *melissa*, a bee; literally, a bee-flower. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Hardy herbaceous perennials. Dividing the roots in spring; common garden soil. See BALM.

M. A'cinos (Acinos). See CALAMINTHA ACINOS.
,, *a'lba* (white). See MICROMERIA RUPESTRIS.
,, *alpi'na* (alpine). See CALAMINTHA ALPINA.
,, *alti'ssima* (tallest). See M. OFFICINALIS.
M. cocci'nea (scarlet). See CALAMINTHA COCCINEA.
,, *cordifo'lia* (heart-leaved). See M. OFFICINALIS.
,, *cre'tica* (Cretan). See CALAMINTHA CRETICA.
,, *grandiflo'ra* (large-flowered). See CALAMINTHA GRANDIFLORA.
,, *microphy'lla* (small-leaved). See CALAMINTHA CORSICA.
,, *officina'lis* (shop). 1. White. July. S. Europe. 1573.
,, ,, *au'rea* (golden). Leaves variegated with yellow.
,, ,, *variega'ta* (striped-*leaved*). 1. White. June. Gardens.
,, ,, *villo'sa* (shaggy). White. August. Italy. 1573.
,, *polya'nthos* (many-flowered). 1. White. July. 1820.
,, *pyrena'ica* (Pyrenean). See HORMINUM PYRENAICUM.

MELI'TTIS. Bastard Balm. (The same derivation as Melissa. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Same culture as BALM.

M. Melissophy'llum (balm-leaved). 1. Flesh. May. England. "Honey Balm."
,, ,, *a'lba* (white). White.
,, ,, *alpi'na* (alpine). ½. Flesh. May. Switzerland.
,, ,, *grandiflo'ra* (large-flowered). 1. White, yellow. May. England.

ME'LLOCA TUBERO'SA. See ULLUCUS TUBEROSA.

MELOCA'CTUS. Melon Cactus, Melon Thistle. (From *melon*, a melon, and *kaktos*, a thorny plant, according to Theocritus. Nat. ord. Cactaceæ.)

The genus differs from Echinocactus by producing its flowers on a terminal branch or offset, like a Turk's Cap, the cap being covered with a dense mass of bristly hairs. Seeds, offsets. Loam, peat, bricks broken finely, old mortar treated in a similar way, and sand.

M. commu'nis (common). 1–2. Rose-red. W. Ind. 1788. "Turk's Cap."
,, *depre'ssus* (depressed). Rose. July. Brazil.
,, *Ellemee'tii* (Ellemeet's). Rose. Brazil. 1872.
,, *hu'milis* (dwarf). ¼. Carmine-red. Venezuela. 1897.
,, *Negry'i* (Negry's). Small, pink. Has no cap. Brazil. 1901.
,, *Rii'stii* (Riist's). Armature dense. Cap large. Honduras. 1901.
,, *Salvato'ris* (Salvator's) of gardens. Mexico.
,, *schlumbergeria'nus* (Schlumbergerian). Island of St. Thomas. 1861.

MELODI'NUS. (From *melon*, an apple, and *dineo*, to turn round; referring to the shape of the fruit. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Carissa.)

The fruit of this and some other allied genera are eatable, but not of much merit. Stove evergreen twiners, with white flowers, blooming in July. Cuttings of half-ripened side-shoots in sand, under a bell-glass, in heat; peat and loam, with a little sand. Winter temp., 50° to 60°; summer, 68° to 85°.

M. mono'gynus (one-pistiled). 10. E. Ind. 1820.
,, *parvifo'lius* (small-leaved). E. Ind. 1775.
,, *sca'ndens* (climbing). 15. New Caledonia. 1775.
,, *undula'tus* (wave-*leaved*). E. Ind.

MELOLONTHA. Everyone knows the common May-bug, or Cockchafer (*Melolontha vulgaris*); a drawing and a description of its grub are given at p. 15, vol. v., of *The Cottage Gardener*. This grub very closely resembles that of another species, *M. horticola*, Garden Beetle, or Brackenclock—*Phyllopertha* of some entomologists. The latter beetle (*ibid.*, ii. 171) is found in June and July, among the petals of white roses. It is nearly half an inch long, and rather less than a quarter of an inch broad. Its wing-cases are reddish-brown, shining, and shorter than the body; the body and head are dark green, and the antennæ reddish, having at their ends a dark-green club. It also feeds on the leaves of apples, pears, and roses, gnawing them full of small holes, and even transferring its attacks to the young fruit of the apple. During the latter part of July the female retires into the earth for the purpose of there depositing her eggs, from which the grubs speedily are produced, and feed upon the roots of plants, especially of grass. The only mode of reducing the number of these beetles is by searching for them during the evening, when, if detected, they stiffen their outstretched legs, and feign

death; but in the day they fly about swiftly, and are captured with great difficulty. It is said that when grass suffers from the grubs of either of these beetles, they may be extirpated by watering with the ammoniacal liquor from gas-works.

ME'LON. (*Cu'cumis Me'lo.*)

Varieties.—These are so numerous that we must be very severe in our selection, confining ourselves to such as are most generally useful in Britain; and these we must classify according to their habits.

Cantaloups, the Rocks, the Green-fleshed, the Valentia, or Winter, and the Persians, with their various hybrids. Amongst the *Cantaloups* we have both round and oblong, plain and netted, the Orange, the Montagnes, &c. In the *Rocks* we have the Small Scarlet-fleshed, the Black, the Large, and the Early, &c. In the *Green-flesh* class we may point to the Beech-wood, which may almost be considered the type of this section, the Small Green-fleshed Egyptian, of exquisite flavour, and thin rind; these, with the various varieties known by the name of Snow's, Terry's, the Kew-green-flesh, &c. These are the most generally useful melons, being hardy, free-setters, and not liable to rot or canker.

Next we may advert to the *Winter Melons*, a class which will keep a long time after they are cut; and the *Valentia* may be placed amongst this division. Lastly, are the *Persians*, with their useful hybrids. The types of these Persian hybrids are, principally, the Ispahan, the Dampsha, the Germek, and the Hoosainee.

Propagation: by Seed.—Most practical men prefer old seed to new, as running less to bine. A bottom-heat of from 75° to 85° is essential; and when the seedlings are up, and just before the second set of leaves begin to appear, the young plants may be potted into 5-inch pots, two in a pot, in a soil of three parts strong loam, enriched with manure. A temperature of 70° to 80° must be secured to them, and the pots should be plunged. As soon as the central shoot begins to sprout from between the seed-leaves it may be pinched off; and this, if other points be right, will cause the protrusion of a pair, or more, of shoots, more fruitful in character, and these are enough as "leaders." In about a fortnight afterwards they will be fit for the fruiting-bed.

By Cuttings.—This mode of culture has been recommended by some, as serving to restrict that excessive luxuriance which is frequently inimical to fertile blossoming. Under proper culture the plan answers; but, on the whole, the seedling plan is the better. It is, however, a certain mode of perpetuating choice kinds, and as such should not be lost sight of. Healthy, free-growing, yet short-jointed shoots, should be selected, and the usual bottom-heat and atmospheric temperature must be secured; in addition to this, there must be a liberal amount of atmospheric moisture, and the close treatment, with shading, incidental to the growth of cuttings. When established, the plants will need no "stopping"; and they require a more generous soil when finally planted.

Subsequent Culture.—The melon is fruited by a variety of modes, but in all a certain amount of bottom-heat, as well as atmospheric, is absolutely necessary. The bottom-heat should never descend below 70°, nor range above 90°, whilst an atmosphere not below 65°, nor above 80°, will be most suitable, permitting, however, a rise of eight or ten degrees from sunshine. In no situation can the melon endure shade.

Culture in the Dung-bed. (For preparation of this see HOTBED.)—The earliest melons are generally sown about the middle of January, in a seed-bed specially prepared. Great caution is necessary; and when the plants are up, and the two seed-leaves fully developed, they may be planted out singly in 5-inch pots, in rich soil. About this time the ridging-out bed must be got up for their reception, and this must be composed of materials perfectly sweet. Regular ventilation and frequent waterings will soon render the air within perfectly sweet; and then the hills of soil may be introduced; in doing which it is good practice to form hollows two-thirds the depth of the bed, and to fill them to the ordinary surface with brickbats or rubble, laying a turf with the grass downwards on the top, and on this the hillocks may be placed. The young plants will, by this time, have produced three or four shoots each, and it is advisable to retain two of the best on each. They may now be ridged out, and must afterwards be occasionally watered when dry; watering, according to the weather, also the sides of the frame and the uncovered dung almost daily. Henceforth, regular linings must be supplied, and those often turned and watered; maintaining steadily the temperatures, and taking care that the bottom-heat in no part of the interior exceeds 90°. As strong linings will be requisite at this early period, much water will be necessary twice or thrice a week, round the insides of the frames, and next to the linings, to prevent burning. As soon as the plants begin to spread, the remaining soil must be added; each light requiring, in the whole, from two or three barrowfuls. The surface of the bed must be formed convex, the plants occupying the highest point. Two plants are enough for each light, and a shoot may be led to each angle of the light, and then the main shoots, taking the whole light, will form the letter X, the centre of the letter indicating the ridging-out point. As soon as each of these shoots reaches to within from 6 to 9 inches of the frame side, it must be pinched, and the laterals forced out by this pinching will produce blossoms, some males, others females; the former generally preponderating.

The female blossoms must be carefully "set" or impregnated daily, choosing about two o'clock P.M. for the operation, when the farina will be dry. As soon as from three to four fruit are secured on each plant, and these are as large as a pigeon's egg, all the blossoms must be kept cut away, male and female, as they appear. Each axillary shoot with a fruit must be pinched or stopped three or four eyes beyond the fruit; and frequent stopping practised with all the other portions, removing at all times coarse shoots which threaten to overpower the bearing portions. The chief object should be to expose as much healthy foliage as possible, and that connected with bearing portions, to the light, not suffering late-formed leaves to overshadow the older healthy leaves. Still, the sides of the frame must be occasionally watered; and when the fruit is as large as a hen's egg, a liberal watering of liquid-manure may be given, avoiding, however, wetting the collars of the plants at all times. Ventilation must be daily had, but much caution is necessary; good linings must be maintained, in order to support the necessary temperature with ventilation. By these means, fine, ripe Cantaloups or Beechwoods may be cut by the middle of May. We may add that the root-watering may require to be repeated, but water must be entirely withheld a week or two before they commence ripening, and an extra amount of ventilation used during the ripening period.

The main features of their culture in *houses* or *pits*, or on *trellises*, are precisely the same, except that, having a greater depth of soil, and more room to ramble, a much greater length of main shoot may be allowed before stopping. In whatever situation, about 80° of bottom-heat, and an average of 75° atmospheric, will be found to suit them best, except that in proportion as the sunlight increases they will readily bear an increase of from 5° to 10°, both to the roots and branches.

Bed.—Although a common hotbed is generally used for this plant, yet a pit is more economical of heat, and, by enabling a more regular temperature to be sustained, renders the fruit in greater perfection. The pit is a rectangular frame or bin, built of 9-inch brick-work, and enclosed by a glass case of the necessary dimensions. Mr. Smith, gardener to A. Keith, Esq., of Ravelstone, N.B., has suggested a mode of building a pit which renders the renewal of the heat in it easy; and, as the committee appointed to examine it report, is the means of considerable saving compared with the common mode of forming an open bed. But the facility with which linings may be applied is its best feature.

Mr. Smith's mode of applying the linings is simple. There is a pit, the sides of which, instead of being a continuous piece of brick-work, are merely rows of pillars 6 feet apart; and the brick-work of the frame above is supported by bars of iron reaching from pillar to pillar. An outer brick wall is constructed at 2½ feet distance from the pillars on each side; thus two bins are formed in which the linings are inserted, as is found necessary, and are kept close covered with thick boards; ordinary lights are used, being laid on the top without any wooden frames. For other modes of construction, see HOTBED, PITS, &c. If a common hotbed is employed, fifteen barrow-loads of dung is the usual

allowance to each light, which make it about 6 inches higher than is allowed for the cucumber bed of largest dimensions.

If a melon-house be employed, the following is the form and mode adopted by Mr. Fleming:

"The house is 28 feet long, and 15 wide, and is heated by means of a saddle boiler, with 4-inch pipes passing round the outside of the pit, which pipes are fitted with cast-iron troughs, for holding water to regulate the moisture of the atmosphere. Beneath the pit is an arched chamber, along the front of which runs the flue, imparting a slight degree of heat to the soil above, and also serving to heat a series of arches, which run along beneath the path, and are entered from a house in front, and which are used for forcing rhubarb, &c., in the winter."—*Gardeners' Chronicle.*

Culture of the Persian Kinds.—These are much more tender than the ordinary green-fleshed melons; they will not endure so low a temperature, and neither will they thrive in so moist an atmosphere. A high authority, speaking of the Persian melons, has thus observed: "They are found to require a very high temperature, a dry atmosphere, and an extremely humid soil, while they are at the same time impatient of an undue supply of moisture, which causes spottings and decay long before the fruit is ripe."

We are informed that in Persia, where the melon grows in the open fields, that the ground where they are cultivated is crossed in various ways by streams, between which the melons are placed on raised beds highly manured. It would seem, therefore, that in order to excel in their culture, the following may be taken as maxims: 1st. The brightest of glass is requisite, to admit every ray possible of the sunlight. 2nd. A very high atmospheric temperature must be sustained, and especially in order that the cultivator may be enabled to ventilate freely, to prevent the accumulation of damp. 3rd. A rich soil, dry in its upper surface, but rather moist beneath. It is urged by those who have been successful in their culture, that they should be trained on trellises; and there is no doubt the opinion is correct. They may, however, be trained against the back walls of stoves, or grown in large pots, to which in due time a dish of water may be affixed, and the shoots trained on portable trellises.

We will conclude with a few general remarks. The foliage of melons, of whatever kind, should never be ruffled or disturbed; training and stopping, therefore, must be attended to in due time. Melons should not be encouraged to become luxuriant until a crop of fruit commences swelling; after this it is almost impossible to encourage them too much. Again, they should never be watered indiscriminately overhead, after the manner of cucumbers, unless it be some of the ordinary green-flesh kinds, during periods of continued heat and a dry atmosphere.

Diseases.—These are few properly so called except the gum and canker, and those are mostly engendered by wounds or bruises on gross subjects, producing a sort of vegetable gangrene. When such occurs, it is a good plan to place a slate, tile, or piece of glass beneath the affected part, and to pile a mixture of quick-lime three parts, and charcoal-dust one part, in a hillock around and above the wound, changing the same when it becomes damp.

Canker is a term applied to the effect of eelworms at the collar of the plant, and which gain an entrance owing to bruises or to careless watering, by which the collar of the plant is kept wet, thus enabling the eelworms to attack the plants there. Akin to this are the unnatural swellings or nodules on the roots, also caused by eelworms, for which there is no cure when once the plants are attacked. The pest is introduced by the soil, manure, or water, and care should be exercised to guard against it as much as possible. The sterilisation of the soil and manure before making up the bed is the best preventive. This can be done by heating the soil to a temperature of 150° or thereby, by steaming it, and, possibly in the near future by chemicals.

Insects.—See ACARUS, APHIS, and THRIPS.

MELON PUMPKIN. *Cucu'rbita Pe'po.*

MELON THISTLE. *Meloca'ctus.*

MELON TURK'S-CAP. *Meloca'ctus commu'nis.*

MELON WATER. *Citru'llus vulga'ris.*

MELO'THRIA. (From *melon*, a melon, and *thrion*, a fig-leaf; in allusion to the leaves resembling those of both the plants named. Nat. ord. Cucurbitaceæ.)

Prostrate or climbing stove perennial herbs, bearing small yellow or orange fruits. Seeds; cuttings in sand in a close case. Loam, leaf-mould, and sand.

M. abyssi'nica (Abyssinian). Small, yellowish. Fruits orange. Abyssinia. 1893.
,, *heterophy'lla* (variable-leaved). Yellow. Leaves with silvery veins. Trop. Asia. 1866.
,, *i'ndica* (Indian). Yellow. Cochin-China.
,, *puncta'ta* (dotted). Yellow. S. Africa. 1889.

MELVI'LLA SPECIO'SA. See CUPHEA MELVILLA.

MEME'CYLON. (Dioscorides' name for the fruit of the Arbutus. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Mouriria.)

The berries of *M. edu'le* are eatable, but not very good. Stove evergreens. Cuttings of shoots in sand, under a glass, in heat; loam and peat, with a good portion of sand, and pieces of charcoal. Winter temp., 50° to 55°; summer, 60° to 85°.

M. angula'tum (angled). 3. Purple. May. Mauritius. 1826.
,, *capitella'tum* (small-headed). 4. July. Ceylon. 1796.
,, *edu'le* (eatable). 10. Purple. Malaya; India. 1820.
,, *gra'nde* (large). Blue. May. Ceylon, Malaya. 1824.

MENI'NIA TU'RGIDA. See CYSTACANTHUS TURGIDUS.

MENIO'CUS. (From *mene*, the moon, and *okos*, the eye; referring to the shape of the seed-pod. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Aubrietia. Now referred to Alyssum.)

M. linifo'lius (flax-leaved). See ALYSSUM LINIFOLIUM.

MENI'SCIUM. (From *meniskos*, a crescent; referring to the shape of the spore, or seed-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns, with brown spores. See FERNS.

M. cuspida'tum (sharp-pointed). May. Isle of Luzon.
,, *denta'tum* (toothed). 3–4. Brazil.
,, *palu'stre* (marsh). See M. SERRATUM.
,, *proli'ferum* (proliferous). May. E. Ind. 1820.
,, *reticula'tum* (netted). ¾. May. Martinique. 1793.
,, *serra'tum* (sawed). 4. May. Mexico, W. Ind., &c.
,, *si'mplex* (simple). 1–2. Chusan, Hong-Kong, &c. 1850.
,, *sorbifo'lium* (Sorbus-leaved). Pinnæ narrower than those of *M. reticulatum*. Brazil. 1823.
,, *triphy'llum* (three-leaved). 1–1½. June. Himalayas to Ceylon. 1828.

MENISPE'RMUM. Moonseed. (From *mene*, the moon, and *sperma*, a seed. Nat. ord. *Menispermads* [Menispermaceæ]. Linn. 22-*Diœcia*, 10-*Decandria*. Allied to Cocculus.)

Chiefly hardy deciduous twining plants. Division of the roots; cuttings in spring under a hand-light, and by seeds sown at the same time; common garden soil.

M. amari'ssimum (most-bitter). Yellow. E. Ind. 1804. Stove evergreen climber.
,, *canade'nse* (Canadian). 10. Green, white. June. N. Amer. 1691.
,, ,, *loba'tum* (lobe-*leaved*). Green, yellow. June. N. Amer. 1732.
,, *Co'cculus* (Cocculus). See ANAMIRTA COCCULUS.
,, *dau'ricum* (Dahurian). 6–12. Green, white. Siberia, China and Japan.
,, *fenestra'tum* (windowed). See COSCINIUM FENESTRATUM.
,, *Lyo'nii* (Lyon's). See CALYCOCARPUM LYONII.
,, *smilaci'num* (Smilax-like). See M. CANADENSE.
,, *virgi'nicum* (Virginian). See COCCULUS CAROLINUS.

MENODO'RA. (Derivation not quite clear. Nat. ord. Oleaceæ.)

Evergreen shrub requiring greenhouse protection. Cuttings of nearly mature shoots, in sand, in gentle heat and covered with a bell-glass. Loam, peat, and sand.

M. tri'fida (three-cut). 1–2. Yellow. Brazil. 1828.

MENONVI'LLEA. (Named after *T. de Menonville*, a French naturalist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)
Hardy annual. Seeds; common garden soil.
M. filifo'lia (thread-leaved). 1. Greenish-white. August. Chili. 1836.

ME'NTHA. Mint. (*Mentha* is the Latin name of the herb. Nat. ord. *Labiates*, or Lipworts [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)
Hardy herbaceous perennials, purple-flowered, except where otherwise mentioned. Division of the plant or roots in spring and autumn—the first period is the best in stiff, clayey soils; common garden soil.
M. alopecuroi'des (Alopecurus-like). See M. SYLVESTRIS ALOPECUROIDES.
„ *aqua'tica* (aquatic). The varieties are the forms of the "Water Mint."
„ „ *citra'ta* (citron-scented). 1–2. August. England. "Bergamot Mint."
„ „ *hirsu'ta* (hairy). 1–2. Very hairy. August. Britain. The typical or common form.
„ „ *subgla'bra* (nearly smooth). 1–2. Nearly smooth. August. Britain.
„ *arve'nsis* (field). ½. August. Britain. "Corn Mint."
„ *austra'lis* (southern). 1. Purple. Australia.
„ *balsa'mea* (balsam-scented). See M. SUAVIS.
„ *bla'nda* (mild). 2. White. September. Nepaul. 1824. This is *Elsholtzia incisa*.
„ *canade'nsis* (Canadian). 1. August. N. Amer. 1800.
„ „ *glabra'ta* (smoothed). 1. July. N. Amer. 1800.
„ *citra'ta* (citron-scented). See M. AQUATICA CITRATA.
„ *cocci'nea* (scarlet). 1. Scarlet. July. E. Ind. 1823.
„ *cri'spa* (crisped). See M. VIRIDIS CRISPA.
„ *dahu'rica* (Dahurian). ½. Red. July. Siberia. 1818.
„ *denta'ta* (toothed). See M. GENTILIS.
„ *glabra'ta* (smoothed). See M. PIPERITA.
„ *ge'ntilis* (related). 1. Purple. August. England.
„ „ *variega'ta* (variegated). Leaves variegated with yellow.
„ *gra'cilis* (graceful). 1–1½. August. England.
„ „ *cardi'aca* (stomach). 1–1½. August. England.
„ *hirsu'ta* (hairy). See M. AQUATICA HIRSUTA.
„ *inca'na* (hoary). See M. SYLVESTRIS CANDICANS.
„ *lavandula'cea* (lavender-*leaved*). See M. SYLVESTRIS.
„ *longifo'lia* (long-leaved). See M. SYLVESTRIS.
„ *piperi'ta* (pepper). 2. August. England. "Peppermint."
„ *prate'nsis* (meadow). See M. GENTILIS.
„ *Pule'gium* (pennyroyal). ½. August. Britain. "Penny-royal."
„ *Requie'ni* (Requien's). ½. Lilac. August. Corsica. 1829.
„ *rotundifo'lia* (round-leaved). 1½–2. August. Britain. "Apple Mint."
„ *ru'bra* (red). 1–4. August. England.
„ *salici'na* (willow-*leaved*). S. Africa.
„ *sati'va* (cultivated). The varieties are the forms of this.
„ „ *paludo'sa* (marsh). 1½–2. Upper whorls forming a spike. August. Britain.
„ „ *riva'lis* (river-bank). 1½–2. August. Britain.
„ „ *subgla'bra* (subglabrous). 1½–2. Nearly smooth. August. Britain.
„ *spica'ta* (spiked). See M. VIRIDIS.
„ *sua'vis* (sweet). Red. July. France.
„ *sylve'stris* (wild). 1½–2. August. Britain. "Horse Mint."
„ „ *alopecuroi'des* (Alopecurus-like). 1½–2. August. England.
„ „ *ca'ndicans* (whitish). 1½–2. Leaves felted with grey hairs.
„ *vi'ridis* (green). 2. August. Britain. "Spearmint."
„ „ *cri'spa* (curled). 2. July. 1807.

MENTZE'LIA. (Named after *G. Mentzel*, a German botanist. Nat. ord. *Loasads* [Loasaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Includes Bartonia of Sims.)
Easily raised from seed, and *stipita'ta* from shoots in sand, under a glass, in heat; sandy loam and peat.
M. a'spera (rough). 2. Yellow. July. N.W. Amer. 1733. Hardy annual.
„ *Barto'nia* (Bartonia). See M. LINDLEYI.
„ *bartonioi'des* (Bartonia-like). See M. GRONOVIÆFOLIA.
„ *gronoviæfo'lia* (Gronovia-leaved). 1. Sulphur-yellow, white beneath. Summer. Mexico. 1849. Annual.
M. hi'spida (hispid). 1½. Yellow. Mexico. 1820. Perennial.
„ *lævicau'lis* (smooth-stemmed). 1½. Yellow. California. 1890. Annual.
„ *Lindle'yi* (Lindley's). 1½–2. Golden yellow. July. California. 1834. Annual.
„ *loba'ta* (lobed). Mexico. Annual.
„ *nu'da* (naked). 1½–2. White. July. N. Amer. 1811. Biennial.
„ *oligospe'rma* (few-seeded). 1½. Rich orange. July. Louisiana. 1812. Perennial.
„ *orna'ta* (adorned). 1. White. July. N. Amer. 1811 Annual.
„ *stipita'ta* (stalked-*flowered*). 2. Yellow. October. Mexico. 1835. Hardy herbaceous perennial.

MENYA'NTHES. Buck Bean, Bog Bean. (From *men*, a month, and *anthos*, a flower; the time of duration. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Villarsia.)
Hardy perennial aquatics. Division of the plant, and by seed in spring; moist situation.
M. Cri'sta-ga'lli (Cock's-crest). 1–2. Yellow. April. N.W. Amer.
„ *exalta'ta* (tall). See VILLARSIA PARNASSIFOLIA.
„ *i'ndica* (Indian). See LIMNANTHEMUM INDICUM.
„ *nymphæoi'des* (Nymphæa-like). See LIMNANTHEMUM PELTATUM.
„ *ova'ta* (egg-shaped). See VILLARSIA OVATA.
„ *sarmento'sa* (trailing). See VILLARSIA RENIFORMIS.
„ *trifolia'ta* (three-leaved). 1. White. July. Britain.
„ „ *america'na* (American). 1. Pale red. July. N. Amer. 1818.

MENZIE'SIA. (Named after *A. Menzies*, surgeon and naturalist to the expedition under Vancouver. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Andromeda.)
Chiefly by layers early in autumn, and by cuttings under a hand-light; sandy peat, with a little loam.

HARDY DECIDUOUS SHRUBS.

M. ere'cta (upright). 1. Red. April. Siberia.
„ *ferrugi'nea* (rusty). ½. Brown. May. N. Amer. 1811.
„ *glabe'lla* (smooth). Purple. N.W. Amer. 1888.
„ *globula'ris* (globular-*flowered*). ½. Brown. May. N. Amer. 1806.
„ *penta'ndra* (five-anthered). 3. Greenish-white. Japan. 1909.

HARDY EVERGREENS.

M. cæru'leus (sky-blue). See BRYANTHUS TAXIFOLIUS.
„ *empetrifo'lia* (Empetrum-leaved). See BRYANTHUS EMPETRIFORMIS.
„ *empetrifo'rmis* (Empetrum-like). See BRYANTHUS EMPETRIFORMIS.
„ *polifo'lia* (Polium-leaved). See DABOËCIA POLIFOLIA and its varieties.
„ „ *taxifo'lia* (yew-leaved). See BRYANTHUS TAXIFOLIUS.

MERCURY. (*Chenopo'dium Bo'nus-Henri'cus.*) This perennial plant is known by the various names of Angular-leaved Goosefoot, English Mercury, or Allgood, Good Henry, Good King Henry, and Wild Spinach. In many parts of Lincolnshire, as about Boston, it is cultivated to use as spinach; the young shoots are also peeled, boiled, and eaten as asparagus. Sow the seed in March—but in October is better—in a well-manured bed, prepared as for asparagus; in the middle of September plant the seedlings, during rainy weather, in a similar bed, in rows a foot apart each way. Hoe frequently, and use the shoots or tops as required. Dress the beds with manure the same as for asparagus; they will continue in production many years.
This must not be mistaken for *Mercuria'lis*, or Mercury, one of our common hedge-weeds; for this is poisonous. *Mercuria'lis* is a dicœcious plant, and belongs to the Nat. ord. *Spurgeworts*; but the *Chenopo'dium* belongs to the Nat. ord. *Chenopods*, and to the Linnæan class and order *Pentandria Monogynia*.

MERENDE'RA. (The Spanish name for *Colchicum*. Nat. ord. Liliaceæ.)
Hardy bulbous plants. Offsets and seeds. Light rich, well-drained soil.

M. Aitchiso'ni (Aitchison's). See M. PERSICA.
„ *bulbocodioi'des* (Bulbocodium-like). See M. BULBOCODIUM BULBOCODIOIDES.
„ *Bulboco'dium* (Bulbocodium). ½. Rose-lilac. Spain.
„ „ *bulbocodioi'des* (Bulbocodium-like). ½. Pale purple. Autumn. 1882.
„ *cauca'sica* (Caucasian). ½. Light rose-purple. May. Caucasus; Persia. 1823.
„ „ *ruthe'nica* (Russian). See BULBOCODIUM VERNUM VERSICOLOR.
„ *Eichle'ri* (Eichler's). ½. Purple. Caucasus.
„ *monta'na* (mountain). See M. BULBOCODIUM.
„ *pe'rsica* (Persian). ½. Lilac. Autumn. Persia; Afghanistan. 1872.
„ *soboli'fera* (rhizome-bearing). Purple. Asia Minor and Persia.

MERIA'NIA. (Commemorative of *Sibylle de Merian*, a Dutch lady naturalist. Nat. ord. Melastomaceæ.)

Evergreen stove shrub. Cuttings of side-shoots in sand in a close case. Loam, peat, and sand.

M. Karste'nii (Karsten's). Crimson-purple. Venezuela. 1852.

ME'RODON EQUE'STRIS. Narcissus Fly. The bulbs of the daffodil and of other species of the narcissus frequently refuse to vegetate; and the usual cause is, that their interiors have been eaten by the grub of this two-winged fly. This disappointment may be avoided if these bulbs are examined before being planted. It also destroys the bulbs of *Habranthus pratensis*, *Hippeastrums*, *Liliums*, and *Vallota purpurea* much in the same way.

In the month of November, says Mr. Curtis, one or two large, roundish holes are sometimes found on the outsides of the bulbs of the daffodil and narcissus. The bulbs are more or less decayed within, where a maggot will generally be found, which, by feeding in the heart during the summer and autumn months, has been the sole author of the mischief. This larva is somewhat like the flesh-maggot, and not unlike a bot, only that it is not jagged with spines, and instead of being whitish, its natural colour, is changed to brown by its living amongst the slimy matter which has been discharged from its own body, causing the gradual rotting of the bulb. Towards the end of November the maggot is transformed into a pupa, to accomplish which it eats its way out of the bulb near the roots, and buries itself in the surrounding earth. The pupæ are dull brown, egg-shaped, rough, and strongly wrinkled. In this state they remain until the following spring, when the flies issue from them. Their eggs are then deposited, but upon what part of the plant they are laid has not been observed, but probably upon the bulb near the base of the leaves. April seems to be the month when most of the flies hatch; and they have been compared to small humble-bees, from the disposition of the colours, which are, for the most part, yellow, orange, and black; but they certainly bear a greater resemblance to some of the bot-flies. From bees they are readily distinguished by having only two wings, the horns and proboscis are totally different, and they have no stings.

MERTE'NSIA. (Commemorative of *Professor F. C. Mertens*, a German botanist. Nat. ord. *Borageworts* [Boraginaceæ]. Allied to Pulmonaria.)

Beautiful hardy perennial herbs for the border and rockery. Seeds; divisions in spring, and cuttings in sand in a cold frame during summer. Ordinary, well-drained garden soil.

M. alpi'na (alpine). ½. Blue. May. N.W. Amer. 1875.
„ *dahu'rica* (Dahurian). 1. Sky-blue. June. Dahuria. 1812.
„ *echioi'des* (Echium-like). ½. Blue. May to August. Himalayas.
„ „ *elonga'ta* (elongated). See M. ELONGATA.
„ *elonga'ta* (elongated). ¾–1. Gentian blue. May, June. Himalaya. 1910.
„ *lanceola'ta* (lance-shaped). ¾–1. Blue. May. N.W. Amer. 1813.
„ *mari'tima* (maritime). ½. Blue. July. Sea-shores of Britain. "Oyster Plant."
„ *oblongifo'lia* (oblong-leaved). 1. Blue. N. Amer.
„ *panicula'ta* (panicled). 1½–2. Blue-purple. July. N. Amer. 1778.
„ *primuloi'des* (Primula-like). ½. Indigo-blue, fading to white and yellow. Himalaya. 1902.
M. pulmonarioi'des (Pulmonaria-like). 1½–2. Blue-purple. April, May. N. Amer. 1799.
„ „ *ru'bra* (red). Pink. 1900.
„ *sibi'rica* (Siberian). Pale blue and white. Siberia and N.W. Amer. 1800.
„ *virgi'nica* (Virginian). See M. PULMONARIOIDES.
„ „ *ru'bra* (red). See M. PULMONARIOIDES RUBRA.

ME'RYTA. (From *meruo*, to unroll. Nat. ord. Araliaceæ.)

Stove or greenhouse evergreen trees or shrubs. Seeds; grafting on roots. Loam and peat, both fibrous, and sand.

M. latifo'lia (broad-leaved). 6. Yellow. Norfolk Island. 1831. Greenhouse.
„ *Sinclai'rii* (Sinclair's). 12–25. Leaves 9–20 inches long. New Zealand. 1903. Greenhouse.
„ *sonchifo'lia* (Sonchus-leaved). Leaves much cut. New Caledonia. 1878.

MESEMBRYA'NTHEMUM. Fig-Marigold. (From *mesembria*, mid-day, and *anthemon*, a flower; referring to the flowers opening better on sunny days. Nat. ord. *Ficoids* [Ficoidaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*.)

Greenhouse succulent plants, from South Africa, except when otherwise mentioned. All by seeds, and most of them by cuttings, dried at the base, before inserting them in sandy soil, peat, loam, lime-rubbish, and old cow-dung, well-drained. Winter temp., 38° to 45°. Well suited for window-plants and rough rock-work, out of doors, in summer. Seeds should be sown in a hotbed, and plants gradually hardened off before planting out.

GREENHOUSE ANNUALS.

M. cadu'cum (deciduous). 1. Pink. July. 1774.
„ *calendula'ceum* (marigold-*flowered*). See M. POMERIDIANUM.
„ *califo'rnicum* (Californian). See M. CRYSTALLINUM.
„ *crystalli'num* (crystalline). White or rose. July. Greece; S. Africa, &c. 1775. "Ice Plant."
„ *fla'ccidum* (feeble). 1. Yellow. Biennial.
„ *geniculiflo'rum* (joint-flowering). 1. White. August. 1727.
„ *gla'brum* (smooth). ¾. Yellow. August. 1787.
„ *helianthoi'des* (sunflower-like). Yellow. September. 1774.
„ *pilo'sum* (shaggy). See M. HELIANTHOIDES.
„ *pinnati'fidum* (leaf-cleft). 1. Yellow. July. 1774.
„ *pomeridia'num* (afternoon). 1. Yellow. July. 1774.
„ „ *Andre'wsii* (Andrew's). 1. Yellow. July.
„ *pube'rulum* (rather-downy). White. 1829. Biennial.
„ *pyro'peum* (flame-coloured). Rose, white. June.
„ „ *a'lbum* (white). White.
„ „ *ro'seum* (rosy). Rose, white. June. "Common Fig Marigold."
„ *tri'color* (three-coloured). See M. PYROPEUM.
„ *Tripo'lium* (Aster-*leaved*). ½. Pale yellow. August. 1700. Biennial.

GREENHOUSE EVERGREEN TRAILERS.

M. abbrevia'tum (short-*jointed*). ½. 1825.
„ *acinacifo'rme* (scimitar-formed). ½. Pink. 1714.
„ „ *lo'ngum* (long). ½. Pink. August.
„ *æquilatera'le* (equal-sided). ¾. Pink. June. Australia. 1791.
„ *attenua'tum* (thin). ½. White. July. 1821.
„ *austra'le* (southern). ½. Yellow July. Australia. 1733.
„ „ *aggrega'tum* (crowded-*leaved*). ½. Pink. June. Australia. 1803.
„ „ *mi'nus* (smaller). ½. Pink. Australia. 1810.
„ *barba'tum* (bearded). ¾. Pink. July. 1705.
„ *calyci'num* (*long*-calyxed). ¾. White. July. 1819.
„ *ca'ndens* (glittering). ½. White. June. 1820.
„ „ *viri'dius* (greener). White. September.
„ *clavella'tum* (small-club-*leaved*). See M. AUSTRALE.
„ *crassifo'lium* (thick-leaved). ½. Pink. June. 1727.
„ *de'bile* (weak). See M. REPTANS.
„ *de'nsum* (dense-*bearded*). ½. Pink. June. 1732.
„ *edu'le* (eatable). ½. Pink. July. 1690. "Hottentot Fig."
„ *filamento'sum* (thready). ½. Pink. May. 1732.
„ *floribu'ndum* (bundle-flowered). ½. Pink. July. 1704.

M. furfu'reum (branny-*twigged*). See M. FLORIBUNDUM.
,, *gemina'tum* (twin). ½. Pink. 1792.
,, *glauce'scens* (milky-greenish). See M. ÆQUILATERALE.
,, *hirte'llum* (dwarf-bristly). ½. Pink. August. 1792.
,, *hi'spidum* (bristly). ¾. Purple. July. 1704.
,, ,, *platype'talum* (broad-petaled). ½. Purple. July. 1820.
,, *hispifo'lium* (bristly-leaved). See M. STRIATUM HISPIFOLIUM.
,, ,, *ro'seum* (rosy). See M. STRIATUM ROSEUM.
,, *la'cerum* (jagged). ½. Pink. July. 1811.
,, *læviga'tum* (polished). See M. ACINACIFORME.
,, *re'ptans* (creeping). ½. Pink. July. 1774.
,, *rigidicau'le* (stiff-stemmed). ½. Pink. May. 1819.
,, *Ro'ssi* (Ross's). See M. ÆQUILATERALE.
,, *rubricau'le* (red-stalked). ½. Pale purple. June. 1802.
,, ,, *de'nsius* (denser). ½. Pink. 1818.
,, ,, *subvi'rens* (greenish). ½. Pink. 1818.
,, *rubroci'nctum* (red-bordered). ½. Pink. 1811.
,, ,, *compre'ssum* (compressed). ½. Pink. August.
,, ,, *te'nerum* (tender). ½. Pink. August.
,, *sarmento'sum* (twiggy). 1½. Red. April. 1805.
,, *Scho'llii* (Scholl's). 1. Pink. May. 1810.
,, *serrula'tum* (saw-*leaved*). ½. Pink. November. 1795.
,, ,, *viri'dius* (greener). ½. Pink. November.
,, *si'mile* (similar). 1. Pink. 1819.
,, *stria'tum* (channelled-*bristly*). ¾. Pink. July. 1727.
,, ,, *hispifo'lium* (bristly-leaved). Leaves with reversed hairs.
,, ,, *pa'llidum* (pale). ½. White. July.
,, ,, *ro'seum* (rosy). ½. Pale rose. July. 1818.
,, ,, *subhi'spidum* (slightly-bristly). ¾. Purple. July. 1704.
,, *subula'tum* (awl-*leaved*). See M. BELLIDIFLORUM.
,, *torqua'tum* (torqued). See M. FLORIBUNDUM.
,, *va'lidum* (strong). ½. Pink. May. 1824.
,, *virga'tum* (twiggy). 3. Pink. March. 1793.

GREENHOUSE EVERGREEN SHRUBS.

M. abyssi'nicum (Abyssinian). Purple. Abyssinia. 1873.
,, *acumina'tum* (pointed-*leaved*). 2. White. August. 1820.
,, *acuta'ngulum* (acute-angled). 1½. White. 1821.
,, *acu'tum* (*great*-acute-*leaved*). ½. Red. July. 1793.
,, *adsce'ndens* (ascending-*tongue*). ¾. Yellow. September. 1805.
,, *adu'ncum* (hook-*leaved*). 1. Pink. February. 1795.
,, *agni'num* (lamb). ½. Yellow. June. 1824.
,, ,, *erectiu'sculum* (more-erect-*leaved*). ½. Yellow. May. 1824.
,, ,, *mi'nus* (less). ½. Yellow. May. 1824.
,, *albicau'le* (white-stemmed). 1. White. August. 1824.
,, *a'lbidum* (whitish). ½. Yellow. July. 1714.
,, *albino'tum* (white-marked). ½. Yellow. September. 1823.
,, *albipuncta'tum* (white-dotted). See M. ALBINOTUM.
,, *aloi'des* (Aloe-like). ½. Yellow. 1819.
,, *amœ'num* (lovely). ½–1. Purplish; filaments white.
,, *anato'micum* (skeleton-*leaved*). ¾. White. September. 1803.
,, ,, *fra'gile* (brittle). ¾. White. 1803.
,, *a'nceps* (two-edged). 1½. Pink. June. 1811.
,, ,, *pa'llidum* (pale). 1½. Pale pink. June. 1819.
,, *angu'stum* (narrow-*tongued*). ½ Yellow. July 1790.
,, ,, *heterophy'llum* (various-leaved). ½. Yellow. July. 1790.
,, ,, *pa'llidum* (pale). ½. Yellow. July. 1790.
,, *aristula'tum* (small-bristled). ½. Pale red. Creeping.
,, *a'sperum* (rough). 1½. 1818.
,, ,, *cærule'scens* (bluish). 1½. 1820.
,, *aura'ntium* (orange). See M. AURANTIACUM.
,, *auranti'acum* (orange). 1½. Orange. July. 1793.
,, *au'reum* (golden). 1. Yellow. June. 1750.
,, *bellidiflo'rum* (daisy-flowered). ½. Red, white. July. 1717.
,, ,, *subula'tum* (awl-shaped-*leaved*). ½. Red. July. 1717.
,, ,, *vi'ride* (*pea*-green). ½. Red. July. 1717.
,, *bibractea'tum* (double-bracted). See M. ROSTRATUM.
,, *bi'color* (two-coloured). 1½. Orange. July. 1732.
,, ,, *mi'nus* (smaller). ½. Orange. July.
,, ,, *pa'tulum* (spreading). 1. Orange. July.
M. bicolo'rum (two-coloured). See M. BICOLOR.
,, *bidenta'tum* (two-toothed). 1. Yellow. August. 1818.
,, ,, *ma'jus* (larger). 1½. Yellow. August. 1818.
,, *bi'fidum* (two-cleft). ½. Yellow. November. 1795.
,, *bigibbera'tum* (two-bunched). ½. Yellow. August. 1820.
,, *bla'ndum* (mild). 1½. White. June. 1810.
,, *Bolu'sii* (Bolus's). ½. Petals yellow, with red outer half. July. 1877.
,, *bosschea'num* (Bosschean). ½. Golden-yellow. 1908.
,, *brachia'tum* (forked). See M. DECUSSATUM.
,, *bractea'tum* (bracted). 1½. Yellow. August. 1774.
,, *brevicau'le* (short-stemmed). ½. Pale yellow. August. 1820.
,, *brevifo'lium* (short-leaved). 1. Pale yellow. August. 1777.
,, *Brow'nii* (Brown's). Brilliant orange-red or purple. 1888.
,, *bulbo'sum* (bulbous-*rooted*). ½. Pink. August. 1820.
,, *cæspito'sum* (tufted). S. Africa.
,, *calamifo'rme* (reed-shaped). 1. White. August. 1717.
,, *canalicula'tum* (small-channel-*leaved*). 2. Pink. August. 1794.
,, *cani'num* (dog). ½. Yellow. September. 1717.
,, *ca'num* (hoary). ½. Yellow. 1795.
,, *capita'tum* (headed). 1. Pale yellow. August. 1717.
,, ,, *rami'gerum* (branchy). 1. Pale yellow. August. 1816.
,, *cari'nans* (keeling). ½. 1818.
,, *caule'scens* (stemmed-*delta*-*leaved*). 1½. Pink. June. 1731.
,, *clandesti'num* (secret). ½. White. June. 1822.
,, *clava'tum* (clubbed). 2. Straw yellow. July. 1795.
,, *cocci'neum* (scarlet). 1½. Scarlet. July. 1696.
,, ,, *acu'tius* (acuter-*calyxed*). 1½. Scarlet. July.
,, ,, *mi'nus* (smaller). 1½. Scarlet. July.
,, *compa'ctum* (compact). ½. Yellow. November. 1780.
,, *compre'ssum* (compressed). 1½. Red. August. 1792.
,, *confe'rtum* (crowded-*leaved*). See M. ROSEUM.
,, *conge'stum* (congested). 2–3. Reddish.
,, *conspi'cuum* (conspicuous). 1. Red. September. 1806.
,, *Coope'ri* (Cooper's). ½. Rose-purple; stamens yellow. 1862.
,, *coralliflo'rum* (coral-flowered). 1. Pink. May. 1820.
,, *coralli'num* (coral). 1. Pink. May. 1820.
,, *cordifo'lium* (heart-leaved). ½. Pink. July 1774.
,, ,, *variega'tum* (variegated). Leaves variegated with creamy-yellow. Used in carpet bedding. 1862.
,, *cornicula'tum* (small-horned). 1. Pale yellow. April. 1732.
,, ,, *isophy'llum* (equal-leaved). 1. Pale yellow. April. 1732.
,, *coru'scans* (glittering). 1. Pale yellow. August. 1812.
,, *crassicau'le* (thick-stemmed). ½. Pale yellow. July. 1815.
,, *crassuli'num* (thick). ½. Pink. July. 1819.
,, *crassuloi'des* (Crassula-like). See M. CRASSULINUM.
,, *criniflo'rum* (Crinum-flowered). ½–¾. Pale rose, red or whitish. July. 1774.
,, *cro'ceum* (saffron). 1–2. Croceous or saffron. September. 1790.
,, ,, *fla'vo-cro'ceum* (yellow-saffron). 1. Yellow and saffron. September. 1816.
,, ,, *mi'nus* (lesser). ¾. Yellow. September.
,, *crucia'tum* (cross-*leaved*). ½. Yellow. May. 1792.
,, *cultra'tum* (pruning-knife-*leaved*). ½. Yellow. September. 1820.
,, *cuneifo'lium* (wedge-leaved). See M. CRINIFLORUM.
,, *cu'rtum* (short-*sheathed*). 1½. White.
,, ,, *ma'jus* (larger). 1½. White.
,, ,, *mi'nus* (smaller). 1½. White.
,, ,, *poli'tum* (polished). 1½. White.
,, *curviflo'rum* (curved-flowered). 2. White. June. 1818.
,, *curvifo'lium* (curved-leaved). 1. Pink. October. 1792.
,, ,, *lætevi'rens* (bright-green). 1½. Pink. October. 1818.
,, *cyli'ndricum* (cylindrical). ½. Red. May. 1792.
,, *cymbifo'lium* (boat-leaved). 1. Yellow. 1822.
,, *cymbifo'rme* (boat-shaped). See M. SESSILE.

M. deci'piens (deceiving). See M. THUNBERGII.
„ *decu'mbens* (lying-down). 1. Pale red. July. 1759.
„ *decussa'tum* (decussate). 1½. Yellow. July. 1774.
„ *defle'xum* (bent-down). 1. Pink. August. 1774.
„ *defolia'tum* (leafless). See M. CLAVATUM.
„ *deltoi'des* (delta-*leaved*). 1½. Pink. May. 1731.
„ *denticula'tum* (small-toothed). ½. Yellow. April. 1793.
„ „ *candidi'ssimum* (whitest). ½. Yellow. April.
„ „ *glau'cum* (milky-green). ½. Yellow. April.
„ *depre'ssum* (depressed-*tongue*). ¾. Yellow. October. 1795.
„ „ *li'vidum* (livid). ½. Yellow. October. 1819.
„ *diffo'rme* (irregular). ¾. Yellow. August. 1732.
„ *dilata'tum* (dilated). 3. White. July. 1820.
„ *diminu'tum* (diminished). See M. LOREUM.
„ „ *caulicula'tum* (small-stemmed). See M. LOREUM CAULICULATUM.
„ *diversifo'lium* (various-leaved). 1. Pale yellow. June. 1726.
„ „ *a'tro-vi'rens* (dark green). 1. Pale yellow. August.
„ „ *brevifo'lium* (short-leaved). 1. Pale yellow. August.
„ „ *glau'cum* (milky-green). 1. Pale yellow. August. 1726.
„ „ *læ'te-vi'rens* (bright green). 1. Pale yellow. August.
„ *dolabrifo'rme* (hatchet-formed). ½. Yellow. June. 1705.
„ *du'bium* (doubtful). See M. THUNBERGII.
„ *echina'tum* (hedgehog). 1. Yellow. August. 1774.
„ „ *a'lbum* (white). ½. White. August. 1774.
„ *Ecklo'nis* (Ecklon's). 1½. White.
„ *e'legans* (elegant). ½–1½. Pink. July. 1724.
„ *elonga'tum* (elongated-*tuberous*). 1. Pale yellow. May. 1793.
„ „ *fusifo'rme* (fusiform). 1. Pale yellow. May. 1793.
„ „ *mi'nus* (smaller). 1. Pale yellow. May. 1793.
„ *emargina'tum* (notch-*flowered*). 2. Pink. July. 1732.
„ *equilatera'tum* (equal-sided). S. Africa.
„ *erigerifo'rum* (wool-bearing-flowered). See M. BREVIFOLIUM.
„ *ermini'num* (ermine). ½. Yellow. May. 1824.
„ *expa'nsum* (expanded-*leaved*). ½. Pale yellow. July. 1705.
„ *falca'tum* (sickle-*leaved*). 1. Pink. July. 1727.
„ *falcifo'rme* (sickle-shaped). 1½. Pink. July. 1805.
„ *fastigia'tum* (peaked). 1½. White. August. 1794.
„ „ *refle'xum* (bent-back). 1½. White. August. 1792.
„ *feli'num* (cat). ½. Yellow. September. 1730.
„ *fibulifo'rme* (button-shaped). ½. 1795.
„ *ficifo'rme* (fig-shaped). 1/12. Bright pink, fragrant. July. 1819.
„ *filicau'le* (thread-stalked). 1½. Pink. September. 1800.
„ *fi'ssum* (cleft-*leaved*). ½. 1776.
„ *fla'vum* (yellow). ½. Yellow. August. 1820.
„ *fle'xile* (pliant). See M. POLYANTHON.
„ *flexifo'lium* (pliant-leaved). See M. CURVIFOLIUM.
„ „ *læ'te-vi'rens* (lively-green). See M. CURVIFOLIUM LÆTEVIRENS.
„ *flexuo'sum* (zigzag). 1½. White. July. 1795.
„ *folio'sum* (leafy). See M. TUMIDULUM.
„ *forfica'tum* (scissor-*leaved*). 1½. Pink. September. 1758.
„ *formo'sum* (beautiful). 1. Crimson. August. 1820.
„ *fra'grans* (fragrant). ½. Yellow.
„ *fu'lvum* (tawny). 2. Tawny. July. 1820.
„ *geminiflo'rum* (twin-flowered). 2. White or rose. May. 1826.
„ *gemmiflo'rum* (bud-flowered). See M. GEMINIFLORUM.
„ *gibbo'sum* (swollen). ½. Red. February. 1780.
„ *gladia'tum* (*purple*-sworded). See M. LACERUM.
„ *glauci'num* (milkyish-green). See M. MUTABILE.
„ „ *cra'ssum* (thick-*leaved*). See M. MUTABILE CRASSUM.
„ *glau'cum* (milky-green-*leaved*). 1½. Orange. June. 1696.
„ *glomera'tum* (clustered). 1½. Pink. July. 1732.
„ *gra'cile* (slender). 1½. Red. September. 1794.
„ „ *graci'lius* (slenderer). 1. Red. September.
„ *grandiflo'rum* (large-flowered). ½. Yellow. July. 1824.
„ *granifo'rme* (grain-shaped). ½. Yellow. September. 1727.
M. gro'ssum (gross). ½. Pale red or rosy.
„ *Hawo'rthii* (Haworth's). 1. Brown. March. 1793.
„ *heterope'talum* (various-petaled). 2. Pink. June. 1794.
„ *heterophy'llum* (various-leaved). See M. ANGUSTUM HETEROPHYLLUM.
„ *hi'rtum* (hairy). ½. Bright purple; stamens yellow. June to September. 1862.
„ *horizonta'le* (horizontal-*leaved*). See M. CLAVATUM.
„ *hu'mile* (dwarf). S. Africa.
„ *hy'bridum* (hybrid). ½. Yellow.
„ *i'mbricans* (imbricating). See M. POLYANTHON.
„ *imbrica'tum* (imbricated). See M. MULTIFLORUM and varieties.
„ *imbrica'tum* (imbricated) of E. and Z. See M. CURTUM.
„ *inæqua'le* (unequal-*calyxed*). 1. Orange. July. 1716.
„ *inclau'dens* (not-closing). 1½. Pink. June. 1805.
„ *inco'mptum* (untrimmed). ½. White. July. 1819.
„ *inconspi'cuum* (inconspicuous). ½. Red. July. 1823.
„ *incu'rvum* (curled-in). 1½. Pink. July. 1802.
„ „ *densifo'lium* (dense-leaved). 1½. Pink. June. 1809.
„ „ *dila'tans* (spreading-*keeled*). 1½. Pink. June.
„ „ *pa'llidus* (pale). 1½. Pink. June.
„ „ *ro'seum* (rosy). 1½. Pink. June.
„ *infle'xum* (bent-in). 1. Pink. June. 1819.
„ *insti'tium* (grafted). See M. CROCEUM.
„ „ *fla'vo-cro'ceum* (yellow and saffron). See M. CROCEUM FLAVO-CROCEUM.
„ „ *mi'nus* (smaller). See M. CROCEUM MINUS.
„ *into'nsum* (unshaved). ½. Pink. July. 1824.
„ „ *a'lbum* (white). ½. Pink. July. 1824.
„ *intro'rsum* (turned-inwards). See M. INTONSUM.
„ *ju'nceum* (rush-*leaved*). 1. Pink. September. 1800.
„ *læ've* (smooth-*white-wood*). 1½. August. 1774.
„ *lanceola'tum* (spear-head-*leaved*). ¾. White. August. 1795.
„ „ *ro'seum* (rosy). ¾. Pink. May. 1813.
„ *la'tum* (broad-*tongued*). ½. Yellow. July. 1620.
„ „ *bre've* (short). ½. Yellow. July. 1802.
„ *Lehma'nni* (Lehmann's). ½. Whitish-yellow. 1908.
„ *le'pidum* (slender). S. Africa. 1826.
„ *lepta'leum* (slender). See M. ELEGANS.
„ *lineola'tum* (small-lined). ½. Pink. August. 1819.
„ „ *læ've* (smooth). ½. July. 1819.
„ „ *mi'nus* (smaller). ½. July. 1819.
„ „ *ni'tens* (shining). ½. August. 1819.
„ *linguifo'rme* (tongue-shaped). ½. Yellow. July. 1714.
„ „ *assu'rgens* (rising). ½. Yellow. July. 1819.
„ „ *prostra'tum* (lying-flat). ½. Yellow. July.
„ „ *purpu'reum* (purple). 1. Purple. July. 1731.
„ „ *rufe'scens* (reddish). ½. Yellow. July. 1732.
„ „ *subcrucia'tum* (slightly-crossed). ½. Yellow. 1820.
„ *longispi'nulum* (long-spined). 1. Pale yellow. September. 1820.
„ *lo'ngum* (long-*tongued*). ¾. Yellow. September. 1725.
„ „ *angus'tus* (narrower). ¾. Yellow. September.
„ „ *atto'llens* (elevating). ¾. Yellow. September. 1819.
„ „ *decli've* (sloping). ¾. Yellow. September.
„ „ *depre'ssum* (depressed). ¾. Yellow. September.
„ „ *purpura'scens* (purplish). ¾. Yellow. September. 1819.
„ „ *unca'tum* (hooked). ¾. Yellow. September. 1819.
„ *lora'tum* (strap-shaped). See M. PALLENS.
„ *lo'reum* (strap-*stalked*). 1. Pale yellow. September. 1732.
„ „ *caulicula'tum* (small-stemmed). ½. Red. April. 1789.
„ „ *conge'stum* (crowded). 1. Pale yellow. September. 1805.
„ *lu'cidum* (shining). ½. Yellow. September. 1732.
„ *luna'tum* (crescent-*leaved*). 1. Pink. July. 1812.
„ *lupi'num* (wolf). ½. Yellow.
„ *lu'teolum* (yellowish). ½. Pale yellow. June. 1820.
„ *lu'teum* (yellow). 1½. Pale yellow. June. 1824.
„ *macrorhi'zum* (large-rooted). See M. MEGARHIZUM.
„ *macula'tum* (spotted-*stalked*). 1½. Scarlet. 1732.
„ *magnipuncta'tum* (large-dotted). ½. Yellow. 1822.
„ „ *uncia'le* (inch-*flowered*). ½. Yellow. 1822.
„ *Maho'ni* (Mahon's). ½ Bright violet-purple. S. Rhodesia. 1902.

M. margina'tum (*white*-edged). 1. White. May. 1793.
,, *ma'ximum* (largest-*moon-leaved*). 1½. Pink. September. 1787.
,, *me'dium* (intermediate). ½. Yellow. June.
,, *megarhi'zum* (large-rooted). ½. White. Stem erect.
,, *mi'cans* (glittering). 1½. Scarlet. 1704.
,, *micra'nthum* (small-flowered). 1. Pure white. October, November. 1819.
,, *microphy'llum* (small-leaved). ½. Pink. May. 1795.
,, *mi'nimum* (smallest). ½. Pale yellow. October. 1796.
,, *minu'tum* (minute). ½. Pink. October. 1795.
,, *mira'bile* (wonderful). ½. White. 1903.
,, *mo'lle* (soft-*leaved*). 1. Pink. October. 1774.
,, *monilifo'rme* (bracelet-shaped). ½. White. May. 1791.
,, *mucrona'tum* (spine-pointed). ½. Pink. 1794.
,, *mucroni'ferum* (mucro-bearing). 1. Yellow. July. 1821.
,, *mu'lticeps* (many-headed). ½. Yellow. July to December.
,, *multiflo'rum* (many-flowered). 3. White. August. 1792.
,, ,, *me'dium* (intermediate). 3. White. July.
,, ,, *mi'nus* (smaller). 3. White. August.
,, ,, *ni'tens* (shining). 3.
,, ,, *pa'tens* (spreading). 3. White. August. 1820.
,, ,, *ru'brum* (red). 3. Red. August.
,, ,, *vi'ride* (green). 3. White. July.
,, *multipuncta'tum* (many-spotted). ½. Yellow.
,, *murica'tum* (point-covered-*delta-leaved*). 1½. Pink. May. 1731.
,, ,, *mi'nus* (small). 1½. Pink. May.
,, *muri'num* (mouse). ½. Yellow. September. 1790.
,, *musculi'num* (little-mouse). ½. Yellow. June. 1820.
,, *mustelli'num* (weasel). ½. Yellow. June. 1820.
,, *muta'bile* (changeable). 1½. Pink. August. 1792.
,, ,, *cra'ssum* (thick). 1½. Pink. July.
,, *ni'tidum* (bright). 2. Yellow. August. 1790.
,, *no'bile* (noble). ½. Yellow. July. 1822.
,, *noctiflo'rum* (night-flowering). 2. White. July. 1714.
,, ,, *ela'tum* (tall). 3. Scarlet. July. 1714.
,, ,, *fu'lvum* (tawny). Tawny or buff-orange.
,, ,, *strami'neum* (straw-coloured). 2. Straw. July. 1732.
,, *nodiflo'rum* (knot-flowered). 1. September. Mediterranean region; Persia. 1739.
,, *nucifo'rme* (nut-shaped). See M. MINUTUM.
,, *obcone'llum* (small-conical). ½. White. June. 1786.
,, *obcorde'llum* (small-reversed-egg-shaped). ½. White. June. 1796.
,, *obli'quum* (twisted). 1. Purple. August. 1819.
,, *obsubula'tum* (small-awl-shaped). 1. White. 1796.
,, *obtu'sum* (blunt-*cloven*). ½. Pale red. March. 1792.
,, *octophy'llum* (eight-leaved). See M. TESTICULATUM and varieties.
,, *pa'llens* (pale). ½. White. July. 1819.
,, *parviflo'rum* (small-flowered). 3. Purple. August. 1800.
,, *parvifo'lium* (small-leaved). ½. White. August. 1820.
,, *pa'tulum* (spreading). 1½. Pink. October. 1811.
,, *perfolia'tum* (leaf-stem-pierced). 1. Purple. July. 1714.
,, ,, *monaca'nthum* (one-spined). 1. Purple. July.
,, *pervi'ride* (very-green). ½. Red. February. 1792.
,, *pisifo'rme* (pea-shaped). ½. White. 1796.
,, *polya'nthon* (many-flowered). 1. Pink. August. 1803.
,, ,, *e'legans* (elegant).
,, *polyphy'llum* (many-leaved). See M. VIOLACEUM.
,, *præpi'ngue* (very-fat). ½. Yellow. September. 1792.
,, *procu'mbens* (lying-down). 1. Pale yellow. April. 1820.
,, *produ'ctum* (prolonged-*calyxed*). 1. Rose. May. 1822.
,, *pube'scens* (downy). ½. Red. February. 1792.
,, *pugionifo'rme* (dagger-shaped). 1. Pale yellow. August. 1714.
,, ,, *bie'nne* (biennial). 1. Pale yellow. August. 1714.
,, ,, *ca'rneum* (flesh-coloured). 1. Pink. August. 1714.
,, ,, *purpu'reum* (purple). 1. Purple. August. 1714.
,, *pulche'llum* (pretty). ½. Pink. April. 1793.
,, ,, *revolu'tum* (rolled-back). ½. Pink. April.
M. pulverule'ntum (powdery). ½. Pink. May. 1792.
,, *puncta'tum* (dotted-*awl-shaped*). ½. Red. July. 1793.
,, *purpu'reo-a'lbum* (purplish-white). ½. White. August. 1824.
,, *pustula'tum* (blistered). ½. Yellow. August. 1818.
,, *pygmæ'um* (pigmy). ½. Pink. 1805.
,, *quadri'fidum* (four-cleft). ½. Yellow. November. 1795.
,, *racemo'sum* (racemose). 1½. Deep rose-pink. 1902.
,, *radia'tum* (rayed). ½. Red. September. 1732.
,, *ramulo'sum* (branchy). ½. Deep yellow. June. 1791.
,, *re'ctum* (straight). ½. White. July. 1819.
,, *relaxa'tum* (relaxed). 1. Pink. July. 1815.
,, *retrofle'xum* (bent-back). See M. ELEGANS.
,, *rhomboi'deum* (lozenge-shaped). ½–½. Yellow.
,, *ri'gidum* (stiff). 1½. White. August. 1793.
,, *robu'stum* (robust). ½. Yellow. 1795.
,, *ro'seum* (rosy). ½. Pink. July. 1795.
,, ,, *a'lbum* (white-*flowered*). ½. White. July. 1819.
,, ,, *confe'rtum* (clustered).
,, ,, *linea're* (narrow-*leaved*). ½. White. July. 1819.
,, *Roste'llum* (little-beaked). ½. White, pink. June. 1820.
,, *rostra'tum* (beaked). ½. Yellow. April. 1732.
,, *Sa'lmii* (Salm's). ½. Yellow. October. 1818.
,, ,, *angustifo'lium* (narrow-leaved). 1. Yellow. October. 1823.
,, ,, *semicrucia'tum* (half-crossed). 1. Yellow. October. 1818.
,, *salmo'neum* (salmon-coloured). 3. White. September. 1819.
,, *sca'brum* (rough). See M. LINGUIFORME and varieties.
,, *sca'brum* (rough) of Thunberg. See M. RADIATUM.
,, *scalpra'tum* (*great*-knife-shaped). See M. LINGUIFORME.
,, *sca'piger* (scape-bearing). ½–1. Yellow. August. 1723.
,, *scapi'gerum* (scape-bearing). See M. SCAPIGER.
,, *semicyli'ndricum* (half-cylindric). ½. Yellow. June. 1732.
,, *serra'tum* (saw-*keeled*). 2. Pink. June. 1707.
,, *se'ssile* (stalkless). 1½. Yellow. 1792.
,, *setuli'ferum* (small-bristle-bearing). 1. Bright violet-purple. 1876.
,, *sexparti'tum* (six-parted). See M. LEHMANNI.
,, *specio'sum* (showy). 1½. Scarlet. July. 1793.
,, *specta'bile* (striking). 1. Purplish; filaments white. June. 1787.
,, *spinifo'rme* (thorn-shaped). 1. Pink. September. 1793.
,, ,, *subadu'ncum* (rather-hooked). 1. Pink. September.
,, *spino'sum* (thorny). 1½. Pink. July. 1714.
,, *spinuli'ferum* (spinule-bearing). 1. Pale yellow. August. 1794.
,, *sple'ndens* (shining). 1½. White. July. 1716.
,, *stella'tum* (starry-*bearded*). ½. Pink. September. 1716.
,, *stelli'gerum* (star-bearing). See M. BARBATUM.
,, *stipula'ceum* (stipuled). 1½. Pink. May. 1723.
,, *stri'ctum* (erect). 3. Yellow. 1795.
,, *subcompre'ssum* (sub-compressed). 1½. Purple. July. 1823.
,, ,, *mi'nus* (smaller). 1. Purple. July. 1823.
,, *subglobo'sum* (sub-globular). See M. BREVIFOLIUM.
,, *subinca'num* (somewhat-grey). 1½. White. November to April. 1824.
,, *sulca'tum* (furrowed). 3. White. August. 1819.
,, *surre'ctum* (very-erect). 1. Yellow. October. 1819.
,, ,, *brevifo'lium* (short-leaved). ½. Yellow. October. 1819.
,, *Sutherla'ndii* (Sutherland's). ½–½. Pale purple; stamens yellow. Natal. 1870.
,, *tauri'num* (bull's-*horn*). ½. Yellow. October. 1795.
,, *tene'llum* (delicate-*perfoliate*). 1½. White. August. 1792.
,, *te'nue* (slender). See M. MICRANTHUM.
,, *tenuiflo'rum* (slender-flowered). See M. VIRIDIFLORUM.
,, *tenuifo'lium* (slender-leaved). 1. Scarlet. July. 1700.
,, ,, *ere'ctum* (erect). 1½. Scarlet. July.
,, *teretifo'lium* (round-leaved). ½. Pink. June. 1794.
,, *teretiu'sculum* (rather-rounder). ½. Pink. 1794.
,, *testa'ceum* (tile-coloured). 3. Orange. August. 1820.
,, *testicula're* (testicular). ½. White. October. 1774.

M. testicula'tum (testicled). ½. Yellow. November. 1819.
„ „ *longiu'sculum* (rather-longer). ½. Yellow. November. 1774.
„ „ *ro'seum* (rosy). ½. Red. November. 1774.
„ *Thunbe'rgii* (Thunberg's). 1. Pale yellow. August. 1800.
„ *tigri'num* (tiger). ½. Yellow. October. 1790.
„ *tortuo'sum* (twisted-*leaved*). ½. Pale yellow. August. 1705.
„ *tricolo'rum* (three-coloured). 1. Yellow, red. October. 1794.
„ *truncate'llum* (small-truncated). ½. Pale yellow. July. 1795.
„ *tubero'sum* (tuberous-*rooted*). 3. Orange. April. 1714.
„ „ *mi'nus* (smaller). 1½. Orange. August. 1714.
„ *tumi'dulum* (rather-swollen). 3. Pink. March. 1802.
„ „ *mi'nus* (smaller). 3. Pink. March. 1820.
„ *turbina'tum* (top-shaped). 1. Reddish.
„ *umbella'tum* (umbelled). 3. White. July. 1727.
„ „ *ano'malum* (anomalous). 3. White. July.
„ *umbelliflo'rum* (umbel-flowered). 1½. August. 1820.
„ *unca'tum* (hooked). ½. Yellow or reddish.
„ *uncina'tum* (hooked). 1–2. Red. 1725.
„ *uncine'llum* (small-hooked). ½. Reddish.
„ *vagina'tum* (sheathed). 1½. White. July. 1802.
„ „ *parviflo'rum* (small-flowered). 1½. White. July.
„ *varia'bile* (variable). 1½. Yellow. July. 1796.
„ „ *læ'vius* (smoother). 1½. Yellow. July. 1796.
„ *va'rians* (varying). See M. TORTUOSUM.
„ *verrucula'tum* (small-warted). 1½. Yellow. May. 1731.
„ „ *Cando'llii* (De Candolle's). 1½. Yellow. May.
„ *versi'color* (changeable-coloured). Pink. June. 1795.
„ *villo'sum* (shaggy). 1. July. 1759.
„ *viola'ceum* (violet). 2. Purple. July. 1820.
„ *vi'rens* (*upright*-green). ½. Pink. June. 1821.
„ *vi'ride* (green-*perfoliate*). 1. Pale purple. July. 1792.
„ *viridiflo'rum* (green-flowered). 1–2. Green or greenish-red. September. 1774.
„ *vitta'tum* (striped). ⅓–½. Petals bright yellow, with red midrib; stamens white. 1876.
„ *vulpi'num* (fox). See M. CANINUM.
„ *Ze'yheri* (Zeyher's). 1½. Purplish or purplish-violet. October.

MESOCHLÆ'NA. (From *mesos*, the middle or half, and *chlaina*, a cloak; the indusium appears cut in half. Nat. ord. *Ferns* or Filices.)
M. java'nica (Javanese). See DIDYMOCHLÆNA POLYCARPA.

MESOSPINI'DIUM. (From *mesos*, the middle, and *spinidion*, a small bird; in allusion to the beak-like rostellum in the middle of the flower. Nat. ord. Orchidaceæ. The species are now referred to Odontoglossum and Cochlioda.)
Cool stove Orchids. Offsets and divisions. Fibrous peat, sphagnum, and crocks.
M. Bowma'ni (Bowman's). ½. Green and rose. Colombia. 1869.
„ *inca'ntans* (enchanting). Ochre and brown. Colombia. 1878.
„ *jucu'ndum* (joyous). Bright green and brown. Brazil. 1877.
„ *sangui'neum* (blood-red). See COCHLIODA SANGUINEA.
„ *vulca'nicum* (volcanic). See COCHLIODA VULCANICA.
„ *Warscewi'czii* (Warscewicz's). See MILTONIA WARSCEWICZII.

ME'SPILUS. Medlar. (From *mesos*, half, and *pilos*, a ball; referring to the shape of the medlar fruit. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Dipentagynia*. Now referred to Pyrus.) See MEDLAR.
M. Amela'nchier (Amelanchier). See AMELANCHIER VULGARIS.
„ *germa'nica* (German). See PYRUS GERMANICA and varieties.
„ *grandiflo'ra* (large-flowered). See PYRUS LOBATA.
„ *japo'nica* (Japanese). See ERIOBOTRYA JAPONICA.
„ *loba'ta* (lobed-*leaved*). See PYRUS LOBATA.

MESSERSCHMI'DIA, MESSERSCHMI'DTIA, and **MESSERSMI'DIA.** See TOURNEFORTIA.

ME'SUA. (Named after *Mesue*, an Arabian botanist. Nat. ord. *Guttifers* [Guttiferaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Allied to Calophyllum.)
The sweet-scented flowers of *Me'sua fe'rrea* are sold in all the Indian bazaars by the name of Nagksur, and are as much esteemed as orange flowers are with us. Stove evergreen tree. Seeds in a hotbed, in March; cuttings of half-ripened shoots in sand, under a bell-glass, in May, and with a little bottom-heat; loam and peat. Winter temp., 50° to 60°; summer, 60° to 85°.
M. fe'rrea (iron-*wooded*). 40. White. July. E. Ind. 1837.

METALA'SIA. (From *meta*, a change, *lasios*, hairy; referring to the older leaves losing their downy covering. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Gnaphalium.)
Greenhouse evergreens, from South Africa, and with white flowers, except where otherwise stated. Cuttings in spring, in sandy peat; sandy peat, loam, and charcoal nodules, to keep the soil open. Winter temp., 40° to 48°.
M. au'rea (golden). Yellow. June. 1816.
„ *Cephalo'tes* (large-head). 4. Pink. June. 1789.
„ *dive'rgens* (widely-parted). 2. July. 1816.
„ *fastigia'ta* (peaked). See M. MURICATA.
„ *imbrica'ta* (overlapping). See M. UNIFLORA.
„ *mucrona'ta* (pointed). See HELICHRYSUM MUCRONATUM.
„ *murica'ta* (point-covered). 2. June. 1812.
„ *phylicoi'des* (Phylica-like). See M. MURICATA.
„ *pu'ngens* (stinging). See M. MURICATA.
„ *seriphioi'des* (Seriphium-like). See TRICHOGYNE SERIPHIOIDES.
„ *umbella'ta* (umbelled). 3. Rose. May. 1816.
„ *uniflo'ra* (one-flowered). 2. May. 1816.

METAPLE'XIS. (From *meta*, together, and *pleko*, to twine; in allusion to the shoots twining together. Nat. ord. Asclepiadaceæ.)
Evergreen stove twiner. Cuttings of side-shoots in sand in bottom-heat. Fibrous loam, peat, and sand.
M. fimbria'ta (fringed). 10. Purple. July. Venezuela. 1826.

METASTE'LMA. (From *meta*, with, and *stelma*, a crown; in allusion to the structure of the flower. Nat. ord. Asclepiadaceæ.)
Evergreen stove twiner. Cuttings of side-shoots in a close case, with bottom-heat. Fibrous loam, peat, and sand.
M. parviflo'rum (small-flowered). 6. Green, white. Trop. Amer.

METHO'NICA GRANDIFLO'RA. See GLORIOSA SIMPLEX.

METRODO'REA. (Commemorative of *Metrodorus Sabinus*, a plant draughtsman. Nat. ord. Rutaceæ.)
Evergreen stove shrub. Cuttings in sand in a close case with bottom-heat. Fibrous loam, peat, and sand.
M. atropurpu'rea (dark-purple). See M. NIGRA.
„ *ni'gra* (black). 5. Dark purple. Brazil. 1851.

METROSIDE'ROS. (From *metra*, heart-wood, and *sideros*, iron; referring to the hardness of the wood. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Callistemon.)
Greenhouse evergreens. Cuttings of small young side-shoots in April, in sand, under a bell-glass, in a close pit or frame, but without heat; peat and loam, equal proportions, with a little white sand and sifted, broken crocks. Winter temp., 35° to 45°. Most of them should be tried on a wall.
M. angustifo'lia (narrow-leaved). 20. Yellow. S. Africa. 1787.
„ *ano'mala* (anomalous). See ANGOPHORA CORDIFOLIA.
„ *a'spera* (rough). Australia. 1824.
„ *buxifo'lia* (box-leaved). See M. SCANDENS.
„ *capita'ta* (headed). See KUNZEA CAPITATA.
„ *citri'na* (lemon). See CALLISTEMON LANCEOLATUS.
„ *corifo'lia* (Coris-leaved). See KUNZEA CORIFOLIA.
„ *floribu'nda* (free-flowering). See CALLISTEMON SALIGNUS.
„ „ *a'lba* (white). See CALLISTEMON SALIGNUS ALBUS.
„ *flo'rida* (florid). See M. ROBUSTA.
„ *glau'ca* (sea-green). See CALLISTEMON SPECIOSUS.

M. glomuli'fera (heaped-*flowered*). See SYNCARPIA LAURIFOLIA.
,, *hirsu'ta* (hairy). See ANGOPHORA CORDIFOLIA.
,, *hypericifo'lia* (Hypericum-leaved). New Zealand.
,, *lanceola'ta* (lance-shaped). See CALLISTEMON LANCEOLATUS.
,, *linearifo'lia* (linear-leaved). See CALLISTEMON RIGIDUS LINEARIFOLIUS.
,, *linifo'lia* (flax-leaved). See CALLISTEMON RIGIDUS.
,, *robu'sta* (robust). 80. Scarlet. June. New Zealand. 1845.
,, *sali'gna* (willow-leaved). See CALLISTEMON SALIGNUS.
,, *sca'ndens* (climbing). White. August. New Zealand.
,, *semperflo'rens* (ever-flowering). See CALLISTEMON LANCEOLATUS.
,, *specio'sa* (showy). See CALLISTEMON SPECIOSUS.
,, *tomento'sa* (felted). 40–50. Red. July. New Zealand.
,, *ve'ra* (true. *Iron-wood*). 20. Yellow, green. April. E. Ind. 1819.
,, *viridiflo'ra* (green-flowered). See CALLISTEMON SALIGNUS VIRIDIFLORUS.

METRO'XYLON. (From *metra*, heart-wood, and *xulon*, wood; in allusion to the hardness of the wood, and its colour. Nat. ord. Palmaceæ.)
Stove Palms. Seeds. Fibrous loam, peat, and sand.
M. amica'rum (Friendly Islands'). 30. Friendly Islands.
,, *Ru'mphii* (Rumph's). 40–50. Green. Malaya. 1800.
,, *Sa'gu* (Sagu). 40–50. Moluccas. "Sago Palm."
,, *vitie'nse* (Fijian). 30. Fiji.

METTERNI'CHIA. (In honour of the Austrian Prince *Metternich-Winneburg*. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Evergreen greenhouse shrubs. For culture, see culture of the evergreen species of LISIA'NTHUS.
M. pri'ncipis (princely). 3. White. August. Brazil. 1854.
,, *We'rcklei* (Werckle's). 3–4. White, fading to sulphur yellow, fragrant. Costa Rica. 1910.

ME'UM. *Meu*, Bald-money. Spignel. (From *meion*, very small; in allusion to the fine, hair-like divisions of the leaves. Nat. ord. Umbelliferæ.)
A hardy, perennial herb, with a remarkably fragrant rootstock at one time eaten in the Highlands. The foliage is finely divided and suitable for mixing with cut flowers. Seeds and divisions. Ordinary garden soil.
M. athama'nticum (Mount Athamas). 1–1½. White, pinkish. Britain.

MEXICAN LILY. *Hippea'strum Regi'næ.*

MEXICAN POPPY. *Argе'mone mexica'na.*

MEXICAN TEA. *Chenopo'dium ambrosioi'des.*

MEXICAN THISTLE. *Cni'cus conspi'cuus.*

MEXICAN TIGER-FLOWER. *Tigri'dia Pavo'nia.*

MEYE'NIA. (Commemorative of *M. Meyen*. Nat. ord. Acanthaceæ.) Now referred to Thunbergia.
M. ere'cta (erect). See THUNBERGIA ERECTA.
,, *hawtaynea'na* (Hawtaynean). See THUNBERGIA HAWTAYNEANA.
,, *vogelia'na* (Vogelian). See THUNBERGIA VOGELIANA.

MEZE'REON. See DAPHNE MEZEREUM.

MICE. Various plans have been suggested to preserve peas and beans when sown from the ravages of mice. We believe we have tried them all. Dipping the seeds in oil, and then rolling them in powdered resin; putting small pieces of furze in the drills and over the rows after the seed has been sown, but before covering with the earth—were both partially successful; but the mode attended with the most complete safety has always been that of covering the surface of the soil over the rows, to the depth of full an inch, and six inches wide, with finely-sifted coal-ashes. The mice will not scratch through this; and it has the additional advantage, by its black colour absorbing the solar heat, of promoting the early vegetation of the crop.

MICHAELMAS DAISY. *A'ster.*

MICHAU'XIA. (Named after *A. Michaux*, a French botanist. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Campanula.)
Hardy biennials. Seeds in the open border; in damp situations they are apt to fog off in winter; a dry, elevated situation is the best remedy; even there, in very severe weather, an evergreen branch stuck beside them will be an advantage.
M. campanuloi'des (Campanula-like). 4. Pale red. July. Levant. 1787.
,, *deca'ndra* (ten-stamened). See M. LÆVIGATA.
,, *lævига'ta* (smooth-*stemmed*). 3. White or light blue. July. Persia. 1827.
,, *Tchihatche'ffi* (Tchihatcheff's). 3–6. White. July. Asia Minor. 1896.

MICHE'LIA. (Named after *P. A. Micheli*, an Italian botanist. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)
Stove or greenhouse evergreen trees. Cuttings of half-ripened shoots in summer, in sand, under a glass, and in heat; sandy loam and leaf-mould. Winter temp., 48° to 60°; summer, 60° to 85°.
M. Champa'ca (Champaca). 20–40. Yellow. E. Ind. 1779.
,, *compre'ssa* (compressed). Japan. 1893. Hardy in the South.
,, *fusca'ta* (dusky). 2–5. Dusky purple, fragrant. China. 1789.
,, ,, *anonæfo'lia* (Anona-leaved). 2. Red. June. China. 1789.
,, *lanugino'sa* (woolly). Pale yellow. March, April. Himalaya. 1865.

MICHOLI'TZIA. (Commemorative of *M. Micholitz*, a plant collector. Nat. ord. Asclepiadaceæ. Allied to Marsdenia.)
Small, stove shrub. Seeds; cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
M. obcorda'ta (obversely-heart-shaped). Olive-green, reddish. India. 1909.

MICO'NIA. (Named after *D. Micon*, a Spanish botanist. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Blakea.)
Stove evergreens, with white flowers, unless otherwise specified. Cuttings of half-ripened shoots in sandy soil, under a bell-glass, and in heat; sandy peat and loam, with a few bits of cow-dung and charcoal. Winter temp., 48° to 60°; summer, 60° to 85°.
M. Acinode'ndron (Acinodendron). 6. Purple. Jamaica. 1804.
,, *a'lbicans* (whitening). See M. HOLOSERICEA.
,, *angusta'ta* (narrow). 5. Trinidad. 1820.
,, *calve'scens* (becoming-bald). Brazil.
,, *desma'ntha* (bunch-flowered). Colombia.
,, *ecosta'ta* (ribless). 4. Purple. July. Jamaica. 1793.
,, *fla'mmea* (flame-coloured). Brazil. 1865.
,, *Fothergi'lla* (Fothergilla). 10–15. White, purple. May. Mexico. 1815.
,, *grandifo'lia* (large-leaved). 20. Trinidad. 1820.
,, *holoseri'cea* (wholly-silky). 10. White. W. Ind. 1815.
,, *hookeria'na* (Hookerian). Pale green. July. S. Amer. 1863.
,, ,, *trifascia'ta* (three-bundled). White. Leaves with three white ribs. S. Amer. 1874.
,, *impetiola'ris* (stalkless-*leaved*). 4. W. Ind. 1822.
,, *lævига'ta* (smooth). 6. W. Ind. 1815.
,, *longifo'lia* (long-leaved). 4. Guiana. 1817.
,, *macrophy'lla* (large-leaved). 6–10. Rose. May. 1820.
,, *magni'fica* (magnificent). Leaves very large, rusty red. Mexico. 1858.
,, *meta'llica* (metallic). Pale purple. Venezuela. 1852.
,, *pulveru'lenta* (dusty). See M. HOOKERIANA.
,, *purpura'scens* (purplish-*berried*). See ACIOTIS PURPURASCENS.
,, *pyramida'lis* (pyramidal). 3. White. July. Porto Rico. 1815.
,, *rube'scens* (ruddy). 6. S. Amer. 1818.
,, *semicrena'ta* (half-notched). 20. White. April. Guadeloupe Islands. 1823.
,, *stami'nea* (long-stamened). White. Brazil. 1867.
,, *swartzia'na* (Swartzian). See M. FOTHERGILLA.
,, *tenuifo'lia* (fine-leaved). 6. S. Amer. 1818.
,, *tetra'ndra* (four-stamened). 2. Jamaica. 1815.

M. teysmannia'na (Teysmannian). See M. STAMINEA.
„ *trine'rvia* (three-nerved). 4. July. Jamaica. 1795.
„ *veluti'na* (velvety). Leaves large, green, purple-red beneath. Colombia. 1894.
„ *vesica'ria* (bladdery). Leaves deep green, shaded violet. Peru. 1895.

MICRANTHE'LLA CANDO'LLEI. See PLEROMA EXAPPENDICULATUM.

MICRA'NTHEMUM. (From *mikros*, small, and *anthos*, a flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)
Evergreen perennial. Cuttings under a hand-light; division of the plant in spring; sandy peat, and a little loam; requires a pit or a dry, sheltered place in winter.
M. orbicula'tum (round-*leaved*). ½. White. May. Carolina. 1826.

MICRA'NTHUS. (From *mikros*, small, and *anthos*, a flower. Nat. ord. Iridaceæ. Allied to Watsonia.)
Greenhouse bulbous plants. Seeds and offsets. Light, rich, sandy soil and leaf-mould.
M. cepa'ceus (onion-like). See M. FISTULOSUS.
„ *fistulo'sus* (hollow-stemmed). ½–1. Red. Leaves 3–6 in. long. S. Africa. 1774.
„ *plantagi'neus* (plantain-like). ½–1. Red. Leaves 6–12 in. long. S. Africa. 1774.
„ „ *ju'nceus* (rush-like). Leaves nearly round.

MICROCA'CHRYS. (From *mikros*, small, and *kachrus*, a cone; in reference to the small cones. Nat. ord. Coniferæ.)
Greenhouse evergreen Conifer allied to Saxegothea. Seeds; cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.
M. tetrago'na (four-angled). 3–15. Tasmania. 1857.

MICROCO'DON. (From *mikros*, small, and *kodon*, a bell; in allusion to the small bell-shaped flowers. Nat. ord. Campanulaceæ.)
Greenhouse, dwarf annual herbs. Seeds. Sandy loam and leaf-mould.
M. depre'ssum (depressed). ½–1. Blue. July. S. Africa. 1816.
„ *linea're* (linear). ½–1. White. June, July. S. Africa. 1822.
„ „ *diffu'sa* (diffuse). Much branched. S. Africa. 1787.

MICROCY'CAS. (From *mikros*, small, and *Cycas*, a Cycad. Nat. ord. Cycadaceæ.)
Stove evergreen shrub. Seeds and imported stems. Fibrous loam, peat, and sand.
M. calo'coma (beautiful-haired). 2. Cuba.

MI'CRODON. (From *mikros*, small, and *odous*, *odontos*, a tooth. Nat. ord. Selaginaceæ.)
Greenhouse evergreens. Cuttings of short side-shoots, in sand, under a bell-glass. Sandy loam and leaf-mould.
M. cyli'ndricus (cylindrical). ¾. Purple. August. S. Africa. 1807.
„ *lu'cidus* (shining). 1½. Purple. June. S. Africa. 1812.
„ *ova'tus* (ovate). 1. Dark purple. August. S. Africa. 1774.

MICROGA'STER. See ICHNEUMON FLIES.

MICROGLO'SSA. (From *mikros*, small, and *glossa*, a tongue; in allusion to the small rays of the heads. Nat. ord. Compositæ.)
Hardy, deciduous shrub. Cuttings of shoots in sand under a hand-light. Ordinary soil.
M. albe'scens (whitish). 2–3. Small, blue. Himalaya. 1842.

MICROLE'PIA. (From *mikros*, small, and *lepis*, a scale; the appearance of the spore, or seed-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Davallia.)
Stove Ferns, with brown spores. See FERNS.
M. ala'ta (winged). April. Jamaica.
„ *anthriscifo'lia* (Anthriscus-leaved). S. Africa. 1878.
„ *crista'ta* (crested). April. Isle of Luzon.
M. hi'rta (hairy). 3–4. N. India, Ceylon, &c. 1878.
„ „ *crista'ta* (crested). 3–4. Fronds crested. Polynesian Islands. 1878.
„ *No'væ-Zela'ndiæ* (New-Zealand). 1. New Zealand. Greenhouse.
„ *pinna'ta* (leafleted). May. Isle of Luzon.
„ *platyphy'lla* (broad-leaved). 2–4. Ceylon to the Himalayas.
„ *polypodioi'des* (Polypodium-like). 3–4. E. Ind. 1836.
„ *rhomboi'dea* (diamond-shaped). April. Australia. 1836.
„ *sca'bra* (rough). 2. Japan. 1862. Greenhouse.
„ *strigo'sa* (fine-haired). 3–4. N. India. 1862.
„ *tricho'sticha* (hairy-spiked). April. Samaria.

MICROLI'CIA. (From *mikros*, small, and *helikia*, stature; dwarf plants. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Acisanthera.)
M. biva'lvis (two-valved). See ACISANTHERA BREVIFOLIA.
„ *brevifo'lia* (short-leaved). See ACISANTHERA TRIVALVIS.
„ *recu'rva* (curled-back). See ACISANTHERA RECURVA.

MICROLO'MA. (From *mikros*, small, and *loma*, a fringe; flowers fringed. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Asclepias.)
Greenhouse evergreen twiners, from South Africa. Stiff little shoots, but young, as cuttings, in sand, under a bell-glass, in a close pit, in May; sandy loam, a little fibrous peat, and dried leaf-mould. Winter temp., 40° to 50°.
M. linea're (narrow-*leaved*). 3. White or pale red. July. 1818.
„ *sagitta'tum* (arrow-*leaved*). Green, purple. July. 1775.

MICROME'LES. (From *mikros*, small, and *melon*, an apple or quince; the fruit resembles a small quince. Nat. ord. Rosaceæ.)
A hardy tree or shrub. Seeds, budding and grafting. Ordinary soil.
M. caloneu'ra (beautiful-nerved). 10–20. White; fruit brown. W. China. 1910.

MICROME'LUM. (From *mikros*, small, and *melon*, an apple; in allusion to the small berried fruits. Nat ord. Rutaceæ.)
Evergreen stove shrub. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, peat, and sand.
M. pube'scens (downy). 3–4. White. June. Trop. Asia, &c. 1823.

MICROME'RIA. (From *mikros*, small, and *meris*, a part; referring to the flowers. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Melissa.)
Evergreen shrubs, with purple blossoms, except where otherwise specified. Cuttings under hand-lights, in sandy soil, in a shady place, in May; common garden, light soil; a high, sheltered position, or the protection of a cold pit, in winter.
M. approxima'ta (close-*leaved*). June. Mediterranean. 1822.
„ *austra'lis* (southern). See MENTHA AUSTRALIS.
„ *croa'tica* (Croatian). ½–1. Purple. Croatia. 1802.
„ *Dougla'sii* (Douglas's). 1. Purple. N.W. Amer.
„ *græ'ca* (Grecian). ¾. June. Greece. 1759.
„ „ *densiflo'ra* (thickly-flowered). June. S. Europe. 1822.
„ *julia'na* (St. Julian's). ½. Pale red. July. Mediterranean. 1596.
„ „ *hirsu'ta* (hairy). June. Sicily. 1822.
„ *marifo'lia* (cat-thyme-leaved). 1. Blue. June. Spain. 1800.
„ *monta'na* (mountain). See SATUREIA MONTANA.
„ *nervo'sa* (nerved). 1. Purple. Mediterranean region. 1820.
„ *obova'ta* (reversed-egg-*leaved*). 2. July. Jamaica. 1783.
„ *rupe'stris* (rock). 1. Purple. June. S. Europe. 1798.
„ *Teneri'fæ* (Teneriffe). 1. May. Teneriffe.
„ *va'ria* (various). July. Canaries. 1806.

MICROMY'RTUS. (From *mikros*, small, and *Myrtus*, a myrtle; the shrubs of the genus resemble small myrtles. Nat. ord. Myrtaceæ.)

A small bushy shrub, resembling a heath and requiring greenhouse protection. Cuttings of half-ripe shoots in sand, under a bell-glass, and in gentle heat. Fibrous loam and peat, in equal parts, with a good dash of sand.

M. microphy'lla (small-leaved). 1–2. White. Australia. 1870.

MICROPE'RA. (From *mikros*, small, and *pera*, a pouch; the pouch-like labellum, or lip. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Sarcochilus.)

Stove orchids. The ground species require to be grown in loose, open soil, in a pot; the others in a shallow basket, or on a moss-covered block of wood. Winter temp., 55° ; summer, 60° to 85°.

TERRESTRIAL, OR GROUND.

M. Ba'nksii (Banks'). New Zealand.
,, *me'dia* (middle-sized). 2. Pale green, white. King George's Sound. 1823.
,, *parvifio'ra* (small-flowered). See SARCOCHILUS PARVIFLORUS.

EPIPHYTAL.

M. pa'llida (pale). Pale yellow. Sylhet.

MICROPHŒ'NIX. (From *mikros*, small, and *Phœnix*; it resembles a small Phœnix. Nat. ord. Palmaceæ.)

A greenhouse Palm, a hybrid between *Microphœnix decipiens* and *Trachycarpus excelsa*. It has the habit and foliage of the former, and the petioles and fruit of the latter. Loam, peat, and a little sand.

M. Sahu'ti (Sahut's). Fruits reddish-brown. 1885.

MICROSE'CHIUM. (From *mikros*, small, and *Sechium*; the fruit being smaller than that of Sechium. Nat. ord. Cucurbitaceæ.)

Stove annual. Seeds. Fibrous loam, leaf-mould, and sand.

M. palma'tum (hand-shaped). Yellow. June. Mexico. 1827.

MICRO'SERIS. (From *mikros*, small, and *seris*, wild chicory; in allusion to the appearance of the plant. Nat. ord. Compositæ.)

A hardy annual. Seeds. Ordinary garden soil.

M. Li'ndleyi (Lindley's). Yellow. May, June. California. 1833.

MICROSO'RIUM. (From *mikros*, small, and *soros*, a heap, a cluster of spore-cases. Nat. ord. *Ferns* [Filices]. Now mostly referred to Nephrodium.)

Stove ferns. Spores and offsets. Loam, peat, and sand.

M. iridioi'des (Iris-like). 2. E. Ind. 1828.
,, *irregula're* (irregular). See NEPHRODIUM IRREGULARE.

MICROSPE'RMA BARTONIOI'DES. See MENTZELIA GRONOVLÆFOLIA.

MICROSPE'RMA LOBA'TA. See MENZELIA LOBATA.

MICROSTE'PHIUM NI'VEUM. See CRYPTOSTEMMA NIVEUM.

MICRO'STYLIS. (From *mikros*, small, and *stulis*, a style; in allusion to the small column. Nat. ord. Orchidaceæ.)

Stove terrestrial Orchids. Offsets. Fibrous peat, sphagnum, charcoal, and finely-broken crocks, in pots or small baskets.

M. be'lla (pretty). See M. PLANTAGINEA.
,, *calophy'lla* (beautiful-leaved). Yellow. Malaya. 1879.
,, *chloro'phrys* (green-leaved). Purple. Borneo. 1881.
,, *commelynæfo'lia* (Commelyna-leaved). Java.
,, *conge'sta* (congested). 2. Brown-purple, green. Trop. Asia. 1886.
,, *di'scolor* (two-coloured). Yellow, fading to orange. Ceylon. 1863.
,, *histiona'ntha* (sail-flowered). Brown-green. Nicaragua. 1842.
M. josephia'na (Josephian, or Sir Joseph Hooker's). Yellow. Leaves greenish-brown. Himalaya. 1877.
,, *Lo'wi* (Low's). Purple. Borneo. 1884.
,, *lu'teola* (little-yellow). Neilgherries.
,, *macrochi'la* (large-lipped). ¾. Green and purple. Malaya. 1895.
,, *meta'llica* (metallic). Yellow top sepal, the rest rose. Borneo. 1880.
,, *micra'ntha* (small-flowered). Perak.
,, *monophy'llos* (one-leaved). Northern and temperate regions. Hardy. "Adder's Mouth."
,, *ocula'ta* (eyed). Java.
,, *ophioglossoi'des* (Ophioglossum-like). ½. Green. N. Amer.
,, ,, *mexica'na* (Mexican). ½. Green. Mexico.
,, *philippine'nsis* (Philippine). ¾. Yellow or purplish. Philippine Islands. 1907.
,, *plantagi'nea* (plantain-like). 2. Light purple, green. Malaya. 1886.
,, *purpu'rea* (purple). Purple. Ceylon.
,, *Rhee'dii* (Rheed's). S. India.
,, *Sco'ttii* (Scott's). ½. Green and purple. Leaves brown, with green edge. Malaya.
,, *trilobula'ta* (three-small-lobed). See M. CONGESTA.
,, *Ventila'brum* (wind-lipped). Yellow. Sunda Islands. 1881.
,, *versi'color* (variable-coloured). 1. Variable in colour. S. India. 1830.
,, *Walli'chii* (Wallich's). India.
,, ,, *bi'loba* (two-lobed). Lip two-lobed. Nepal.

MIGNONETTE. *Rese'da odora'ta.*

Soil.—Light loam, well drained, and manured with leaf-mould.

Sowing in the open ground, from the end of April to the beginning of July, will produce a sure succession of blooms through the year. If allowed to seed, and the soil suits it, mignonette will continue to propagate itself. If not allowed to ripen its seed, the same plants will bloom for two or more seasons, being a perennial in its native country.

For *Pot-Culture* and the production of flowers to succeed those of the open-ground plants, and to bloom in winter, sow once in August, and again in September. The soil as above, well drained, and pressed into 5-inch pots; cover the seed a fourth of an inch. Thin the seedlings to three in a pot. Water sparingly. When mignonette is deficient of perfume, it is because the temperature is too low.

Tree-Mignonette.—About the end of April is the best time to sow seeds for this purpose; and as the little tree of mignonette will be expected to last in good health for half a dozen years at least, lay a good foundation to begin with. A rich compost of mellow loam, and one-third very rotten cow-dung, with a little sand; and to keep this from getting too close, a handful of dry lime-mortar added to each pot of 6-inch diameter, and so in proportion for larger or smaller pots; the mortar to be in lumps of the size of peas. Bones, charcoal, or even powdered crocks would answer the same purpose, only the mignonette is so much sweeter from the lime-rubbish or dry mortar. Cow-dung being very liable to turn sour, the mortar is a better corrector of this than even the charcoal. Take as many 3-inch pots as you want plants; drain them with pieces of mortar, and over that a little of the roughest of your compost; fill up nearly level with the top of the pot, and place three seeds in the very middle of each pot, and nine or ten seeds all over the surface; if you just cover them with earth it is enough, and press them down very tight. Water them, and put them up in the window, or greenhouse, and if the seeds are good they will be up in less than ten days; give them abundance of air, and no forcing. When the day is at all fine, put them outside the window from ten to three in the afternoon. They will not stand much water; a gentle shower with a rose would suit them very well, and the best time to give it them is in the morning, when you turn them outside, as they will have time to drain and dry properly before you take them in for the night. If the three seeds in the centre come up, the weakest of the three must be pulled out as soon as you can get hold of it; the rest to be thinned one-half. The reason for sowing so many seeds in one pot, and for thus thinning them out afterwards, is to make sure of one good plant; if the middle one

turns out to be so, that must be selected; but if not, you must choose the strongest and most promising from among the rest; yet be in no great hurry to pull them all out but one; as long as three or four have room, leave them. When you have fixed on the one that is to form the future tree, place a neat little stick down by the side of it, a foot long, and pushed down to the bottom of the pot. When the plant is 2 inches long, tie it loosely to this stick with a piece of worsted thread. Keep tying it as regularly as it grows, and when it reaches the top of the stick give it a longer one, that is, if you wish a long stem. Some people grow them up to 3, or even 4, feet and more. Suppose we say only a foot high for a couple of them, as they must all go in pairs; 18 inches for the next couple, and 2 feet for a third lot; you would then be better able to judge which size would suit your window best; and as soon and as often as side-branches issue forth from the stem of your tree, you must stop them at the second joint. Some people, who do not know the value of leaves, cut off the side-shoots close to the stem at once; but the substance of the stems and trunks of all trees, and mignonette-trees among the rest, is first formed by the leaves. In the second year you will cut off more than the half of these side-spurs, beginning at the bottom, and only taking off a pair at a time, and in ten days or a fortnight another couple, and so on progressively.

There must be no flowers the first season, at least as long as there are some out in the borders. After the middle of October you may let your trees bloom all the winter, but before that nip them off as fast as they appear. When the first little pots are full of roots, say about Midsummer, shift the plants into 5-inch pots, which is the next larger size; and if they have done well they may want another shift by the end of July, but never shift them after the middle of August, because, if we should have a cold autumn, they would not fill the pots with strong, healthy roots.

MIKA'NIA. (Named after *J. Mikan*, professor of botany at Prague. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Eupatorium.)

Stove evergreen twiners, with white flowers, blooming in August, except where otherwise mentioned. Cuttings of half-ripened shoots in sand, under a bell-glass, and in heat; rich, sandy loam. Winter temp., 48° to 55°; summer, 60° to 80°.

M. ama'ra (bitter). 6. Pale blue. S. Amer. 1813.
,, *apiifo'lia* (celery-leaved).
,, *cordifo'lia* (heart-leaved). 2–6. White. Central Amer. 1823. Tuberous.
,, *Eckhau'tii* (Eckhaut's). White.
,, *Gua'co* (Guaco). See M. AMARA.
,, *opi'fera* (eye-bearing). See M. CORDIFOLIA.
,, *phyllo'podon* (leaf-stalk). White. Argentina.
,, *pulverule'nta* (dusty). See M. APIIFOLIA.
,, *Sande'ri* (Sander's). Flowers unknown. Leaves green and purple. 1898.
,, *sca'ndens* (climbing). 6. Trop. Amer. 1714.
,, *suave'olens* (sweet-scented). See M. CORDIFOLIA.

MILDEW, whether on the stems of the wheat, or on the leaves of the chrysanthemum, pea, rose, or peach, appears in the form of minute fungi, the roots of which penetrate the pores of the epidermis, rob the plant of its juices, and interrupt its respiration. Every specimen of these fungi emits annually myriads of minute spores, and these are wafted over the soil by every wind, vegetating and reproducing the fungi, if they have happened to be deposited in a favourable place, or remaining until the following spring without germinating. These fungi have the power of spreading also by stooling, or throwing out offsets. They are never absent from a soil, and at some period of its growth are annually to be found upon the plants liable to their inroads. They are more observed in cold, damp, muggy seasons, because such seasons are peculiarly favourable to the growth of all fungi. The best of all cures is afforded by the application of flowers of sulphur in some form, either by dusting the sulphur over the parts affected, or a sulphur paint, for which a recipe is given at page 225; merely clay, water, and flowers of sulphur, however, are sufficient, and not so injurious to leaves. *Sphærotheca pannosa* (which see) and *Cladosporium herbarum* are the mildew fungi of the rose-tree, and *Phragmidium subcorticatum* is rose rust; *Oidium erysiphoides*, of the peach-tree; *Oidium Tuckeri*, of the vine; *Glœosporium concentricum*, of the cabbage; and *Erysiphe communis*, of the pea. Of course there are many others.

The most important point for subduing the mildew fungus is to apply the sulphur immediately it appears. To prevent its occurrence, nothing is so effectual as keeping the roots and the leaves equally active by a due amount of warmth and moisture.

MILFOIL. *Achille'a.*

MILIU'SA. (Possibly a commemorative name. Nat. ord. Anonaceæ.)

Evergreen stove shrub. Cuttings in sand in a close frame, with bottom-heat.

M. veluti'na (velvety). 6. Brown. India. 1823.

MILK-VETCH. *Astra'galus.*

MILK-WOOD. *Bro'simum spu'rium.*

MILKWORT. *Poly'gala.*

MI'LLA. (Named after *J. Milla*, a gardener to the Spanish court. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Caloscordium.)

Half-hardy little bulbs, with white flowers, which succeed in a deep, front border of light soil; offsets when in a dormant state.

M. au'rea (golden). 1. Yellow. April. Argentina. 1838.
,, *biflo'ra* (two-flowered). 1½. May. Mexico. 1826.
,, *capita'ta* (headed). See BRODIÆA CAPITATA.
,, *conspi'cua* (conspicuous). See BRODIÆA UNIFLORA CONSPICUA.
,, *hyaci'nthina* (hyacinthine). See BRODIÆA HYACINTHINA.
,, *ixioi'des* (Ixia-like). See BRODIÆA IXIOIDES.
,, *Leichtli'nii* (Leichtlin's). See BRODIÆA LEICHTLINII.
,, *macroste'mon* (long-stamened). 1. Pale lilac. Argentina. 1875.
,, *porrifo'lia* (leek-leaved). See BRODIÆA PORRIFOLIA.
,, *uniflo'ra* (one-flowered). See BRODIÆA UNIFLORA.

MILLE'TTIA. (Commemorative of *J. A. Millett*, of the early eighteenth century. Nat. ord. Leguminosæ.)

Evergreen stove climber. Seeds and layers. Loam, peat, and sand.

M. megaspe'rma (large-seeded). Purple. Australia.

MILLINGTO'NIA. (Named after *Sir T. Millington*, professor of botany at Oxford. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat; sandy loam and peat. Winter temp., 48° to 55°; summer, 60° to 85°.

M. horte'nsis (garden). 30. White. Burma. 1820.
,, *simplicifo'lia* (simple-leaved). 20. Yellow. E. Ind. 1828.

MILLIPEDE. See JULUS.

MILTO'NIA. (Named after the *Earl Fitzwilliam*. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Brassia.)

Stove orchids, from Brazil, except where otherwise mentioned. Divisions in spring; shallow baskets in moss, sphagnum, &c., or fixed to a block of wood, and then this block fastened across the top, inside of a pot. Winter temp., 60°; summer, 60° to 90°.

M. a'nceps (two-edged). Yellow, purple, white. Brazil. 1851.
,, *bi'color* (two-coloured). White, red. 1839.
,, *Bino'ti* (Binot's). Sepals and petals cinnamon; lip violet-purple. Brazil. 1897.
,, *Blu'ntii* (Blunt's). Whitish-yellow, blotched cinnamon; lip white, purple. Brazil. 1879.
,, ,, *lubbersia'na* (Lubbersian). Sepals and petals spotted with brown; lip purple. 1887.
,, *ca'ndida* (white-*lipped*). 2. Yellow and brown. March. 1830.
,, *ce'reola* (small-waxen). White, purple. Brazil. 1865.
,, *Clowe'sii* (Rev. J. Clowes's). 1. Yellow, brown. 1840.
,, ,, *gigante'a* (giant). Flowers larger. 1892.
,, ,, *pa'llida* (pale). Yellow, brown. 1839.

M. Clowe'sii rosefielde'nsis (Rosefield). Indian-yellow, with chestnut-bars. 1906.
,, *cunea'ta* (wedge-*lipped*). 1. Yellow, purple. March. 1843.
,, *Endre'sii* (Endres's). Creamy-white, with rose blotch at base of segments. Central Amer.
,, *festi'va* (joyous). Pale yellow, purple. Brazil. 1868.
,, *fla'va* (yellow-*flowered*). Yellow. July. 1848.
,, *flave'scens* (yellowish). 2. White, yellow. June. 1837.
,, ,, *grandiflo'ra* (large-flowered). 2. Larger, paler yellow. December. Brazil. 1837.
,, ,, *stella'ta* (starry). Bracts reddish; lip white. Brazil.
,, *joiceya'na* (Joiceyan). Yellow, with brown blotches. Brazil. 1893.
,, *Karwi'nskii* (Karwinski's). See ODONTOGLOSSUM KARWINSKII.
,, *lamarckea'na* (Lamarckean). Sepals and petals yellow, barred cinnamon. 1876.
,, *leopoldia'na* (Leopoldian). See M. VEXILLARIA LEOPOLDII.
,, *morelia'na* (Morelian). See M. SPECTABILIS MORELIANA.
,, *odora'ta* (sweet-scented). 1843.
,, *petersia'na* (Petersian). Brown-purple; lip rich purple, and blotched. 1886.
,, ,, *co'ncolor* (one-coloured). Paler, without spots. 1886.
,, *Phalæno'psis* (Phalænopsis). White, with purple-crimson area on the lip. Colombia. 1850.
,, ,, *luxu'rians* (luxuriating). Lip with two large crimson blotches. 1881.
,, ,, *sola're* (solar). Base of lip yellow, with purple rays. 1879.
,, *Regne'lli* (Regnell's). 1. White, rose, lilac. Brazil. 1864.
,, ,, *purpu'rea* (purple). Bright purple; lip with darker veins. Brazil. 1869.
,, ,, *travassosia'na* (Travassosian). Sepals and petals yellow. 1901.
,, *Rœ'zlii* (Rœzl's). White, with dark purple blotch at base of petals. Colombia. 1873.
,, ,, *a'lba* (white). White; lip with small yellow crest.
,, *russellia'na* (Duke of Bedford's). Brown, lilac. December. Rio Janeiro. 1835.
,, *schrœderia'na* (Schrœderian). Yellow, barred brown; lip crimson-purple. 1889.
,, *specta'bilis* (showy). 1. White, violet. July. 1835.
,, ,, *aspe'rsa* (scattered). Sepals and petals cream, washed mauve-lilac. 1885.
,, ,, *a'tro-purpu'rea* (dark purple). Rio Janeiro.
,, ,, *bi'color* (two-coloured). White, violet. 1839.
,, ,, *colora'ta* (*high*-coloured). Rose. 1838.
,, ,, *linea'ta* (lined). Buff-white, purple.
,, ,, *morelia'na* (Morelian). Rich violet-purple. Brazil. 1851.
,, ,, *ra'dians* (radiating). Purple, pale yellow. Brazil. 1880.
,, ,, *ro'sea* (rosy). Rose, purple. 1867.
,, ,, *virgina'lis* (virginal). White, with rose spot. Brazil. 1869.
,, *stella'ta* (starry). See M. FLAVESCENS STELLATA.
,, *travassosia'na* (Travassosian). See M. REGNELLI TRAVASSOSIANA.
,, *vexilla'ria* (standard). 1. Rose, white, with yellow crest. Colombia. 1872.
,, ,, *a'lba* (white). White; crest pale yellow. Colombia.
,, ,, *bousiesia'na* (Bousiesian). Flowers large deep purplish-red. 1897.
,, ,, *chelsonie'nsis* (Chelsea). Lip with rich brown blotch and radiating lines. 1901.
,, ,, *Kirstei'niæ* (Miss Kirstein's). Rose, rose-purple; lip white; disc yellow. 1897.
,, ,, *Klabocho'rum* (the Messrs. Klaboch's).
,, ,, *lambeauia'na* (Lambeauian). Pure white, with lemon-yellow crest. 1907.
,, ,, *Lau'ræ* (Laura's). Very dark, almost purple. 1910.
,, ,, *lawrencea'num* (Lawrencean). Pink; lip dark crimson. 1884.
,, ,, *Leopo'ldii* (Leopold's). Richly coloured, with a dark crimson triangular blotch on lip. 1889.
,, ,, *measuresia'num* (Measuresian). Smaller and purer white than *M. v. alba*.
M. vexilla'ria Memo'ria Linde'ni (in memory of Linden). Large and richly coloured. 1900.
,, ,, *purpu'rea* (purple). Deep rose-purple. 1889.
,, ,, *quadri'color* (four-coloured). Rose, edged white, deep purple; disc yellow. 1897.
,, ,, *sanderia'na* (Sanderian). See M. VEXILLARIA LEOPOLDII.
,, ,, *supe'rbum* (superb). Lip dark purple, with a rayed, blackish zone, edged white. 1881.
,, ,, *vitta'ta* (striped). Deep rose, pale rose, tipped white. 1897.
,, *virgina'lis* (virginal). See M. SPECTABILIS VIRGINALIS.
,, *Warne'ri* (Warner's). See M. SPECTABILIS ROSEA.
,, *Warscewi'czii* (Warscewicz's). Brown, yellow; lip violet-purple, white. Colombia. 1869.
,, ,, *æthe'ria* (ethereal). Lip white, with yellow area edged lilac. 1881.
,, ,, *leucochi'la* (white-lipped). Pale purple, edged white; lip red-purple, translucent. 1910.
,, ,, *Welto'ni* (Welton's). See M. WARSCEWICZII.
,, ,, *xa'nthina* (yellow). Sepals and petals deep yellow; lip yellow, white. 1884.

MIME'TES. (From *mimos*, a mimic; referring to its resemblance to allied genera. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Leucospermum.)

Greenhouse evergreen shrubs, from South Africa. Cuttings of the ripened shoots towards autumn, or in the spring, before fresh growth commences, in sand, under a glass, but without bottom-heat, at least until a swelling takes place at their base; peat and a little loam. Winter temp., 38° to 45°.

M. capitula'ta (small-headed). Red. June. 1822.
,, *cuculla'ta* (hooded-*leaved*). See M. LYRIGERA.
,, *divarica'ta* (spreading). 2½. White. July. 1795.
,, *Harto'gii* (Hartoge's). 5. July. 1824.
,, *hi'rta* (hairy). 3½. Red. July. 1774.
,, *lyri'gera* (lyre-bearing). 2. Purple. 1789.
,, *palu'stris* (marsh). 1. Purple. July. 1802.
,, *pauciflo'ra* (few-flowered). 3½. Red. July. 1818.
,, *purpu'rea* (purple). 2. Purple. November. 1789.
,, *vacciniifo'lia* (whortleberry-leaved). 3. 1800.
,, *Ze'yheri* (Zeyher's). 5–8. Rose-red. July.

MIMO'SA. (From *mimos*, a mimic; referring to the irritability of the leaves, as if imitating animal sensibility. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)

Stove evergreens, except *pu'dica*, commonly called the Sensitive Plant, which is an annual, and *vi'va*, which is herbaceous. Seeds sown in a hotbed, in the spring; cuttings also of young shoots, getting rather firm at the base, in sandy soil, and in heat; sandy loam, leaf-mould, and a little peat. Winter temp., 50° to 55°; summer, 60° to 85°. The foliage of most is beautifully leafleted, and many species more or less sensitive to the touch; most of them furnish fine examples of what is termed *sleep* in plants, as the leaflets fold together at night.

M. acanthoca'rpa (spiny-fruited). 8–10. Red. Mexico. 1822.
,, *angula'ta* (angled-*branched*). White. June. Brazil. 1826.
,, *arge'ntea* (silvery). A garden name.
,, *barclaya'na* (Barclay's). 1. Madagascar. 1824.
,, *ca'sta* (chaste). 2. Pale yellow. July. Trop. Amer. 1741.
,, *Cerato'nia* (Ceratonia). 3. White. Trop. Amer. 1800.
,, *cilia'ta* (hair-fringed). White. June. Brazil. 1824.
,, *Denha'rdti* (Denhardt's). Leaves nearly as sensitive as those of *M. pudica*. 1906.
,, *di'scolor* (two-coloured). See ACACIA DISCOLOR.
,, *do'rmiens* (sleeping). Rose. April. S. Amer. 1825.
,, *e'legans* (elegant). See ALBIZZIA LOPHANTHA.
,, *ferrugi'nea* (rusty). See ACACIA FERRUGINEA.
,, *floribu'nda* (bundle-flowered). 1. Pink. June. Trop. Amer. 1818.
,, *frutico'sa* (shrubby). 4. E. Ind. 1820.
,, *guayaquile'nsis* (Guayaquil). 10. Guayaquil. 1818.
,, *interme'dia* (intermediate). See M. DORMIENS.
,, *kermesi'na* (carmine). See M. LUCIDULA.
,, *latispino'sa* (broad-spined). 3. White. September. Madagascar. 1823.
,, *linifo'lia* (flax-leaved). See ACACIA LINIFOLIA.

M. longifo'lia (long-leaved). See ACACIA LONGIFOLIA.
„ *luci'dula* (somewhat-shining). Purple. Brazil.
„ *margina'ta* (bordered). Pink. Brazil. 1838.
„ *myrtifo'lia* (myrtle-leaved). See ACACIA MYRTIFOLIA.
„ *obtusifo'lia* (blunt-leaved). 3. Red. June. Brazil. 1816.
„ *polyda'ctyla* (many-fingered). 1½. Purple. June. Guiana. 1822.
„ *pube'scens* (downy). See ACACIA PUBESCENS.
„ *pudibu'nda* (blushing). See M. PUDICA PUDIBUNDA.
„ *pu'dica* (chaste). 1. White. June. Brazil. 1638. "Sensitive Plant."
„ „ *pudibu'nda* (blushing). 2. Pale red. Bahia. 1818.
„ *purpu'rea* (purple). 5–8. Purple. Trop. Amer. This is *Calliandra purpurea*.
„ *quite'nsis* (Quito). Ecuador.
„ *rubricau'lis* (red-stalked). 3. Pale yellow. June. India. 1799.
„ *sensiti'va* (sensitive). 1½. Pink. June. Brazil. 1648.
„ *Spegazzi'nii* (Spegazzini's). White, with violet stamens. Argentina. 1892.
„ „ *glau'ca* (glaucous). Whitish. Leaves glaucous. 1903.
„ *stri'cta* (upright). See ACACIA STRICTA.
„ *strigo'sa* (bristled). See M. FLORIBUNDA.
„ *uragua'nsis* (Uraguay). 2. Red. June. Buenos Ayres. 1840.
„ *verticilla'ta* (whorled). See ACACIA VERTICILLATA.
„ *vi'scida* (clammy). 2. Red. Brazil. 1825.
„ *vi'va* (lively). 1½. Purple. August. Jamaica. 1739.

MI'MULUS. Monkey-Flower. (From *mimo*, an ape; in reference to the ringent or gaping mouth of the flower. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Common soil, provided it be moist; divisions, cuttings, and seeds. A few, like *ro'seus*, require the protection of a pit in winter; but where that is not available, seeds of them, sown in March or April, will bloom in summer and autumn.

HARDY ANNUALS.

M. floribu'ndus (bundle-*flowered*). ¾. Yellow. August. California. 1826.
„ *mohave'nsis* (Mohavan). ½. Whitish, with crimson eye. California. 1886.
„ *parvifo'rus* (small-flowered). See M. PILOSIUSCULUS.
„ *pilosiu'sculus* (rather-hairy). ½. Yellow. Peru. 1824.

HALF-HARDY HERBACEOUS.

M. auranti'acus (orange). See M. GLUTINOSUS.
„ *Clevela'ndi* (Cleveland's). Golden-yellow. S. California. 1895. Woody at base.
„ *Fremo'nti* (Fremont's). ½–1. Crimson. California. 1882.
„ *glutino'sus* (clammy). 2–5. Salmon. California. 1794. Shrubby.
„ „ *cocci'neus* (scarlet). 2–5. Scarlet. California. Shrubby.
„ „ *puni'ceus* (purple). 2–5. Orange-red. California. 1837. Shrubby.
„ *lana'tus* (woolly). 1½. Yellow. June. N. Amer. 1826.
„ *perfolia'tus* (stem-pierced). See LEUCOCARPUS ALATUS.
„ *re'pens* (creeping). Lilac, yellow. Australia. 1864.
„ *Rœ'zlii* (Rœzl's). Yellow. California. 1882.
„ *tomento'sus* (felted). Salmon. California. 1897.
„ *tri'color* (three-coloured). Pink, crimson. June. California. 1848.

HARDY HERBACEOUS.

M. ala'tus (winged). 1. Light blue. July. N. Amer. 1783.
„ *cardina'lis* (cardinal-like). 2. Scarlet. June. California. 1835.
„ *cu'preus* (copper). See M. LUTEUS ALPINUS.
„ *glabra'tus* (smoothed). Yellow. June. Mexico. 1827.
„ *graci'lipes* (slender-stalked). Carmine-red, with white throat. California. 1898.
„ *gutta'tus* (spotted-*flowered*). See M. LUTEUS GUTTATUS.
„ *Lewi'sii* (Lewis's). ¾. Pale purple. August. Missouri. 1824.
„ *lu'teus* (yellow). ¾. Yellow. July. Chili. 1826.
M. lu'teus alpi'nus (Alpine). ½. Coppery-orange. Chili. 1861.
„ „ *cu'preus* (copper). See M. LUTEUS ALPINUS.
„ „ *gutta'tus* (spotted). 1½. Yellow, blotched maroon. July. N. Amer. 1812.
„ „ *Langsdo'rffii* (Langsdorff's). 1–1½. Yellow, finely spotted in the throat. Britain.
„ „ *Neube'rti* (Neubert's). Double.
„ „ *no'bilis* (noble). Hose-in-hose variety.
„ „ *rivula'ris* (rivulet). ¾. Yellow. July. Chili. 1826.
„ „ *Smi'thii* (Smith's).
„ „ *younga'nus* (Mr. Young's). See M. LUTEUS GUTTATUS.
„ *moscha'tus* (musk-*plant*). ¾. Yellow. August. N.W. Amer. 1826.
„ *primuloi'des* (Primula-like). ½. Yellow. N.W. Amer. 1873.
„ *propi'nquus* (related). See M. GLABRATUS.
„ *radi'cans* (rooting). ½. White, with a violet blotch. New Zealand. 1883.
„ *ri'ngens* (gaping). 1. Light blue. July. N. Amer. 1759.
„ *ro'seus* (rosy). See M. LEWISII.
„ *Smi'thii* (Smith's). See M. LUTEUS SMITHII.
„ *Tili'ngii* (Tiling's). See M. LUTEUS.
„ *variega'tus* (variegated). See M. LUTEUS GUTTATUS.

MI'MUSOPS. (From *mimo*, an ape, and *ops*, a face; fancied resemblance of the flowers. Nat. ord. *Sapotads* [Sapotaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Bassia.)

Mi'musops Ele'ngi is an Indian fruit-tree; and the sweetish gum of the *M. Kau'ki* is eaten by the natives. Stove, white-flowered evergreen trees, from the East Indies. Cuttings of half-ripened shoots in sand, under a glass, and in heat; sandy loam and leaf-mould. Winter temp., 48° to 55°; summer, 60° to 80°.

M. Bala'ta (Balata). See M. GLOBOSA.
„ *disse'cta* (dissected). See M. KAUKI.
„ *Ele'ngi* (Elengi). 15. 1796.
„ *globo'sa* (globose). Tropics. "Gum Balata."
„ *hexa'ndra* (six-stamened). 10. 1804.
„ *Kau'ki* (Kauki). 10. 1796.
„ *parvifo'lia* (small-leaved). Australia.

MI'NA. (Named after *F. X. Mina*, a Mexican minister. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Ipomœa.)

M. corda'ta (heart-shaped). See IPOMŒA VERSICOLOR.
„ *loba'ta* (lobed). See IPOMŒA VERSICOLOR.

MINKELE'RSIA. (A commemorative name. Nat. ord. Leguminosæ.)

A greenhouse twiner with a tuberous rootstock. Cuttings of shoots from the base, in sand, under a bell-glass. Loam, peat, and sand.

M. biflo'ra (two-flowered). Pale red-purple. Mexico. 1902.

MINT. See ME'NTHA.

MIRA'BILIS. Marvel of Peru. (From *mirabilis*, wonderful; as everything was at first considered that came from America. Nat. ord. *Nyctagos* [Nyctaginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse herbaceous perennials. By seeds sown in a hotbed, in spring, and plants hardened off by degrees to stand in the open border; by their fusiform (carrot-shaped) roots, taken up and preserved in sand or dry moss during the winter; rich, sandy loam. May be managed similarly to a Dahlia.

M. dicho'toma (forked). 2. Yellow. July. Mexico. 1640.
„ *divarica'ta* (spreading). 2–3. White. Madeira.
„ *hy'brida* (hybrid). 2. White. July. Mexico. 1813.
„ *Jala'pa* (jalap). 2. Red. July. W. Ind. 1596.
„ „ *a'lba* (white). 2. White. July. W. Ind. 1596.
„ „ *fla'va* (yellow). 2. Yellow. July. W. Ind. 1596.
„ „ *ru'bro-a'lba* (red and white). 2. Red, white. July. W. Ind. 1596.
„ „ *ru'bro-fla'va* (red and yellow). 2. Red, yellow. July. W. Ind. 1596.
„ *lepto'siphon* (slender-tubed). 2. White. July, August.
„ *longiflo'ra* (long-flowered). 2. White. July. Mexico. 1759.

M. longiflo'ra ca'rnea (flesh-coloured). 2. Pink. August. Germany.
,, ,, *viola'cea* (violet-coloured). 2. Pink. August. Germany.
,, *multiflo'ra* (many-flowered). 2–3. Bright purple. N.W. Amer. 1876.
,, *suave'olens* (sweet-scented). See M. LONGIFLORA.

MIRBE'LIA. (Named after *C. F. B. Mirbel*, a physiological botanist of Paris. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Oxylobium.)

Greenhouse evergreens, from Australia. Cuttings of the half-ripened shoots in May, under a bell-glass, and in sand, over well-drained, sandy peat; sandy peat, with a few nodules of fibrous loam and charcoal. Winter temp., 40° to 48°.

M. Baxte'ri (Baxter's). See OXYLOBIUM SCANDENS.
,, *dilata'ta* (wide-*leaved*). 3. Yellow. July. 1803.
,, *floribu'nda* (many-flowered). 2. Purple. March. 1838.
,, *grandiflo'ra* (large-flowered). 2. Yellow. June. 1825.
,, *Meissne'ri* (Meissner's). See M. DILATATA.
,, *oxylobioi'des* (Oxylobium-like). Yellow. Australia.
,, *pu'ngens* (stinging). 2. Yellow. June. 1824.
,, *reticula'ta* (netted). 3. Yellow. June. 1792.
,, *specio'sa* (showy). 2. Purple. June. 1824.

MISCA'NTHUS. (From *mischos*, a fruit-stalk, and *anthos*, a flower; the spikelets of flowers are stalked. Nat. ord. Gramineæ.)

Hardy ornamental grasses. Divisions and seeds. Ordinary soil.

M. japo'nicus (Japanese). 3–6. August, September. Japan.
,, ,, *variega'tus* (variegated). Leaves striped with cream.
,, ,, *zebri'nus* (zebra-striped). Leaves transversely barred with yellow.
,, *saccha'rifer* (sugar-bearing). 6–8. Japan.
,, *sine'nsis* (Chinese). 3–5. September. China and Japan.

MISTLETOE. (*Vi'scum a'lbum.*) Name derived from the Saxon for the same plant, *Miselta*. The best months for sowing it are February and March. Make two cuts in the shape of the letter V, on the *under-side* of the branch of an apple-tree. Make the cuts quite down to the wood of the branch; raise the tongue of bark made by the cuts, but not so as to break it, and put underneath one or two seeds freshly squeezed from the Mistletoe berry. Let the tongue back into its place, and the process is completed. If the seed is good, the seedlings, not unlike cucumber plants, soon appear. They remain attached to the branch, and do not seem to injure the tree.

Open the bark underneath the branch to receive the seed, because it is thus preserved from an accumulation of rain water, and is shaded from the sun.

There is really no necessity, however, for opening the bark at all, if the berries are rubbed upon a piece of smooth and healthy live bark, preferably young, till they adhere by their own viscid juice. The berries should be protected from birds till they germinate.

The Mistletoe may also be propagated by grafts; and it is said that it will succeed upon any tree. It is certainly found upon the pine in Germany; and we have seen it on the common walnut and black walnut in Buckinghamshire. It will grow, yet with difficulty, upon the oak; but it readily takes upon the apple, pear, poplar, and willow. Mr. Beaton says (*Gard. Mag.*, iii. 207, N.S.), the first weeks of May are best for grafting the Mistletoe, and it should never be inserted less than five nor more than ten feet from the ground. Make an incision in the bark of the tree, and insert into it a thin slice of Mistletoe, having a bud and one leaf at the end. Grafts larger than half an inch in diameter require a notch to be cut out of the branch, the incision to receive the scion being made below this notch, and a shoulder left on the scion to rest on the notch, as in crown-grafting. Budding the Mistletoe may also be practised in the middle of May. Mr. Beaton says it is only a modification of grafting, a heel of wood being retained below the bud for insertion.

MITCHE'LLA. (Named after *Dr. Mitchell*, of Virginia. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Hardy herbaceous creeper. Division, cuttings under a hand-light, and layering the running stems; sandy, fibrous peat, either in a sheltered American border, or in a pot protected like the generality of alpine plants.

M. re'pens (creeping). ½. White. June. N. Amer. 1731. "Partridge Berry."

MITE. See ACARUS.

MITE'LLA. (The diminutive of *mitra*, a mitre; referring to the shape of the seed-pods. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Allied to Heuchera.)

Hardy, white-flowered, herbaceous perennials, from North America. Division of the roots in spring; common garden soil. Pretty for border or rock-work.

M. Brewe'ri (Brewer's). ½. White. California.
,, *cordifo'lia* (heart-leaved). See M. NUDA.
,, *diphy'lla* (two-leaved). ½. April. 1731.
,, *nu'da* (naked-*stemmed*). ½. July. 1758.
,, *penta'ndra* (five-stamened). ½. Yellow. June. N.W. Amer. 1827.
,, *prostra'ta* (lying-down). See M. NUDA.
,, *renifo'rmis* (kidney-shaped). See M. NUDA.
,, *tri'fida* (three-cleft-*petaled*). ½. May. 1827.

MITRACA'RPUM. (From *mitra*, a mitre, and *karpos*, a fruit. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Richardsonia.)

Stove annuals, with white flowers. Seeds in a hotbed, in March, potted and hardened off to bloom in the stove and greenhouse during the summer.

M. Fische'ri (Fischer's). 1. July. Jamaica. 1821.
,, *hi'rtum* (hairy). See M. VILLOSUM.
,, *stylo'sum* (*long*-styled). 1. August. Manilla. 1819.
,, *villo'sum* (shaggy). ½. July. Jamaica. 1816.

MITRA'RIA. (From *mitra*, a mitre; referring to the seed-pod. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Columnea.)

Evergreen shrub. Cuttings of the half-ripened shoots in sand, under a bell-glass, in summer; better-ripened shoots under a hand-light, in a shady place. A beautiful spring plant for the greenhouse, and supposed to be hardy enough for all sheltered places out of doors; sandy peat and fibrous loam.

M. cocci'nea (scarlet). 4. Scarlet. July. San Carlo de Chiloe. 1848.

MITRIOSTI'GMA. (From *mitra*, a mitre, and *stigma*; in allusion to the club-shaped or spindle-shaped stigma. Nat. ord. Rubiaceæ.)

Evergreen stove shrub. Cuttings in sand, in bottom-heat, and kept close. Fibrous loam, peat, and sand.

M. axilla're (axillary). 2–5. White, sweet-scented. March. S. Africa.

MIXTURE OF SOILS is one of the most ready and cheapest modes of improving their staple, and thus rendering them more fertile; and upon the subject we have nothing to add to the following excellent remarks of Mr. Cuthbert Johnson:

"I have witnessed, even in soils to all appearance similar in composition, some very extraordinary results from their mere mixture. Thus, in the gravelly soils of Spring Park, near Croydon, the ground is often excavated to a depth of many feet, through strata of barren gravel and red sand, for the purpose of obtaining the white or silver sand which exists beneath them. When this fine sand is removed, the gravel and red sand are thrown back into the pit, the ground merely levelled, and then either let to cottagers for gardens, or planted with forest trees. In either case the effect is remarkable; all kinds of either fir or deciduous trees will now vegetate with increased luxuriance; and in the cottage-gardens thus formed several species of vegetables, such as beans and potatoes, will produce very excellent crops, in the very soils in which they would have perished previous to their mixture. The permanent advantage of mixing soils, too, is not confined to merely those entirely of an earthy composition: earths which contain inert organic matter, such as peat or moss earth, are highly valuable additions to some soils. Thus, peat earth was success-

fully added to the sandy soils of Merionethshire by Sir Robert Vaughan. The Cheshire farmers add a mixture of moss and calcareous earth to their tight-bound earths, the effect of which they describe as having 'a loosening operation'; that is, it renders the soil of their strong clays less tenacious, and, consequently, promotes the ready access of the moisture and gases of the atmosphere to the roots. The cultivator sometimes deludes himself with the conclusion that applying sand, or marl, or clay, to a poor soil, merely serves to freshen it for a time, and that the effects of such applications are apparent for only a limited period. Some comparative experiments, however, which were made sixteen years since, on some poor, hungry heath-land, in Norfolk, have up to this time served to demonstrate the error of such a conclusion. In these experiments the ground was marled with twenty cubic yards only per acre, and the same compost; it was then planted with a proper mixture of forest trees, and by the side of it a portion of the heath, in a state of nature, was also planted with the same mixture of deciduous and fir-trees.

"Sixteen years have annually served to demonstrate, by the luxuriance of the marled wood, the permanent effect produced by a mixture of soils. The growth of the trees has been there rapid and permanent; but on the adjoining soil the trees have been stunted in their growth, miserable in appearance, and profitless to their owner.

"Another, but the least commonly practised mode of improving the staple of a soil by earthy addition, is claying; a system of fertilising, the good effects of which are much less immediately apparent than chalking, and hence one of the chief causes of its disuse. It requires some little time to elapse, and some stirring of the soil, before the clay is so well mixed with a sandy soil as to produce that general increased attraction and retentive power for the atmospheric moisture, which ever constitutes the chief good result of claying poor soils. Clay must be, moreover, applied in rather larger proportions to the soil than chalk; for not only is its application rarely required as a direct food for plants for the mere alumina which it contains, since this earth enters into the composition of plants in very small proportion, but there is also another reason for a more liberal addition of clay being required, which is the impure state in which the alumina exists in what are commonly called clay soils."—*Farm Encyc.*

MODE'CCA. (The Indian name. Nat. ord. *Passion-flowers* [Passifloraceæ]. Linn. 22-*Diœcia*, 5-*Pentandria*. Allied to Carica.)

Stove evergreen climbing plants, resembling Passion-flowers. Cuttings of young shoots in May, in sandy soil, under a bell-glass, and in heat; peat and loam. Winter temp., 48° to 55°; summer, 60° to 75°.

M. loba'ta (lobed). Yellow-green. W. Trop. Africa.
,, *palma'ta* (hand-shaped). 10. August. India. 1822.
,, *sene'nsis* (Senan). 10–18. Pale yellow. Trop. Africa. 1901.
,, *triloba'ta* (three-lobed). 10. August. India. 1818.
,, *tubero'sa* (tuberous). See M. PALMATA.
,, *wightia'na* (Wightian). 10–15. Pale yellow. India.

MO'DIOLA. (From *modiolus*, the nave of a wheel; referring to the formation of the seed-vessel. Nat. ord. *Mallow-worts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polygynia*. Allied to the Mallow.)

Seeds in spring; division of the herbaceous kinds at the same time, and by cuttings of the young shoots under a hand-light; common, sandy loam. The herbaceous require a dry, sheltered place, or the protection of a cold pit during the winter.

M. carolinia'na (Carolina). See M. MULTIFIDA.
,, *decu'mbens* (lying-down). See M. MULTIFIDA.
,, *geranioi'des* (Geranium-like). See MODIOLASTRUM GERANIOIDES.
,, *multi'fida* (much-cut). 1. Red or scarlet. June. N.W. Amer. 1723. Hardy annual.
,, *prostra'ta* (lying-flat). See M. MULTIFIDA.

MODIOLA'STRUM. (From *modiolus*, the nave of a wheel, and *astron*, a star; literally, "Star Modiola." Nat. ord. Malvaceæ.)

A handsome, hardy herb for the rockery. Divisions and seed. Light rich soil.

M. geranioi'des (Geranium-like). ½. Deep red. June to August. Chili. 1882.

MÖEHRI'NGIA. (Named after *P. Möehring*, a German botanist. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 8-*Octandria*, 2-*Digynia*. United to Arenaria.)

Hardy herbaceous perennials, from south of Europe. Division of the plant in spring; common, sandy soil, and dry, elevated positions; suited for steep rock-works.

M. musco'sa (mossy). ¼. Purple. June. 1775.
,, *sedifo'lia* (Sedum-leaved). ½. White, red. June. 1823.

MOGI'PHANES. (From *mogis*, scarcely, and *phaino*, to show; the small flowers scarcely show themselves. Nat. ord. Amarantaceæ.)

A stove plant allied to Gomphrena. Seeds. Loam, leaf-mould, and sand.

M. strami'nea (straw-coloured). Trop. Amer. 1774.

MOHLA'NA. (A commemorative name. Nat. ord. Phytolaccaceæ.)

Stove evergreen shrub. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

M. latifo'lia (broad-leaved). 2–3. Purple. July. Madagascar. 1826.

MO'HRIA. (Named after *M. Mohr*, a German botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Greenhouse Fern. See FERNS.

M. caffro'rum (Caffer). Brown, yellow. June. S. Africa. 1842.
,, *thuri'fraga* (frankincense). See M. CAFFRORUM.

MOIST STOVE. A stove with a moist atmosphere. See STOVE.

MOLDAVIAN PALM. *Dracoce'phalum Molda'vica.*

MOLDENHAU'ERA. (Named after *I. J. Moldenhauer*, a German botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Swartzia.)

Stove evergreen shrub. Cuttings of ripened shoots in sand, under a glass, in heat; rich, sandy loam. Winter temp., 50° to 55°; summer, 60° to 75°.

M. floribu'nda (many-flowered). Yellow. May. Brazil. 1828.

MOLE CRICKET. One of the most curious, and often most destructive to our kitchen-garden crops of all the subterranean vermin, is the Mole-cricket, known, in different parts of England, by the various names of Earth-crab, Jarr-worm, Churr-worm, and Eve-churr. It is the *Gryllotalpa vulgaris* and *europæa* of some naturalists, and the *Gryllus Gryllotalpa* of others. It rarely appears upon the surface of the soil, but makes burrows, like the mole, and destroys all roots which interrupt him in forming these passages. When full-grown, it is nearly two inches long, and four lines broad; colour, dark brown; antennæ, bristle-shaped, and in front of its black eyes; thorax, hairy; wings, broad, large, and triangular when fully opened; abdomen, nine or ten-jointed, furnished at the end with two hairy, awl-shaped filaments. The two fore-feet are broad, like those of the mole, and similarly intended for digging. The female hollows out a place, about half a foot from the surface, in the month of June, and lays her eggs in a heap, from two to three hundred. They are shining yellowish-brown, and like grains of millet. The young, which are hatched in July or August, greatly resemble black ants, and feed, like the old ones, on the tender roots of grass, corn, and various culinary vegetables. They betray their presence under the earth by the withered decay of culinary vegetables in the garden. In October and November they bury themselves deeper in the earth, as a protection from cold, and come again to the surface in the warmer days in March. Their presence is discovered by their throwing up the earth like moles. The surest of remedies is destroying the brood in June or July. Gardeners know, from experience, where the nest of the Mole-cricket is situated; they dig it out with their spades, and destroy hundreds in the egg state with little trouble.—*Kollar.*

MOLI'NIA. (Commemorative of *G. J. Molini*, a writer on Chilian botany. Nat. ord. Gramineæ.)

Hardy perennial grass. Seeds and divisions. Ordinary soil.

M. cæru'lea (blue). 1–3. Purple or green. July, August. Britain.
„ „ *Berti'ni* (Bertin's). A variegated variety that occurred amongst seedlings. 1890.
„ „ *variega'ta* (variegated). Leaves variegated with creamy-yellow. 1880.
„ *va'ria* (variable). See M. CÆRULEA.

MOLOPOSPE'RMUM. (Derived from *molops*, a stripe, and *sperma*, a seed. Nat. ord. Umbelliferæ.)
Hardy perennial with finely divided leaves. Seeds, divisions. Ordinary soil.
M. cicuta'rium (Cicuta-like). 3–5. Whitish. Mountains of Middle and S. Europe. 1596.
„ *peloponnesi'acum* (Peloponnesan). See M. CICUTARIUM.

MO'LTKIA. (Named after *Count Moltke*, a Danish noble. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Echium.)
Hardy herbaceous and shrubby perennials. Division of the plant in spring; rich, sandy loam.
M. cæru'lea (blue). 1. Blue. April. Persia. 1829.
„ *petræ'a* (rock). 1–2. Blue. June, July. Eastern Europe. 1843.

MOLUCCE'LLA. Molucca Balm. (From *Molucca*, where the plants were supposed to be natives. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Phlomis.)
Hardy plants, with purple flowers, flowering in July. *Tubero'sa*, by dividing the tubers in spring and autumn. This, and also the others, which are annuals, by seed in a hotbed, in spring; potted, hardened off, and transferred to the flower-border in the middle of May; sandy loam.
M. læ'vis (smooth). 1½. Syria. 1570. "Shell Flower."
„ *Marrubia'strum* (Marrubiastrum). See MARRUBIUM LANATUM.
„ *spino'sa* (spiny). Purple. S. Europe.
„ *tubero'sa* (tuberous-*rooted*). See EREMOSTACHYS MOLUCCELLOIDES.

MO'LY. *A'llium Mo'ly.*

MOMO'RDICA. (From *mordeo*, *momordi*, to bite; in allusion to the bitten appearance of the seeds. Nat. ord. Cucurbitaceæ.)
Stove climbers, with ornamental fruits and seeds, treated as annuals. Seeds. Loam, leaf-mould, some well-decayed cow manure, and sand.
M. Balsami'na (Balsamina). Yellow. July, August. Tropics of Old World. 1568. "Balsam Apple."
„ *Chara'ntia* (Charantia). Yellow. July. Tropics of Old World. 1710.
„ *chine'nsis* (Chinese). Yellow. Fruits larger and longer than *M. Charantia*. China. 1893.
„ *cochinchine'nsis* (Cochin-China). Yellow. July. Trop. Asia.
„ *dioi'ca* (diœcious). Yellow. July. India and Malaya.
„ *Elate'rium* (Elaterium). See ECBALIUM ELATERIUM.
„ *fœ'tida* (fetid). Yellow. July. Trop. Africa.
„ *involucra'ta* (involucred). Creamy-yellow. July. S. Africa. 1862.
„ *martinice'nsis* (Martinique). Yellow. July. Martinique. 1888.
„ *mi'xta* (mixed). See M. COCHINCHINENSIS.
„ *murica'ta* (warted). See M. CHARANTIA.

MONA'NTHES. (Derived from *monos*, one, and *anthos*, a flower; the flowers of the first-named species being solitary. Nat. ord. Crassulaceæ.)
Greenhouse perennial succulents. Seeds, divisions or cuttings. Loam, leaf-mould, finely-broken bricks, and sand.
M. atla'ntica (Atlantic). ½. Yellow. Morocco. 1871.
„ *mura'lis* (wall). See M. ATLANTICA.

MONA'RDA. Horsemint. (Named after *N. Monardes*, a physician of Seville. Nat. ord. *Labiates* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Salvia.)
Hardy herbaceous perennials, all natives of North America. Division of the plant in spring; common soil.
M. amplexicau'lis (stem-embraced). See M. BRADBURIANA.
„ *arista'ta* (awned). See M. CLINOPODIOIDES.
„ *bradburia'na* (Bradbury's). Pale red or white. June.
M. citriodo'ra (lemon-scented). Purple. N.W. Amer.
„ *clinopo'dia* (basil-*leaved*). 2. Purple, white. July 1771.
„ *clinopodioi'des* (Clinopodium-like). 2. Yellow. August. Texas.
„ *di'dyma* (twin). 3. Scarlet. July. 1752. "Oswego Tea."
„ „ *a'lba* (white). White.
„ „ *kalmia'na* (Kalmian).
„ *fistulo'sa* (hollow-*stalked*). 3. Purple. July. 1656.
„ „ *flo're-macula'to* (spotted-flowered). 3. Rose-spotted. June. 1832.
„ „ *me'dia* (intermediate). Dark purple.
„ „ *mo'llis* (soft). 2. Lilac. July. 1656.
„ „ *ru'bra* (red). Rose-red.
„ *gra'cilis* (slender). 1½. Purple. July. 1820.
„ *menthæfo'lia* (mint-leaved). See M. FISTULOSA MOLLIS.
„ *puncta'ta* (dotted). 2. Yellow, brown. August. 1714.
„ *russellia'na* (Russell's). 2. White. September. 1823.

MONARDE'LLA. (A diminutive of *Monarda*. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Origanum.)
Hardy herbaceous perennials. Division of the plants in spring; common, sandy soil, with a little peat or leaf-mould.
M. ca'ndicans (white). 1. White. California. 1853.
„ *macra'ntha* (large-flowered). ½. Bright scarlet. September. California. 1877.
„ *undula'ta* (wavy). ½. Violet. June. California. 1848.

MONE'SES. (From *monos*, solitary, and *esis*, desire; the flowers are solitary on the stems. Nat. ord. Ericaceæ.)
Hardy evergreen herb for a moist, shady position on the rockery. Plants from their wild habitat. Loam, plenty of leaf-mould and sand.
M. grandiflo'ra (large-flowered). ½. White, with pink veins. July. Northern and Arctic regions (Scotland).
„ *uniflo'ra* (one-flowered). See M. GRANDIFLORA.

MONE'TIA. (Named after *Monet de la Marck*, a French botanist. Nat. ord. Salvadoraceæ. Linn. 4-*Tetrandria*, 1-*Monogynia*. Now referred to Azima.)
M. barlerioi'des (Barleria-like). See AZIMA TETRACANTHA.

MONEYWORT. *Lysima'chia Nummula'ria.* Cornish Moneywort. *Sibthо'rpia europæ'a.*

MONI'ZIA EDU'LIS. See THAPSIA EDULIS.

MONKEY-BREAD. *Adanso'nia.*

MONKEY-FLOWER. *Mi'mulus.*

MONK'S HOOD. *Aconi'tum.*

MONNI'NA. (Named after *Monnino*, Count de Flora Blanca, a Spanish patron of botany. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 17-*Diadelphia*, 3-*Octandria*. Allied to Muraltia.)
The bark of the root is used in Peru for soap, and the Peruvian ladies ascribe the beauty of their hair to the use of it. Greenhouse evergreen shrubs. Seeds in March, in a gentle hotbed; cuttings of young side-shoots in April, under a bell-glass, and kept close, but damp prevented; sandy peat and fibrous loam. Winter temp., 40° to 45°.
M. crotalarioi'des (Crotalaria-like). 2. Purple. August. 1840.
„ *obtusifo'lia* (blunt-leaved). 12. Violet and white. June. Colombia. 1830.
„ *xalape'nsis* (Xalapan). Bright blue, with yellow keel. Mexico. 1879.

MONO'CERA GRANDIFLO'RA. See ELÆOCARPUS GRANDIFLORUS.

MONOCHÆ'TUM. (From *monos*, one, and *chaite*, long flowing hair. Nat. ord. Melastomaceæ.)
Stove evergreen shrubs. Cuttings in sand, in bottom-heat, and kept close. Fibrous loam, peat, and sand.
M. alpe'stre (alpine). Rich red. Mexico.
„ *Bonpla'ndii* (Bonpland's). 2. Pink. Trop. Amer. 1858.
„ „ *multiflo'rum* (many-flowered). Rich mauve. Spring.
„ *dicrananthe'rum* (two-head-anthered). See M. HARTWEGIANUM.

M. ensi'ferum (sword-bearing). See M. ALPESTRE.
,, *hartwegia'num* (Hartwegian). 2. Rose. Winter. Colombia. 1865.
,, *humboldtia'num* (Humboldtian). 2–3. Rosy-purple. Autumn. Venezuela. 1863.
,, *lemoinia'num* (Lemoinean). 2. Rose. Winter and spring.
,, *ni'tidum* (shining). 1. Pink. Colombia.
,, *quadrangula're* (four-angled). Rose. Colombia. 1872.
,, *seri'ceum* (silky). See M. BONPLANDII.
,, *tene'llum* (slender). 1–2. Purple. October. Guatemala.

MONOCHI'LUS. (From *monos*, one, and *cheilos*, a lip; the formation of the flower. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Verbena.)

Stove tuber. Division of the tubers when in a dormant state; sandy loam, a little fibrous peat, and leaf-mould. Temp. when growing, 55° to 75°.

M. gloxinifo'lius (Gloxinia-leaved). White. Brazil. 1838.

MONOCHO'RIA. (From *monos*, one, and *chorizo*, to set apart; one filament is often broader than the rest. Nat. ord. Pontederiaceæ.)

Stove perennial herbs to be grown in shallow water or mud. Divisions. Fibrous loam, leaf-mould, and sand.

M. cya'nea (blue). 2. Blue. Australia. 1883.
,, *hastæfo'lia* (halbert-leaved). 2. Blue. July. Trop. Asia. 1806.
,, *hasta'ta* (halbert-shaped). See M. HASTÆFOLIA.
,, *vagina'lis* (sheathing). 2. Blue. June to September. Trop. Asia and Africa.
,, ,, *Korsako'wii* (Korsakow's). 1–2. Violet. 1862.

MONOCOTYLEDONS. This is one of the two great classes into which flowering plants, having their seeds enclosed in a seed-vessel, are divided. They are characterised by having their woody bundles scattered through the ground tissue, and the stem does not lengthen till the leaves are as large and numerous as they will ultimately be, consequently the stem rarely thickens after this base or foundation has been formed in the woody species. New closed fibro-vascular bundles are formed, while the base is thickening, so that there is no continuous cambium and no bark as in a Dicotyledon. The leaves are parallel veined in most cases, and the flowers have their parts in threes or multiples of three, and the embryo has only one cotyledon; hence the name of the class, Monocotyledons. Lilies, Irises, Amaryllis, Orchids, sedges, and grasses are familiar examples.

MONODO'RA. (From *monos*, one, and *dora*, a hide or skin; in allusion to the one-celled fruit. Nat. ord. Anonaceæ.)

Stove trees rarely seen outside of botanic gardens. Cuttings of ripened wood in sand, in a close case with bottom-heat. Fibrous loam, peat, and sand.

M. grandiflo'ra (large-flowered). Trop. Africa. B.M., t. 7260.
,, *Myristica* (Myristica). 8–20. Yellow, spotted with purple, white. Trop. Africa. 1843. "Calabash Nutmeg."
,, *tenuiflo'lia* (slender leaved). Trop. Africa.

MONOGRA'MME. (From *monos*, one, and *gramme*, writing; referring to the spore, or seed-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns, from the West Indies, with brownish-yellow spores. See FERNS.

M. furca'ta (forked-*leaved*). See M. GRAMINOIDES.
,, *grami'nea* (grass-*leaved*). June. S. Africa; Mauritius; Bourbon. 1823.
,, *graminoi'des* (grass-like). ½. June. Jamaica; Brazil. 1825.
,, *trichoi'dea* (hair-like). June. Philippines.

MONO'LENA. (From *monos*, one, and *olene*, the arm; in allusion to one branch of the anther being developed into a barren appendage. Nat. ord. Melastomaceæ.)

Evergreen, stove perennial herb. Seeds, or cuttings of the fleshy rootstock, in sand in a close case. Fibrous loam, peat, and plenty of sand.

M. primulæflo'ra (Primula-flowered). ½. Rich pink, white eye. Autumn. Colombia. 1869.

MONO'LOPHUS SECU'NDA. See KÆMPFERIA SECUNDA.

MONOLO'PIA. (From *monolopus*, one covering; referring to the flower-covering. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Lasthenia.)

A pretty, hardy annual, once called *Hele'nium Dougla'sii*. Seeds in mellow soil, in April.

M. ma'jor (greater). 3. Yellow. July. California. 1834.

MONOME'RIA. (From *monos*, one, and *meris*, a part. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Bulbophyllum.)

Stove orchids. Division in spring or autumn; fibrous peat, broken pots, and sphagnum. Winter temp., 55° to 60°; summer, 60° to 90°.

M. barba'ta (bearded). Spotted. India. 1841.
,, *ni'tida* (shining). Mexico. 1841.

MONO'PANAX GHIESBRE'GHTII. See OREOPANAX GHIESBREGHTII.

MONO'PSIS. (From *monos*, one, and *opsis*, a face; the flowers being more regular than is usual in the Nat. ord. *Bellflowers* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Lobelia.)

M. conspi'cua (conspicuous). See LOBELIA DEBILIS.

MONOPY'LE. (From *monos*, one, and *pule*, a gate; the capsule opens by one dorsal fissure below the sepals. Nat. ord. Gesneraceæ.)

Stove perennial herb. Seeds. Loam, peat, or leaf-mould, and sand.

M. racemo'sa (racemed). ½. White, faintly spotted. July. Colombia. 1875.

MONO'TOCA. (From *monos*, one, and *tokos*, a birth; the fruit, which is eatable, having only one seed. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Leucopogon.)

Greenhouse white-flowered evergreens, from New South Wales. Cuttings of the points of young shoots in sand, over sandy soil, and covered with a bell-glass, in May; sandy peat, and a little fibrous loam. Winter temp., 40° to 48°.

M. a'lba (white). 6. June. 1824.
,, *elli'ptica* (oval-*leaved*). 8. June. 1802.
,, *linea'ta* (narrow-*leaved*). 6. June. 1804.
,, *scopa'ria* (broom). 5. June. 1825.

MONSO'NIA. (Named after *Lady A. Monson*. Nat. ord *Cranesbills* [Geraniaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Allied to Geranium.)

Greenhouse herbaceous perennials, except *ova'ta*, which is biennial. All from South Africa. Seeds in a slight hotbed, in spring, and transplanted; cuttings in spring and autumn, under a hand-light; division and cuttings of the roots in summer and autumn; sandy loam, and a little peat and leaf-mould; a cold pit or greenhouse in winter.

M. biflo'ra (two-flowered). 1. Purplish-blue. 1869.
,, *Heritie'ri* (L'Heritier's). See SARCOCAULON L'HERITIERI.
,, *loba'ta* (lobed-*leaved*). 1. Purple. May. 1774.
,, *ova'ta* (egg-*leaved*). 1. White. August. 1774.
,, ,, *biflo'ra* (two-flowered).
,, *Paterso'nii* (Paterson's) See SARCOCAULON PATERSONII.
,, *pilo'sa* (*long*-haired). 1. White. July. 1778.
,, ,, *Co'llæ* (Colla's). 1. Pale red. July. 1820.
,, *specio'sa* (showy). 1. Red. May. 1774.
,, ,, *pa'llida* (pale). 1. Pale red. May.

MO'NSTERA. (From *monos*, alone, and *ster* or *stear*, fat; in allusion to the fruiting spadix being wholly pulpy. Nat. ord. Araceæ.)

Evergreen climbing stove plants. Cuttings of short side-shoots, in a close case, with bottom-heat. Fibrous loam, peat, lumpy charcoal, and sand.

M. acumina'ta (long-pointed). Yellow. Trop. Amer. 1884.
,, *Adanso'nii* (Adanson's). See M. PERTUSA.
,, *borsigia'na* (Borsigian). Yellow. Mexico.
,, *cannæfo'lia* (Canna-leaved). See SPATHIPHYLLUM CANNÆFOLIUM.

M. decursi'va (running-down). See RHAPHIDOPHORA DECURSIVA.
,, *delicio'sa* (delicious). Greenish-yellow. Mexico. Fruit edible.
,, *dimidia'ta* (halved). See M. ACUMINATA.
,, *holtonia'na* (Holtonian). See M. PERTUSA.
,, *lingula'ta* (tongue-shaped). W. Ind. 1793.
,, *obli'qua* (oblique). Brazil and Guiana.
,, *pertu'sa* (perforated). Yellow, white. May. Trop. Amer. 1752.
,, *pinna'ta* (pinnate). See EPIPREMNUM MIRABILE.
,, *te'nuis* (slender). Central Amer. 1855.

MONTAGNÆ'A. See MONTANOA.

MONTANO'A. (Commemorative of *Montano*, a Mexican politician. Nat. ord. Compositæ.)
Greenhouse evergreen shrubs. Seeds; cuttings in sand, under a bell-glass. Loam, leaf-mould, and sand. *M. bipinnati'fida* is a bold and handsome subject for subtropical gardening in summer.
M. arbore'scens (tree-like). 3. Yellow. July. Mexico. 1823.
,, *bipinnati'fida* (twice-pinnately-cut). 5–8. White, with yellow disc. November. Mexico. 1863.
,, *floribu'nda* (free-flowering). 3. White, yellow. October. Mexico. 1828.
,, *grandiflo'ra* (large-flowered). 5–10. Rays 8–10, white. Mexico. 1910.
,, *heracleifo'lia* (Heracleum-leaved). See M. BIPINNATIFIDA.
,, *molli'ssima* (softest). 3. White, yellow. October, November. Mexico. 1857.
,, *tomento'sa* (felted). 3. White, yellow. September. Mexico. 1828.
,, ,, *cordifo'lia* (heart-leaved). 7. White rays five. Mexico. 1908.
,, *We'rcklei* (Werckle's). 15–18. White, with yellow disc. December, January. Costa Rica. 1905.

MONTBRE'TIA POTTSII. See TRITONIA POTTSII.

MONTEZU'MA. (Named after a king of Mexico. Nat. ord. *Mallow-worts* [Malvaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Allied to Cheirostemon.)
Stove evergreen tree. Cuttings of shoots, getting firm, in sand, under a glass, and in bottom-heat; sandy loam and lumpy peat. Winter temp., 48° to 55°; summer, 60° to 80°.
M. speciosi'ssima (showiest). 30. Red. Mexico. 1827.

MONTRICHA'RDIA. (Commemorative of *Gabriel Montrichard*, of Trinidad. Nat. ord. Araceæ.)
Stove aquatic shrubs, with stout, ringed stems, containing a milky juice. Leaves arrow-shaped. Seeds, offsets, and divisions. Good loam and leaf-mould under water.
M. aculea'ta (prickly). 8. White. June. Brazil. 1759.
,, *arbore'scens* (tree-like). See M. ACULEATA.
,, *lini'fera* (thread-bearing). 5–10. Green, creamy-white. Brazil. 1860.

MOON CREEPER. *Ipomœ'a Bo'na-no'x.*

MOON DAISY. *Chrysa'nthemum Leuca'nthemum.*

MOON-SEED. *Menispe'rmum.*

MOON-TREFOIL. *Medica'go arbo'rea.*

MOONWORT. *Botry'chium.*

MOO'REA. (Commemorative of *Sir Frederick W. Moore*, M.A., V.M.H., Keeper, Royal Botanic Garden, Glasnevin. Nat. ord. Orchidaceæ.)
Stove Orchid. Offsets and divisions. Fibrous peat, sphagnum, charcoal, and broken pots, well elevated in pots or baskets.
M. irrora'ta (besprinkled). 1½. Reddish-brown, spotted. S. Amer. 1890.

MORÆ'A. (Named after *R. Moore*, an English botanist. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Iris.)
These pretty bulbs, all from South Africa, except where otherwise mentioned, require the same treatment as I'XIA, which see.

M. angu'sta (narrow-*leaved*). ¾. Lilac. May. 1790.
,, *barbi'gera* (bearded). See M. CILIATA BARBIGERA.
,, *bi'color* (two-coloured). 2. Yellow, dark. June.
,, *bitumino'sa* (bituminous). See M. VISCARIA BITUMINOSA.
,, *bulbi'fera* (bulb-bearing). See M. RAMOSA.
,, *candollea'na* (Candollean). S. Africa.
,, *catenula'ta* (chain-*dotted*). See M. IRIDIOIDES CATENULATA.
,, *cilia'ta* (hair-*leaved*). ½. Yellow. September. 1587.
,, ,, *barbi'gera* (beard-bearing). ½. Bright red. May. 1587.
,, ,, *minu'ta* (minute). ½. Yellow. June. 1825.
,, ,, *tri'color* (three-coloured). See M. CILIATA BARBIGERA.
,, *colli'na* (hill). See HOMERIA COLLINA.
,, *cri'spa* (curled). ½. Blue. May. 1803.
,, *edu'lis* (eatable). 4. Fulvous. May. 1792.
,, ,, *glauco'psis* (glaucous-aspect). See M. GLAUCOPIS.
,, ,, *longifo'lia* (long-leaved). 3. Yellow. May. 1808.
,, ,, *odo'ra* (scented). 2. White. May. 1799.
,, *e'legans* (elegant). See HOMERIA ELEGANS.
,, *exalta'ta* (tall). See HOMERIA COLLINA.
,, *fla'ccida* (limp). See HOMERIA COLLLINA.
,, *flexuo'sa* (zigzag). See HEXAGLOTTIS LONGIFOLIA.
,, *glauco'psis* (glaucous-aspect). 1. Red, brown. June. 1776.
,, *iridioi'des* (Iris-like). ½. White, brown. July. 1758.
,, ,, *catenula'ta* (chain-dotted). Two rows of yellow dots on the claw. 1826.
,, ,, *Johnso'nii* (Johnson's). 2½. White, 4 inches across. 1908.
,, *iriope'tala* (Iris-petaled). 1. Lilac, rarely yellow. May. 1825.
,, *ju'ncea* (rush-like). ½–¾. Lilac. 1897.
,, *linea'ta* (narrow-*leaved*). See HOMERIA LINEATA.
,, *longiflo'ra* (long-flowered). ½. Yellow. May. 1811.
,, *longifo'lia* (long-leaved). See M. EDULIS LONGIFOLIA.
,, *lu'rida* (lurid). ½. Bright red-brown. June. 1817.
,, *minia'ta* (vermilion). See HOMERIA COLLINA MINIATA.
,, *minu'ta* (small). See M. CILIATA MINUTA.
,, *odo'ra* (sweet-scented). See M. EDULIS ODORA.
,, *papiliona'cea* (butterfly). ½. Variegated. May. 1795.
,, *Pavo'nia* (peacock). 1–2. Bright red, with blue-black blotch. May. 1790.
,, ,, *lu'tea* (yellow). 1–2. Yellow, without blotch. June. 1803.
,, ,, *villo'sa* (long-haired). 1–2. Bright purple, with blue-black blotch. July. 1789.
,, *pluma'ria* (feathered). See M. IRIOPETALA.
,, *polysta'chya* (many-spiked). 1. Yellow. June. 1825.
,, *porrifo'lia* (leek-leaved). See HOMERIA LINEATA.
,, *ramo'sa* (branched). 3. Yellow. May. 1789.
,, *robinsonia'na* (Robinsonian). 4–6. White. June. Lord Howe's Island. 1877. "Wedding Flower."
,, *seta'cea* (bristly). ½. Yellow. June. 1825.
,, *Sisyri'nchium* (Sisyrinchium). See IRIS SISYRINCHIUM.
,, *spatha'cea* (large-spathed). 1. Bright yellow. March. 1875.
,, *spica'ta* (spiked). See HOMERIA ELEGANS.
,, *sulphu'rea* (sulphur). ½. Sulphur-yellow, with orange and brown markings. 1899.
,, *tenoria'na* (Tenore's). See IRIS SISYRINCHIUM.
,, *te'nuis* (slender). 1. Yellow-brown. May. 1807.
,, *Thomso'ni* (Thomson's). 1. Pale lilac, yellow at base, spotted with brown. E. Trop. Africa. 1904.
,, *tricu'spis* (three-pointed). 1–2. Whitish or lilac. May. 1776.
,, ,, *Bellende'ni* (Bellenden's). 1. Yellow. June. 1803.
,, *tripe'tala* (three-petaled). 1–2. Lilac, rarely blue or reddish. 1802.
,, *tri'stis* (dull-coloured). 1. Blue. June. 1768.
,, *unguicula'ris* (clawed). 1–1½. White. May. 1802.
,, *villo'sa* (long-haired). See M. PAVONIA VILLOSA.
,, *virga'ta* (twiggy). See HEXAGLOTTIS VIRGATA.
,, *visca'ria* (clammy). 1. Lilac. May. 1800.
,, ,, *bitumino'sa* (bituminous). 1–1½. Bright yellow. May. 1787.

MORE'NIA FRA'GRANS. See CHAMÆDOREA FRAGRANS.

MORETON-BAY CHESTNUT. *Castanospe'rmum.*

MORICA'NDIA. (Named after S. *Moricand*, an Italian botanist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Simple-looking hardy plants, but useful for cut flowers in winter. Seed sown in the open border, in April.

M. arve'nsis (field. *Cabbage-flowered*). 1½. Violet. July. Europe. 1739. Biennial.
„ *hesperidiflo'ra* (Hesperis-flowered). See DIPLOTAXIS SIEBERI.
„ *Rambu'rii* (Rambur's). 1½–2. Purple. Spain. Biennial.
„ *sonchifo'lia* (Sonchus-leaved). 1-2. Light violet-blue. March. China. 1876. Annual.

MORI'NA. (Named after *L. Morin*, a French botanist. Nat. ord. *Teaselworts* [Dipsaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Strong, hardy or half-hardy, herbaceous plants, suited for borders in summer. Seed in a slight hotbed, in April, and hardened off to suit a cool greenhouse or sheltered borders; also by divisions, if the plant is saved over the winter.

M. betonicoi'des (Betonica-like). 1–1½. Rosy-purple, with crimson markings. Himalaya.
„ *brevifo'lia* (short-leaved). See M. COULTERIANA.
„ *coulteria'na* (Coulterian). ½–1½. Pale yellow. Himalaya. 1883.
„ *e'legans* (elegant). See M. LONGIFOLIA.
„ *koka'nica* (Kokanian). 1. July, August. Turkestan. 1911.
„ *longifo'lia* (long-leaved). 3. Purple. July. Himalaya. 1839. "Whorl-flower."
„ *pe'rsica* (Persian). 3. Red, white. July. Persia; Himalaya. 1740.
„ *wallichia'na* (Wallichian). See M. PERSICA.

MORI'NDA. (From a corruption of *Morus indicus*, Indian Mulberry; in reference to its fruit. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Guettarda.)

Stove evergreen shrubs, with white flowers. Cuttings of shoots nearly stopped growing, in sand, under a bell-glass, in summer, and in a nice bottom-heat; sandy loam, peat, and leaf-mould. Winter temp., 48° to 58°; summer, 70° to 80°.

M. angustifo'lia (narrow-leaved). 6. May. E. Ind. 1816.
„ *bractea'ta* (bracted). 6. May. E. Ind. 1816.
„ *citrifo'lia* (citron-leaved). 8. Trop. Asia. 1793.
„ *jasminoi'des* (jasmine-like). Pale buff. April. Point Jackson. 1823.
„ *Royo'c* (Royoc). 10. August. W. Ind. 1793.
„ *tincto'ria* (dyer's). June. Otaheite. 1826.
„ *umbella'ta* (umbelled). June. Trop. Asia and Australia. 1822.

MORI'NGA. Horse-radish-tree. (From *moringo*, the Indian name. Nat. ord. *Moringads* [Moringaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

The roots are used in India for horse-radish. Stove evergreen, yellow-flowered trees, from the East Indies. Cuttings of half-ripened shoots in sand, under a bell-glass, and in heat, in April or May; sandy loam, and a little peat and leaf-mould. Winter temp., 50° to 55°; summer, 60° to 85°.

M. a'ptera (wingless). 15. May. 1838.
„ *polygo'na* (many-angle-*fruited*). See M. PTERYGOSPERMA.
„ *pterygospe'rma* (winged-seeded). 20. 1759.

MORI'SIA. (Named after *Professor Moris*. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Seed sown where it is to remain; cuttings under a hand-light, in summer, and division in spring; a pretty little thing for a knoll, or for rock-work.

M. hypogæ'a (*fruit*-burying). ½. Yellow. May. Sardinia. 1833.

MORISO'NIA. (Named after *Professor Morison*, of Oxford. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Capparis.)

Stove evergreen tree. Cuttings of the ripened shoots early in spring, under a glass, in sandy soil and bottom-heat. Winter temp., 50° to 55°; summer, 60° to 85°.

M. america'na (American). 15. White. S. Amer. 1824.

MORMO'DES. (From *mormo*, a goblin; referring to the strange appearance of the flowers. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Catasetum.)

Stove orchids. Division, and pieces cut off; rough peat, moss, and crocks, in shallow baskets, or raised well above a pot. Winter temp., 55° to 60°; summer, 60° to 90°.

M. aroma'tica (aromatic), ¾. Pink. July. Mexico. 1838.
„ „ *o'leo-auranti'aca* (oily-orange). Orange, black-purple. Colombia. 1880.
„ *atropurpu'rea* (dark purple). ¾. Purple - red. October. E. Ind. 1834.
„ *atropurpu'rea* (dark purple) of Hooker. See M. HOOKERI.
„ *barba'ta* (bearded). See M. HOOKERI.
„ *Buccina'tor* (trumpeter). Yellowish-green. April. Mexico. 1835.
„ „ *auranti'aca* (orange). Orange; lip yellow. Peru. 1892.
„ „ *fla'vida* (yellowish). Yellow. Central Amer. 1852.
„ „ *ma'jor* (larger). Ochre, dotted with cinnamon. 1880.
„ „ *Ro'lfei* (Rolfe's). Bronzy-green; lip rosy-crimson. 1900.
„ „ *stena'ntha* (narrow-flowered). Ochre, striped with sepia-brown. Colombia. 1881.
„ „ *theiochlo'ra* (sulphur-green). Light green; lip sulphur. Colombia. 1881.
„ *Carlo'ni* (Carton's). 1. Straw. July. Santa Martha.
„ „ *auranti'aca* (orange). Orange; lip sulphur. Colombia. 1881.
„ *citri'na* (yellow). Yellow. Mexico. 1837.
„ *Cogniau'xii* (Cogniaux's). Flowers larger than those of *M. rolfeana*. Colombia. 1894.
„ *Colo'ssus* (Colossus). Pink, yellow. Central Amer. 1870. Flowers 5–6 in. across.
„ *convolu'ta* (rolled-together). Yellow. January. Brazil. 1852.
„ *daya'na* (Dayan). Ochre, with red lines; lip white. Mexico. 1885.
„ *fla'vida* (yellowish). See M. BUCCINATOR FLAVIDA.
„ *fractifle'xa* (broken-bent). Pale green, white, purple. Costa Rica. 1872.
„ *Gree'nii* (Green's). See M. UNCIA.
„ *Hoo'keri* (Hooker's). Dark purple. January. Panama. 1851.
„ *i'gnea* (fiery). Red, purple. January. Colombia. 1852.
„ „ *macula'ta* (spotted). Yellow-brown, spotted purple-brown; lip coppery-red.
„ *la'dia* (ladia). 1. Dull red; lip yellow-brown. Peru. 1897.
„ *lawrencea'na* (Lawrencean). Yellow; lip speckled with brown. Colombia.
„ *lentigino'sa* (freckled). See M. BUCCINATOR.
„ *linea'ta* (streaked). 1. Yellow, crimson. March. Guatemala. 1836.
„ *luxa'ta* (dislocated). 1. Straw. August. Mexico. 1842.
„ „ *ebu'rnea* (ivory). White. 1882.
„ „ *puncta'ta* (spotted). Whitish, with reddish spots. 1885.
„ „ *purpura'ta* (purple). Mauve-purple, with purple lines and spots. 1886.
„ *oberlanderia'na* (Oberlanderian). Lemon-yellow, spotted rose; lip apricot. 1900.
„ *Oca'næ* (Ocana). Dull yellow, densely spotted with red-brown. Colombia. 1879.
„ „ *brachy'loba* (short-lobed). Lip with short lateral lobes.
„ *æna'ntha* (wine-flowered). Claret-purple. 1898.
„ *pardi'na* (panther). Yellow, red. July. Oaxaca. 1837.
„ „ *armeni'aca* (apricot). Deep apricot, washed with deep red. 1879.
„ „ *aspe'rsa* (speckled). Pale sulphur, speckled with brown. 1881.
„ „ *me'lanops* (black-eyed). Dark brownish-purple. 1886.
„ „ *uni'color* (one-coloured). Yellow. September. Mexico. 1843.
„ *platychi'la* (broad-lipped). Pale buff; lip striped purple. 1887.

M. puncta'ta (spotted). 1. Yellow-brown, spotted with chestnut. 1891.
„ *revolu'tum* (revolute), 1. Deep buff-yellow; lip reddish-brown. Peru. 1909.
„ *rolfea'na* (Rolfean). Green, tinted brown; lip brownish-crimson. Peru. 1891.
„ *ro'seo-a'lba* (rose and white). White, rose.
„ *russellia'na* (Duke of Bedford's). Green. August. Guatemala. 1838.
„ *Skinne'ri* (Skinner's). Tawny, crimson, yellow, red. Guatemala. 1869.
„ *specio'sa* (showy). Yellow, crimson. Colombia. 1852.
„ *Ti'bicen* (flute-player). Yellow, purple, white. Colombia. 1870.
„ *U'ncia* (inch). Yellow, violet-red, purple. Mexico. 1869.
„ *varia'bilis* (variable). Purplish and yellow. S. Amer.
„ „ *atropurpu'rea* (dark-purple). Purple. S. Amer. 1868.
„ „ *auranti'aca* (orange). Orange. S. Amer. 1868.
„ *verni'xia* (varnished). Shining blackish-purple. British Guiana. 1887.
„ *Willia'msii* (Williams's). See M. LUXATA.
„ *wolteria'na* (Wolterian). ½. Orange-brown. Peru. 1910.

MORMO'LYCE. (From *mormo*, a goblin, and *luke*, a wolf's skin, or helmet made of it; a fanciful resemblance in the flower. Nat. ord. Orchidaceæ. Allied to Maxillaria.)

Stove epiphytal Orchid. Divisions. Fibre of peat, sphagnum, crocks.

M. lineola'ta (finely-lined). Yellow, green. Mexico. 1839.

MO'RNA. (Named after *Morna*, one of Ossian's heroines. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Waitzia.)

M. ni'tida (beautiful). See WAITZIA CORYMBOSA.
„ *ni'vea* (snowy). See WAITZIA NIVEA.

MORNING GLORY. *Ipomœ'a purpu'rea.*

MORONO'BEA. (From *moronobo*, the native name. Nat. ord. *Guttifers* [Guttiferæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Stove evergreen tree. Cuttings of the ripened shoots, with all the leaves except those at the lower joint, in sand, in heat, and under a bell-glass; sandy loam, and lumpy, dried leaf-mould. Winter temp., 50° to 55°; summer, 60° to 85°.

M. cocci'nea (scarlet-*flowered*). 40. Guiana. 1825.

MORPHI'XIA. See IXIA.

MORRE'NIA. (Commemorative of *M. Morren*. Nat. ord. Asclepiadaceæ.)

Tall stove twiners, the flowers of which are scented like Vanilla. Cuttings of short side-shoots in sand in gentle heat, and covered with a bell-glass. Loam, peat, and sand.

M. brachyste'phana (short-crowned). Small, white. Argentina. 1903.
„ *odora'ta* (scented). Flowers twice as large, white. Argentina. 1838.

MO'RUS. Mulberry. (From *mor*, the Celtic for black; referring to the colour of the fruit. Nat. ord. *Nettleworts* [Urticaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria*.)

Seeds, layers, cuttings, and truncheons; in fact, you can scarcely fail to propagate the Mulberry, as pieces of the roots, branches, and even the stem, if stuck into the ground in a deciduous state, will grow more easily than a gooseberry-cutting; deep, sandy, or calcareous loam. Of the hardy kinds, *ni'gra* is the hardiest, grown chiefly for its fruit. *A'lba* is more tender, grown chiefly for its leaves for feeding the silkworm.

STOVE EVERGREEN TREES.

M. i'ndica (Indian). 20. Trop. Asia. 1820.
„ *mauritia'na* (Mauritian). See AMPALIS MADAGASCARIENSIS.

HARDY DECIDUOUS TREES, &c.

M. a'lba (white). 30. June. China. 1596. "White Mulberry."
M. a'lba au'rea (golden). Leaves and branches golden-yellow. 1896.
„ „ *Colomba'ssa* (Colombo).
„ „ *constantinopolita'na* (Constantinople). 15. June. Constantinople. 1818.
„ „ *Gaspari'ni* (Gasparin's). June.
„ „ *heterophy'lla* (variable-leaved). June. Leaves cut in a variety of ways.
„ „ *ita'lica* (Italian). 20. June. Italy. 1817.
„ „ *lacinia'ta* (cut-leaved). 30. June. Leaves deeply cut.
„ „ *latifo'lia* (broad-leaved). 20. June. China.
„ „ *macrophy'lla* (large-leaved). 30. June. China.
„ „ *membrana'cea* (membranous).
„ „ *morettia'na* (Moretti's). See M. ALBA MACROPHYLLA.
„ „ *multicau'lis* (many-stemmed). See M. ALBA LATIFOLIA.
„ „ *nervo'sa* (nerved). See M. ALBA VENOSA.
„ „ *pe'ndula* (pendulous). June. Weeping variety.
„ „ *pu'mila* (dwarf). 10. June. China.
„ „ *roma'na* (Roman).
„ „ *ro'sea* (rose-like). 20. June. China.
„ „ *sine'nsis* (Chinese). See M. ALBA LATIFOLIA.
„ „ *stylo'sa* (long-styled). June. Japan.
„ „ *To'kwa* (Tokwa). June. Japan.
„ „ *urticæfo'lia* (nettle-leaved). June.
„ „ *veno'sa* (veiny). June. China.
„ *Ca'lcar-ga'lli* (cock-spur). See CUDRANIA JAVANENSIS.
„ *Cedro'na* (Cedrona). June. Garden origin.
„ *constantinopolita'na* (Constantinople). See M. ALBA CONSTANTINOPOLITANA.
„ *globo'sa* (globose). Of hemispherical habit. 1896. (*M. alba* × *rubra* ?)
„ *ni'gra* (*common*-black). 20. June. Italy. 1548.
„ „ *globo'sa* (globose). See M. GLOBOSA.
„ „ *lacinia'ta* (cut-*leaved*). See M. ALBA LACINIATA.
„ *ru'bra* (red). 10. June. N. Amer. 1629.
„ *sca'bra* (rough). See M. RUBRA.
„ *tata'rica* (Tartarian). See M. ALBA LATIFOLIA.

MOSCHA'RIA. (From *moschos*, musk; a musk-smelling plant. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy annual. Seeds in a slight hotbed, in April; seedlings harden off, and transplant in open borders, in May.

M. pinnati'fida (cut-*leaved*). ½. July. Chili. 1823.

MOSCHO'SMA. (From *moschos*, musk, and *osme*, smell. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Ocimum.)

Tender annual and greenhouse shrub. Seeds in a hotbed, in beginning of April; seedlings potted and grown in greenhouse in summer, or placed in the open border in June, in a sheltered situation. Cuttings of the shrub in sand in a close case with gentle heat, or covered by a bell-glass in spring. Light, rich, sandy soil for the annual; loam, a little leaf-soil and sand for the shrub.

M. ocymoi'des (Ocimum-like). 1½. White. August. 1823.
„ *ripa'rium* (river-bank). 1–2. Cream. Winter. Trop. S. Africa. 1902. Shrub.

MOSS is useful to the gardener for packing round the roots of plants; and even some bulbous roots and orchids are cultivated in it. The kind known as Sphagnum is that used for orchids. When it infests the trunks of trees, or our lawns, it is one of the gardener's pests.

MOSS FIBRE is a fibrous form of peat now largely used for growing Dutch and other bulbs, as a substitute for soil or compost, in ornamental pots, vases, and bowls. It is specially prepared for the purpose by the addition of chemical manures or fertilisers, and is also mixed with ground oyster shells and charcoal to render it more porous. The pots and bowls have no drainage holes and are impervious to moisture, to avoid wetting the furniture, as this method of culture is carried on chiefly in the rooms and windows of dwelling-houses. The moss fibre, when obtained, is dry, and has to be spread out on a stone floor or other hard surface and watered till it becomes uniformly soft and moist, without drip when squeezed in the hand. The bulbs are buried in this to the neck, but not pressed very firmly in the pots, otherwise the roots would have difficulty in penetrating it. When the moss is getting dry more water is applied

in the usual way, and after an hour or two all pots are turned or tipped to one side to let the free water run out, if too much has been applied. Water must not be allowed to stand in the pots.

MOSSES are leafy plants, with simple or branching stems, mostly of very dwarf stature, but, as they possess no true fibro-vascular tissue, they take rank below the Ferns in the vegetable kingdom. Like the Ferns they are flowerless plants, reproducing themselves by spores, and vegetatively in some cases by means of buds. Most of them are of no economic importance, but the larger ones which form broad green tufts of interlacing stems become useful for packing, for placing over the drainage of pots, and sometimes for surfacing pots containing Palms, Ferns, or other decorative plants. These belong to the true mosses, which produce a theca or capsule, opening at the top by means of a lid and containing within them the spores or reproductive bodies. A small section, termed Alpine Mosses, has a fruit that splits open by four valves. The Bog or Peat Mosses, best known as Sphagnum, have a spherical fruit. They are highly serviceable to the orchid grower, being extensively used for cultivating orchids, mixed with peat fibre and charcoal. Where it is plentiful it is used over the drainage of flower-pots, and is occasionally used in the compost for ferns. The Earth Mosses are a small and unimportant group, whose fruit does not burst.

MOSSY LAWNS are on a soil which is unable to support a green sward of grass. When soil is exhausted, grasses begin to die off, and their place is taken by moss. The obvious mode, then, of proceeding is to give the lawn a good top-dressing in winter, either of malt-dust, or nitrate of soda, or soot, or any manure containing an abundance of alkali. The gardener finds the growth of moss arrested by frequent raking in wet weather, or by the application of pounded oyster-shells; but these are mere palliatives, and not remedies. Make your grass healthy, and it will soon smother the moss. Drainage may be necessary, if the lawn is naturally soft and wet. Top-dressings of rich soil, lime, and even manures are given to make the grass grow and crowd out the moss. These remedies are very effective.

The most effectual, most salutary, and least disagreeable remedy *for moss on trees* is of trivial expense, and which a gardener need but try upon one individual to insure its adoption. It is with a hard scrubbing-brush, dipped in a strong brine of common salt as often as necessary, to insure each portion of the bark being moistened with it, to scrub the trunks and branches of his trees at least every second year. It most effectually destroys insects of all kinds, and moss; and the stimulating influence of the application, and the friction, are productive of the most beneficial effects. The expense is not so much as that of dressing the trunks with a solution of lime, which, however efficient in the destruction of moss, is not so in the removal of insects, and is highly injurious to the trees, by filling up the respiratory pores of the epidermis, and is decidedly a promoter of canker.

On *gravel walks*, a strong solution of sulphate of copper (blue vitriol) has been found the most effectual destroyer of moss.

MOTH. *Verba'scum Blatta'ria.*

MOTHER OF THOUSANDS. *Lina'ria Cymbala'ria* and *Saxi'fraga sarmento'sa.*

MOTHERWORT. *Leono'tis.*

MOTHS of most kinds are the parents of caterpillars preying upon some plant under the gardener's care, and should be destroyed whenever discovered.

MOTTLED UMBER-MOTH. *Hybe'rnia defolia'ria.*

MOULDINESS is the common term applied to that crop of fungi which appears on moist, putrescent vegetable matters. These fungi are *Mucores*, and are effectually destroyed whenever common salt or sulphur can be applied.

MOUNTAIN ASH. *Py'rus Aucupa'ria.*

MOUNTAIN EBONY. *Bauhi'nia.*

MOUNTAIN TOBACCO. *A'rnica monta'na.*

MOUSE-EAR. *Hiera'cium stoloni'ferum.*

MOUSE THORN. *Centau'rea myaca'ntha.*

MOUSSO'NIA. See ISOLOMA.

MOWING is, next to digging, the most laborious of the gardener's employments, and requires much practice, as well as an extremely sharp scythe, before he can attain to the art of shaving the lawn or grass-plot smoothly and equally. A mowing machine was invented by Mr. Budding and others, but has now been vastly improved. It cuts, collects, and rolls the grass at the same time, and is better than the scythe for mossy lawns.

Mowing is most easily performed whilst the blades of grass are wet, as they then cling to the scythe, and are consequently erect against its cutting edge. The operation, therefore, should be performed early in the morning, before the dew has evaporated, or whilst the grass is wet from rain or artificial watering. See SCYTHE.

MUCU'NA. Cow-itch. (The Brazilian name. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Erythrina.)

The hairs on the seed-pods of *M. pru'riens* is the Cow-itch. Stove climbers, with purple flowers, which open in July. Cuttings of half-ripened shoots in sandy soil, under glass, in heat; rich, sandy loam. Winter temp., 55°; summer, 60° to 85°.

M. alti'ssima (tallest). 50. Martinique. 1779.
,, *a'tro-purpu'rea* (dark purple). 10. E. Ind. 1820.
,, *capita'ta* (headed). Flowers crowded in heads. Himalaya and Malaya.
,, *cochinchine'nsis* (Cochin-Chinese). White. June. Cochin-China. 1826.
,, *imbrica'ta* (overlapping). 20–30. Dark purple. Himalaya. 1879.
,, *macroca'rpa* (large-fruited). India.
,, *macro'botrys* (large-bunched). Hong-Kong.
,, *ni'vea* (snowy). India.
,, *pru'riens* (*common*-stinging). 12. E. Ind. 1680.
,, ,, *u'tilis* (useful). "Velvet Bean."
,, *pruri'ta* (stinging) of B.M., t. 4945. See M. IMBRICATA. Of Bot. Misc., ii. 348. See M. PRURIENS.
,, *sempervi'rens* (evergreen). China. 1816.
,, *u'tilis* (useful). See M. PRURIENS UTILIS.

MUDAR PLANT. *Calo'tropis gigante'a.*

MUDDING, or **PUDDLING,** is dipping the roots of trees, shrubs, and seedlings in a thin mud or puddle, and retaining them there until again planted, whenever they are removed. It is one of the best aids to success, and should be universally adopted; for it is a rule without exception, that the less the roots of a plant are injured, and the moister they are kept during its removal, the less does it suffer by the transplanting. The best of all muds for the purpose is formed of three pounds of garden soil, one ounce of salt, eight ounces of soot, and one gallon of water.

MUEHLENBE'CKIA. (Commemorative of *Dr. G. Muehlenbeck*. Nat. ord. Polygonaceæ.)

Slender and usually much branched trailers or climbers, but *M. platyclada* is erect. They are fairly hardy, with the exception of *M. platyclada* and *M. sagittifolia*. Cuttings of short side-shoots in sand in a close cold frame during summer, and the greenhouse ones in heat. Ordinary soil; peat, loam, and sand for the greenhouse ones.

M. adpre'ssa (adpressed). 2. Pink to red. Australia. 1822.
,, *axilla'ris* (axillary). New Zealand, &c.
,, *chile'nsis* (Chilian). 2. Pale green. May. Chili. 1828.
,, *comple'xa* (encircling). Green. July. New Zealand.
,, *depre'ssa* (depressed). See M. ADPRESSA.
,, *injucu'nda* (unpleasing). See M. CHILENSIS.
,, *na'na* (dwarf). See M. AXILLARIS.
,, *orbicula'ris* (orbicular). 15. White, green. S. Amer. 1825.
,, *platy'clada* (flat-branched). 1–3. White. Solomon Islands. 1863.
,, *sagittifo'lia* (arrow-leaved). S. Amer.
,, *va'rians* (varying). Origin doubtful.
,, *vulca'nica* (volcanic). Mexico. 1831. Evergreen trailer.

MUE'LLERA. (Commemorative of the Danish botanist, *O. F. Mueller*. Nat. ord. Leguminosæ.)

Evergreen stove shrub. Cuttings of half-ripe wood in sand and placed in a close case with bottom-heat. Loam, peat, and sand.

M. monilifo'rmis (necklace-formed). 6. Yellow. Nicaragua. 1792.

MULBERRY. *Mo'rus.*

MULBERRY (*M. ni'gra*) **CULTURE.**—*Propagation: by Cuttings.*—In former days this operation was much circumscribed, being limited to the cuttings of the young shoots, as in currants. Truncheons of considerable size may, and, indeed, ought to be used. These strike with facility by ordinary means, especially in the deciduous state, and put in the soil in the autumn, leaving only a bud or two exposed.

If *Truncheons* of some size are used, let them be taken from the tree in the beginning of February; and being inserted a foot deep, in a situation where neither direct sunshine nor wind can freely penetrate, envelop their stems above the ground-level with moss, all but the upper pair of buds, in order to prevent evaporation.

By Layers.—The shoots of the previous year are generally selected for this purpose, and may be either slit or ringed, although they will root without. This being performed in November, or in February, the young plants will be ready to be removed from the parent plant in twelve months, when they may be placed in the nursery for two years, by which time they will be fit for their permanent situations, care being taken to train them to stems, as ordinary standard fruit-trees.

By Grafting.—Ordinary grafting, as in the apple, is not a very safe mode; but inarching, or grafting by approach, is quite eligible. This is performed exactly as in other trees, and will produce strong plants in a short time.

By Seeds.—This practice is seldom resorted to, but may prove interesting to some. The seed being washed from the pulp as soon as ripe, and dried, may be preserved through the winter in dry sand, and sown in the succeeding February. A slight bottom-heat will facilitate the progress of the seedlings; but they may be safely reared without, by affording a regular but not excessive supply of moisture, with a partial deprivation of light for awhile. They will need the ordinary routine of transplanting, &c., afterwards.

Culture during the Growing Period.—In the standard state little or nothing can be done; but those trained on walls or fences must have some assistance. It must be kept in view, that the mulberry produces fruit both on short-jointed young wood and on spurs, and that fruit must not be looked for from luxuriant shoots. The summer's dressing must consist in thinning-out and stopping the grosser shoots in crowded situations, observing a regularity in their distances for the admission of sunlight. We would advise much stopping in preference to much disbudding, as such parts may form a nucleus for future spurs; and if they turn out barren it will be easy to remove them totally in the succeeding year. The mulberry, when trained, will extend a great way; and regular training, as the shoots extend, must be practised.

Culture during the Rest Period.—Some pruning is occasionally of benefit, even to standard trees, but it can be merely thinning out cross-shoots on those parts of the tree which are too crowded. The shady side of the tree, too, may be kept thinner than the sunny side; and watery spray springing from the branches in the interior may be removed. Those trained must have superfluous shoots and barren snags or spurs removed; but no shortening back is necessary.

Soil.—Any ordinary garden or field-soil will do for them, if not too clayey; for they rather prefer an upland or mellow soil, which should be of a generous character, but not enriched with manures until they get rather old and cease producing luxuriant wood, when a rich, mellow compost, as top-dressing occasionally, will much benefit them.

Forcing.—The mulberry bears forcing excellently, and will ripen its fruit early in June. It will bear a very high temperature. It may also be grown of a dwarf size in pots, and be thus forced.

MULCHING is placing mulch, or long, moist stable litter, upon the surface of the soil over the roots of newly planted trees and shrubs. The best mode is to form a trench about six inches deep, to put in the mulch, and cover it with the earth. This prevents the mulch being dried or scattered by the winds, and is more neat than exposing it on the surface. Mulching keeps the moisture from evaporating, and prevents frost penetrating to the roots, straw being one of the worst conductors of heat. When rapid growth is desirable, the mulch should be kept on the surface, and removed at times in bright sunshine, that the soil may be heated; for, if deeply mulched, the leaves may be enjoying the climate of India, and the roots be nearly as cold as if in Siberia.

MULE, or **HYBRID,** is a plant raised from seed generated by parents of distinct species, and sometimes, but not always, unfertile. See HYBRIDISING.

MULGE'DIUM. (Derivation not known. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Lactuca.)

Hardy herbaceous plants. Seeds and divisions in spring; dry, sandy soil.

M. acumina'tum (long-pointed). See LACTUCA ACUMINATA.
,, *alba'num* (Mount-Alban). See LACTUCA RACEMOSA.
,, *alpi'num* (alpine). See LACTUCA ALPINA.
,, *cacaliæfo'lium* (Cacalia-leaved). 4–5. Blue. Caucasus. 1899.
,, *gigante'um* (giant). 6–8. Blue-violet. 1889.
,, *macrorhi'zum* (large-rooted). See LACTUCA MACRORHIZA.

MULLEIN. *Verba'scum.*

MU'NDTIA. (Commemorative of *Herr Heinrich Mundt*, a German botanist. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 17-*Diadelphia*, 3-*Octandria*. Allied to Muraltia.)

The fruit is eatable. Greenhouse evergreen shrubs, from South Africa. Cuttings of stiff young side-shoots in May, in sand, under a bell-glass, and in a close, cold pit or frame; sandy peat. Winter temp., 40° to 45°.

M. spino'sa (spiny). 3. White. March. 1780.
,, ,, *angustifo'lia* (narrow-leaved). 3. Purple. March. 1800.
,, ,, *latifo'lia* (broad-leaved). 3. Lilac. February. 1800.

MUNRO'NIA. (A commemorative name. Nat. ord. Meliaceæ.)

Greenhouse evergreen tree. Cuttings in sand under a bell-glass. Loam, peat, and sand.

M. Walli'chii (Wallich's). 15. Pale rose. March. Himalaya. 1828.

MUNTI'NGIA. (Named after *A. Munting*, a German botanist. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Tilia.)

Stove evergreen shrub, known as the *Calabu'ra* in South America. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy, fibrous loam and leaf-mould. Winter temp., 48° to 58°; summer, 60° to 85°.

M. Calabu'ra (Calabura). 3. White. June. Jamaica. 1690.

MURA'LTIA. (Named after *J. V. Muralt*, a Swiss botanist. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 17-*Diadelphia*, 3-*Octandria*. Allied to Polygala.)

Greenhouse evergreens, all but one purple-flowered, and all from South Africa. Cuttings of short young shoots in sandy peat, under a glass; chiefly peat earth, with a good portion of sand. Winter temp., 40° to 48°.

M. alopecuroi'des (foxtail-like). 3. June. 1800.
,, *cilia'ris* (hair-fringed-*leaved*). 3. May. 1824.
,, *diffu'sa* (straggling). See M. STIPULACEA.
,, *filifo'rmis* (thread-form-*branched*). 1½. August. 1812.
,, *Heiste'ria* (Heisteria). 6. January. 1787.
,, *hu'milis* (humble). 1. June. 1818.
,, *juniperifo'lia* (juniper-leaved). 3. June. 1810.
,, *linophy'lla* (flax-leaved). See M. FILIFORMIS.
,, *macro'ceras* (large-horned). 3. 1812.
,, *micra'ntha* (small-flowered). 1½. 1800.
,, *mi'xta* (mixed). 3. 1791.
,, *squarro'sa* (spreading). 3. May. 1820.
,, *stipula'cea* (stipuled). 3. Red. June. 1801.
,, *virga'ta* (twiggy). See M. FILIFORMIS.

MU'RICE. See BYRSO'NIMA.

MURRA'YA. (Named after *Professor Murray*, editor of Linnæus's works. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Limonia.)

Stove evergreen, white-flowered trees, from the East Indies. Cuttings of shoots, getting firm at their base, in sand, under a bell-glass, and in a bottom-heat of about 90°. Winter temp., 50° to 55°; summer, 60° to 85°.

M. exo'tica (exotic). 10. August. 1771.
,, *Kœni'gii* (Kœnig's). 30–40. Light yellow. June. India. 1820.
,, *panicula'ta* (panicled). See M. EXOTICA.

MURUCU'JA. (The native name. Nat. ord. *Passion-worts* [Passifloraceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*. Now referred to Passiflora.)

M. adiantifo'lia (Adiantum-leaved). See PASSIFLORA GLABRA.
,, *Baue'ri* (Bauer's). See PASSIFLORA BAUERIANA.
,, *herbertia'na* (Herbertian). See PASSIFLORA HERBERTIANA.
,, *ocella'ta* (small-eyed). See PASSIFLORA MURUCUJA.
,, *perfolia'ta* (leaf-stem-pierced). See PASSIFLORA PERFOLIATA.

MU'SA. Plantain-tree. (From *mauz*, the Egyptian name. Nat. ord. *Scitaminads* [Scitaminaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

The fruit of the Musa is called Bananas and Plantains. Stove evergreens. Chiefly by suckers; rich, loamy soil, with abundance of water when growing freely. Winter temp., 55° to 60°; summer, 60° to 90°, with plenty of atmospheric moisture. *Cavendi'shii*, from fruiting at a small size, is the most valuable.

M. africa'na (African). Angola. 1871.
,, *arnoldia'na* (Arnoldian). Leaves with reddish midribs. Central Trop. Africa. 1901.
,, *assa'mica* (Assam). Assam. 1871.
,, *auranti'aca* (orange). Flowers and bracts bright yellow. Assam. 1894.
,, *Ba'keri* (Baker's). 10. Pink; bracts crimson inside. Cochin-China (?). 1898.
,, *Ba'sjoo* (Basjoo). Japan. 1889.
,, *Cavendi'shii* (Cavendish's). 4. Scarlet. China. 1829.
,, *Cha'mpa* (Champa). See M. SAPIENTUM CHAMPA.
,, *cine'rea* (grey). See M. SAPIENTUM.
,, *cocci'nea* (scarlet). 4. Scarlet. July. China. 1792.
,, *Da'cca* (Dacca). See M. SAPIENTUM DACCA.
,, *dis'color* (two-coloured). New Caledonia.
,, *Ense'te* (Ensete). 20–35. Greenish-brown. August. Abyssinia. 1853.
,, *Fe'hi* (Feh's). 15–20. Stem banded with violet; juice violet. New Caledonia. 1888.
,, *Gile'ttii* (Gillett's). 4–6. Fruit angular, pear-shaped. Lower Congo. 1901.
,, *glau'ca* (milky-green). 10. Pink. Burma. 1824.
,, *Hi'llii* (Hill's). White, on erect stalks. Queensland. 1893.
,, *Ho'lstii* (Holst's). Leaves with a green midrib. German E. Africa. 1904.
,, *imperia'lis* (imperial). Allied to *M. Ensete*, with underground perennial stem. Cameroons. 1902.
,, *japo'nica* (Japanese). See M. BASJOO.
,, *kewe'nsis* (Kew). The first garden hybrid Musa. (*Mannii* × *rosacea*.)
,, *La'catan* (Lacatan). See M. SAPIENTUM.
,, *livingstonea'na* (Livingstonian). E. Trop. Africa.
,, *macula'ta* (spotted). 10. Pink. Mauritius. 1818.
,, *Ma'nnii* (Mann's). 4. Yellow; bracts rose-crimson. Assam. 1894.
,, *martaba'nica* (Martaban). See M. SAPIENTUM MARTABANICA.
,, *Marti'nii* (Martin's). Bright rose. Leaves with reddish stalks. Cultivated in Teneriffe. 1892.
,, *nepale'nsis* (Nepaul). 6. Yellow. February. Nepaul. 1823.
,, *orna'ta* (ornamented). See M. ROSACEA.
,, *paradisi'aca* (paradise). See M. SAPIENTUM PARADISIACA.
,, *religio'sa* (religious). Stem with bulbous base. Fruits dry. Trop. Africa. 1900.
,, *rosa'cea* (rosy). 15. Pink. March. Mauritius. 1805.
,, *ro'sea* (rosy). 4. Rose. India.
M. ru'bra (red). 7. Pale yellow; bracts rose-red. India. 1894.
,, *sangui'nea* (blood-red). 4. Yellow; bracts red. Himalaya. 1872.
,, *sapie'ntum* (wise-men's). 20. Pink. June. Tropics. 1729. "Banana."
,, ,, *Cha'mpa* (Champa).
,, ,, *Da'cca* (Dacca).
,, ,, *martaba'nica* (Martaban).
,, ,, *olera'cea* (pot-herb).
,, ,, *paradisi'aca* (paradise). 20. Pink. November. Tropics. 1690. "Plantain."
,, ,, *re'gia* (royal). "Pisang Radji."
,, ,, *ru'bra* (red). "Ram-Kela."
,, ,, *sangui'nea* (blood-red). Leaves brown velvety red. French Congo. 1901.
,, ,, *semini'fera* (seed-bearing). Fruits containing seeds.
,, ,, *vitta'ta* (striped). Leaves striped with white. Trop. Africa. 1862.
,, *semini'fera* (seed-bearing). See M. SAPIENTUM SEMINIFERA.
,, *Seema'nni* (Seemann's). Flower racemes erect. Fiji. 1890.
,, *sumatra'na* (Sumatra). Leaves marked with transverse spots. Sumatra. 1880.
,, *supe'rba* (superb). 14. Purple. July. E. Ind. 1820.
,, *te'xtilis* (textile). Philippines.
,, *Troglodyta'rum* (Troglodytes'). See M. SAPIENTUM.
,, *Urano'scopus* (Uranoscopus). Racemes of flowers and fruits erect. Queensland. 1881.
,, *veluti'na* (velvety). 8. Yellow. Himalaya. 1875.
,, *viola'scens* (violet). Malaya.
,, *vitta'ta* (striped). See M. SAPIENTUM VITTATA.
,, *zebri'na* (zebra). 10. Purple. Java. 1820.

BANANA AND PLANTAIN CULTURE.—*Propagation.*—Sir J. Paxton has suggested, that immediately the fruit is cut from the old plants, these be taken out of their tubs, partially disrooted, and placed in pots to produce suckers, which they will do readily, especially if plunged in a bottom-heat of about 85°. These suckers are removed into smaller pots, and cultivated from pot to pot, and thence to the tub, in which they are fruited.

Soil.—The soil must be exceedingly rich, and by no means adhesive; rather of a light character, and well-drained, in order that copious supplies of water may be given.

Culture.—A lively heat is the great essential, with a liberal amount of atmospheric moisture. A thermometer ranging from 70° to 90° during the bright part of the year, and from 60° to 70° during the duller portion, will be requisite.

Suckers will produce fruit within the year; and if one be approaching too close on the heels of another in ripening, the whole spadix of fruit of the one may be cut off, with a portion of the stem, just where the upper tier of fruit is ripening, and suspended in a dry and airy room, after the manner of late grapes. Sir J. Paxton observes, that "he has had capital fruit from a spadix two months after it was cut." The produce of one plant will weigh from 15 to 30 pounds.

MUSA'NGA. (Probably a native name. Nat. ord. Urticaceæ.)

A tall stove tree allied to Cecropia, with leaves deeply divided into eleven to fifteen radiating segments. It is recommended as a shade tree in Coffee and Cocoa plantations, and in European gardens as a fine foliage plant. Cuttings in sand in a close case with bottom-heat. Loam, peat, and sand.

M. Smi'thii (Smith's). 10–60. Leaves suborbicular, deeply divided. W. Trop. Africa. 1901.

MUSCA'RI. Grape Hyacinth. (From *moschos*, musk; the smell of the flowers. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Hyacinthus.)

Hardy bulbs. For culture, see HYACINTHUS.

M. æstiva'le (summer). ½. Yellow, green. June. Orient. 1877.
,, *alpi'num* (alpine). ½. Violet. Asia Minor.
,, *ambrosi'acum* (ambrosial). See M. MOSCHATUM.
,, *Argæ'i* (Arga's). Greece (?). 1883.
,, *armeni'acum* (Armenian). ½–¾. Brilliant blue. Asia Minor. 1876.

M. aila'nticum (Atlantic). ½–¾. Bright blue. Spain; N. Africa. 1902.
„ *azu'reum* (azure). See HYACINTHUS AZUREUS.
„ *bosni'acum* (Bosnian). ½. Blue. S.E. Europe.
„ *botryoi'des* (bunch-like). ½. Blue. April. Italy. 1596.
„ „ *a'lbum* (white). ½. White. April. Italy. 1596.
„ „ *ca'ndidum* (white). White, delicately tinted with flesh.
„ „ *Lelie'vrii* (Lelievr's). Flowers larger, earlier. Western France.
„ „ *pa'llidum* (pale). ½. Pale blue. April. Italy. 1596.
„ *Bourgæ'i* (Bourga's). ½. Blue-violet. Asia Minor.
„ *brevisca'pum* (short-scaped). ½. Dark blue. Europe. 1876.
„ *cilia'tum* (hair-fringed). See HYACINTHUS CILIATUS.
„ *commuta'tum* (changed). ½. Blue. Italy. 1836.
„ *como'sum* (tufted). ½. Blue. April. S. Europe. 1596. "Tassel Hyacinth."
„ „ *monstro'sum* (monstrous). ½. Pale blue. April. S. Europe. 1596. "Feathered Hyacinth."
„ *compa'ctum* (compact). ¾. Dark violet. Asia Minor. 1878.
„ *conci'nnum* (neat). ½. Rich blue. 1878.
„ *co'nicum* (conical). 1. Brilliant blue, fragrant. 1877. "Heavenly Blue."
„ *cre'ticum* (Cretan). ½. Green and purple. Crete. 1875.
„ *dilu'tum* (diluted). ½. Lively blue. 1878.
„ *e'legans* (elegant). ½. Bright blue, large. 1896.
„ *Elwe'sii* (Elwes's). ½. Bright blue. April. Caria. 1878.
„ *glau'cum* (milky-green). ¾. Purple, green. May. Persia. 1825.
„ *grandifo'lium* (large-leaved). ½. Dull glaucous blue. 1869.
„ *Heldrei'chii* (Heldreich's). ½–1. Amethyst blue. Greece. 1869.
„ *hymeno'phorum* (membrane-bearing). See M. HELDREICHII.
„ *latifo'lium* (broad-leaved). 1–1½. Blackish-violet. April, May. Asia Minor.
„ *leucophæ'um* (dusky-white). See HYACINTHUS LEUCOPHÆUS.
„ *lu'teum* (yellow). See M. MOSCHATUM FLAVUM.
„ *macroca'rpum* (large-fruited). See M. MOSCHATUM FLAVUM.
„ *mawea'num* (Mawean). ½. Lively light blue. Armenia. 1889.
„ *micra'nthum* (small-flowered). ½–½. Rich clear blue. April. 1877.
„ *moscha'tum* (musky). ¾. Blue, yellow. April. Levant. 1596.
„ „ *fla'vum* (yellow). ¾. Yellow. April. Levant. 1596.
„ *Motela'yi* (Motelay's). France.
„ *negle'ctum* (neglected). ½–¾. Violet. April. Mediterranean region. 1884.
„ *pa'llens* (pallid). ½. Pale blue. May. Caucasus. 1822.
„ *parado'xum* (paradoxical). ½–1. Dull blue. April. Armenia.
„ *parvifo'rum* ((small-flowered). Blue. April. Sicily. 1827.
„ *peduncula're* (*long*-flower-stalked). See M. BOTRYOIDES.
„ *polya'nthum* (many-flowered). ½–¾. Violet-blue. Asia Minor. 1896.
„ *præ'cox* (early). See HYACINTHUS AZUREUS.
„ *pulche'llum* (pretty). ½–½. Dull blue-violet. March. Greece. 1876.
„ *racemo'sum* (racemed). ½. Blue. April. Europe. 1780. "Starch Hyacinth."
„ „ *brachya'nthum* (short-flowered). See M. SZOVITZIANUM.
„ „ *mi'nus* (smaller). ½. Blue. April. Europe. 1780.
„ *sartoria'num* (Sartorian). ½. Pale dusky yellow. April. Greece.
„ *Schliema'nni* (Schliemann's). ½. Light purple-blue. April and May. Asia Minor.
„ *sessiliflo'rum* (stalkless-flowered). See HYACINTHUS SESSILIFLORUS.
„ *Strangwa'ysii* (Strangway's). ½. Blue. S. Europe. 1837.
„ *suave'olens* (sweet-smelling). ½. Deep blue, fading light blue. Siberia. 1902.
M. szovitsia'num (Szovitsian). ¾. Rich bright blue. March, April. Caucasus.
„ *tenuiflo'rum* (slender-flowered). 1. Lower flowers olive-green, upper violet-blue. 1889.
„ *transsilva'nicum* (Transsilvanian). See M. BOTRYOIDES.

MUSHROOM. *Aga'ricus campe'stris.*

MUSHROOM-BEDS, for winter production, should be formed in August, and once in two months after, of dry materials, such as four or five barrowfuls of horse-droppings, which have been saved for the purpose, four or five barrowfuls of road-sweepings, and four or five barrowfuls of dry, husky dung from the stable dung-heap. Let these be all well turned over three or four times to sweeten in some dry place. If the mixture should be found too dry to ferment sufficiently, then sprinkle it with a little water at the time of its being turned over. Shake it and mix it well together. The quantity of materials depends on the size of the beds required. The place where the beds are to be made should be dry at bottom. The materials being in good condition, proceed to make up your bed as solid and firm as it can be beat together with the fork, whether in ridges or half-ridges, or whatever shape may be thought most convenient. Let the outside be beaten smooth and well with a shovel or spade. Then insert a stick to prove the temperature of the bed by. In about ten days after the bed has been made it will be fit for *spawning*, if all has gone on well, and the heat be found about that of cows' milk; but if the heat be too great, defer it for another week, and shake open the bed a little to let off the rank heat. If too cold, add a little fresh materials, and work it up well together. Before putting in the spawn make the beds firm, smooth, and even; then open holes with the hand about an inch below the surface, and eight inches apart every way. Place in each hole a moderate-sized lump or handful of bits of spawn, and cover it over again with the same dry materials of the bed. If there is no fear of the bed being too hot, it may be covered over at the same time, about an inch and a half thick, with good turfy loam, rather dry, and run through a sieve first. When all is regularly covered over, sprinkle the whole with water from a fine rose waterpot, and pat the whole surface down level, leaving it as smooth as a fresh-plastered wall. Let it remain to dry off, giving plenty of air to dry it off the quicker. After this, the bed should have a covering of anything like mouldy hay, such as tops and bottoms from the hay-rick, or hay-bands untwisted, or the like. Cover up according to the heat of the beds. If you have any doubt whether it is too hot, let the covering be light; and at all times the short mulch, when gathering the mushrooms, should be cleared off from the bed's surface, or it will exhaust the bed by the encouragement it gives to the spawn to run out. A little additional litter may be added as required, so as to keep the beds in regular and uniform bearing, and gentle applications of tepid liquid-manure will be found of great benefit to those beds that have been well gathered from. Where the convenience of hot-water pipes, or other artificial means, can be commanded for mushroom culture, so that the right temperature can be at all times maintained, no kind of litter-covering need be applied. Mushroom-beds are always best made under cover, and even a cart-shed can be very easily converted into an excellent mushroom-house. Warm and gentle moisture has much to do with the growth of the mushrooms; therefore, if the shed is covered in with slate or tiles, the space between the rafters inside should be well stuffed with straw of any kind, which can be fastened up by nailing cross strips of boards from rafter to rafter. Then, after the bed is made, spawned, and finished, the front of the shed may be stopped up with thick and well-thatched hurdles, which would be warmer and better than any other thin permanent enclosure. These hurdles can be readily opened whenever light is wanting, either to examine the beds, or to cover, or to uncover, or to collect, the mushrooms. It is also convenient to be able to open the house opposite where you wish, either to get in fresh materials to make a new bed with, or to take out an old one. If the length of the shed be from 21 to 30 feet, it should give a large supply of mushrooms during the winter and spring months. The beds should be made along the back of the house.

Previously to making up the beds, a board about

9 inches high should be placed as a frontage-board, from 3 to 4 feet distant from the wall, which is a good width for the bottom of the bed. This front board may be supported upright by driving three or four short stakes into the floor. The bed may be from 2 to 3 feet high at the back, sloping down to 9 inches in front, which will give a very convenient width to reach over for all necessary purposes. Have the materials ready to make the first bed about the last week in August. Let this occupy one-third of the length of the shed. Make up another of the same size about the last week in October, and the remaining third about the 1st of January.

In four or five weeks after spawning, in spring and autumn, the bed should begin to produce, but not until much later in summer and winter; and if kept dry and warm, it will continue to do so for several months.

A gathering may take place two or three times a week. according to the productiveness of the bed. It sometimes happens that beds will not come into production for five or six months; they should not, therefore, be impatiently destroyed.

Watering.—In autumn, the bed will not require water until the first crop is gathered, but it is then to be repeated after every gathering; a sprinkling only is necessary. In spring and summer, during dry weather, the same course is to be pursued. As excessive or unequal moisture is studiously to be avoided, the best mode of applying the water is to pour it through a rose-pan on to a thin layer of hay, which has previously been spread over the bed, and thus allow it to percolate by degrees. In winter, waterings are not allowable; to keep the mould moist, hot fermenting mulch may be put on outside the covering. If the bed is in the open ground, on a warm day succeeding to wet weather, it may be left uncovered for not more than two or three hours. During excessive rains, the additional covering of mats, &c., must be afforded; and, on the other hand, if a moderate, warm shower occurs during summer, after excessive droughts, it may be fully admitted, by taking off the covering.

Mode of Gathering.—In gathering, the covering being carefully turned off, only such are to be taken as are half an inch or more in diameter before they become flat, but are compact and firm. Old mushrooms, especially, should be rejected for the table, as it is found that some which are innoxious when young become dangerous when tending to decay; they also then lose much of their flavour.

Each mushroom is detached by a gentle twist completely to the root; a knife must never be employed, for the stumps left in the ground decay, and become the nursery of maggots, which are liable to infect the succeeding crop.

Other Modes of Cultivation.—Some gardeners merely vary from the preceding by building entirely of dung, without any layers of earth. Many gardeners grow mushrooms in the same bed with their melons and cucumbers. The spawn is inserted in the mould, and on the hills of the beds, as soon as the burning heat is passed. In September or October, when the bines of the plants decay, the bed is carefully cleaned, the glasses put on and kept close, and when the earth becomes dry, water is frequently but moderately given, as well as every gentle shower admitted when necessary. A gentle heat is thus caused, and the produce is often extraordinarily abundant, frequently two bushels, from a frame 10 feet by 6, and mushrooms have been produced two pounds in weight.

Hampers or boxes containing about 4 inches depth of fresh, dry stable-dung, or, in preference, of a mixture of three barrow-loads of horse-dung, and one perfectly dry cow-dung, well pressed in, may be set in some situation where neither damp nor frost can enter. After two or three days, or as soon as heat is generated, the spawn may be inserted; a mushroom brick is to be broken into three equal parts, and each fragment to be laid 4 inches asunder on the surface of the dung; after six days, 1½ inch depth of fresh dung to be beaten down as before. In the course of a fortnight, or as soon as it is found that the spawn has run nearly through the whole of the dung, fine earth must be applied 2½ inches thick, and the surface made level. In five or six weeks the mushrooms will begin to come up, and if the mould appear dry, may then be gently watered, the water being slightly heated. Each box will continue in production six or eight weeks.

Mr. J. Oldaker, late gardener to the Emperor of Russia, introduced a house purposely constructed for the growth of the mushroom. The house is found of great use in storing broccoli during the winter. It is usually built against the back wall of a forcing-house, or wherever convenient; but if built unconnected with another building, the only necessary alteration is to have a hipped instead of a lean-to roof. The outside wall should be 8½ feet high for four heights, the width 10 feet within the walls, which is most convenient, as it admits shelves 3½ feet wide on each side, and a space up the middle 3 feet wide, for a double flue, and wall upon it.

When the outside of the house is finished, a floor or ceiling is made over it, as high as the top of the outside walls, of boards 1 inch thick, and plastered on the upper side, with road-sand, well wrought together, an inch thick; square trunks being left in the ceiling, 9 inches in diameter, up the middle of the house, at 6 feet apart, with slides to ventilate with when necessary.

Two single brick walls, each five bricks high, are then to be erected at 3½ feet from the outside walls, to hold up the sides of the floor-beds, and form at the same time one side of the air flues. Upon these low walls are to be laid planks 4½ inches wide, and 3 inches thick, in which are to be mortised the standards, which support the shelves. These standards to be 3½ inches square, and 4½ feet asunder, fastened at the top, into the wooden ceiling. The cross bearers, which support the shelves, must be mortised into the bearers and into the walls; the first set of bearers being 2 feet from the floor, and each succeeding one to be at the same distance from the one below it. The shelves ought to be of boards 1½ inch thick, each shelf having a ledge in front, of boards 1 inch thick and 8 inches deep, to support the front of the beds, fastened outside the standards. The flue to commence at the end of the house next the door, and running the whole length, to return back parallel, and communicate with the chimney; the walls of the insides to be the height of four bricks laid flat, and 6 inches wide; this will allow a cavity on each side betwixt the flues, 2 inches wide, to admit the heat from their sides into the house. The middle cavity itself should be covered with tiles, leaving a space of 1 inch betwixt each. The top of the flue, including the covering, should not be higher than the walls that form the fronts of the floor-beds. The wall itself is covered with three rows of tiles, the centre one covering the cavity, as before mentioned; the outside cavities are left uncovered.

As the compost, the formation of the beds, &c., are very different from the common practice, we will give Mr. Oldaker's directions. The compost employed is fresh horse-dung, which has been subject neither to wet nor fermentation, cleared of the long straw, but one-fourth of the short litter allowed to remain, with one-fourth of dry turf-mould, or other fresh earth.

The beds are to be made by placing a layer of the above compost, 3 inches thick, on the shelves and floor, which must be beaten as close as possible with a flat mallet, fresh layers being added and consolidated until the bed is 7 inches thick, and its surface as level as possible. If the beds are thicker, the fermentation caused will be too powerful; or if much less, the heat will be insufficient for the nourishment of the spawn. As soon as the beds intimate a warmth of 80° or 90°, they are to be beaten a second time, to render them still more solid, and holes made with a dibble, 3 inches in diameter and 9 apart, through the compost, in every part of the beds; these prevent too great a degree of heat arising and causing rottenness.

If the beds do not attain a proper heat in four or five days after being put together, another layer, 2 inches thick, must be added. If this does not increase the heat, part of the beds must be removed, and fresh horse-droppings mixed with the remainder. The spawn is to be inserted in three or four days after making the holes, when the thermometer indicates the desired degree of heat; the insides of the holes are dry; and while the heat is on the decline every hole is to be filled, either with lumps or fragments of spawn, well beaten in, and the surface made level.

In a fortnight, if the spawn is vegetating freely, and the beds are required for immediate production, they

may be earthed over; but those for succession left unearthed, three or four weeks in summer, and four or five in winter. If the spawn is introduced in hot weather, air must be admitted as freely as possible until the spawn has spread itself through the beds.

The soil employed should be maiden earth, with turf well reduced; neither too dry nor too wet, otherwise it will not be capable of being beaten solid. It must be laid regularly over the beds 2 inches thick. From the time of earthing, the room is to be kept at a temperature of 50° or 55°. If higher, it will weaken or destroy the spawn; if lower, it will vegetate slowly; and if watered in that state, numbers of mushrooms will be prevented attaining perfection. Water must be applied with extreme caution, being nearly as warm as new milk, and sprinkled over the beds with a syringe or small watering-pot. Cold water destroys both the crop and the beds. If suffered to become dry, it is better to give several light than one heavy watering.

Beds thus managed will bear for several months; and a constant supply of mushrooms kept up by earthing but one bed or more every two or three months.

If, when in full production, the mushrooms become long-stemmed and weak, the temperature is certainly too high, and air must be proportionately admitted. As the beds decline, to renovate them the earth must be taken off clean, and if the dung is decayed they must be reformed, any good spawn being preserved that may appear; but if the beds are dry, solid, and full of good spawn, a fresh layer of compost, 3 or 4 inches thick, must be added, mixed a little with the old, and beaten solid as before.

Mushrooms may be grown in a cellar, or other vaulted place, with equal success, and not unfrequently with a greater advantage, the same rules being adopted; but no fire is necessary, and less water.

Spawn: where to be found.—Spawn is constituted of masses of white fibres, arising from the spores of mushrooms that have fallen into situations suitable for their germination, from which it is to be obtained: such places are stable dung-hills, dungy horse-rides in stable-yards, horse mill-tracks, dry spongy composts: the droppings of hard-fed horses also produce it in greater abundance than the dung of any other animal, and more sparingly under sheds, where horses, oxen, or sheep have been kept. The dung of the two latter affords it in greater perfection than that of grass-fed horses. It has also been found in pigeons' dung; but the most certain mode of obtaining it is to open the ground about mushrooms growing in pastures, though it is said not to be so productive.

Time of Collecting.—July, August, and September, it being reckoned in the greatest perfection in this last month. It may be found, however, and should be collected, when it appears in the spring. It generally occurs spread through the texture of cakes, or lumps of dry, rotted dung. Put it in a heap under a dry shed; and a current of air, passing through the shed, is of great utility. If kept dry, spawn may be preserved three or four years; if damp, it will either vegetate before being planted or putrefy.

Spawn must not be so far advanced in vegetation as to appear in threads or fibres; for, when in this state, it is no longer applicable to a mushroom-bed; it may produce a mushroom if left to itself, but otherwise is useless. Spawn proper for inserting in a bed should have the appearance of indistinct white mould.

May be raised.—Spawn is capable of being raised artificially. The following is the manner: Two barrow-loads of cow-dung, not grass-fed, one load of sheep's-dung, and one of horses', well dried and broken so small as to pass through a coarse sieve, are well mixed, and laid in a conical heap during March, in a dry shed, being well trod as it is formed, to check its heating excessively. This heap is covered with hot dung, 4 inches thick, or only with mats if the shed is warm; for here, as in all the stages of growth, the heat should only range between 55° and 60°. In about a month the heap is examined; and if the spawn has not begun to run, which is shown by indistinct white fibres pervading its texture, another covering, of equal thickness to the first, is applied over the old one; in another month it will indubitably make its appearance. The time varies from three to ten weeks.

May be increased.—If a small quantity of spawn only can be collected, it may be increased in the following methods, the first of which is chiefly recommendable on account of its simplicity and facility of adoption:

Small pieces of the spawn may be planted a foot asunder, just beneath the surface of the mould of a cucumber-bed constructed in the spring. In about two months the surface of the spawn will assume a mouldy appearance; it may then be taken up, with the earth adhering to it, and when dried stored as before directed.

The second mode is variously practised. In the course of May a heap of the droppings of cows, sheep, and horses, or any one or two of them, without the admixture of any undecomposed straw, is to be collected, and one-fifth of road-scraping with one-twentieth of coal-ashes added, the whole being mixed together with as much of the drainings from a dunghill as will make it of the consistency of mortar. Being well incorporated, it is then to be spread in a dry, sheltered, airy place, on a smooth surface, and beaten flat with a spade. When become of the consistency of clay, it is to be cut into slabs about 8 inches square, a hole punched half through the middle of each, and piled to dry, an opening being left between every two bricks. When perfectly dry, a fragment of the spawn is to be buried in the hole previously made: it will shortly spread through the whole texture of the slabs, if kept in a warm, dry place, when each may be broken into four pieces, and when quite dry laid on shelves—separate, and not in heaps, otherwise a bed will be formed for the spawn to run in. Mr. Wales recommends the composition to consist of three-parts horse-dung without litter, two of rotten tree-leaves, two of cow-dung, one of rotten tanner's bark, and one of sheep's dung, mixed to the consistency of mortar, and moulded in small frames like those used by brick-makers, 6 inches long, 4 broad, and 3 deep. Three holes to be made half through the bricks, an inch apart, with a blunt dibble, for the reception of the spawn. They should be put on boards for the convenience of moving abroad during fine days, as they must be made perfectly dry, which they often appear to be on the outside when they are far otherwise internally. Before they are perfectly dry they require great care in handling and turning, from their aptitude to break; but in about three weeks, if dry weather, when perfectly dried, they become quite firm. To pervade them with the spawn, a layer of fresh horse-litter, which has laid in a heap to sweeten, as for a hotbed, must be formed, 6 inches thick, in a dry shed. On this a course of the bricks is to be laid, and their holes completely filled with spawn; and, as the bricks are laid in rows upon each other, the upper side of each is to be scattered over with some of the same. The bricks are not placed so as to touch, so that the heat and steam of the dung may circulate equally and freely. The heap is to terminate with a single brick, and when completed, covered with a layer, 6 inches thick, of hot dung, to be reinforced with an additional 3 inches after a lapse of two weeks. The spawn will generally have thoroughly run through the bricks after another fortnight. If, however, upon examination this is not found to be the case, they must remain for ten days longer. The bricks being allowed to dry for a few days before they are stored, will then keep for many years.

Mr. Oldaker recommends the bricks to be made of fresh horse-droppings, mixed with short litter, to which must be added one-third of cow-dung, and a small portion of earth, to cement them together. The spawn to be inserted when they are half dry.

Quantity required.—One bushel of spawn is required for a bed 5 feet by 10; two bushels for one double that length; and so on in proportion.

MUSK-AKRO or **OCHRO.** *Hibi'scus Abelmo'schus.*

MUSK-FLOWER. *Mi'mulus moscha'tus.*

MUSSÆ'NDA. (The Cingalese name of *M. frondo'sa*, Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria.* 1-*Monogynia.* Allied to Gardenia.)

Stove evergreens. Cuttings in sandy soil, in heat, under a glass, in May; loam and peat. Winter temp., 50°; summer, 60° to 85°.

M. capsuli'fera (capsule-bearing). 2. White. Socotra. 1899.

„ *cocci'nea* (scarlet). See WARSZEWICZIA COCCINEA.

M. corymbo'sa (corymbed). Orange. May. E. Ind. 1827.
,, *erythrophy'lla* (red-leaved). 30–40. Yellow, changing to red, centre crimson. Sepal crimson. Trop. Africa. 1863.
,, *frondo'sa* (leafy). 8. Yellow. August. E. Ind. 1814.
,, *gla'bra* (smooth). 6. Orange. July. Himalaya; Malaya. 1820.
,, *lu'teola* (pale-yellow). 3–6. Primrose; large sepal white. Arabia; Nubia.
,, *macrophy'lla* (large-leaved). 8. Orange. May. Nepaul. 1827.
,, *pube'scens* (downy). 2–6. Yellow. China.
,, *rufine'rva* (rusty-red-nerved). 6–8. Large sepal white. Sumatra.
,, *sanderia'na* (Sanderian). 5–6. Yellow; large sepal white. Indo-China. 1909.
,, *specio'sa* (showy). 6. Red. August. Venezuela. 1820.
,, *thei'fera* (tea-bearing). See M. UNIFLORA.
,, *Treutle'ri* (Treutler's). 2–8. Orange; large sepals white. July. India. 1840 and 1909.
,, *unifio'ra* (one-flowered). 2–4. White, fragrant. Burma; Cochin-China. 1883.

MU'SSCHIA. (Commemorative of *J. H. Mussche*, of the Ghent Botanic Garden. Nat. ord. Campanulaceæ. Allied to Michauxia.)

Greenhouse subshrubs or herbs with rough stems and leaves. Seeds; cuttings of short side-shoots in sand, covered with a bell-glass. Loam, peat, and a liberal use of sand.

M. au'rea (golden). 2–3. Yellow. August. Madeira. 1777. Evergreen shrub.
,, ,, *angustifo'lia* (narrow-leaved). 2. Yellow. August. Madeira. 1777.
,, ,, *latifo'lia* (broad-leaved). 2. Yellow. August. Madeira. 1777.
,, *Wollasto'ni* (Wollaston's). 2–6. Purple. Madeira. 1857.

MUSSEL SCALE. See SCALE INSECTS.

MUSTARD (*Bra'ssica a'lba*) succeeds best in a fine, rich, mouldy loam. In early spring, and late in autumn, the situation should be sheltered, and, during the height of summer, shaded from the meridian sun.

Sowing, for salading, may be throughout the year. From the beginning of November to the same period of March, in a gentle hotbed, or in the corner of a stove. From the close of February to the close of April it may be sown in the open ground, on a warm, sheltered border, and from thence to the middle of September in a shady one. For salading, sow in flat-bottomed drills, about ¼ inch deep, and 6 inches apart. The seed cannot well be sown too thick. The earth which covers the seed should be very fine. Water must be given in dry weather, as a due supply of moisture is the chief inducement to a quick vegetation. The sowings are to be performed once or twice in a fortnight, according to the demand. Cress (*Lepi'dium sati'vum*) is the most constant accompaniment of this salad-herb; and as the mode of cultivation for each is the same, it is only necessary to remark that, as cress is rather slower in vegetating than mustard, it must, for the obtaining them in perfection at the same time, be sown five or six days earlier. Cut for use whilst young, and before the rough leaves appear.

To obtain Seed, sow thin. When the seedlings have attained four leaves, thin them to 8 or 9 inches apart. If dry weather occurs at the time of flowering, water may be applied with great advantage to their roots. The plants flower in June, and are fit for cutting when their pods are brown. They must be thoroughly dried before threshing and storing.

Forcing.—For forcing, sow in boxes or pans, even if a hotbed is appropriated to the purpose. Pans of rotten tan are to be preferred to pots or boxes of mould; but whichever is employed, the seed must be sown thick, and other directions attended to, as for the open-ground crops. The hotbed need only be moderate.

MUSTARD BEETLE. *Phæ'don Be'tulæ.*

MUTI'SIA. (Named after *C. Mutis*, a South American botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Barnadesia.)

Stove climbers. Cuttings of half-ripened shoots in May, in sand, under a bell-glass, and in a gentle bottom-heat. Common stove temp. *M. latifo'lia* should be tried against a wall.

M. arachnoi'des (cobweb-like). See M. SPECIOSA.
,, *brevifio'ra* (short-flowered). Deep orange; disc yellow. Juan Fernandez.
,, *Cle'matis* (Clematis). Scarlet; disc yellow. Peru. 1859.
,, *decu'rrens* (decurrent). Deep orange. Chili. Half-hardy.
,, *ilicifo'lia* (holly-leaved). 10. S. Amer. 1832.
,, *latifo'lia* (broad-leaved). 10. Pink, yellow. September. Valparaiso. 1832.
,, *specio'sa* (showy). 6. Red. July. Brazil. 1823.
,, *versi'color* (changing-coloured). Orange, banded with brown. Juan Fernandez.
,, *viciæfo'lia* (Vicia-leaved). Orange. Chili. 1887.

MYA'GRUM. (From *muia*, a fly, and *agra*, capture; referring to the clamminess of the plant. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Isatis.)

Hardy annual. Seeds in open border, in April.

M. perfolia'tum (leaf-stem-pierced). ½. Pale yellow. June. France. 1648.

MYA'NTHUS. Flywort. (From *muia*, a fly, and *anthos*, a flower; its appearance when dried. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Flowers of *M. barba'tus* and *Monacha'nthus vi'ridis* have been produced on a spike of *Catase'tum*, showing the uncertainty of the laws on which genera and species are founded in Orchids. *Catase'tum* being the older name, Monachanthus and Myanthus have been united to it. See CATASE'TUM.

MYCARA'NTHES. (Same derivation as Myanthus. Nat. ord. Orchidaceæ. Now referred to Eria.)

M. obli'qua (twisted-*leaved*). See ERIA OBLIQUA.

MYGI'NDA. (Named after *C. Mygind*, a German botanist. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 4-*Tetrandria*, 3-*Tetragynia*. Allied to Elæodendron.)

Evergreen shrubs, all white-flowered but one. *M. myrtifo'lia* is hardy; propagated by cuttings of the ripened shoots in sand, under a hand-light, in autumn; the others require stove-treatment, and are propagated by ripe shoots in sand, under a bell-glass, in heat; loam and peat, sandy and fibrous.

M. integrifo'lia (whole-leaved). 4. Martinique. 1826.
,, *latifo'lia* (broad-leaved). 4. April. W. Ind. 1795.
,, *myrtifo'lia* (myrtle-leaved). See PACHISTIMA MYRSINITES.
,, *Rhaco'ma* (Rhacoma). 4. Jamaica. 1798.
,, *Urago'ga* (diuretic). 4. Purple. August. S. Amer. 1790.

MYLOCA'RYUM. Buckwheat-tree. (From *mule*, a mill, and *karyon*, a nut; having four-winged seeds. Nat. ord. *Cyrillads* [Cyrillaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Cliftonia.)

M. ligustri'num (privet-like). See CLIFTONIA NITIDA.

MYO'PORUM. (From *muo*, to shut, and *poros*, a pore, or opening; referring to the transparent spots on the leaves. Nat. ord. *Myoporads* [Myoporaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Greenhouse, white-flowered, evergreen shrubs, from New South Wales. Cuttings of the points of shoots, getting firm at their base, in sand, under a bell-glass, in April; loam and peat, fibrous and sandy, with pieces of charcoal intermixed. Winter temp., 38° to 48°. *M. parvifo'lium* and others would, no doubt, succeed against a wall, where protection could be given in winter.

M. acumina'tum (point-*leaved*). 3. 1812.
,, *crassifo'lium* (thick-leaved). 1½. New Zealand. 1822.
,, *de'bile* (weak). 3. White. April.
,, *Dese'rtii* (Desert's). White. Australia.
,, *diffu'sum* (spreading). See M. DEBILE.
,, *elli'pticum* (oval-*leaved*). See M. ACUMINATUM.
,, *insula're* (island). See M. SERRATUM.
,, *læ'tum* (bright). White. New Zealand.
,, *monta'num* (mountain). See M. ACUMINATUM.
,, *oppositifo'lium* (opposite-leaved). 3. 1803.

M. parvifo'lium (small-leaved). 1803.
„ *rosmarinifo'lium* (rosemary-leaved). See M. PARVIFOLIUM.
„ *serra'tum* (saw-*leaved*). 6. White, purple. May.
„ „ *tubercula'tum* (tubercled). 3. 1803.
„ *tasma'nicum* (Tasmanian). See M. SERRATUM.
„ *tubercula'tum* (tubercled). See M. SERRATUM TUBERCULATUM.

MYOSOTI'DIUM. (From *Myosotis*, and *eidos*, appearance or look; in reference to the flowers, which look like those of a Myosotis. Nat. ord. Boraginaceæ.)

Hardy perennial herb, resembling a huge Forget-me-not. It likes a moist, cool, but sheltered place in the open air, and must not be disturbed when established. Seeds. Good, rich but open soil.

M. no'bile (noble). 1–2. Blue, with white edges. Spring. Chatham Island. 1858. "Chatham Island Forget-me-not."

MYOSO'TIS. Forget-me-not. (From *mus*, a mouse, and *ous, otis*, an ear; resemblance of the leaves. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Seeds for annuals, and also for the perennial herbaceous species; most of the latter freely, by dividing the root in spring; the scarcer ones by cuttings in a shady place, in summer, under a hand-light; moist places, by the side of ditches and ponds, suit most of them. *M. palu'stris* is the true Forget-me-not. It, as well as others, may be treated like alpine plants in winter, and have a saucer of water below the pot in summer, when they will bloom long and well. *M. alpe'stris*, *M. dissitiflo'ra*, *M. sylva'tica*, and their varieties are much used in spring bedding.

Hardy Herbaceous.

M. alpe'stris (alpine). ½. Blue. July. Europe. 1818.
„ „ *eleganti'ssima* (very-elegant). White, rose, and blue, free flowering. 1882.
„ *azo'rica* (Azorean). 1. Dark blue. August. Azores. 1846.
„ *azu'rea* (light blue). Blue. June. Corvo. 1842.
„ *cæspito'sa* (tufted). ¾. Blue. June. Britain.
„ „ *macroca'lyx* (large-calyxed). ½. Blue. June. Britain.
„ „ *Rehstei'neri* (Rehsteiner's). ½. Clear blue Summer. Lake of Geneva.
„ *dissitiflo'ra* (scattered-flowered). ½–1. Blue, with yellow eye. Switzerland. 1868.
„ „ *a'lba* (white). White. 1883.
„ „ *Dye'ræ* (Lady Dyer's).
„ „ *eleganti'ssima* (very-elegant). Leaves edged with creamy-white.
„ „ *grandiflo'ra* (large-flowered). Flowers large. 1886.
„ „ *splе'ndens* (splendid). Flowers very large. 1881.
„ *horte'nsis* (garden). See MYOSOTIDIUM NOBILE.
„ *interme'dia* (intermediate). ½. Blue. April. Europe, &c. 1800.
„ *lithospermifo'lia* (Lithospermum-leaved). See M. SYLVATICA.
„ *macra'ntha* (large-flowered). Flowers yellow, ½ in. long. New Zealand.
„ *na'na* (dwarf). See M. INTERMEDIA.
„ *na'na* (dwarf) of Vill. See ERITRICHIUM NANUM.
„ *obtu'sum* (blunt). See ANCHUSA BARRELIERI.
„ *palu'stris* (marsh). 1. Blue, yellow. July. Britain. "Common Forget-me-not."
„ *Rehstei'neri*, *M. Reichsteineri*, and *M. Reichensteineri*. See M. CÆSPITOSA REHSTEINERI.
„ *re'pens* (creeping). 1. Pale blue. June. Britain. "Blue Eyebright."
„ *rupi'cola* (rock). See M. ALPESTRIS.
„ *semperflo'rens* (ever-blooming). ½–1. Blue. Garden origin.
„ *seri'cea* (silky). See ERITRICHIUM SERICEUM.
„ *sparsiflo'ra* (scattered-flowered). 1½. Blue. May. S. France. 1822.
„ *sylva'tica* (wood). 1. Blue, yellow. May to July. Britain.
„ „ *alpe'stris* (alpine). See M. ALPESTRIS.
„ *Trave'rsii* (Travers's). ½. Yellow. New Zealand. 1894.

Hardy Annuals.

M. arve'nsis a'lba (white-corn-field). ½. White. June. Britain.
„ *austra'lis* (southern). Blue. June. N. S. Wales. 1824.
„ *califo'rnica* (Californian). See KRYNITZKIA CALIFORNICA.
„ *Ci'ntra* (Cintra). See M. WELWITSCHII.
„ *clava'ta* (club-*leaved*). See TRIGONOTIS CLAVATA.
„ *colli'na* (hill). ½. Blue. May. Britain.
„ *commuta'ta* (changed). See M. CÆSPITOSA.
„ *littora'lis* (sea-shore). Blue, yellow. April. Caspian Sea. 1836.
„ *macrophy'lla* (large-leaved). See ANCHUSA MYOSOTIDIFLORA.
„ *pedunculа'ris* (*long*-flower-stalked). See TRIGONOTIS CLAVATA.
„ *ungula'ta* (clawed). Blue. June. Siberia. 1822.
„ *versi'color* (changing-coloured). ½–¾. Yellow, then blue. June, July. Britain.
„ *Welwi'tschii* (Welwitsch's). ½. Bright blue, with yellow-white eye. Spain. 1890.

MY'RCIA. (A name of Venus. Nat. ord. *Myrtle-blooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Myrtus.)

Stove white-flowered evergreens. Cuttings of stubby young shoots, getting a little firm at their base, in sand, under a bell-glass, and in a mild bottom-heat, in May; sandy peat and fibrous loam, with charcoal nodules to keep it open. Winter temp., 50° to 60°; summer, 60° to 80°.

M. a'cris (sharp-flavoured). See PIMENTA ACRIS.
„ *amplexicau'lis* (stem-clasping). 4–5. White. Brazil. 1869.
„ *bractea'ta* (bracted). 4. May. Brazil. 1824.
„ *coria'cea* (leathery-*leaved*). 4. Caribbæan Isles. 1759.
„ *crassine'rvia* (thick-nerved). May. Guiana. 1780.
„ *pimentoi'des* (allspice-like). See EUGENIA ACRIS.
„ *Pseu'do-Mi'rti* (false-mini). May. Brazil. 1822.
„ *soro'ria* (sister). 5. May. Trinidad. 1822.
„ *splе'ndens* (shining). 12. May. Hispaniola. 1822.

MYRIA'CTIS. (From *murios*, a myriad, and *aktin*, a sunbeam; referring to the florets. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Bellis.)

Half-hardy annuals. Seeds in spring, in a gentle heat; division of the plant as growth commences; sandy loam; the protection of a cold pit will generally be necessary in winter.

M. Gmeli'ni (Gmelin's). White. June. Persia. 1836.
„ *nepale'nsis* (Nepaulese). White; disc yellow. Himalaya. 1900.
„ *Wi'ghtii* (Wight's). White; disc yellow. India. 1900.

MYRIADE'NUS. (From *murios*, a myriad, and *aden*, a gland; the leaves are thickly beset with glands. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. See ZORNIA.)

M. tetraphy'llus (four-leaved). See ZORNIA MYRIADENA.

MYRI'CA. Candleberry Myrtle. (From *murike*, a shrub, a tamarisk; inhabiting the banks of rivers. Nat. ord. *Galeworts* [Myricaceæ]. Linn. 22-*Diœcia*, 4-*Tetrandria*.)

The berries of *M. ceri'fera* yield a large proportion of wax, of which candles are made; hence the name. Greenhouse kinds, by cuttings under glass, in a shady place, in autumn and spring, but without bottom-heat; peat, moist and sandy. Hardy kinds, by seeds sown as soon as ripe, by layers, by cuttings, and by suckers and division. The *Ga'le* is one of our hardiest plants, and is used for many purposes, such as placing its leafy, dried twigs among clothes to give them an agreeable scent, and keep away moths, and to banish vermin from beds. The berries put into beer render it as intoxicating as those of the *Anami'rta Co'cculus*, and, when distilled while they are fresh, they yield an essential oil. All like rather moist, sandy peat.

Hardy Shrubs.

M. asplenifo'lia (Asplenium-leaved). 4. May. N. Amer. 1714.
„ *califo'rnica* (Californian). 4. Green. June. California. 1848.

M. caroline'nsis (Carolinian). 4–5. Green. June. United States. 1894.
,, *ceri'fera* (wax-bearing). 8. May. N. Amer. 1699. Deciduous.
,, *latifo'lia* (broad-leaved). 6. May. N. Amer. 1730. Evergreen.
,, *Ga'le* (*sweet*-gale). 4. May. Britain. Deciduous.
,, ,, *tomento'sa* (felted). Leaves silky, with hairs.

GREENHOUSE EVERGREEN SHRUBS.

M. escule'nta (eatable-*berried*). See M. NAGI.
,, *hirsu'ta* (hairy). See M. QUERCIFOLIA.
,, *mexica'na* (Mexican). 8. February. Mexico. 1823.
,, *Na'gi* (Nagi). 20. May. Nepaul. 1817.
,, *quercifo'lia* (oak-leaved). 3. June. S. Africa. 1752.
,, *ru'bra* (red). See M. NAGI.

MYRICA'RIA. (From *murike*, the Greek name of the Tamarisk. Nat. ord. *Tamarisks* [Tamaricaceæ]. Linn. 16-*Monadelphia*, 5-*Octandria*.)

Hardy, pink-flowered, evergreen shrubs. Cuttings of young shoots in spring or autumn, in sandy soil, under a bell-glass; or, if under a hand-light, all the better; sandy loam and leaf-mould, and all the better for a little peat.

M. dahu'rica (Dahurian). See M. DAVURICA.
,, *davu'rica* (Davurian). 6. Siberia. 1816.
,, *germa'nica* (German). 8–12. July. Europe. 1582.

MYRIOCA'RPA. (From *murios*, a myriad or large number, and *karpos*, a fruit. Nat. ord. Urticaceæ.)

A stove shrub, with leaves 2–3 feet long, including the stalks. Cuttings of young wood getting firm, in sand in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

M. colipe'nsis (Colipan). See M. LONGIPES COLIPENSIS.
,, *lo'ngipes* (long-stalked).
,, ,, *colipe'nsis* (Colipan). Small flowers in spikes 1½–2 feet long. Mexico. 1887.
,, *stipita'ta* (stalked). Green. Trop. Amer.

MYRIOCE'PHALUS. (From *murios*, a myriad, and *kephale*, a head; the heads are numerous in each cluster. Nat. ord. Compositæ.)

Half-hardy, herbaceous perennial. Seeds; cuttings in sand under a hand-light in summer; divisions. Ordinary soil, with a cold frame in winter.

M. Stua'rtii (Stuart's). 1. White bracts; yellow disc. Australia.

MYRIOPHY'LLUM. Water-Milfoil. (From *murios*, a myriad, and *phullon*, a leaf. Nat. ord. *Hippurids* [Haloragaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*. Allied to Hippuris.)

Hardy perennial, British water-plants, except where otherwise stated, suitable for the margins of lakes, ponds, &c. Chiefly by division; ponds and ditches; interesting little aquatics.

M. alterniflo'rum (alternate-flowered). 1. July.
,, *pectina'tum* (comb-*leaved*). See M. VERTICILLATUM PECTINATUM.
,, *proserpinacoi'des* (Proserpinaca-like). 1. Green. July. Brazil and Chili. 1878.
,, *spica'tum* (spiked). 1. Red. July.
,, *verticilla'tum* (whorled). 1. White. July.
,, ,, *pectina'tum* (comb-leaved). White. July.

MYRIO'PTERIS. (From *murios*, a myriad, and *pteris*, a fern. Nat. ord. Filices. Now referred to Cheilanthes, which see.)

M. e'legans (elegant). See CHEILANTHES MYRIOPHYLLA ELEGANS.
,, *fri'gida* (frigid). See CHEILANTHES FRIGIDA.
,, *lendi'gera* (maggot-bearing). See CHEILANTHES LENDIGERA.
,, *myriophy'lla* (myriad-leaved). See CHEILANTHES MYRIOPHYLLA.
,, *tomento'sa* (felted). See CHEILANTHES TOMENTOSA.
,, *vesti'ta* (clothed). See CHEILANTHES LANUGINOSA.

MYRI'STICA. Nutmeg. (From *muristikos*, sweet-smelling. Nat. ord. *Nutmegs* [Myristicaceæ]. Linn. 22-*Diœcia*, 13-*Monadelphia*.)

Stove evergreens. Cuttings of ripened shoots in sand, under a bell-glass, and in a sweet bottom-heat; sandy loam and fibrous peat. Winter temp., 55° to 60°; summer, 60° to 85°.

M. fa'tua (tasteless). 30. Green, white. Surinam. 1812.
,, *fra'grans* (fragrant). 30. Pale yellow. Moluccas. 1795. "Nutmeg."
,, *Horsfie'ldii* (Horsfield's). Ceylon.
,, *magni'fica* (magnificent). Travancore.
,, *moscha'ta* (musky). See M. FRAGRANS.
,, *sebi'fera* (wax-bearing). 10. Yellow, green. Guiana.

MYRMECO'DIA. (From *murmekodes*, abounding in ants; ants take up their abode in the tuberous bole of the plant. Nat. ord. Rubiaceæ.)

Interesting stove plants, from the fact that ants, in the native country, take up their abode in holes of the short, tuberous stem. Seeds; imported plants, and cuttings in sand in a close case, with bottom-heat. Loam, peat, and sand.

M. Antoi'nei (Antoine's). 1–1½. Flowers small, white. Torres Straits. 1897.
,, *Becca'ri* (Beccar's). 1–1½. White. Trop. Australia.

MYRO'BALAN PLUM. *Pru'nus cerasi'fera*.

MYRO'DIA. (From *muron*, fragrant balsam, and *odme*, smell. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Helicteres.)

M. turbina'ta (top-shaped-*calyxed*). See QUARARIBEA TURBINATA.

MYRO'SMA. (From *muron*, fragrant balsam, and *osme*, smell. Nat. ord. Scitaminaceæ.)

Evergreen stove herbs with tuberous roots, with fine foliage. Divisions and suckers. Fibrous loam, peat plenty of sand, and some nodules of charcoal.

M. cannæfo'lium (Canna-leaved). White, small. Guiana. 1820.
,, *Gla'dioli* (Gladiolus-leaved). Trop. Amer.
,, *hemisphæ'ricum* (hemispherical). Trop. Amer.
,, *kummeria'num* (Kummerian). Leaves dark green, with silvery bands. Trop. Amer. 1875.
,, *Lubbe'rsii* (Lubbers's). Leaves marbled with yellow. Trop. Amer. 1880.
,, *madagascarie'nse* (Madagascar). White. Madagascar. 1872.
,, *na'num* (dwarf). ½. White. Leaves with a yellow median band. Trop. Amer. 1894.
,, *seto'sum* (bristly). 2. Purple or white. Brazil. 1824.

MYROSPE'RMUM. (From *muron*, myrrh, or aromatic balsam, and *sperma*, a seed; the seeds yield a strong-smelling resin. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Sophora.)

Stove evergreen trees. Cuttings of half-ripened shoots in sand, in summer, under a bell-glass, and in bottom-heat; loam and peat, with an addition of silver sand and leaf-mould. Winter temp., 55°; summer, 60° to 85°.

M. frute'scens (shrubby). 10. Rose. May. Caracas. 1824.
,, *perui'ferum* (Peru-*balsam*-bearing). See MYROXYLON PERUIFERUM.
,, *pube'scens* (downy). See MYROXYLON PUBESCENS.
,, *tolui'ferum* (Tolu-bearing). See MYROXYLON TOLUIFERUM.

MYRO'XYLON. (From *muron*, myrrh, and *xulon* wood; in allusion to the fragrant balsam contained in the wood. Nat. ord. Leguminosæ.)

This is the genus which produces the Balsam of Peru and Balsam of Tolu, used in perfumery and in the preparation of lozenges. See MYROSPERMUM FOR CULTURE.

M. Perei'ræ (Pereira's). Central Amer.
,, *perui'ferum* (Peru-bearing). 40. White. Brazil. 1824.
,, *pube'scens* (downy). 40. White. Colombia. 1820.
,, *tolui'ferum* (Tolu-bearing). 40. Cream. Trop. Amer. 1733.

MY'RRHIS. Myrrh. (From *murrha*, myrrh, or perfumed balsam. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Scandix.)

This is the British Myrrh, formerly used in various ways. Hardy herbaceous. Seeds, dividing at the root, and slips inserted early in spring in a shady place, common garden soil.

M. odora'ta (sweet-scented). 2½. White. May. Britain.

MY'RSINE. (The ancient name of *myrrh*. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*. Allied to Ardisia.)

Greenhouse evergreens, but *M. africa'na* is hardy in the southern and more favoured parts of England and Ireland. Cuttings of stubby shoots before they are quite ripe, in sand, under a glass, in heat; fibrous loam and sandy peat. Winter temp., 38° to 48°.

M. africa'na (African). 4. Brown. May. S. Africa. 1691.
,, ,, *bifa'ria* (two-rowed-*leaved*). 20. White, pink. January. Nepaul. 1822.
,, ,, *retu'sa* (bent-back-*leaved*). 2. White, green. June. S. Africa. 1788.
,, *canarie'nsis* (Canary-*Island*). 30. Whitish. Teneriffe. 1820.
,, *capitella'ta* (small-headed). 30. Green. January. Nepaul. 1822.
,, *coria'cea* (leathery). 8. December. Jamaica. 1770.
,, *Heberde'nia* (Heberdenia). See ARDISIA EXCELSA.
,, *howittia'na* (Howittian). Australia.
,, *ilicifo'lia* (holly-leaved). Australia. 1826.
,, *melano'phleos* (black-paper). 3. White, green. Cape of Good Hope. 1783.
,, *mi'tis* (mild). 6. White. July. S. Africa. 1692.
,, *pendulifio'ra* (drooping-flowered). Mexico.
,, *penta'ndra* (five-anthered). 3. White. S. Africa. 1770.
,, *salici'na* (willow-like). New Zealand.
,, *Sa'mara* (Samara). See M. PENTANDRA.
,, *semiserra'ta* (half-saw-*edged*). 30. Pink. January. Nepaul. 1822.
,, ,, *subspino'sa* (slightly-spined). 20. Nepaul. 1823.
,, *Urvi'llei* (Urville's). 10. New Zealand.
,, *varia'bilis* (variable). 3. July. N.S. Wales. 1824.

MYRSIPHY'LLUM. (From *mursine*, myrtle, and *phullon*, a leaf; aromatic leaves. Nat. ord. the Asparagus section of *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Asparagus.)

M. angustifo'lium (narrow-leaved). See ASPARAGUS MEDIOLOIDES ANGUSTIFOLIUS.
,, *asparagoi'des* (Asparagus-like). See ASPARAGUS MEDEOLOIDES.
,, ,, *myrtifo'lius* (myrtle-leaved). See ASPARAGUS MEDEOLOIDES MYRTIFOLIUS.
,, *falcifo'rme* (sickle-shaped). See ASPARAGUS MEDEOLOIDES FALCIFORMIS.

MY'RTUS. The Myrtle. (From *muron*, signifying perfume, and *murtos* is the myrtle-tree. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

The French perfume called *Eau d'Ange* is obtained from the distilled water of myrtle-flowers; and myrtle-berries and flower-buds are eaten in Italy for pepper. Evergreens, and all white-flowered but two. Cuttings of half-ripened shoots in sandy soil, under a glass; sandy loam and a little peat or leaf-mould, or very old, rather dry cow-dung. Winter temp., 38° to 45°. The stove kinds merely require a higher temperature. The varieties of *commu'nis* are propagated by cuttings, or by grafting and budding on the commoner kinds. In the south of England the myrtle flourishes against a wall; but north of London, in such a position, it requires protection in winter.

STOVE EVERGREENS.

M. biflo'ra (two-flowered). See EUGENIA BIFLORA.
,, *buxifo'lia* (box-leaved). 6. Isle of Bourbon. 1826.
,, *dumo'sa* (bushy). 3. June. W. Ind. 1793.
,, *Gre'gii* (Greg's). See EUGENIA GREGII.
,, *mespiloi'des* (medlar-like). See EUGENIA COTINIFOLIA.
,, *mucrona'ta* (small-pointed). Brazil.
,, *obscu'ra* (doubtful). See EUGENIA OBSCURA.
,, *orbicula'ta* (round-*leaved*). See EUGENIA COTINIFOLIA.
,, *Pime'nta* (Pimenta). See PIMENTA OFFICINALIS.
,, *ru'fa* (brown-red). See EUGENIA FERRUGINEA.
,, *virgulto'sa* (twiggy). See EUGENIA VIRGULTOSA.

GREENHOUSE EVERGREENS.

M. affi'nis (kindred). 6. Purple. June. China. 1823.
,, *apicula'ta* (small-apexed). See M. LUMA.
,, *bulla'ta* (blistered-*leaved*). 18. White. July. New Zealand.
M. Che'ken (Cheken). See EUGENIA CHEQUEN.
,, ,, *apicula'ta* (small-apexed). See M. LUMA.
,, *commu'nis* (common). 6. June. S. Europe. 1597.
,, ,, *be'lgica* (*broad-leaved*-Dutch). 6. July. S. Europe. 1597.
,, ,, *bæ'tica* (Bœtic). 6. July. S. Europe. 1597.
,, ,, *flo're-ple'no* (double-flowered). 6. July. S. Europe. 1597.
,, ,, *ita'lica* (Italian). 6. July. S. Europe. 1597.
,, ,, *lusita'nica* (Portuguese). 6. July. S. Europe. 1597.
,, ,, *macula'ta* (spotted). 6. July. S. Europe. 1597.
,, ,, *mucrona'ta* (pointed-*leaved*). 2. July. S. Europe. 1597.
,, ,, *roma'na* (Roman). 6. July. S. Europe. 1597.
,, ,, *tarenti'na* (Tarentine). 6. July. S. Europe. 1597.
,, ,, *variega'ta* (variegated). 6. July. S. Europe. 1597.
,, *Lu'ma* (Luma). 3. White. Chili. B.M., t. 5040.
,, *melastomoi'des* (Melastoma-like). See RHODAMNIA TRINERVIA.
,, *myrsinoi'des* (Myrsine). Peru.
,, *obcorda'ta* (reversely-egg-shaped). New Zealand.
,, *Ra'lphii* (Ralph's). New Zealand.
,, *rhytispe'rma* (wrinkled-seeded). Australia.
,, *tarenti'na* (Tarentine). See M. COMMUNIS TARENTINA.
,, *tenuifo'lia* (fine-leaved). 5. N. Holland. 1824.
,, *tomento'sa* (woolly-*leaved*). See RHODOMYRTUS TOMENTOSA.
,, *trine'rvia* (three-nerved). See RHODAMNIA TRINERVIA.
,, *U'gni* (Ugni). 3–5. Pink. July. Chili. 1845.
,, ,, *variega'ta* (variegated).

MYSTACI'DIUM. (From *mustax*, a moustache; in allusion to the hairs on the apex of the column. Nat. ord. Orchidaceæ.)

Stove orchids allied to Angræcum. Offsets in spring. Sphagnum, broken potsherds, and nodules of charcoal.

M. caule'scens (stemmed). 1½. Green. White. September. Madagascar. 1834.
,, *di'stichum* (two-ranked). See ANGRÆCUM DISTICHUM.
,, *dolabrifo'rme* (hatchet-shaped). W. Trop. Africa.
,, *filico'rne* (thread-horned). ½. White. July. S. Africa. 1825.
,, *hariotia'num* (Hariotian). ½. White, minute. Madagascar. 1897.

MYXOPY'RUM. (From *muxa*, a kind of plum, and *pyrum* (more correctly *pirum*), a pear; in allusion to the plum-like fruit and its colour. Nat. ord. Oleaceæ.)

Tall, twining stove shrub. Cuttings of half-ripe shoots in sand, with bottom-heat. Loam, peat, and sand.

M. smilacifo'lium (Smilax-leaved). Flowers very small, yellow; fruit nearly round. Malaya.

N

NÆGE'LIA. (Commemorative of *Dr. Nægeli*, of Munich. Nat. ord. Gesneraceæ.)

Stove perennial herbs. Seed; cuttings of the young stems, and of mature leaves later on, and by the increase of the tuberous or fleshy rhizomes. Peat, leaf-mould, a small quantity of loam, and plenty of sand.

N. ama'bilis (lovely). See N. MULTIFLORA.
,, *cinnabari'na* (cinnabar). 2. Scarlet. Mexico. 1856.
,, *fu'lgida* (shining). 1½. Vermilion. Mexico. 1867.
,, ,, *bi'color* (two-coloured). 1½. Vermilion, white.
,, *geroltia'na* (Geroltian). 1½–2. Orange-scarlet. Mexico. 1844.
,, *multiflo'ra* (many-flowered). 1½. Creamy-white. Mexico.
,, *zebri'na* (zebra-striped). 1½. Orange-scarlet, yellow. Leaves marbled with violet-purple. Mexico. 1840.

NAGE'LIA. (Named after *Nageli*, a German botanist. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Dipentagynia*. United to Cotoneaster.)

N. denticula'ta (toothleted). See COTONEASTER DENTICULATA.

NAILS for training wall-trees are best made of cast iron, being the cheapest, stoutest, and most enduring. Before using they should be heated almost to redness, and then be thrown into cold linseed-oil. When dry,

they have a varnish upon them which preserves them from rusting, and prevents the mortar of the wall sticking to them so corrosively as it does if they are un-oiled. In drawing old nails from walls, the mortar is not so much disturbed if the nails are driven in a little further before they are extracted. Old nails may be renovated by being heated to redness, and then thrown into water: this removes from them the mortar, and then they may be again heated and put into oil as before directed. The cast iron nails used by gardeners are known to the ironmonger as wall-nails, and are described as 2½, 3, 4, and 5 lb. wall-nails, accordingly as 1000 of them are of those weights. Nails, in most cases, require to be driven only a very little way into the mortar, and walls then do not become defaced by them for many years. In all summer nailing of peach-trees, roses, &c., the point only requires to be driven in, so that the nail may be easily withdrawn by the fingers.

NA'MA. (From *nama*, a stream of water; the natural place of growth. Nat. ord. *Hydrophyls* [Hydrophyllaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Hydrolea.)

Seeds sown in a hotbed, in March and April, and bloomed in the greenhouse, after being hardened; divisions and cuttings of the plant in spring; sandy loam and fibrous peat, with sand and charcoal to keep it open. Common stove and greenhouse temperature.

N. jamaice'nse (Jamaica). White, blue. June. Jamaica. 1812. Stove annual.

„ *Pa'rryi* (Parry's). 4–5. Lilac-purple. N.W. Amer. 1881. Half-hardy perennial.

„ *undula'tum* (waved-*leaved*). 1. Violet. June. Mexico. 1826. Greenhouse herbaceous.

NANA'NTHEA. (From *nanos*, a dwarf, and *anthe*, a flower; the only known species being a dwarf annual. Nat. ord. Compositæ.)

Hardy annual. Seeds. Ordinary well-tilled garden soil.

N. perpusi'lla (very-dwarf). ½. White; disc yellow. Corsica and Sardinia. 1825.

NANDI'NA. (From *nandin*, the Japanese name. Nat. ord. *Berberids* [Berberidaceæ]. Linn. 6-*Hexandria*, 2-*Digynia*. Allied to Leontice.)

Greenhouse evergreen shrubs. Cuttings of ripened shoots in sand, under a hand-light, and not hurried; loam and sandy peat; a sheltered place, a cold pit, or a greenhouse in winter. An interesting plant, with white petals, yellow anthers, and red fruit.

N. denuda'ta (denuded). 6. 1879.

„ *dome'stica* (domestic). 6. White. July. China. 1804.

NA'NNORRHOPS. (From *nanos*, dwarf, and *rhops*, a bush; in allusion to the dwarf, branching, and bushy habit. Nat. ord. Palmaceæ.)

A small greenhouse palm. Seeds; suckers. Loam, peat, sand, and some nodules of charcoal.

N. ritchiea'na (Ritchiean). 3–18. N.W. India and Afghanistan. 1886. Reintroduced 1912.

NANO'DES. (From *nanodes*, dwarfish. Nat. ord. Orchidaceæ. Now referred to Epidendrum.)

N. di'scolor (two-coloured). See EPIDENDRUM DISCOLOR.

„ *Medu'sæ* (Medusa's). See EPIDENDRUM MEDUSÆ.

NAPÆ'A. (From *ne*, not, and *paio*, to wound; literally, not poisonous. Nat. ord. Malvaceæ.)

Hardy, perennial herb. Seeds; divisions and cuttings in summer, under a hand-light. Ordinary garden soil.

N. dioi'ca (dicecious). 5–6. Rosy-purple. July, August. N. Amer.

NAPOLEO'NA. (Named after *Napoleon Buonaparte*. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Dr. Lindley has it in the Myrtle alliance, next to the Mangroves.)

Stove evergreen shrubs. Cuttings of half-ripened shoots, two to four inches long, in sand, under a bell-glass, and in a mild bottom-heat, giving air at night, to prevent damping; sandy peat and fibrous loam. Winter temp., 55° to 60°; summer, 60° to 90°; and moist.

N. cuspida'ta (short-pointed). 6. Cream, with crimson centre. Trop. Africa. 1886.

N. imperia'lis (imperial). 6. Apricot, crimson. May. Sierra Leone. 1844.

„ *Mie'rsii* (Miers's). 5. Trop. Africa. 1843.

„ *Whitfie'ldii* (Whitfield's). See N. MIERSII.

NAPOLEON'S WEEPING WILLOW. *Sa'lix babylo'nica.*

NARAVE'LIA. (From *naravæl*, its Cingalese name. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Clematis.)

Stove evergreen climber. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy peat and fibrous loam. Winter temp., 50° to 60°; summer, 60° to 85°.

N. zeyla'nica (Ceylon). 12. Yellow. Ceylon. 1796.

NARCI'SSUS. Daffodil. (Name of a youth, said to have been changed into this flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

This genus of hardy bulbs, like the Rhododendron, has so multiplied from seeds, that it is utterly impossible to make out what are, and what are not, true species. Salisbury and Haworth gave generic names to the different groups; but their definitions have broken down. For all practical purposes, the whole may be included under the old name Narcissus. Seeds, but chiefly by offsets from the bulbs, which, in most kinds, are freely produced; rich, sandy loam, with a little leaf-mould. Those to be forced early should be removed out of the ground as soon as the leaves decay, and be kept dry and cool until potting-time, in autumn.

N. absci'ssus (cut-off). See N. MUTICUS.

„ *a'lbicans* (whitening). See N. MOSCHATUS ALBICANS.

„ *a'lbus* (white). See N. BIFLORUS and N. MOSCHATUS.

„ *angustifo'lius* (narrow-leaved). See N. POETICUS RADIIFLORUS.

„ *aperticoro'na* (open-crowned). See N. TAZETTA CUPULARIS.

„ *apoda'nthus* (stalkless-flowered). See N. JUNCIFOLIUS RUPICOLA.

„ *aura'ntius* (orange). See N. INCOMPARABILIS AURANTIUS.

„ *Backhou'sei* (Backhouse's). Segments sulphur; trumpet lemon. Garden origin.

„ *Ba'rlæ* (Barla's). See N. TAZETTA POLYANTHOS.

„ *Ba'rrii* (Barr's). Segments lemon; cup orange and yellow. Garden origin.

„ *Berna'rdi* (Bernard's). White; cup yellow to orange-scarlet. Pyrenees. Natural hybrid.

„ *bi'color* (two-coloured). See N. PSEUDO-NARCISSUS BICOLOR.

„ *bicrena'tus* (twice-notched). See N. INTERMEDIUS.

„ *biflo'rus* (two-flowered). 1. White. March. Europe (Britain).

„ *bi"frons* (two-faced). See N. INTERMEDIUS, of which it is a variety.

„ *bre'viflos* (short-flowered). See N. PSEUDO-NARCISSUS BICOLOR.

„ *Broussone'tii* (Broussonet's). 1. White; cup rudimentary. April. Morocco. 1888.

„ *Bulboco'dium* (bulbous). ½. Yellow. April. Portugal. 1629. "Hoop-petticoat Daffodil."

„ „ *citri'nus* (lemon). ½. Pale lemon-yellow, large. 1880.

„ „ *conspi'cuus* (conspicuous). ½. Flowers large, bright yellow. March, April.

„ „ *Græ'llsii* (Græll's). ½. Primrose-yellow. Mountains of Castile. 1879.

„ „ *mi'nor* (lesser). ½. Pale sulphur. March. Spain. 1696.

„ „ *monophy'llus* (one-leaved). ½. White. December to February. Algeria. 1870.

„ „ *niva'lis* (snowy). ½. Orange-yellow. Mountains of Central Spain and Asturias. 1879.

„ „ *tenuifo'lius* (slender-leaved). ½. Yellow; trumpet 6-lobed.

„ *Burbi'dgei* (Burbidge's). 1. White; crown yellow and red. Garden origin.

„ *calathi'nus* (cup-shaped) of Linnæus. See N. ODORUS.

„ *ca'mbricus* (Welsh). See N. PSEUDO-NARCISSUS and its forms.

„ *Campernе'lli* (Campernelle). See N. ODORUS.

„ *candidi'ssimus* (whitest). See N. MOSCHATUS.

„ *ca'pax* (capacious). ½. Pale yellow. May. France.

„ *ceri'nus* (wax-coloured). See N. TAZETTA PATULUS.

N. ce'rnuus (*pale*-drooping). ½. Lemon, white. March. Pyrenees.
,, ,, *coro'na ple'na* (full-crowned). 1. Lemon, white. March.
,, *citri'nus* (citron-coloured). See N. BULBOCODIUM CITRINUS.
,, *compre'ssus* (flat-*stalked*). See N. INTERMEDIUS, of which it is a variety.
,, *co'ncolor* (one-coloured). See N. INCOMPARABILIS CONCOLOR.
,, *conspi'cuus* (conspicuous). See N. BULBOCODIUM CONSPICUUS.
,, *crenula'tus* (scolloped-*petaled*). See N. TAZETTA LACTICOLOR.
,, *Curti'sii* (Curtis's). See N. ODORUS TRILOBUS.
,, *cyclami'neus* (Cyclamen-like). 1. Lemon; trumpet orange-yellow. Portugal. "Cyclamen-flowered Daffodil."
,, *Cy'pri* (Cyprian). See N. TAZETTA LACTICOLOR.
,, *defi'ciens* (deficient). See N. SEROTINUS DEFICIENS.
,, *du'bius* (doubtful). See N. TAZETTA DUBIUS.
,, *e'legans* (elegant). ½. White; cup saucer-shaped, yellow. September, October. Italy.
,, ,, *obsole'tus* (obsolete). Segments broader; cup rudimentary.
,, *eystettie'nsis* (Eystettan). See N. PSEUDO-NARCISSUS EYSTETTENSIS.
,, *fistulo'sus* (hollow-*stalked*). See N. TAZETTA PATULUS.
,, *floribu'ndus* (many-flowered). See N. TAZETTA LACTICOLOR.
,, *galanthifo'lius* (snowdrop-leaved). ½. White. May. Pyrenees.
,, *Goua'ni* (Gouan's). See N. INCOMPARABILIS.
,, *gra'cilis* (slender). 1½. Yellow. April. Bordeaux.
,, ,, *tenu'ior* (more-slender). Flowers smaller, paler, changing to white. 1789.
,, *grandiflo'rus* (large-flowered). See N. TAZETTA LACTICOLOR.
,, *Hawo'rthii* (Haworth's). See N. TRIANDRUS.
,, ,, *ple'nus sulphu'reus* (double-sulphur). See N. INCOMPARABILIS PLENUS SULPHUREUS.
,, *hemina'lis* (*lesser-curled*-cup). See N. ODORUS TRILOBUS and forms.
,, *Horsfie'ldii* (Horsfield's). See N. PSEUDO-NARCISSUS BICOLOR.
,, *Hu'mei* (Hume's). 1. Sulphur; trumpet lemon. Garden origin.
,, ,, *a'lbidus* (whitish). 1. White; trumpet lemon.
,, *incompara'bilis* (incomparable). 1. Yellow. April. Portugal. 1629.
,, ,, *a'lbus* (white). 1. White; cup lemon-yellow.
,, ,, *a'lbus ple'nus* (double white). 1. Double white and lemon-yellow. "Orange Phœnix."
,, ,, *aura'ntius* (orange). 1. Pale yellow; cup with an orange rim.
,, ,, *aura'ntius ple'nus lu'teus* (double-yellow). 1. Pale yellow; cup with orange rim.
,, ,, *aura'ntius ple'nus* (double orange). "Orange Phœnix."
,, ,, *co'ncolor* (one-coloured). Wholly pale lemon-yellow.
,, ,, *ple'nus sulphu'reus* (double-sulphur). 1. Sulphur. April. 1629. "Sulphur Phœnix."
,, ,, *semiparti'tus* (half-parted). Pale yellow; cup lemon-yellow, deeply lobed.
,, ,, *semiparti'tus ple'nus* (double-half-parted). Soft lemon-yellow; many pointed segments.
,, *infla'tus* (swollen). See N. BULBOCODIUM.
,, *infundibula'ris* (funnel-*flowered*). See N. ODORUS TRILOBUS.
,, *interje'ctus* (interjected). See N. ODORUS INTERJECTUS.
,, *interme'dius* (intermediate). 1½. Pale yellow. March. Pyrenees. Forms of this are *N. bi'frons*, *N. biscrena'tus*, *N. compre'ssus*, and *N. primuli'nus*.
,, *ita'licus* (Italian). See N. TAZETTA ITALICUS.
,, *Johnsto'ni* (Johnston's). 1. Wholly clear lemon-yellow. Portugal. 1887.
,, *Jonqui'lla* (jonquil). ¾. Pale yellow. April. Spain. 1596. "Jonquil."
,, ,, *Burbi'dgei* (Burbidge's). Cup 6-parted. 1885.
,, ,, *flo're-ple'no* (double-flowered). 1. Yellow. April. Spain. 1596.
,, *juncifo'lius* (rush-leaved). Yellow. S. Europe. "Rush-leaved Daffodil."
N. juncifo'lius rupi'cola (rock-dwelling). ½. Yellow; cup distinctly 6-lobed. April. Spain.
,, ,, *scabe'rulus* (rather-rough). ½. Yellow. Portugal. 1888.
,, *latifo'lius* (broad-leaved-*orange*). See N. TAZETTA CUPULARIS.
,, *Lee'dsii* (Leeds's). 1. White; cup lemon. Garden origin.
,, *lobula'ris* (small-lobed). See N. PSEUDO-NARCISSUS LOBULARIS.
,, *lobula'tus* (small-lobed). See N. BULBOCODIUM, of which it is a variety.
,, *longiflo'rus* (long-flowered). See N. MOSCHATUS TORTUOSUS.
,, *lorifo'lius* (strap-leaved). See N. MAJOR LORIFOLIUS.
,, *lu'na* (moon). See N. TAZETTA POLYANTHOS.
,, *Maclea'yi* (Mac Leay's). ½. Cream. March. Smyrna. 1815.
,, ,, *Nelso'ni* (Nelson's). 1. White; trumpet narrow, yellow.
,, ,, *Sabi'ni* (Sabine's). 1. White larger; trumpet yellow, longer.
,, ,, *tri'dymus* (three-flowered). 1. Yellow, fragrant.
,, *maja'lis* (May) of Curtis. See N. POETICUS RADIIFLORUS.
,, *ma'jor* (larger). 1. Yellow. March. Spain. 1629. *N. pri'nceps*, *N. propi'nquus* (1629), and *N. spu'rius* are allied forms.
,, ,, *lorifo'lius* (strap-leaved). 1½–2. White; trumpet yellow. March. *N. tubæflo'rus* is an allied form.
,, ,, *Telamo'nius* (Telamonian). 1. Sulphur-yellow; trumpet yellow. April.
,, ,, *Telamo'nius grandiple'nus* (large-double). 1. Yellow. April.
,, ,, *Telamo'nius ple'nus* (double). 1. Greenish-yellow, ultimately golden-yellow. "Wilmer's Great Double Golden-yellow Daffodil."
,, *ma'ximus* (largest). 1. Yellow. April. Europe.
,, *me'dio-lu'teus* (yellow-centred). See N. BIFLORUS.
,, *mi'nor* (smaller). ½. Yellow. March. Spain. 1629.
,, ,, *mi'nimus* (least). ¼. Yellow; segments not overlapping. March. Europe.
,, ,, *na'nus* (dwarf). ½. Yellow, with overlapping segments longer than the trumpet. March.
,, ,, *ple'nus* (double). ½. Yellow, with twisting segments. March. "Rip Van Winkle."
,, ,, *pu'milus* (dwarf). ½. Yellow; segments wedge-shaped at base. March. Spain.
,, *monophy'llus* (one-leaved). See N. BULBOCODIUM MONOPHYLLUS.
,, *monta'nus* (mountain). See N. POCULIFORMIS.
,, *moscha'tus* (musky). 1. White. April. Pyrenees. 1759. "Musk Daffodil."
,, ,, *a'lbicans* (whitening). Flowers larger; segments more overlapping. March. 1789.
,, ,, *tortuo'sus* (twisted). Segments twisted, shorter than the trumpet. Spain. 1629.
,, *multiflo'rus* (*tall*-many-flowered). See N. TAZETTA CUPULARIS.
,, ,, *au'reus* (golden-*many-flowered*). See N. TAZETTA AUREUS.
,, *mu'ticus* (snipped). 1. Yellow. May. Pyrenees.
,, *na'nus* (dwarf). See N. MINOR NANUS.
,, *negle'ctus* (neglected). See N. TAZETTA LACTICOLOR.
,, *Nelso'ni* (Nelson's). See N. MACLEAYI NELSONI.
,, *ni'veus* (snowy). See N. TAZETTA PAPYRACEUS.
,, *no'bilis* (noble). See N. PSEUDO-NARCISSUS NOBILIS.
,, *nu'tans* (nodding). See N. TRIANDRUS NUTANS.
,, *obsole'tus* (obsolete). See N. ELEGANS OBSOLETUS.
,, *obvalla'ris* (trenched-round). See N. PSEUDO-NARCISSUS OBVALLARIS.
,, *odo'rus* (sweet-scented). 1. Yellow. May. S. Europe. 1629. "Campernel."
,, ,, *la'tus* (bright). See N. ODORUS TRILOBUS.
,, ,, *mi'nor* (lesser). ¾. Cup smaller than in any other form. "Small Jonquil."
,, ,, *mi'nor ple'nus* (lesser-double). ¾. Yellow, fragrant. April. "Queen Anne's Double Jonquil."
,, ,, *ple'nus* (double). 1. Yellow, fragrant. "Double Campernel."
,, ,, *rugulo'sus* (wrinkled). Segments shorter, broader, overlapping. *N. calathi'nus* (1629) and *N. interje'ctus* are allied forms.
,, ,, *rugulo'sus ma'ximus* (largest). Flowers golden-yellow, twice as large. 1905.

N. odo'rus tri'lobus (three-lobed). Flowers smaller; segments half as long again as the cup. *N. Curti'sii* and *N. hemina'lis* are allied forms.
„ *orienta'lis* (eastern). 1. White. April. Levant.
„ *orna'tus* (adorned) of Haworth. See N. POETICUS TRIPODALIS.
„ *pachybo'lbos* (thick-bulbed). See N. TAZETTA PACHYBOLBOS.
„ *palli'dulus* (rather-pale). See N. TRIANDRUS PALLIDULUS.
„ *pa'llidus præ'cox* (pale-early). See N. PSEUDO-NARCISSUS PALLIDUS PRÆCOX.
„ *papyra'ceus* (paper). See N. TAZETTA PAPYRACEUS.
„ „ *jasmi'neus* (jasmine-like). See N. TAZETTA PAPYRACEUS.
„ *patella'ris* (basin-*flowered*). See N. POETICUS PATELLARIS and forms.
„ *pa'tulus* (spreading. *White Musk*). See N. TAZETTA PATULUS.
„ *poculifo'rmis* (bowl-shaped). 1. Pure white. April. Pyrenees.
„ *poe'ticus* (poet's). 1. White. May. S. Europe.
„ „ *angustifo'lius* (narrow-leaved). See N. POETICUS RADIIFLORUS.
„ „ *maja'lis* (May). See N. POETICUS RECURVUS.
„ „ *orna'tus* (adorned). See N. POETICUS TRIPODALIS.
„ „ *patella'ris* (basin-cupped). 1. White; segments imbricated. May.
„ „ *patella'ris ple'nus* (double). 1. White. May.
„ „ *poeta'rum* (Poets'). 1. White; cup orange-scarlet. April.
„ „ *radiiflo'rus* (ray-flowered). 1. White; segments very narrow, not overlapping. March. 1570.
„ „ *recu'rvus* (recurved). 1. White; segments incurved at the sides. May. S. Europe. "Pheasant's Eye."
„ „ *recu'rvus ple'nus* (double). 1. White. May, June. "Gardenia-flowered Narcissus."
„ „ *stella'ris* (starry). 1. White; segments not overlapping.
„ „ *tripoda'lis* (three-stalked). 1. White; segments narrow, reflexing. March.
„ „ *verbane'nsis* (Verbanian). ½. White; segments lanceolate, reflexing.
„ *primuli'nus* (cowslip-*cupped*). See N. INTERMEDIUS, of which it is a variety.
„ *pri'nceps* (chief). See N. MAJOR, of which it is a form.
„ *propi'nquus* (allied). See N. MAJOR PROPINQUUS.
„ *Pseu'do-narci'ssus* (bastard Narcissus). 1. Pale yellow. March. England. "Daffodil or English Lent Lily."
„ „ *bi'color* (two-coloured). 1. White; trumpet bright lemon-yellow. April. Spain. 1629. Varies in size from *N. bre'viflos* to *N. Horsfie'ldi*, which are forms.
„ „ *ca'pax ple'nus* (double-capacious). See N. PSEUDO-NARCISSUS EYSTETTENSIS.
„ „ *eystette'nsis* (Eystettan). ½. Segments pale lemon in six overlapping rows. "Queen Anne's Double Daffodil."
„ „ *lobula'ris* (small-lobed). 1. Yellow, with overlapping segments, and 6-lobed trumpet. March.
„ „ *lobula'ris ple'nus* (double). 1. Large, yellow, fragrant. "Dwarf Double Scented Daffodil."
„ „ *no'bilis* (noble). 1. Yellow; trumpet spreading at the rim.
„ „ *obvalla'ris* (trenched-round). 1. Bright yellow; segments overlapping; trumpet wide. March. "Tenby Daffodil." *N. ca'mbricus* is an allied form.
„ „ *pa'llidus præ'cox* (pale-early). 1. Pale sulphur. March. Pyrenees.
„ „ *plens'ssimus* (most-double). 1. Yellow. March. "Parkinson's Rose-flowered Daffodil."
„ „ *ple'nus* (double). 1. Yellow. March. France. "Gerard's Double-flowered English Lent Lily."
„ „ *rugi'lobus* (plaited-lobed). 1. Yellow; trumpet 6-lobed, plaited.
„ „ *sco'ticus* (Scotch). 1. Yellow. May. Scotland.
„ „ *sco'ticus ple'nus* (double). 1. White and golden-yellow. "Double Scotch Garland Lily."
„ „ *serra'tus* (sawed). 1. Pale yellow; trumpet longer than the segments. March. S. Europe.
„ „ *variifo'rmis* (variable-shaped). 1. Pale sulphur and white. It tends towards *N. moschatus*. March. Pyrenees.

N. pulche'llus (pretty). See N. TRIANDRUS PULCHELLUS.
„ *pu'milus* (dwarfish). See N. MINOR PUMILUS.
„ *pusi'llus* (small. *Jonquil*). See N. ODORUS MINOR.
„ „ *ple'nus* (double. *Queen Anne's Jonquil*). See N. ODORUS MINOR PLENUS.
„ *radia'tus* (rayed). See N. TAZETTA.
„ *recu'rvus* (curled-back-*leaved*). See N. POETICUS RECURVUS.
„ *rugi'lobus* (plaited-lobed). See N. PSEUDO-NARCISSUS RUGILOBUS.
„ *rugulo'sus* (wrinkled-*cup*). See N. ODORUS RUGULOSUS.
„ *Sabi'ni* (Sabine's). See N. MACLEAYI SABINI.
„ *scabe'rulus* (rather-rough). See N. JUNCIFOLIUS SCABERULUS.
„ *semiparti'tus* (cloven-*cupped*). See N. INCOMPARABILIS SEMIPARTITUS.
„ *sero'tinus* (late). ½. White; cup lemon-yellow. October, November. S. Europe; Palestine. 1629.
„ „ *defi'ciens* (deficient). Crown nearly obsolete.
„ *serra'tus* (saw-*edged*). See N. PSEUDO-NARCISSUS SERRATUS.
„ *si'milis* (similar. *Jonquil*). See N. JONQUILLA.
„ *spu'rius* (bastard). See N. MAJOR SPURIUS.
„ *stella'ris* (starry-*sepaled*). See N. POETICUS STELLARIS.
„ *striate'llus* (small-channelled). See N. TRIANDRUS.
„ *syri'acus* (Syrian). See N. TAZETTA LACTICOLOR.
„ *Taze'tta* (Tazetta). 1. White. March. Spain. 1759. "Polyanthes Daffodil."
„ „ *au'reus* (golden). Lemon-yellow; cup darker.
„ „ *Bertolo'nii* (Bertoloni's). Wholly bright yellow.
„ „ *canarie'nsis* (Canary-Island). Wholly white, ½ in. across.
„ „ *citri'nus* (lemon-yellow). White, 1½–2 in. across; cup yellow.
„ „ *cupula'ris* (cup-shaped). Lemon-yellow, overlapping; cup orange. Allied forms are *N. multiflo'rus*, *N. latifo'lia*, and *N. aperticoro'na*.
„ „ *Cy'pri* (Cyprus). White, 1½–2 in. across; cup yellow.
„ „ *du'bius* (doubtful). Wholly white, ½–¾ in. across.
„ „ *etru'scus* (Etruscan). Pure white, ¾–⅞ in. across; cup lemon-yellow.
„ „ *ita'licus* (Italian). Creamy-white, 1½–2 in. across; cup lemon-yellow. Forms of this are *ple'nus*, double, and *semiple'nus*, semi-double.
„ „ *la'cticolor* (milk-white). White, 1½–2 in. across; cup yellow. Allied forms are *N. syri'acus*, *N. Cy'pri*, *N. citri'nus*, *N. crenula'tus*, *N. floribu'ndus*, *N. negle'ctus*, *N. trewia'nus*.
„ „ *ochroleu'cus* (yellow-white). Pale yellow, 1–1½ in. across; cup lemon-yellow.
„ „ *pachybo'lbos* (thick-bulbed). Wholly white, ⅝–¾ in. across. Bulb very large. Algeria.
„ „ *panizzia'nus* (Panizzian). Wholly white, ½–⅝ in. across.
„ „ *papyra'ceus* (paper-white). Wholly white, 1½ in. across. "Paper White Narcissus."
„ „ *pa'tulus* (spreading). ¾. Pure white, ⅝–⅞ in. across; cup lemon-yellow. Allied forms are *N. etru'scus* and *N. ceri'nus*.
„ „ *polya'nthos* (many-flowered). Wholly white, 1–1½ in. across; cup faintly tinted sulphur, finally white. Allied forms are *N. Ba'rlæ* and *N. Lu'na*.
„ „ *syri'acus* (Syrian). White, 1½–2 in. across; cup pale yellow. 1890.
„ *Telamo'nius* (Telamon's). See N. MAJOR TELAMONIUS and forms.
„ *tenu'ior* (slenderer). See N. GRACILIS TENUIOR.
„ *tereticau'lis* (round-stalked). 1½. Pale yellow. March Spain.
„ *tortuo'sus* (twisted-*petaled*). See N. MOSCHATUS TORTUOSUS.
„ *trewia'nus* (Trewian). See N. TAZETTA LACTICOLOR.
„ *tria'ndrus* (three-stamened). ¾. White. April. Portugal. 1629. "Angel's Tears."
„ „ *calathi'nus* (cup-shaped). ¾. Pale sulphur-yellow; cup nearly as long as segments. Isle of Glenans, Brittany.
„ „ *ce'rnuus* (drooping). ¾–1. Pale yellow; cup deeper yellow. Many flowered.
„ „ *co'ncolor* (one-coloured). ¾. Wholly pale yellow.
„ „ *nu'tans* (nodding). ½. Pale yellow; cup notched deeper yellow. 1789.
„ „ *palli'dulus* (rather pale). ½–1. Wholly primrose-yellow.

N. triand'rus pulche'llus (pretty). ½–1. Yellow; cup white.
,, *tri'lobus* (three-lobed-*Jonquil*). See N. ODORUS TRILOBUS.
,, *tri'lobus* (three-lobed) of Sims. See N. TRIANDRUS NUTANS.
,, *tubiflo'rus* (tube-flowered). See N. MAJOR TUBÆFLORUS.
,, *varifo'rmis* (various-formed). See N. PSEUDO-NARCISSUS VARIIFORMIS.
,, *viridiflo'rus* (green-flowered). ½. Green. September. Morocco and Gibraltar. 1629.

NARCISSUS FLY. *Me'rodon eque'stris.*

NARDO'STACHYS. (From *nardos*, the Celtic for spikenard, and *stachus*, a spike. Nat. ord. Valerianaceæ.)
Hardy perennial herb, suitable for the rockery, and according to "Asiatic Researches" considered the spikenard of the ancients. Seeds; cuttings in summer under a hand-light. Ordinary soil.
N. Jatama'nsi (Jatamans'). 1–1½. Pink. August. Himalayas. 1878. "Spikenard."

NARTHE'CIUM. (From *narthex*, a rod; referring to the flower-stems. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Hardy herbaceous, Iris-like plant, adapted for mixed borders of herbaceous plants. Divisions of the plant in spring; a cool border, and supplied with sandy peat, or sand and leaf-mould.
N. america'num (American). See N. OSSIFRAGUM.
,, *ossi'fragum* (bone-breaking). ¼. Yellow. July. Britain.

NA'RTHEX ASAFŒ'TIDA. See FERULA NARTHEX.

NA'RTHEX POLLA'KI. See FERULA NARTHEX.

NASO'NIA CINNABARI'NA and N. PUNCTA'TA. See CENTROPETALUM PUNCTATUM.

NASTU'RTIUM. (From *nasus*, the nose, and *tortus*, tormented; referring to the hot, acrid smell. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to the Wallflower.)
Simple-looking plants, of no great beauty. We introduce the genus to correct the common error of calling the Indian Cress (*Tropæ'olum*) Nasturtiums. Hardy aquatics, with yellow flowers, except where otherwise mentioned; seeds and division of the plant in common soil; but none are worth growing for their beauty.
N. a'nceps (two-edged-*pod*). See N. SYLVESTRE.
,, *ere'ctum* (upright). June. Chili. 1837.
,, *na'tans* (floating). 4. July. Siberia. 1827.
,, *officina'le* (officinal). 1–6. White. Summer. Britain. "Water Cress."
,, *sylve'stre* (wood). 1. July. August. Britain. "Water Rocket."

NATIVE OAK. *Casuari'na.*

NAU'CLEA. (From *naus*, a ship, and *kleio*, to inclose; the half-capsule, or seed-pod, in the form of a ship's hull. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cinchona.)
Stove evergreens, from the East Indies; cuttings of half-ripe shoots in sandy loam, under a glass, in heat; loam, sand, and peat. Usual stove temperatures.
N. A'dina (Adina). See ADINA GLOBIFLORA.
,, *Cada'mba* (Cadamba). See ANTHOCEPHALUS MORINDÆFOLIUS.
,, *cordifo'lia* (heart-leaved). See ADINA CORDIFOLIA.
,, *macrophy'lla* (large-leaved). Yellow. 1829.
,, *orienta'lis* (eastern). 30. Yellow.
,, *purpu'rea* (purple). 10. Purple. China.
,, *undula'ta* (waved-*leaved*). 20. Yellow. 1820.

NAUMBU'RGIA THYRSIFLO'RA. See LYSIMACHIA THYRSIFLORA.

NAUTILO'CALYX HASTA'TUS. See EPISCIA BRACTESCENS.

NAVARRE'TTIA. (Named after a Spaniard. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Gilia.)
N. cotulæfo'lia (Cotula-leaved). See GILIA COTULÆFOLIA.
,, *eryngioi'des* (Eryngium-like). See GILIA ERYNGIOIDES.
,, *interte'xta* (interwoven). See GILIA INTERTEXTA.
,, *pube'scens* (downy). See GILIA PUBESCENS.
,, *pu'ngens* (prickly-*leaved*). See GILIA PUNGENS.
,, *squarro'sa* (spreading). See GILIA SQUARROSA.

NAVELWORT. *Cotyle'don Umbili'cus.*

NAVET, or NAVEW. (*Bra'ssica Na'pus.*) The Colesat, or Rape.

NEAPOLITAN VIOLET. *Vi'ola odora'ta pa'llida ple'na.*

NEBE'LIA. (A commemorative name. Nat. ord. Bruniaceæ.)
Evergreen greenhouse shrubs. Cuttings in sand under a bell-glass. Loam, peat, or leaf-mould and sand.
N. affi'nis (allied). 2. White. July. S. Africa.
,, *palea'cea* (scaly). 2. White. July. S. Africa. 1791.
,, *phylicoi'des* (Phylica-like). See RASPALIA PASSERINOIDES.

NECKE'RIA. See CORYDALIS.

NECTARINE. (*Pru'nus Pe'rsica ispahane'nsis.*) The following are the best varieties, and all require a south-aspect wall. We add the months in which the fruit ripens. *Early Rivers*, end of July; *Lord Napier*, early August; *Dryden*, early August; *Rivers Early Orange*, mid-August; *Hardwick Seedling*, August; *Elruge*, August; *Violette hâtive*, August, September; *Stanwick Elruge*, early in September; *Humboldt*, end of August; *Pine Apple*, beginning of September; *Victoria*, end of September; *Pitmaston Orange*, September. For culture, see PEACH.

NECTA'NDRA. (From *nektar*, nectar, and *aner*, *andros*, a male or stamen; in allusion to the three nectar-bearing, barren stamens of the third series in the flower. Nat. ord. Lauraceæ.)
Stove, evergreen trees with leathery leaves. Cuttings of mature wood in sand in a close case, with bottom-heat. Loam, with a little peat and sand.
N. angustifo'lia (narrow-leaved). 6–12. Yellow. Brazil.
,, *Rodiæ'i* (Rodie's). 60–70. Yellow. Guiana. 1844. "Bibisi-tree" or "Greenheart."
,, *sangui'nea* (blood-coloured). 40. Yellow-green. S. Amer. 1800.
,, *willdenovia'na* (Willdenow's). 6. Yellow. April. W. Ind. 1775.

NECTAROSCO'RDUM. Honey Garlic. (From *nectar*, honey, and *skorodon*, garlic; referring to honey pores in the flower of this onion-like flower. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. United to Allium.)
N. si'culum (Sicilian). See ALLIUM SICULUM.

NECTOU'XIA. (Commemorative of *M. Nectoux*, a German author. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Nicotiana.)
Half-hardy, perennial herb. Divisions in spring; cuttings in summer. Good but light soil.
N. formo'sa (beautiful). 1. Yellow. July. Mexico. 1826.

NE'CTRIA. A genus of parasitic fungi, living on trees and shrubs. They are often wound-parasites, gaining an entrance to large limbs and branches after pruning, and as a result of the attacks of American Blight, and injury from hail and frost, the latter in the case of badly ripened, late growths. *N. diti'ssima*, which is the cause of Apple-tree canker, is one of the most common. The spores, gaining an entrance, live on the decaying wood, and killing live wood, are thus able to extend their work of destructiveness, until the diseased part completely surrounds the twig or branch, which then dies. The spores are of two forms, namely, threads of conidia, which break up into single cells or spores at the joints, and ascospores, to the number of eight in asci or large cells. Both of these forms are produced on and in the small knobs which appear on the surface of the wounds, when the fungus has reached the fruiting stage. This fungus also attacks various forest and ornamental trees. More common, perhaps, and more conspicuous is the coral spot disease (*Ne'ctria cinnabari'na*), frequently seen on dead and dying wood of red currants, sycamores, elms, and other trees. The fungus is very noticeable on account

of the bright red, coral, or scarlet colour of the knob-like warts of the fruiting portion in the autumn and early winter. All diseased wood should be cut off some distance below the visible portions of the fungus and burned to destroy the myriads of spores present. Dead wood lying on the ground should be served in the same way. Old, much-cankered Apple trees, when practically useless, should be uprooted and burned.

NE'CTRIS AQUA'TICA. See CABOMBA AQUATICA.

NE'CTRIS PELTA'TA. See CABOMBA CAROLINIANA.

NEEDLE FURZE. See GENISTA ANGLICA.

NEGRO FLY. *Atha'lia.*

NEGU'NDIUM AMERICA'NUM. See ACER NEGUNDO.

NEGU'NDO. Box Elder. (Derivation is not known. Nat. ord. *Maples* [Sapindaceæ]. Linn. 22-*Diœcia*, 5-*Pentandria*. United to Acer.)

N. cissifo'lium (Cissus-leaved). See ACER CISSIFOLIUM.
„ *fraxinifo'lium* (ash-leaved). See ACER NEGUNDO.
„ *nikoe'nse* (Niko). See ACER NIKOENSE.

NEI'LLIA. (Commemorative of *Patrick Neill*, of Edinburgh. Nat. ord. Rosaceæ.)

Hardy, deciduous shrubs. Cuttings of ripe wood in autumn in cold frames; seeds. Ordinary soil.

N. amure'nsis (Amurland). 4–6. White. July, August. Amurland.
„ *capita'ta* (headed). 3–5. White. California.
„ *malva'cea* (mallow-like). 3–4. White. Rocky Mountains.
„ *opulifo'lia* (Opulus-leaved). 4–6. White. June. N. Amer. 1690. "Nine-Bark."
„ „ *ine'brians* (inebriating).
„ „ *lu'tea* (yellow). Foliage yellow, best in spring.
„ *rubiflo'ra* (Rubus-flowered). 6. White. Himalaya.
„ *sine'nsis* (Chinese). 4. Rosy-pink. June. Central China. 1902.
„ *thyrsiflo'ra* (thyrse-flowered). 3–5. White. Himalaya.
„ *Torre'yi* (Torrey's). 2–3. White. June. Rocky Mountains. 1889.

NE'JA. (A name invented by *Don*, who wrote the letters of the alphabet on slips of paper, threw them up, and took those for the name which fell uppermost. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Referred to Hysterionica.)

N. falca'ta (sickle-shaped). See HYSTERIONICA PINIFOLIA.
„ *gra'cilis* (slender). See HYSTERIONICA PINIFOLIA.

NELI'TRIS. (From *ne*, not, and *elutron*, a seed-case; referring to the berry having no partitions. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Stove white-flowered, evergreen shrub. Cuttings of half-ripened short shoots in sand, under a bell-glass, and in a gentle heat, in April or May; fibrous loam, leaf-mould, peat, and sand, and a little charcoal to keep all open. Winter temp., 45° to 50°; summer, 60° to 85°.

N. Jambose'lla (Jambosella). See TIMONIUS JAMBOSELLA.
„ *panicula'ta* (panicled). See DECASPERMUM PANICULATUM.

NELSO'NIA. (A commemorative name. Nat. ord. Acanthaceæ.)

Stove herbaceous perennial. Cuttings in sand in a close case. Loam, leaf-mould, and sand.

N. campe'stris (field). Violet. June. Tropics of both Worlds. 1827.
„ *tomento'sa* (felted). See N. CAMPESTRIS.

NELU'MBIUM. Sacred or Water Bean. (From *nelumbo*, the Indian name. Nat. ord. *Water-lilies* [Nymphæaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

These handsome plants are natives of still waters. The nuts of all the species are eatable and wholesome; and the North American Indians eat the root-stocks of *lu'teum*, which are not unlike the sweet potato. Division of the root, either just before, but better just after, growth has commenced, and better still by seeds; fresh warm water must often be supplied when the plants are growing, removing some out of the tub, and placing more in; when at rest, the soil, rich loam, may be allowed to get quite dry. Temp., when at rest, 48° to 55°; when growing and approaching flowering, 70° to 95°.

N. ca'spicum (Caspian). See N. SPECIOSUM.
„ *flave'scens* (yellowish). Yellowish. June. Egypt. 1847.
„ *jamaice'nse* (Jamaica). Blue. Jamaica. 1824.
„ *lu'teum* (yellow). Yellow. Carolina. 1810.
„ *nuci'ferum* (nut-bearing). See N. SPECIOSUM.
„ *specio'sum* (showy). Pink. July. India. 1787.
„ „ *a'lbum* (white). White.
„ „ *ro'seum* (rose-coloured). 3. Rose. June. India.
„ *Tama'ra* (Tamara). See N. SPECIOSUM.

NEMA'STYLIS. (From *nema*, a thread, and *stulis*, the diminutive of *stulos*, a column or style for writing with; in allusion to the long, slender style.)

Half-hardy bulbs. Offsets and seeds. Loam, with a little leaf-mould, and plenty of sand.

N. acu'ta (acute). ½–1. Bright blue. Texas and Arkansas. 1875.
„ *cœlesti'na* (sky-blue). 1½–2. Sky-blue. March. Southern United States. 1818.

NEMATA'NTHUS. (From *nema*, a thread, and *anthos*, a flower; the flowers of *lo'ngipes* hanging down from long, thread-like foot-stalks. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Columnea.)

Stove evergreen climbers of considerable beauty, easily managed, still easier to increase, and offering strong inducements to the cross-breeder. Cuttings in sandy soil, kept rather dry; leaves, also, will strike; sandy peat and turfy loam, with charcoal and dried cow-dung. Winter temp., 45° to 55°; summer, 60° to 85°.

N. chlorone'ma (green-*filamented*). See N. LONGIPES.
„ *corti'cola* (bark-loving). Deep crimson. Brazil. 1848.
„ *guilleminia'na* (Guilleminian). See N. LONGIPES.
„ *ione'ma* (violet-*stemmed*). See N. CORTICOLA.
„ *lo'ngipes* (long-*flower-stalked*). 2. Scarlet. December. Brazil. 1841.

NEMATOID WORMS. A large group of minute worms belonging to the order Anguillulideæ or eelworms. They are minute, or in many cases microscopical in size, white or colourless, and thread-like, though in the case of *Heterodera radicicola* the full-grown female, when filled with eggs, swells out into lemon-shape many times her original size. *Tylenchus devastatrix*, like the previous one, enters the roots of various wild and cultivated plants, causing galls upon them. Plants, once attacked by them, are in most cases incurable, and should be burnt. Eelworms may be introduced with soil, manure, or water, and the best preventative would be to sterilise the soil in which the plants are to be grown. This may be done by baking or steaming soil for pot plants, by adding lime, gas-lime, &c., to garden soils.

NEMA'TUS. A very large genus of Sawflies, the larvæ of which are destructive to gooseberries, red currants, and willows. As many as 107 have been described as British. *N. Ribesii*, *N. consobrinus*, and *N. appendiculatus* attack the gooseberry, but the first named, which is very destructive to both gooseberries and red currants is best known, under the name of Gooseberry and Currant Sawfly. The larvæ or caterpillars are bluish-green, with black head, feet, and tail, and several rows of black spots. They are also readily distinguished by having fourteen sucker-feet and six proper feet, or an aggregate of twenty. The perfect sawfly has four wings, with yellow and orange body, with black markings, but does not feed on the foliage. Remedies may be commenced in winter by removing 4 inches of soil from beneath the bushes and burying it in deep holes between the rows of bushes. Give a sprinkling of lime, and then cover the roots with soil taken from the holes. The eggs are laid upon the young leaves, some time in April, the caterpillars hatch out in seven days and commence feeding. If attacked at this early stage they are easily destroyed by means of flowers of sulphur dusted on the dewy leaves, early in the morning, with a pepper-box or special sulphur distributor. This is a non-poisonous remedy. Another useful remedy is to syringe the bushes with a mixture, consisting of three gallons of soapy water, ½ lb. of soda in solution, the same weight of table salt, and a handful of soot. If this is done on a dull day or after sundown, the mixture may be used lukewarm, and washed off with clean water half an hour later.

NEME'SIA. (Name of a plant in Dioscorides. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Hemimeris.)

Natives of South Africa. Seeds sown in a slight hotbed in spring, and transplanted in May or June, or sown in May; the perennials, also, by divisions in spring, and by cuttings under a hand-light in summer; sandy loam; a cold pit, and dry in winter.

ANNUALS.

N. affi'nis (allied). See N. FLORIBUNDA.
„ *bico'rnis* (two-horned). 2. Purple. July. 1774.
„ *cynanchifo'lia* (Cynanchum-leaved). ½–1. Bright blue, yellow. Natal. 1879. Greenhouse.
„ *floribu'nda* (many-flowered). 1. White, yellow. July.
„ *lilaci'na* (lilac). ½–1½. Lilac, striped purple. German S.W. Africa. 1909.
„ *linea'ris* (narrow-*leaved*). 1. Rose. April. 1822.
„ *pube'scens* (downy). 1. White. July, August.
„ *strumo'sa* (tumoured). 1–2. White, ochreous, yellow, orange, scarlet, &c. 1892.
„ *versi'color* (changeable-coloured). 1. White, purple. July, August.

HERBACEOUS.

N. chamædrifo'lia (Chamædrys-leaved). 2. Purple. June. 1787.
„ *fœ'tens* (stinking). 2. Purple. June. 1798.
„ *frute'scens* (shrubby). See LINARIA FRUTICOSA.
„ *fru'ticans* (shrubby). 1. Yellow. June. 1822. Evergreen.

NEMOPA'NTHES. (From *nemos*, a grove, and *anthos*, a flower; it being generally found in groves. Nat. ord. *Hollyworts* [Aquifoliaceæ]. Linn. 23-*Polygamia*, 2-*Dicœcia*. Allied to Prinos.)

An ornamental, hardy, deciduous, upright-growing shrub, very little known in England, but very desirable. It was called *I'lex canade'nsis* and *Pri'nos lu'cida*. The flowers are small and white; but the berries are large, beautiful crimson, and very ornamental. Layers in autumn; seeds then, and in spring; common shrubbery soil, but it will do better with an addition of sandy peat or leaf-mould.

N. canade'nsis (Canadian). See N. FASCICULARIS.
„ *fascicula'ris* (bundled). 3. May. N. Amer. 1812.

NEMO'PHILA. (From *nemos*, a grove, and *phileo*, to love; from their place of growth. Nat. ord. *Hydrophyls* [Hydrophyllaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Like all the Californian annuals, well-adapted to be sown in September; the seedlings to stand over the winter, and be protected at times with evergreen boughs, to flower where sown, or to be raised in patches, and thus transplanted in spring; sown thickly in March, on a rough, rich soil, consisting of leaf-mould, rotten dung, and coarse loam, laid on a hard bottom, protected by glass or mats, and transferred to the flower-garden in April and May. Sown in April and May, in the open border, they will flower most of the summer. A few grown in pots will ornament a house or window in winter and spring. A rich, light soil suits them best, and a moist, shady situation. In watering, avoid wetting the collar of the plant.

ANNUALS.

N. atoma'ria (speckled). See N. MENZIESII.
„ *auri'ta* (ear-*leaved*). 1½. Purple. June. California. 1831.
„ *insi'gnis* (showy). 1½. Blue. August. California. 1833. "Californian Bluebell."
„ „ *a'lba* (white). White.
„ *macula'ta* (blotched-*flowered*). ½. White, purple. June. California. 1848.
„ *Menzie'sii* (Menzies'). ½. White, speckled with purple. June to August. California. 1836.
„ „ *discoida'lis* (disc-like). ½. White, with heavy purple zone. June to August. 1843.

HERBACEOUS PERENNIALS.

N. panicula'ta (panicled). See HYDROPHYLLUM APPENDICULATUM.
„ *parviflo'ra* (small-flowered). Blue. N.W. Amer. 1826.
„ *phacelioi'des* (Phacelia-like). 1. Blue. July. N.W. Amer. 1822.

NEOBENTHA'MIA. (From *neos*, new, and *Benthamia*; the latter genus is now referred to Cornus. Nat. ord. Orchidaceæ.)

Stove orchid with thin bamboo-like stems and narrow leaves. Divisions when growth commences. Sphagnum, fibrous peat, and potsherds in pots.

N. gra'cilis (slender). 2–3. Pure white. E. Trop. Africa. 1891.

NEODRY'AS. (From *neo*, to come or arrive, and *drus*, *druos*, an oak, or trees in general; the species grow amongst trees. Nat. ord. Orchidaceæ.)

Stove epiphytical Orchids. Divisions at the recommencement of growth. Fibrous peat, sphagnum, and potsherds.

N. densiflo'ra (dense-flowered). Pale purple. Peru. 1875.
„ *saccia'na* (Saccian). Dull purple; lip yellow. Bolivia. 1893.

NEOGLAZIO'VIA. (From *neos*, new, and *Glaziovia*; to distinguish it from that doubtful genus. Nat. ord. Bromeliaceæ.)

Stove, evergreen herbs. Suckers or offsets. Fibrous loam, one part; fibrous peat, two parts; some nodules of charcoal and sand.

N. co'ncolor (one-coloured). 1½–2. Calyx scarlet; petals violet. Brazil. 1910.
„ *variega'ta* (variegated). 2. Calyx scarlet; petals violet. Leaves not scaly. Brazil. 1910.

NEOLAU'CHEA. (From *neos*, new, and *Lauchea*; to distinguish it from Lauchea, which has been reduced to Begonia. Nat. ord. Orchidaceæ.)

Stove Orchid. Divisions when growth commences. Fibrous peat, sphagnum, and potsherds.

N. pulché'lla (pretty). ½. Bright purple. Trop. Amer. (?) 1897. Reintroduced 1910.

NEONICHOLSO'NIA. (From *neos*, new, and *Nicholsonia*; to distinguish it from Nicholsonia or Nicolsonia, which has been reduced to Desmodium; also commemorative of *George Nicholson*, curator of the Royal Gardens, Kew, from 1886 to 1901. Nat. ord. Palmaceæ.)

Stove Palm. Seeds. Loam, peat, and sand.

N. Geo'rgei (George Nicholson's). Plant stemless. Leaves 4½ ft. long, pinnate. 1901.

NEO'TTIA. (From *neottia*, a bird's-nest; referring to the interlacing of the numerous roots. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Listera.)

Ground orchids. Even the hardy kinds are interesting; division in spring; sandy peat, loam, and charcoal. Temp., for stove kinds, winter, 50° to 60°; summer, 60° to 80°.

HARDY.

N. æstiva'lis (summer). See SPIRANTHES ÆSTIVALIS.
„ *autumna'lis* (autumnal). See SPIRANTHES AUTUMNALIS.
„ *ce'rnua* (drooping-*flowered*). See SPIRANTHES CERNUA.
„ *Ni'dus-a'vis* (bird's-nest). 1. Brown. May. Britain.

GREENHOUSE.

N. austra'lis (southern). See SPIRANTHES AUSTRALIS.
„ *plantagi'nea* (plantain-*leaved*). See SPIRANTHES PLANTAGINEA.

STOVE.

N. aphy'lla (leafless). See SPIRANTHES ORCHIOIDES.
„ *bi'color* (two-coloured). See SPIRANTHES BICOLOR.
„ *calcara'ta* (spurred). See PELEXIA SETACEA.
„ *ela'ta* (tall). See SPIRANTHES ELATA.
„ *glandulo'sa* (glanded). See PONTHIEVA GLANDULOSA.
„ *grandiflo'ra* (large-flowered). See SPIRANTHES GRANDIFLORA.
„ *macra'ntha* (long-flowered). See SPIRANTHES GRANDIFLORA.
„ *orchioi'des* (Orchis-like). See SPIRANTHES ORCHIOIDES.
„ *pi'cta* (painted). See SPIRANTHES PICTA.
„ *pro'cera* (tall). See GOODYERA PROCERA.
„ *pube'scens* (downy). See GOODYERA PUBESCENS.
„ *pu'dica* (modest). See SPIRANTHES AUSTRALIS.
„ *specio'sa* (showy). See SPIRANTHES COLORATA.
„ *spira'lis* (spiral). See SPIRANTHES AUTUMNALIS.

NEOTTO'PTERIS. (From *neottia*, a bird's-nest, and *pteris*, a fern; founded on the Bird's-nest, or Spleenwort Fern. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Asplenium.)

GREENHOUSE.

N. australa'sica (Australasian). See ASPLENIUM NIDUS AUSTRALASICUM.
„ *Ni'dus* (bird's-nest). See ASPLENIUM NIDUS.
„ *stipita'ta* (*long*-stalked). May. E. Ind.
„ *vulga'ris* (common). See ASPLENIUM NIDUS.

STOVE.

N. Grevi'llei (Greville's). See ASPLENIUM GREVILLEI.
„ *musæfo'lia* (Musa-leaved). See ASPLENIUM NIDUS MUSÆFOLIUM.
„ *Philliti'dis* (hart's-tongue). See ASPLENIUM NIDUS PHYLLITIDIS.

NEPE'NTHES. Pitcher Plant. (From *nepenthes*, grief-assuaging; its supposed medicinal quality. Nat. ord. *Nepenths* [Nepenthaceæ]. Linn. 22-*Diœcia*, 13-*Monadelphia*.)

Stove evergreen climbers. Seeds, when they can be obtained, which require a strong, moist heat to vegetate them in; but chiefly by little offsets, which come from near the base of the shoots; very fibrous peat, old sphagnum, charcoal, and broken potsherds, particularly well-drained; the pot to be then plunged in moss, and at all times supplied, less or more, with bottom-heat and abundance of moisture. Where there are tanks or beds heated by hot water, one chief element to successful culture is obtained. Even in winter the bottom-heat should not be lower than 75°. Winter temp., 60° to 65°; summer, 60° to 90°.

N. a'lbo margina'ta (white-margined). Singapore. 1848.
„ *ampulla'ria* (bottle-like). Green. June. Malaya. 1840.
„ „ *pi'cta* (painted). Pitchers pale green, striped with brown.
„ „ *vitta'ta ma'jor* (larger-striped). Pitchers mottled with red-brown. E. Ind. 1877.
„ *angustifo'lia* (narrow-leaved). Pitchers green, spotted with red. Malaya. 1881.
„ *bicalcara'ta* (two-spurred). Pitchers covered with rusty down. Borneo. 1880.
„ *Bu'rkei* (Burke's). Pitchers wingless, green, blotched with red. Borneo. 1889.
„ „ *exce'llens* (excelling). Pitchers larger, with larger blotches. 1890.
„ „ *proli'fica* (prolific). Pitchers smaller than in the type. 1890.
„ *ci'ncta* (girt). Pitchers green, flushed with red, blotched with purple. Borneo. 1884.
„ *Curti'sii* (Curtis's). Pitchers dull green, mottled with purple, with three small horns. Borneo. 1887.
„ „ *supe'rba* (superb). Pitchers almost wholly purple.
„ *distillato'ria* (distilling). 6. Green, yellow. Ceylon. 1789.
„ *gra'cilis* (slender). Borneo.
„ *hirsu'ta* (hairy). Pitchers reddish, with green veins. Borneo.
„ „ *glabre'scens* (smooth). Pitchers reddish or wholly green. Borneo. 1882.
„ *hookeria'na* (Sir W. J. Hooker's). See N. RAFFLESIANA HOOKERIANA.
„ *kennedya'na* (Kennedyan). Pitchers reddish. N. Australia. 1882.
„ *khasia'na* (Khasian). Pale green and yellow. Pitchers green, marked purple. Himalaya. 1789.
„ *læ'vis* (smooth). Malaya. 1848.
„ *lana'ta* (woolly). Pitchers pale green. Borneo. 1876.
„ *lindleya'na* (Dr. Lindley's). 8. Purple. Borneo. 1847.
„ *Loddige'sii* (Loddiges'). Borneo. 1847.
„ *madagascarie'nsis* (Madagascar). Pitcher crimson, 4–6 in. long. Madagascar. 1881.
„ *northia'na* (Miss North's). Pitchers greenish-red with purple spots, 12 in. long. Borneo. 1881.
„ *obrienia'na* (O'Brienian). Pitchers green, red upwards. Borneo. 1890.
„ *Pervi'llei* (Perville's). Pitchers dull crimson, 2–8 in. long. Seychelles. 1896.
N. Phylla'mphora (pitcher-leaved). 6. Green, yellow. July. Cochin-China. 1820.
„ *rafflesia'na* (Sir Stamford Raffles'). Yellow, brown. September. India. 1845.
„ „ *elonga'ta* (elongated).
„ „ *hookeria'na* (Hookerian). 20. Borneo. 1847.
„ „ *insi'gnis* (remarkable). Pitchers 9 in. long, mottled with purplish-brown. Borneo. 1882.
„ „ *nigropurpu'rea* (black-purple). Pitchers 6 in. long, dull purple-brown. Borneo. 1882.
„ *Ra'jah* (Rajah). Pitchers dull purple, 3 in. to 12 in. long in the wild state. Borneo. 1881.
„ *ru'bra* (red). See N. KHASIANA.
„ *sanderia'na* (Sanderian). See N. RAFFLESIANA.
„ *sangui'nea* (blood-red). Pitchers deep blood-red. Malaya. 1849.
„ *stenophy'lla* (narrow-leaved). Pitchers green, with reddish-purple blotches. Borneo. 1890.
„ *Vei'tchii* (Veitch's). Pitchers pale green, with a broad collar. Borneo. 1881.
„ *ventrico'sa* (inflated). Pitchers green, with red collar, wingless. Philippines. 1898.
„ *Vieilla'rdi* (Vieillard's). Pitchers inflated. New Caledonia. 1876.
„ *villo'sa* (shaggy). Pitchers pale green, blotched with reddish-brown. Borneo. 1855.

NE'PETA. Cat Mint. (Named from *Nepet*, a town in Tuscany. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Dracocephalum.)

A genus of hardy herbaceous plants, comprehending a few ornamental, with a large number of weeds; the latter we have omitted. The Ground Ivy, *Ne'peta Glecho'ma*, is still held in high estimation as a pectoral medicine in some parts of the country, and also several others of this order. Seeds, sown in spring, but chiefly by dividing the plants in the spring as growth commences; also, in rare kinds, by cuttings in summer, under a hand-light; light, sandy soil; some of the more trailing kinds do well for rock-work.

N. amethysti'na (amethystine). 1½. Blue. July. S. Europe. 1816.
„ *azu'rea* (azure). 1. Blue. Abyssinia.
„ *cæru'lea* (blue). 1½. Blue. May. 1777.
„ *cæsare'a* (Cæsarean). Cappadocia.
„ *Cata'ria* (Cataria). 2–3. White, spotted with purple. July. Europe (Britain).
„ *co'ncolor* (one-coloured). Asia Minor.
„ *croa'tica* (Croatian). See MICROMERIA RUPESTRIS.
„ *diffu'sa* (spreading). See N. MUSSINI.
„ *dis'color cærule'scens* (bluish-two-coloured). Himalaya.
„ *Glecho'ma* (Glechoma). ½. Blue. May. Britain. "Ground Ivy."
„ „ *ro'sea* (rosy). ½. Rose. May. England.
„ „ *variega'ta* (variegated). ½. Blue. Leaves variegated. May. England. "Variegated Ground Ivy."
„ *grandiflo'ra* (large-flowered). 6. Blue. July. Caucasus. 1817.
„ *grave'olens* (heavy-smelling). See N. NEPETELLA.
„ *hedera'cea* (ivy-like). See N. GLECHOMA and varieties.
„ *hirsu'ta* (hairy). See N. SCORDOTIS.
„ *imbrica'ta* (imbricated). See N. ITALICA.
„ *ita'lica* (Italian). 1½–2. Reddish-purple. July. S. Europe. 1820.
„ *kokami'rica* (Kokamirian). 1. Blue. Turkestan. 1879.
„ *latifo'lia* (broad-leaved). 4. Purple. July. Pyrenees. 1816.
„ *longiflo'ra* (long-flowered). 2. Violet. July. Persia. 1802.
„ *longiflo'ra* (long-flowered) of Sims. See N. MUSSINI.
„ *macra'ntha* (large-flowered). 1–2. Blue. August. Siberia. 1769.
„ *macru'ra* (long-tailed). See N. CATARIA.
„ *malaba'rica* (Malabar). See ANISOMELES MALABARICA.
„ *marifo'lia* (Marum-leaved). See MICROMERIA MARIFOLIA.
„ *marrubioi'des* (horehound-like). See N. ITALICA.
„ *multibractea'ta* (many-bracted). 3. Purple. July. Algiers. 1817.
„ *Mussi'ni* (Mussin's). 2. Violet. July. Caucasus.
„ *Nepete'lla* (small Nepeta). 1. Red. July. S. Europe. 1758. "Small Cat-mint."
„ *nu'da* (naked). 2–4. Red. September. S. Europe. 1683.

N. panno'nica (Hungarian). See N. NUDA.
,, *Scordo'tis* (Scordotis). 1½. Blue. July. Crete. 1817.
,, *sibi'rica* (Siberian). 1. Purple. July. Siberia. 1804.
,, *spica'ta* (spiked). ½–1. Purple; lower lip white. September. Himalaya. 1878.
,, *suave'olens* (sweet-scented). 1½. Blue. July. 1817.
,, *sua'vis* (sweet). N.W. Himalaya.
,, *teucrii'folia* (Teucrium-leaved). 1½. Purple. July. Armenia. 1816.
,, *tubero'sa* (tuberous-rooted). 2. Violet. July. Spain. 1683.
,, *Vei'tchii* (Veitch's). 1½. Light blue. Western China. 1906.
,, *viola'cea* (violet). 2. Blue. August. Spain. 1723.
,, *Wilso'nii* (Wilson's). 2–2½. Violet. Western China. 1906.

NEPHELAPHY'LLUM. (From *nephele*, a cloud, and *phullon*, a leaf; in reference to the leaf-markings. Nat. ord. Orchidaceæ.]

Stove orchids. Divisions when growth is commencing. Fibrous peat, sphagnum, and potsherds.

N. crista'tum (crested). Green, with purple lines; lip white in front. Hong-Kong. 1896.
,, *pu'lchrum* (pretty). Brown and yellow. Java. 1860.
,, *scapi'gerum* (scape-bearing). Yellow and purple. Borneo. 1863.

NEPHE'LIUM. (An ancient name for Burdock; applied in reference to the similarity of the heads of the flowers and seeds. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Cupania.)

Stove evergreen fruit-trees. Seed sown in a hotbed in spring; layers and cuttings of half-ripened shoots in sandy soil, in a close case, with bottom-heat; sandy loam and dried leaf-mould. Winter temp., 45° to 55°; summer, 60° to 80°.

N. lappa'ceum (burdock-like). Malaya.
,, *leioca'rpum* (smooth-fruited). Australia.
,, *Li'tchi* (Lee Chee). 15. White. May. China. 1786. "Litchi."
,, *Longa'na* (Longan). 20. White. May. India. 1786.
,, *verticilla'ta* (whorled). See SAPINDUS DANURA.

NEPHRA'NDRA. See VITEX.

NEPHRANTHE'RA. See RENANTHERA.

NEPHRO'DIUM. (From *nephros*, a kidney; the shape of the involucre or indusium. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. The species of Nephrodium are characterised by having a kidney-shaped indusium attached by the sinus or notch. Lastrea is a section of this, with the veins of the frond all free. Nephrodium proper has some of the veins united, forming a network. Aspidium has an orbicular indusium attached by the middle, like a miniature umbrella. Polystichum is a section of Aspidium with free veins. These remarks will explain the cross references.)

See FERNS for cultivation.

HARDY.

N. aculea'tum (*common*-prickly). 2. Brown. June. Britain. See ASPIDIUM ACULEATUM.
,, *acrostichoi'des* (Acrostichum-like). See ASPIDIUM ACROSTICHOIDES.
,, *æ'mulum* (emulous). 1. July. Britain, Madeira, Azores. "Hay-scented Fern."
,, *angula're* (angular). ½. Brown. July. Britain. 1819. See ASPIDIUM ANGULARE.
,, *atra'tum* (dark). See N. HIRTIPES.
,, *Ba'rometz* (Barometz). See DICKSONIA BAROMETZ, the "Scythian Lamb."
,, *crista'tum* (*lesser*-crested). 1½. Brown. June. England.
,, ,, *clintonia'num* (Clintonian). A larger plant. N. Amer. 1888.
,, ,, *uligino'sum* (marsh). Pinnules more deeply cut.
,, *decursi'vo-pinna'tum* (decurrent-pinnate). 1. Japan, China, Formosa.
,, *dilata'tum* (dilated). See N. SPINOSULUM DILATATUM.
,, *erythroso'rum* (red-sorused). 2. Japan and China.
,, ,, *proli'ficum* (prolific).
,, *Fi'lix-ma's* (male fern). 3. Brown. June. Britain.
,, *Fœnise'cii* (Fœnisec's). See N. ÆMULUM.
N. fra'grans (fragrant). ½. Brown. July. Siberia. 1820.
,, *goldiea'num* (Goldie's). 2. Brown. August. N. Amer.
,, *hi'rtipes* (hairy-stalked). 2–3. Himalayas to Ceylon. Alt. up to 6000 ft.
,, *lancastrie'nse* (Lancaster). Yellow. July. N. Amer. 1825.
,, *loba'tum* (lobed). See ASPIDIUM LOBATUM.
,, *Lonchi'tis* (Lonchitis). See ASPIDIUM LONCHITIS.
,, ,, *aspe'rrimum* (very rough). See ASPIDIUM LONCHITIS ASPERRIMUM.
,, *margina'le* (marginal). 2–3. Sori marginal. Canada and United States. 1772.
,, *monta'num* (mountain). 1½–3. July. Europe (Britain).
,, *noveborace'nse* (New-York). 2–3. July. Canada and United States. 1812.
,, *obtu'sum* (obtuse). Yellow. June. N. Amer. 1827.
,, *Oreo'pteris* (mountain-fern). See N. MONTANUM.
,, *spinulo'sum* (finely-spiny). 1–2. Brown. July. Europe (Britain).
,, ,, *Boo'tii* (Boot's). 1–2. Scales of stalk pale. Pinnæ distant.
,, ,, *dilata'tum* (dilated). 2–3. Brown. July. Britain. "Broad Buckler Shield Fern."
,, ,, *dumeto'rum* (thicket). A slight variety. Britain.
,, ,, *glandulo'sum* (glandular). Fronds glandular beneath. England.
,, ,, *lepido'tum* (scaly). Rachis chestnut-brown, scaly.
,, ,, *remo'tum* (remote). Scales extending to the rachis. Pinnæ close.
,, *Thely'pteris* (lady-fern). 1–2. July. Europe (Britain). "Marsh Shield Fern."

GREENHOUSE.

N. atrovi'rens (dark green). See N. DECOMPOSITUM.
,, *Blu'mei* (Blume's). See N. INTERMEDIUM.
,, *borya'num* (Boryan). 8–11. Himalaya, Madras, &c.
,, *ca'num* (hoary). 1–1½. Brown. July. Himalaya.
,, *cato'pteron* (down-winged). 7–10. Brown. July. Rachis winged. S. Africa.
,, *chine'nse* (Chinese). 1½–2. China and Japan.
,, *coria'ceum* (leathery). 1. Brown. June. Van Diemen's Land. 1821.
,, *Cunningha'mi* (Cunningham's). 1½. Brown. July. New Zealand.
,, *decompo'situm* (decomposed). ½. Brown. June. N. Holland. 1820.
,, ,, *glabe'llum* (small-smooth). 1. Frond more finely cut, with spiny teeth. Australia.
,, ,, *graci'llimum* (very-slender). 1. Pinnules finely divided. Australia. 1908.
,, ,, *Shephe'rdi* (Shepherd's). 1. Frond narrower than in the type. Australia.
,, *dre'panum* (sickle-like). 2. Brown. July. Madeira. 1837.
,, *elonga'tum* (elongated). 2. Brown. July. Madeira. 1779.
,, *florida'num* (Florida). 2–2½. Fertile fronds more divided than the barren ones. Florida.
,, *glabe'llum* (small-smooth). See N. DECOMPOSITUM GLABELLUM.
,, *graci'llimum* (very-slender). See N. DECOMPOSITUM GRACILLIMUM.
,, *hi'spidum* (roughly-hairy). 2–3. New Zealand, Australia, &c.
,, *inequa'le* (unequal). 2–3. Scales at the base reddish-brown. S. Africa.
,, *interme'dium* (intermediate). 2–4. Brown. June. N. India. 1825.
,, *la'cerum* (torn). 1½–2. Japan and Tsus-Sima.
,, *lætevi'rens* (lively-green). 3. Brown. Madeira.
,, *lu'cens* (shining). 1. Brown. August. Mauritius. 1831.
,, *mo'lle* (soft). 1–2. Yellow. July. Ubiquitous. 1820.
,, ,, *corymbi'ferum* (corymb-bearing). 1–2. Apex of frond with a large crest, pinnæ with smaller crests.
,, ,, *polyda'ctylon* (many-fingered). Apex of frond much divided and crested.
,, ,, *viola'scens* (violet). Stalk and rachis violet.
,, *nevade'nse* (Nevada). N. Amer.
,, *podophy'llum* (leaf-stalked). 2–2½. Scales black and fibrillose. Chusan; Hong-Kong.

N. proli'ficum (prolific). See N. ERYTHROSORUM PROLIFICUM.
,, *recu'rvum* (recurved). See N. ÆMULUM.
,, *ri'gidum* (stiff). ½. Brown. July. S. Europe (Britain). 1816.
,, *Siebo'ldii* (Siebold's). 1–2. Scales brown. Pinnæ fewer than in *N. podophyllum*. Japan.
,, *uni'tum* (joined). 2. Brown. August. Australia. 1793.

STOVE.

N. aborti'vum (prematurely-born). 1½–3. Penang, Java, Ceylon.
,, *abru'ptum* (abrupt). Yellow. July. Peru.
,, *albopuncta'tum* (white-dotted). 1–1½. Guinea, Mascarene Isles, &c.
,, *amboine'nse* (Amboynan). 2½–3. Philippines, N. India, &c.
,, *a'mplum* (ample). 5–7. W. Ind. to Ecuador.
,, *Arbu'scula* (little-tree). 1½–2. Mascarene Isles, Ceylon, &c.
,, *articula'tum* (jointed). See N. PENNIGERUM.
,, *auge'scens* (increasing). See N. SERRA.
,, *auricula'tum* (eared). ½. Brown. July. E. Ind. 1793.
,, *calcara'tum* (spurred). 1–1½. N. India to Ceylon, &c.
,, *cane'scens* (hoary). See N. CUCULLATUM.
,, *caripe'nse* (Caripa). 2–3. Guatemala to Brazil and Peru.
,, *caudicula'tum* (tailed). Yellow. July. Isle of Luzon.
,, *chryso'lobum* (yellow-lobed). 1. Brazil and Colombia. 1840.
,, *cicuta'rium* (Cicuta-like). 2–3. Tropics everywhere.
,, *co'nfluens* (running-together). Queensland.
,, *cordifo'lium* (heart-leaved). 1. Brown. July. Jamaica. 1824.
,, *coru'scum* (glittering). See ASPIDIUM VARIUM.
,, *crini'tum* (haired). 1. Brown. August. Mauritius. 1831.
,, *cuculla'tum* (hooded). 2½–3. N. India, Ceylon, &c.
,, *cumingia'num* (Cumingian). 3. Yellow. February. Panama. 1839.
,, *cuspida'tum* (short-pointed). 3. W. Ind. and Ceylon.
,, *cyatheoi'des* (Cyathea-like). 4. Brown. July. Trop. Asia.
,, *decu'rrens* (running-down). 2–4. Trop. Asia.
,, *deltoi'deum* (delta-shaped). 2–3. Trop. Amer.
,, *denticula'tum* (toothletted). 2–3. W. Ind. and Guatemala to S. Brazil.
,, *disse'ctum* (cut). 2½–3. Polynesia.
,, ,, *membranifo'lium* (membranous-leaved).
,, *dive'rgens* (divergent). See N. EFFUSUM DIVERGENS.
,, *edu'le* (eatable-*rooted*). Yellow. July. Nepaul. 1826.
,, *effu'sum* (spread-out). 5–6. Cuba and Mexico to Brazil and Peru.
,, ,, *dive'rgens* (divergent). Fronds more divided.
,, *erioca'rpum* (woolly-fruited). See N. ODORATUM.
,, *exte'nsum* (extended). 3–6. Ceylon, India.
,, *glandulo'sum* (glanded). Yellow. July. Isle of Luzon. 1840.
,, *Griseba'chii* (Grisebach's). 5–7. Cuba.
,, *Hippocre'pis* (horse-shoe). 2. Brown. May. Jamaica.
,, *hirsu'tum* (hairy). Brown, yellow. May. Philippines. 1842.
,, *Hoo'keri* (Hooker's). See N. ARBUSCULA.
,, *inci'sum* (incised). 1½. W. Ind. and Colombia.
,, *interme'dium* (intermediate). 2–5. N. India to Ceylon, &c.
,, *invi'sum* (unseen). 4–6. Mexico and Cuba to Brazil. 1830.
,, *irregula're* (irregular). 3–4. Stem black. Polynesia. 1824.
,, *irri'guum* (watery). 2. Brown. July. Philippines.
,, *Jenma'ni* (Jenman's). Jamaica.
,, *Kaulfu'ssii* (Kaulfuss's). 2–2½. W. Ind. to Brazil.
,, *latifo'lium* (broad-leaved). 3–5. Polynesia, Ecuador, &c. 1823.
,, *lawrencea'num* (Lawrencean). 2. Madagascar. 1881.
,, *le'pidum* (slender). 2–2½. Polynesia.
,, *leuzea'num* (Leuzean). 6–9. N. India, Philippines, &c.
,, *longicau'le* (long-stemmed). Colombia. 1881.
,, *lu'cidum* (shining). 1–1½. Fronds smooth. Madagascar. 1877.
N. macrophy'llum (large-leaved). 3–5. Trop. Amer.
,, ,, *calva'tum* (bald). Without scales.
,, *mamillo'sum* (nippled). 1–2. Moluccas. 1886.
,, *membranifo'lium* (membranous-leaved). See N. DISSECTUM MEMBRANIFOLIUM.
,, *mucrona'tum* (sharp-pointed). 2. Brown. July. Jamaica. 1820.
,, *odora'tum* (scented). 2–2½. Brown. Trop. Asia.
,, *Ota'ria* (Otaria). 1½–2. Philippines, Neilgherries, and Ceylon.
,, *pachyphy'llum* (thick-leaved). 3–4. Philippines, Malaya, Fiji, &c.
,, *pallidive'nium* (pale-veined). 3–4. Guinea.
,, *pa'llidum* (pale).
,, ,, *crista'tum* (crested). Fronds crested, fragrant. 1889.
,, *palu'stre* (marsh). 3–4. Brazil.
,, *parasi'ticum* (parasitical). 1. Brown. June. E. Ind. 1824.
,, *pa'tens* (spreading). Tropics, &c. 1784.
,, *penni'gerum* (winged). 6. Yellow. January. W. Ind.
,, *platyphy'llum* (flat-leaved). Yellow. June. S. Amer. 1826.
,, *polymo'rphum* (many-shaped). 3–5. Himalaya to Ceylon, &c.
,, *Pre'slii* (Presl's). 2. Brown. August. Philippines. 1793.
,, *proli'ferum* (proliferous). 1. Brown. Brazil.
,, *propi'nquum* (related). See N. PRESLII.
,, *pteroi'des* (wing-like). 3. Yellow, brown. July. Himalayas, Ceylon, &c. 1847.
,, *pube'scens* (downy). Brown. July. Jamaica. 1817.
,, *pu'ngens* (stinging). 1. Yellow. January. W. Ind.
,, *raddia'num* (Raddian). See N. VESTITUM.
,, *rece'dens* (receding). 2½–3. Ceylon, Philippines, &c.
,, *refra'ctum* (broken-back). 2–2½. Lower pinnæ deflected. Brazil.
,, *Richa'rdsi* (Richard's). 3. New Caledonia.
,, ,, *multi'fidum* (many-cut). 3. New Caledonia. 1881.
,, *rodigasia'num* (Rodigasian). 3–4. Fronds lanceolate, pinnate. Samoa. 1882.
,, *sagittæfo'lium* (arrow-leaved). 4–6. Java.
,, *sa'nctum* (sacred). ½–1. W. Ind. and Guatemala.
,, *scabro'sum* (rough). 2½–3½. Neilgherries.
,, *Se'rra* (saw-like). 2. Brown. July. Jamaica. 1819.
,, *seti'gerum* (bristle-bearing). 2–5. Rhizome creeping. Japan and Trop. Asia.
,, ,, *crista'tum* (crested). Fronds crested.
,, *seto'sum* (bristly). 1½–2. Java.
,, *simplicifo'lium* (simple-leaved). See POLYPODIUM SIMPLICIFOLIUM.
,, *singaporia'num* (Singaporean). 1½–2. Malaya.
,, *Sloa'nei* (Sloan's). Trop. Amer.
,, *spa'rsum* (scattered). 1½–3. Trop. Asia.
,, *subquinque'fidum* (nearly-five-divided). 1½–3. Frond triangular. W. Ind. to Brazil.
,, *subtriphy'llum* (almost-three-leaved). Trop. Asia.
,, *tenericau'le* (slender-stemmed). See N. SETIGERUM.
,, *te'rminans* (ending). See N. PTEROIDES.
,, *Thwaite'sii* (Thwaites's). 2–2½. Ceylon.
,, *Trime'ni* (Trimen's). Ceylon.
,, *trunca'tum* (cut-short). Fronds wavy, pale green. E. Ind., &c. 1869.
,, *tubero'sum* (tuberous). 1½. Yellow. January. W. Ind.
,, *va'lde-pilo'sum* (strongly-hairy). Colombia. 1881.
,, *va'rians* (varying). 2. Trinidad.
,, *variolo'sum* (variable). 2–2½. N. Ind. and Malaya.
,, *va'stum* (vast). 2–4. Himalaya and Malaya.
,, *venulo'sum* (finely-veined). 4–5. Fernando Po.
,, *venu'stum* (lovely). 3–3½. Plant tufted. Jamaica.
,, *vesti'tum* (clothed). 1½–3. S. Brazil.
,, *villo'sum* (shaggy). 3–9. Brown. July. W. Ind. 1793.
,, ,, *lachnopo'dium* (woolly-footed). Stalks densely covered with spreading scales.
,, ,, *specta'bile* (showy). A nearly smooth form.
,, *Voge'lii* (Vogel's). See N. SUBQUINQUEFIDUM.

NEPHRO'LEPIS. (From *nephros*, a kidney, and *lepis*, a scale; referring to the covering of the seed, or sporecases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Stove Ferns, with yellow spores. See FERNS.

N. acumina'ta (pointed). June. W. Ind.
„ *acu'ta* (acute). 2½–4½. Tropics of both Worlds.
„ „ *Westo'ni* (Weston's). Pinnæ, but not apex of frond, crested. 1903.
„ *ama'bilis* (lovely). See N. RUFESCENS AMABILIS.
„ *Bau'sei* (Bause's). 1–1½. Of dense, dwarf habit. Garden origin. 1885.
„ *biserra'ta* (double-saw-*edged*). See N. ACUTA.
„ *corda'ta* (heart-shaped). See N. CORDIFOLIA.
„ *cordifo'lia* (heart-leaved). 1–2. September. Tropics of both Worlds. 1841.
„ „ *compa'cta* (compact). 1½–2. Pinnules compactly placed. 1890.
„ „ *crispa'to-conge'sta* (crisped-crowded). ½–1½. Pinnæ twisted and curled. 1903.
„ „ *pectina'ta* (comb-like). Pinnæ closely placed. Tropics of New World. 1841.
„ „ *philippine'nsis* (Philippine). Philippines.
„ „ *tessella'ta* (tessellated). Some of the pinnæ are pinnate. 1906.
„ „ *tubero'sa* (tuberous). Wiry rhizomes bearing tubers. Jamaica. 1841.
„ *davallioi'des* (Davallia-like). Fertile pinnæ pinnatifid. Java. 1852.
„ „ *fu'rcans* (forking). Pinnæ forked at the tips. Polynesia. 1873.
„ „ *mu'lticeps* (many-headed). Pinnæ crested. 1892.
„ *Du'ffi* (Grant-Duff's). 1–1½. Australia. 1878.
„ *ensifo'lia* (sword-leaved). See N. ACUTA.
„ *exalta'ta* (tall). 1½–3. Very variable in habit and form. Tropics of both Worlds. 1793.
„ „ *Amerpo'hlii* (Amerpohl's). Pinnæ finely divided. 1905.
„ „ *Barro'wsii* (Barrow's). Pinnæ bipinnatisect dark green. 1908.
„ „ *Barte'ri* (Barter's). W. Trop. Africa.
„ „ *canalicula'ta* (channelled). Frond and pinnæ with curly, much-cut tassels. 1906.
„ „ *Foste'ri* (Foster's). 1½–3. Pinnæ, except the basal ones, much divided. 1903.
„ „ *hirsu'tula* (finely-hairy). Covered all over with rusty down. June.
„ „ *lycopodioi'des* (lycopod-like). Fronds small, densely plumose. 1909.
„ „ *magnifica* (magnificent). Fronds more finely cut than *N. e. Amerpohlii*.
„ „ *Marsha'lli* (Marshall's). 1–2. The most finely divided, and most densely plumose form. 1909.
„ „ *Neube'rtii* (Neubert's). Plant dwarf; fronds very finely divided.
„ „ *Pearso'ni* (Pearson's). Pinnæ much divided. 1902.
„ „ *Pearso'ni compa'cta* (Pearson's compact). Pinnæ much divided, compact. 1905.
„ „ *Pearso'ni eleganti'ssima* (Pearson's most elegant). Pinnæ much divided, dense. 1905.
„ „ *pe'ndula* (pendulous). 4. Fronds long, pendulous. June. W. Ind.
„ „ *Schœlze'li* (Schœlzel's). Fronds very plumose. 1909.
„ „ *Sco'ttii* (Scott's). A dwarf variety. 1904.
„ „ *supe'rba* (superb). 1½–2. Pinnæ waved, cut, crested. 1906.
„ „ *superbi'ssima* (most superb). 1. Pinnæ nearly at right angles to the frond. 1907.
„ „ *todeaoi'des* (Todea-like). Fronds plumose, like *Todea superba*. 1906.
„ „ *volu'bilis* (twining). Fronds straggling, flexuose.
„ „ *Whitma'ni* (Whitman's). Intermediate between the varieties *elegantissima* and *todeaoides*. 1907.
„ *falcifo'rmis* (sickle-shaped). 1½–2. Borneo.
„ *Hesto'ni* (Heston's). Intermediate between *N. acuta* and *N. rufescens*. 1903.
„ *hirsu'tula* (small-haired). See N. EXALTATA HIRSUTULA.
„ *oblitera'ta* (obliterated). See N. RAMOSA.
„ *orna'ta* (adorned). Distinct and compact in habit. 1909.
„ *pectina'ta* (comb-like). See N. CORDIFOLIA PECTINATA.
„ *pe'ndula* (drooping). See N. EXALTATA PENDULA.
„ *philippine'nsis* (Philippine). See N. CORDIFOLIA PHILIPPINENSIS.
„ *Plu'ma* (Pluma). 4–5. Fronds pendulous, deciduous. Madagascar. 1878.
„ *punctula'ta* (small-dotted). See N. ACUTA.
„ *ramo'sa* (branched). ½–1. June. Tropics of Old World. 1839.
N. recurva'ta (recurved). See N. EXALTATA.
„ *rufe'scens* (reddish). 1½–2. Felted with rusty hairs. Tropics.
„ „ *ama'bilis* (lovely). 2–2½. Fronds gracefully arching, crested. 1908.
„ „ *Ma'yi* (May's). 2–2½. Pinnæ close, much waved and twisted. 1903.
„ „ *tripinnati'fida* (three-times-cut). Pinnæ deeply divided, overlapping. Trop. Amer. 1887.
„ *splе'ndens* (shining). See N. ACUTA.
„ *splе'ndens* (shining) of gardens. 2½. Pinnæ overlapping, deep green. Chance sporeling. 1909.
„ *trichomanoi'des* (Trichomanes-like). See N. RAMOSA.
„ *tubero'sa* (tuberous-rooted). See N. CORDIFOLIA TUBEROSA.
„ *undula'ta* (wavy). See N. CORDIFOLIA.
„ *volu'bilis* (twining). See N. EXALTATA VOLUBILIS.

NEPHROSPE'RMA. (From *nephros*, a kidney, and *sperma*, a seed; in allusion to the shape of the seed. Nat. ord. Palmaceæ.)

A stove palm with deeply pinnatisect leaves, with broad and narrow pinnæ. Seeds. Loam, with a little peat and sand.

N. Va'n-houttea'num (Van Houtte's). 20–25. Fruit red. Seychelle Islands. 1868.

NE'PHTHYTIS. (Named after *Nephthys*, a mythical goddess. Nat. ord. Araceæ. Allied to Richardia.)

Stove herbs with a thick tuberous rootstock and large, triangular, arrow-shaped leaves. Offsets. Fibrous loam, leaf-mould, charcoal, and sand.

N. libe'rica (Liberian). 2–3. Spathe green. Spadix cream in upper part. W. Trop. Africa. 1881.
„ *pictura'ta* (ornamented). 2. Leaves variegated with white. Congo. 1887.

NEPTU'NIA. (After *Neptune*, the mythological deity of the sea; a water-plant. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Desmanthus.)

Stove water-plant, with pinnated, sensitive leaves like a Mimosa; seeds in strong heat; cuttings and divisions. Winter temp., 50° to 60°; summer, 60° to 90°.

N. olera'cea (pot-herb). White, yellow. August. Tropics. 1733.
„ *ple'na* (full). See N. OLERACEA.

NERI'NE. (The daughter of *Nerius*. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Brunsvigia.)

Greenhouse bulbs, from South Africa. The Guernsey lily is a Nerine, and, like it, all the species flower in the autumn—some before the growth of the leaves, and others with the leaves coming up. Like the Amaryllis, they grow from September to May, and delight in strong, yellow loam; a vigorous growth of the leaves is requisite to cause them to flower the following autumn. Many attempts have been made to cross them with Amaryllis and other allied families without success; but they produce fine crosses among themselves. Seeds sown in heat, in spring, or as soon as ripe, but chiefly by offsets from the bulbs; rich, sandy loam, with a little peat; deeply planted, and a dry situation in winter; or protected in a cold pit or greenhouse, and kept dry until vegetation commences.

N. angustifo'lia (narrow-leaved). See N. FLEXUOSA ANGUSTIFOLIA.
„ *appendicula'ta* (appendaged). 1. Pink; filaments appendaged. Natal. 1894.
„ *Bowde'ni* (Bowden's). 1½. Flowers pink, larger than those of any other species. 1904.
„ *coru'sca* (glittering). See N. SARNIENSIS CORUSCA.
„ *cri'spa* (crisped). See N. UNDULATA.
„ *curvifo'lia* (curve-leaved). 1. Scarlet. July. 1777
„ „ *Fothergi'llii* (Fothergill's). Crimson or scarlet.
„ *Elwe'sii* (Elwes's). See N. PUDICA ELWESII.
„ *filifo'lia* (thread-leaved). Pale and deep rose; filaments and style red. 1879.
„ *flexuo'sa* (zigzag). 1. Pink. September. 1795.
„ „ *a'lba* (white). 1. White. 1902.
„ „ *angustifo'lia* (narrow-leaved). 1. Pink. 1885.
„ „ *pulche'lla* (pretty). 1–2. Pink, rose. July. 1820.
„ „ *Sanderso'ni* (Sanderson's). 1–2. Segments less crisped, cupped at base. 1885.

N. Fothergi'llii (Fothergill's). See N. CURVIFOLIA FOTHERGILLII.
,, *hu'milis* (low). 2. Red. June. 1795.
,, *japo'nica* (Japanese). See LYCORIS RADIATA.
,, *lu'cida* (shining). Red.
,, *margina'ta* (margined). ½. Scarlet.
,, *Moo'rei* (Moore's). 1–1½. Bright scarlet; segments crisped. 1886.
,, *pancratioi'des* (Pancratium-like). 2. White, with bifid scales between the filaments. 1891.
,, *Plan'tii* (Plant's). See N. SARNIENSIS PLANTII.
,, *pu'dica* (bashful). 1–1½. White, pink. October. 1868.
,, ,, *a'lba* (white). Snow-white. 1904.
,, ,, *Elwe'sii* (Elwes's). Pale rose.
,, *pulche'lla* (pretty). See N. FLEXUOSA PULCHELLA.
,, *pu'mila* (dwarf). 1. Brilliant scarlet, with golden sheen. 1890.
,, *ro'sea* (rosy). See N. SARNIENSIS ROSEA.
,, *sarnie'nsis* (Guernsey *Lily*). 1. Red. September. 1659.
,, ,, *Alle'ni* (Allen's). Garden variety. 1895.
,, ,, *coru'sca* (glittering). 1. Scarlet. July. 1809.
,, ,, *Gaimi'ni* (Gaimin's). Flowers erect. 1905.
,, ,, *Pla'ntii* (Plant's). 1. Dull crimson. 1885.
,, ,, *profu'sa* (profuse). Bright scarlet. September.
,, ,, *ro'sea* (rosy). 1. Pink. July. 1818.
,, ,, *venu'sta* (lovely). 1. Scarlet. June. 1806.
,, *undula'ta* (waved-*flowered*). ¾. Pink. May. 1767.
,, ,, *ma'jor* (greater). Flowers larger.
,, *Vei'tchii* (Veitch's). 1. Pale pink, with wavy segments. S. Africa. 1911.
,, *venu'sta* (beautiful). See N. SARNIENSIS VENUSTA.

NE'RIUM. Oleander. (From *neros*, moist; referring to their native places of growth. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Notwithstanding the beauty of the Oleander, it is one of the most virulent of vegetable poisons. Beautiful greenhouse plants, but which require a higher temperature to start them in the spring. Cuttings of shoots, getting firm, in sand, under a bell-glass, and kept warm; cuttings a little older do well in phials of water, also kept warm; peat and loam, enriched with cow-dung and leaf-mould. Winter temp., 35° to 48°; summer, 60° to 75°. The shoots made this season should bloom the next, if well ripened.

N. corona'rium (garland). See TABERNÆMONTANA CORONARIA.
,, *japo'nicum* (Japanese). See N. OLEANDER.
,, *odo'rum* (sweet-scented). 6. Pale red. July. E. Ind. 1683.
,, ,, *ca'rneum* (fleshy). 6. Pink. July. E. Ind. 1683.
,, ,, *ple'num* (double-*flowered*). 5. Pale red. July. E. Ind. 1683.
,, *Olea'nder* (oleander). 8. Red. August. S. Europe. 1596.
,, ,, *a'lbum* (white-*flowered*). 8. White. August. S. Europe. 1596.
,, ,, *sple'ndens* (shining). 7. Red. August. S. Europe. 1814.
,, ,, *variega'tum* (variegated). 8. Striped. August. S. Europe.
,, *thyrsiflo'rum* (thyrse-flowered). 5. Pink. July. Nepaul. 1830.
,, *tincto'rium* (dyer's). See ALLAMANDA VERTICILLATA.

NE'RTERA. (From *nerteros*, low down; in reference to the very dwarf habit of the plant. Nat. ord. Rubiaceæ.)

A genus of puny, perennial herbs, with stalkless, inconspicuous flowers, followed by red berries. Seeds; divisions. Loam, leaf-mould, and plenty of sand.

N. depre'ssa (depressed). ½. Green; berries orange-red. S. Amer.; N. Zealand, &c. 1868. "Coral-berried Duckweed."
,, *re'pens* (creeping). See N. DEPRESSA.

NESÆ'A. (The name of a sea-nymph. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Includes Heimia.)

Nearly hardy, evergreen shrubs, except *N. triflora*, a stove perennial herb. Divisions in spring, as fresh growth commences; cuttings of young shoots in sandy soil, under a bell-glass; sandy loam and fibrous peat. Winter temp., 45° to 55°; summer, 60° to 80°. The half-hardy ones require the protection of a wall or pit in winter.

N. linariæfo'lia (Linaria-leaved). 5. Yellow. S. Amer. 1829.
,, *myrtifo'lia* (myrtle-leaved). 3–5. Yellow. Brazil. 1826.
,, *salicifo'lia* (willow-leaved). 3–5. Yellow. August. Trop. Amer. 1821.
,, ,, *grandiflo'ra* (large-flowered). 3–5. Yellow. September.
,, *triflo'ra* (three-flowered). 2. Blue. August. Mauritius. 1802.

NESO'PANAX VITIE'NSIS. See PLERANDRA VITIENSIS.

NETOU'XIA FORMO'SA. See NECTOUXIA FORMOSA.

NETTING is employed to prevent the radiation of heat from walls, and the rude access of wind to trees grown upon them, as well as to prevent the ravages of birds.

Netting is a very effectual preventive of cooling, for reasons which will be stated when considering *Screens* generally; and in connection with that, it may be observed, that it is not altogether immaterial of what substance netting is formed. Worsted is to be preferred, not only because it is the most durable, but because it is the best preventive of a wall's cooling. We have found the thermometer under a hemp net sink, during the night, from 2° to 4° lower than that under a net of worsted, the meshes being small and of equal size in both nets. This can only be because worsted is known to be a worse conductor of heat than hemp; and, not absorbing moisture so easily, is not so liable to the cold always produced by its drying. Netting will also exclude flies and other winged insects from the fruit against walls, although the meshes are more than large enough to permit their passage. Why this is the case is not very apparent; but the netting is equally efficient in keeping similar insects from intruding into rooms if there are no cross lights. If there are windows on different sides of the room, and it is to be presumed, therefore, also in a green or hothouse, nets would not be so efficient.

One hundred square yards of netting, according to some merchants' mode of measuring, will not cover more than fifty square yards of wall, for they stretch the net, first longitudinally, and then laterally, when making *their* measurement, and not in both directions at once, as the gardener must when covering his trees. Disappointment, therefore, should be avoided, when ordering *new* nets, by stating the size of the surface which has to be covered. This may be done without any fear of imposition.

Mr. Richardson, net-maker, New Road, London, informs us that one cwt. of *old* mackerel-net, weighed when quite dry, will cover 800 square yards; and one cwt. of *old* herring-net (smaller meshes) will cover 600 square yards.

NETTLE-TREE. *Ce'ltis.*

NEUMA'NNIA ARCUA'TA. See PITCAIRNIA ARCUATA.

NEUMA'NNIA NI'GRA. See PITCAIRNIA NIGRA.

NEURO'DIUM LANCEOLA'TUM. See TÆNITIS LANCEOLATA.

NEUROLÆ'NA. (From *neuros*, a nerve, and *laina*, a cloak; in allusion to the three nerves of the bracts. Nat. ord. Compositæ.)

Stove, evergreen, tall subshrub. Cuttings of half-ripe shoots in sand, under a bell-glass. Loam, leaf-mould, and sand.

N. loba'ta (lobed). 2–3. Flowers white, rayless in panicles. June. Trop. Amer.

NEUWIE'DIA. (A commemorative name. Nat. ord. Orchidaceæ.)

Stove terrestrial orchids, with a short rhizome and a simple, erect leafy stem. Divisions in spring. Fibrous loam, fibrous peat, sphagnum, charcoal, and sand.

N. Griffi'thii (Griffith's). 1. Flowers small, pure white, in spikes 3 in. long. Malaya. 1894.
,, *Li'ndleyi* (Lindley's). 3–4. Golden-yellow, in spikes 1 in. long. Malaya. 1894.

NEVIU'SIA. (Derivation not explained. Nat. ord. Rosaceæ.)

Half-hardy shrub, requiring a wall in the south, and

the protection of a greenhouse in colder parts. Cuttings of half-ripe wood in sand under a hand-light. Well-drained soil.

N. alabame'nsis (Alabama). 3–6. Petals absent; stamens white. Alabama. 1881.

NEWBOU'LDIA. (Commemorative of the *Rev. W. W. Newbould*, a British botanist. Nat. ord. Bignoniaceæ.)

Stove tree. Cuttings of half-ripe wood in sand in a close case with bottom-heat. Fibrous loam, peat, and sand.

N. læ'vis (smooth). Rose or purple. Trop. Africa.

NEW JERSEY TEA. *Ceano'thus america'nus.*

NEW ZEALAND SPINACH (*Tetrago'nia expa'nsa*) is much admired as a substitute for summer spinach, being of more delicate flavour, and continues available the whole summer.

Sow, at the latter end of March, in the seed-vessel, as gathered in the preceding autumn, in a pot, and placed in a melon-frame. The seedlings to be pricked while small singly into pots, to be kept under a frame without bottom-heat until the third week in May, or until the danger of frost is past. Plant in rows, in a rich, light soil, at three or four feet apart each way. Twenty plants will afford an abundant supply daily for a large family.

In five or six weeks after planting, the young shoots may be gathered, these being pinched off. They are productive until a late period of the year, as they survive the frosts that kill nasturtiums and potatoes.

To obtain Seed.—A plantation must be made on a poorer soil, or kept stunted and dry in pots, as ice-plants are when seed is required of them.

NICA'NDRA. (Commemorative of *Nicander*, a botanist about the period A.D. 150. Nat. ord. Solanaceæ.)

Half-hardy annual herbs. Seeds sown under glass in March, grown on and planted out in May, or sown in the open border in April, and thinned out to 12 in. apart. Ordinary garden soil.

N. physaloi'des (Physalis-like). 1½–4. Blue. August to October. Peru. 1759. "Apple of Sodom."

,, ,, *viola'cea* (violet). 1½–3. White in lower half, violet-blue above. S. Amer. (?) 1906.

NICKER-TREE. *Guilandi'na.*

NICODE'MIA. (The commemorative name, *Nicodemus*. Nat. ord. Loganiaceæ.)

Stove evergreen shrub. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

N. diversifo'lia (various-leaved). 6. Mascarene Islands. 1823.

NICOTIA'NA. Tobacco. (Named after *Nicot*, a French ambassador in Portugal, who first obtained seeds from a Dutch merchant. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Penlandria*, 1-*Monogynia*.)

Tobacco was first introduced either from Tobago, in the West Indies, or Tobasco, in Mexico—hence the name. Shrubby and perennial kinds require the warm greenhouse in winter, and may be propagated by divisions and cuttings, and also freely by seeds; all the annuals are raised by seed sown in a hotbed, in March or April; seedlings pricked off, potted, and transplanted in rich soil towards the end of May, when the ornamental ones will adorn the flower-border, and the useful ones, such as *Taba'cum* and the variety *macrophy'lla*, will yield their large leaves for fumigating purposes; *glau'ca* makes a fine appearance against a wall. *N. ala'ta*, *fra'grans*, *noctiflo'ra*, and *pe'rsica* are perennial herbs, and *wigandioi'des* a shrub, although often grown as annuals in the flower-garden or subtropical garden during summer.

ANNUALS.

N. acutiflo'ra (acute-flowered). 1–2. White. June to October. Brazil.

,, *angustifo'lia* (narrow-leaved). 4. Pink. August. Chili. 1819.

,, *Bigelo'vii* (Bigelow's). 3. White. N. Amer. 1898.

,, *brasilie'nsis* (Brazilian). See N. ALATA.

,, *chine'nsis* (Chinese). 6. Pink. August. China. 1819.

,, *dilata'ta* (spread). 3. Pink. August. S. Amer. 1820.

,, *glutino'sa* (clammy). 4. Scarlet. August. Peru. 1759.

N. longiflo'ra (long-*tubed*-flowered). 3. White. August. Buenos Ayres. 1832.

,, *macrophy'lla* (large-leaved). See N. TABACUM MACROPHYLLA.

,, *micra'ntha* (small-flowered). 1. Green, white. July.

,, *multiva'lvis* (many-valved). See N. QUADRIVALVIS.

,, *na'na* (dwarf). See HESPEROCHIRON CALIFORNICUS.

,, *nepale'nsis* (Nepaul). 4. Rose. July. Nepaul. 1829.

,, *panicula'ta* (panicled). 2–3. Flowers small, greenish-yellow. S. Amer.

,, *petiola'ta* (*long*-leaf-stalked). 4. Rose. July. S. Amer. 1829.

,, *plumbaginifo'lia* (Plumbago-leaved). 2. White. May. Trop. and N. Amer. 1816.

,, *quadriva'lis* (four-valved). 1. White. July. N. Amer. 1811.

,, *rotundifo'lia* (round-leaved). See N. SUAVEOLENS.

,, *ru'stica* (rustic). 3–4. Greenish-white. Mexico. "Turkish Tobacco."

,, *sangui'nea* (crimson). 4. Crimson. July. S. Brazil. 1829.

,, *Taba'cum* (tobacco). 4. Pink. July. S. Amer. 1570. "Virginian Tobacco."

,, ,, *a'lipes* (wing-stalked). 4. Pink. July. S. Amer. 1570.

,, ,, *attenua'ta* (thin). 4. Pink. July. S. Amer. 1570.

,, ,, *graci'lipes* (slender-stalked). 4. Pink. July. S. Amer. 1570.

,, ,, *Li'ngua* (tongue-*leaved*). 4. Pink. July. S. Amer. 1750.

,, ,, *macrophy'lla* (large-leaved). 7. Pink. July. S. Amer. 1570.

,, ,, *palle'scens* (pale). 4. Pink. July. S. Amer. 1570.

,, ,, *sero'tina* (late). 4. Pink. July. S. Amer. 1570.

,, ,, *Ve'rdan* (Verdan). 4. Pink. July. S. Amer. 1570.

,, ,, *ybarre'nsis* (Ybarra). 2. Pink. August. S. Amer. 1823.

,, *visco'sa* (clammy). 3. Pink. July. Buenos Ayres. 1824.

PERENNIALS.

N. acumina'ta (long-pointed). 2–3. Pale green. July to September. S. Amer.

,, *affi'nis* (allied). See N. ALATA.

,, *ala'ta* (winged). 2–3. White, green outside. July to October. S. Brazil. 1829. "Night-scented Tobacco."

,, *colo'ssea* (colossal). See N. TOMENTOSA.

,, *forgetia'na* (Forgetian). 1–2. Red or deep rose. July to October. Brazil. 1903.

,, *fra'grans* (fragrant). 3–4. White. New Caledonia.

,, *frutico'sa* (shrubby). 4. Pink. July. China. 1699. Evergreen.

,, *glau'ca* (milky-green). 20. Yellow. August. Buenos Ayres. 1827. Evergreen.

,, *Langsdo'rffi* (Langsdorff's). 4–6. Yellow-green. August. Brazil. 1819.

,, *noctiflo'ra* (night-flowering). 2. Pink. August. Chili. 1826.

,, ,, *albiflo'ra* (white-flowered). White. 1898.

,, *pe'rsica* (Persian). See N. ALATA.

,, *suave'olens* (sweet-smelling). 2. White. July to September. Australia. 1800.

,, *sylve'stris* (wood). 3–6. White. July to October. Argentina. 1898.

,, *tomento'sa* (felted). 7–10. Leaves reddish-violet when unfolding. Peru. 1888.

,, ,, *variega'ta* (variegated). Leaves variegated with creamy-white.

,, *undula'ta* (wave-*leaved*). See N. SUAVEOLENS.

,, *vincæflo'ra* (Vinca-flowered). 2. White. August. S. Amer. 1820.

,, *wigandioi'des* (Wigandia-like). 3–7. Yellow-white. Colombia. 1873. Shrubby.

NIDULA'RIUM. (From *nidus*, a nest; the leaves being disposed in the form of a bird's nest. Nat. ord. Bromeliaceæ. Most of them are now referred to Karatas.)

Moist stove perennial herbs. Suckers. Fibrous loam, peat, some nodules of charcoal and sand.

N. acanthocra'ter (spiny-basined). See KARATAS ACANTHOCRATER.

N. amazo'nicum (Amazonian). See KARATAS AMAZONICA.
,, *ampulla'ceum* (flagon-shaped). Brazil. 1880. Blue, white. Brazil. 1880.
,, *Bino'ii* (Binot's). White. Rosette flat. November. Brazil. 1877.
,, *bivitta'ta* (two-striped). See CRYPTANTHUS BIVITTATUS.
,, *Caroli'næ* (Caroline's). See KARATAS CAROLINÆ.
,, *cya'neum* (blue). Blue, violet. Brazil. 1874.
,, *fu'lgens* (shining). See KARATAS FULGENS.
,, *Innoce'ntii* (Innocenti's). See KARATAS INNOCENTII.
,, *Joha'nnis* (John's). White. Brazil. 1884.
,, *Laure'ntii* (Laurent's). Blue. Brazil. 1867.
,, *Linde'ni* (Linden's). See CANISTRUM EBURNEUM.
,, *makoya'num* (Makoyan). White, violet. Brazil. 1887.
,, *marmora'tum* (marbled). See KARATAS MARMORATA.
,, *Meyendo'rffii* (Meyendorff's). See KARATAS CAROLINÆ.
,, *paxia'num* (Paxian). See KARATAS PAXIANA.
,, *pictu'ra* (painted). Brazil. 1859.
,, *pinelia'num* (Pinelian). Blue. Brazil. 1860.
,, *pri'nceps magni'ficum* (magnificent-chief). See KARATAS PRINCEPS.
,, *ru'tilans* (glowing-red). See KARATAS RUTILANS.
,, *Scheremetie'wii* (Scheremetiew's). See KARATAS SCHEREMETIEWII.
,, *specta'bile* (showy). See KARATAS SPECTABILIS.
,, *stria'tum* (striped). See KARATAS INNOCENTII STRIATA.

NIEREMBE'RGIA. (Named after *J. E. Nieremberg*, a Spanish Jesuit. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Petunia.)

Pretty half-hardy plants for flower-beds. Cuttings root freely under a hand-light in summer, if kept shaded; and very freely in deep pits, in autumn, without shading, if the glass is from 18 to 24 inches from the cuttings; and most freely in a slight hotbed in spring, from plants commencing to grow after being kept rather cool over the winter. Sandy loam and a little peat, and, when quick growth is wanted, a little cow-dung; kept in a cool greenhouse, or a dry, cold pit in winter, where frost can be excluded; the soil in winter should be poor, and kept rather dry; propagated, also, easily by sowing in a slight hotbed in March and April, potting and turning out the seedlings into the flower-garden in the middle of May.

N. arista'ta (awned-*leaved*). ½. White, purple. July. Argentina. 1832. Annual.
,, *atkinsia'na* (Atkinsian). Garden form.
,, *calyci'na* (*large*-calyxed). ¾. White. July. Uruguay. 1834. Herbaceous.
,, *filicau'lis* (thread-stemmed). See N. LINARIÆFOLIA.
,, *frute'scens* (shrubby). Blue, white. Chili. 1867.
,, *gra'cilis* (slender). White, purple. July. Uruguay. 1831. Herbaceous.
,, *interme'dia* (intermediate). See SALPIGLOSSIS LINEARIS.
,, *linariæfo'lia* (toadflax-leaved). ½. Whitish. July. Uruguay. 1831. Evergreen.
,, *phœni'cea* (purple). See PETUNIA VIOLACEA.
,, *rivula'ris* (river). ½. Creamy-white. July. Argentina. 1866. "Trailing Cup-flower."
,, *Vei'tchii* (Veitch's). Pale lilac. Trop. Amer. 1866.

NIGE'LLA. Fennel-Flower. (From *niger*, black; the colour of the seeds. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia*. Allied to Aquilegia.)

Hardy annuals. Seeds in the open ground any time after the middle of March.

N. angustifo'lia (narrow-leaved). See N. DAMASCENA.
,, *arista'ta* (awned). See N. ARVENSIS.
,, *arve'nsis* (field). 2. Blue. August. Europe.
,, *cilia'ris* (hair-fringed). 1. Yellow. July. Levant.
,, *cornicula'ta* (small-horned). 1. Yellow. July. 1820.
,, *damasce'na* (damask). 1½. Lilac, blue. July. S. Europe. 1570. "Love-in-a-Mist."
,, ,, *flo're-ple'no* (double-flowered). 1½. Lilac, blue. July. S. Europe. 1570.
,, *diversifo'lia* (diverse-leaved). See N. INTEGRIFOLIA.
,, *hispa'nica* (Spanish). 1½. Brown, white. July. Spain. 1629.
,, *integrifo'lia* (entire-leaved). 1. Blue. Turkestan. 1908.
,, *latifo'lia* (broad-leaved). See N. HISPANICA.
,, *orienta'lis* (eastern). 1½. Yellow. July. Syria. 1699.
N. sati'va (cultivated). 1½. Yellow. July. Egypt. 1548. "Black Cumin."
,, ,, *citri'na* (citron-coloured-*seeded*). 1½. Pale blue. July. S. Europe.
,, ,, *cre'tica* (Cretan). 1½. Pale blue. July. Crete.
,, ,, *i'ndica* (Indian). 1. Pale blue. July. E. Ind.

NIGHTSHADE. *Sola'num.*

NIGHTSHADE, ENCHANTER'S. *Circæ'a.*

NIGHT-SOIL. See DUNG.

NIGHT TEMPERATURE in hothouses, greenhouses, and frames should always average from 10° to 20° lower than the temperature in which the plants are grown during the day. It is in the night that the individual functions are renovated by a temporary repose, and if left to the dictates of healthy nature, the sap, like the blood, rises at night with a much diminished velocity. That plants do become exhausted by too unremitting excitement, is proved to every gardener who has peach-houses under his rule; for if the greatest care be not taken to ripen the wood by exposure to the air and light during the summer, no peach-tree will be fruitful if forced during a second successive winter, but will require a much more increased temperature than at first to excite it even to any advance in vegetation.

The experiments of Harting and Munter upon vines growing in the open air, and those of Dr. Lindley upon vines in a hothouse, coincide in testifying that this tree grows most during the less light and cooler hours of the twenty-four; but the hours of total darkness were the period when the vine grew slowest. This, observes Dr. Lindley, seems to show the danger of employing a high night temperature, which forces such plants into growing fast at a time when nature bids them repose.

That the elevation of temperature at night does hurtfully excite plants is proved by the fact, that the branch of a vine, kept at that period of the day in temperature not higher than 50°, inhales from one-sixteenth to one-tenth less oxygen than a similar branch of the same vine, during the same night, in a temperature of 75°. The exhalation of moisture and carbonic acid is also proportionably increased by the higher temperature.

NI'PA. (The Moluccan name. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

Stove Palm. Seeds in a strong, moist heat, not giving too much moisture to the seed at first; rich loam. Winter temp., 60° to 65°; summer, 60° to 90°, and moist atmosphere.

N. fru'ticans (shrubby). 10. White. E. Ind. 1822.

NIPHÆ'A. (From *niphos*, snow; snow-white flowers. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Achimenes.)

Stove herbaceous, white-flowered perennials. Divisions of the roots, as growth commences, in the spring; sandy loam and peat, enriched with leaf-mould or rotten cow-dung. Temp. when at rest, 40° to 45°; when starting and potted, 55° to 70°; when growing, 60° to 75°; when flowering, rather less; until after flowering they are allowed to become nearly dry, when a low temperature suits them.

N. a'lbo-linea'ta (white-lined-*leaved*). See PHINÆA ALBOLINEATA.
,, *argyroneu'ra* (silver-nerved). See PHINÆA RETICULATA.
,, *cu'preo-vi'rens* (coppery-green). September. 1860.
,, *gra'cilis* (slender). S. Amer. 1868.
,, *oblo'nga* (oblong). ½. September. Guatemala. 1841.
,, *Rœ'zlii* (Rœzl's). Trop. Amer. 1877.
,, *ru'bida* (red). ½. November. Guatemala. 1846.
,, *ru'bra* (red-*haired*). See N. RUBIDA.

NIPHO'BOLUS. (From *niphobolus*, covered with snow; referring to the white covering of the spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Polypodium, which see.)

Stove Ferns, with brown spores. See FERNS.

N. acrostichoi'des (Acrostichum-like). September. Isle of Luzon.
,, *adna'scens* (stem-leaf-pressed). ½. May. E. Ind. 1824.
,, ,, *va'rius* (variable). Larger variety. July. Malacca. 1845.

N. a'lbicans (whitish). 1. July. Ceylon.
,, *bi'color* (two-coloured). August. Malacca.
,, *co'nfluens* (running-together). ½. May. N. Holland. 1820.
,, *costa'tus* (ribbed-*leaved*). July. Ceylon. 1824.
,, *flocculo'sus* (woolly-tufted). August. Manilla. 1841.
,, *gla'ber* (smooth). July. Malacca.
,, *linea're* (narrow-*leaved*). ½. May. Japan. 1822.
,, *Li'ngua* (tongue-like). May. Japan. 1817.
,, *nummulario'lius* (moonwort-leaved). May. Isle of Luzon.
,, *pertu'sus* (bored). ½. May. China. 1821.
,, *rupe'stris* (rock). ½. May. N. Holland. 1824.
,, *sine'nsis* (Chinese). ½. September. China.
,, *sphæroce'phalus* (round-headed). July. Malacca.
,, *sple'ndens* (shining). July. E. Ind.
,, *va'rius* (variable). See N. ADNASCENS VARIUS.

NIPHO'PSIS ANGUSTA'TUS. See POLYPODIUM ANGUSTATUM.

NISSO'LIA. (Named after *W. Nissole*, a French botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Amicia.)

Cuttings of short, stubby, half-ripened shoots in spring and summer, in sand, under a bell-glass, in bottom-heat; peat and loam. Winter temp., 55° to 60°; summer, 60° to 85°.

STOVE EVERGREEN SHRUBS.

N. glabra'ta (polished). See MACHÆRIUM ARBOREUM.
,, *micro'ptera* (small-winged). 10. White. July. See MACHÆRIUM MICROPTERUM.
,, *robiniæfo'lia* (Robinia-leaved). See MACHÆRIUM ROBINIÆFOLIUM.

STOVE EVERGREEN CLIMBERS.

N. aculea'ta (prickly). See MACHÆRIUM ACULEATUM.
,, *frutico'sa* (shrubby). 15. Yellow. August. S. Amer. 1766.
,, *racemo'sa* (racemed). See N. FRUTICOSA.
,, *retu'sa* (abrupt-ended-*leafleted*). 6. S. Amer. 1819.

NITRATES. See SALTS.

NITTA-TREE. *Pa'rkia africa'na.*

NIVE'NIA. (Named after *J. Niven*, a botanical collector. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Protea.)

Greenhouse evergreen shrubs, from South Africa, bearing, in July, purple flowers. Seeds when obtainable; cuttings of young, stiff, half-ripened shoots in sand, under a bell-glass, in May, and without bottom-heat; sandy peat and fibrous loam. Winter temp., 35° to 45°.

N. crithmifo'lia (Crithmum-leaved). 4. July. 1810.
,, *Lago'pus* (hare's-foot). 4. 1810.
,, *me'dia* (middle). 2–2½. July. 1786.
,, *Sce'ptrum* (sceptre-like). 2. 1790.
,, *spathula'ta* (spathulate-*leaved*). 2½. 1790.
,, *spica'ta* (spiked). 2½. 1786.

NOCCÆ'A. (A commemorative name. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Ionopsidium.)

Dwarf, hardy perennials for the rock-garden. Seeds; cuttings. Light, well-drained soil.

N. alpi'na (alpine). ½. White. May. Europe. 1775.
,, ,, *Auerswa'ldii* (Auerswald's). Spain.
,, *Auerswa'ldii* (Auerswald's). See N. ALPINA AUERSWALDII.
,, *stylo'sa* (long-styled). ½. White, pink. June. S. Europe. 1825.

NOHL KOHL. See KNOHL KOHL.

NOISE'TTIA. (Named after *L. C. Noisette*, a French nurseryman. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Viola.)

Stove evergreen. Cuttings of young shoots in April, in sand, under a glass, in heat; rich, sandy loam. Winter temp., 55°; summer, 60° to 85°.

N. longifo'lia (long-leaved). 1. Cream. Cayenne. 1824.

NOLA'NA. Chilian Bellflower. (From *nola*, a little bell; the form of the flowers. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy trailing annuals, mostly all blue-flowered. Seeds in a gentle hotbed, in spring; seedlings transplanted in May, or sown in May where they are to grow. A border where the soil is rather stiff answers well for sowing all such plants in March, provided you can cover them with a little finer soil, and lay a glass frame over them, until they are fairly up, when they may be protected with a few branches, and then be removed in large patches.

N. atriplicifo'lia (Atriplex-leaved). ½. White, yellow. July. Peru. 1834.
,, ,, *grandiflo'ra* (large-flowered). ½. July. Chili. 1829.
,, *lanceola'ta* (lance-shaped). Blue, white. Chili. 1862.
,, *parado'xa* (paradoxical). 1½. August. Chili. 1825.
,, *prostra'ta* (trailing). ½. August. Peru. 1761.
,, *tene'lla* (slender). ½. August. Chili. 1824.

NOLI'NA. (Named after *P. C. Nolin*, an American botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Dasylirion.)

Interesting, half-hardy, peat-border bulbs. Offsets and cuttings; sandy, moist peat.

N. georgia'na (Georgian). 2½. White. July. Georgia. 1812.
,, *longifo'lia* (long-leaved). 10. White. Mexico. 1830.
,, *Palme'ri* (Palmer's). California.

NO'LTEA. (A commemorative name. Nat. ord. Rhamnaceæ.)

Greenhouse evergreen shrub. Cuttings of half-ripe shoots in sand, under a bell-glass. Fibrous loam, peat, and sand.

N. africa'na (African). 12. Pale yellow or white. March to May. S. Africa. 1712.

NOMA'PHILA. (From *nomos*, a pasture, and *phileo*, to love; in allusion to the habitat of the plants. Nat. ord. Acanthaceæ.)

A stove perennial herb. Divisions in spring. Loam, leaf-mould, and sand.

N. corymbo'sa (level-topped). Java.

NONATE'LIA. (From the South American name. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. See PALICOUREA.)

N. lu'tea (yellow). 1. Yellow. June. Guiana. 1823.
,, *officina'lis* (shop). See PSYCHOTRIA OFFICINALIS.
,, *racemo'sa* (racemed). See PSYCHOTRIA RACEMOSA.
,, *viola'cea* (violet-*berried*). See PALICOUREA VIOLACEA.

NO'NNEA. (Commemorative of *J. P. Nonne*, a German botanist. Nat. ord. Boraginaceæ.)

Hardy annuals. Seeds. Ordinary garden soil.

N. a'lba (white). ½. White. July to September.
,, *decu'mbens* (lying-down). ½. Pale blue. Western Mediterranean region.
,, *ni'gricans* (blackening). See N. DECUMBENS.
,, *ro'sea* (rosy). ½–1. Rose, with yellow eye changing to white. July to September. Caucasus. 1826.
,, ,, *versi'color* (changing-colour). ½–1. Red, changing to blue.

NOPA'LEA. (From *Nopal*, the native Mexican name. Nat. ord. Cactaceæ.)

Warm greenhouse or dry stove succulents. Cuttings in sand, drying them a few days before inserting them in sand. Loam, old mortar, and bricks, finely broken and sand. Full exposure to sunlight is necessary.

N. coccinelli'fera (cochineal-bearing). 5–10. Scarlet. August. Mexico. 1688. "Cochineal Plant."
,, *deje'cta* (cast-down). Yellow. Cuba. 1836.
,, *guatemale'nsis* (Guatemalan). 15–22. Reddish (?). Guatemala. 1907.

NORA'NTEA. (From its Guianan name. Nat. ord. *Ternstrœmiads* [Ternstrœmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Handsome stove evergreen shrubs, remarkable for their singular bracts. Cuttings in sand in a close case with bottom-heat. Fibrous loam, peat, and sand.

N. brasilie'nsis (Brazil). 4. Brazil. 1820.
,, *guiane'nsis* (Guiana). 4. Violet. Guiana. 1818.
,, *i'ndica* (Indian). White. Mauritius. 1822.

NORDMA'NNIA CORDIFO'LIA (heart-leaved). See TRACHYSTEMON ORIENTALE.

NORFOLK ISLAND PINE. *Arauca'ria exce'lsa.*

NORMANDY CRESS. See AMERICAN CRESS.

NORWAY MAPLE. *A'cer platanoi'des.*

NORWAY SPRUCE. *Pi'cea exce'lsa.*

NOTELÆ'A. (From *notos*, south, and *elaia*, the olive; literally, the Australian Olive. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

All the species in this order will graft on each other, as the Lilac on the Ash, the Olive on the Privet and Phillyrea, and so forth. Greenhouse, white-flowered, evergreen shrubs, from Australia. Cuttings of firm, side, stubby shoots in April, in sand, under a bell-glass, without bottom-heat; peat and loam, with a little sand and charcoal. Winter temp., 40° to 50°.

N. exce'lsa (tall). 15. May. Canary Islands. 1784.
„ *longifo'lia* (long-leaved). 3. April. 1790.
„ *ova'ta* (egg-*leaved*). 2. June. 1824.
„ *puncta'ta* (dotted-*leaved*). 3. June. 1826.

NOTHOCHLÆ'NA. (From *nothos*, spurious, and *chlaina*, a cloak; some of the species appearing to have an involucre. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns, all but one with brown spores. See FERNS.

N. affi'nis (allied). ½–¾. Mexico and Guatemala.
„ *argyrosti'gma* (silver-dotted). July. E. Ind.
„ *canarie'nsis* (Canary). Teneriffe.
„ *ca'ndida* (white). See N. SULPHUREA.
„ *cane'scens* (grey). Mexico.
„ *chrysophy'lla* (golden-leaved). See N. FLAVENS.
„ *de'nsa* (dense). July. Isle of Luzon. 1840.
„ *di'stans* (distant). ¾. July. Australia. 1823.
„ *ecklonia'na* (Ecklon's). ½. August. S. Africa. 1838.
„ *ferrugi'nea* (rusty). ½–1½. Sori black. W. Ind. and Mexico to Chili.
„ *fla'vens* (yellow). ½–1½. Powder bright yellow. Central Amer.
„ *Hoo'keri* (Hooker's). See N. NIVEA HOOKERI.
„ *hypoleu'ca* (white-beneath). ½–1. Felted, with white hairs beneath. Chili.
„ *læ'vis* (smooth). See N. SINUATA.
„ *lanugino'sa* (woolly). ¾. August. Madeira. 1778.
„ *lenti'gera* (pea-*spored*). May. S. Amer. 1822.
„ *Mara'ntæ* (Maranta's). ¾. July. N. Africa, Himalayas, &c. 1820.
„ *mo'llis* (soft). ½–1½. Powder silvery. Chili and Guatemala. 1892.
„ *Muelle'ri* (Mueller's). 1. Frond olive-green. 1888.
„ *Newbe'rryi* (Newberry's). ½–1. Frond covered with white felt on both sides. California.
„ *ni'vea* (snowy). ½. White. July. Mexico to Peru.
„ „ *Hoo'keri* (Hooker's). Pinnules sessile.
„ *piloselloi'des* (Pilosella-like). ½. July. E. Ind. 1822.
„ *pulvera'cea* (dusty). See N. SULPHUREA.
„ *pu'mila* (dwarf). ½. August. N. Holland.
„ *ru'fa* (reddish). See N. FERRUGINEA.
„ *sinua'ta* (wavy-*edged*). Peru. 1831.
„ *sinua'ta* (sinuated). 1–2½. Rhizome bearing bulbs. New Mexico to Chili. 1831.
„ *squamo'sa* (scaly). ½–¾. Mexico to Argentina.
„ *sulphu'rea* (sulphur). ½–¾. Fronds with white or yellow powder beneath. California, &c.
„ *te'nera* (tender-*textured*). ½. Chili.
„ *tomento'sa* (downy). May. Mexico. 1841.
„ *trichomanoi'des* (Trichomanes-like). June. Jamaica. 1844.
„ *vesti'ta* (clothed). July. N. Amer. 1812.

NOTHOCLÆ'NA and **NOTHOLÆ'NA.** See NOTHOCHLÆNA.

NOTHOSCO'RDUM. (From *nothos*, spurious, and *skordon*, a contraction of *skorodon*, garlic. Nat. ord. Liliaceæ. Allied to Allium.)

Hardy and half-hardy bulbs. Offsets and seeds. Rich, light soil.

N. au'reum (golden). See BLOOMERIA AUREA.
„ *fra'grans* (fragrant). 1½. White. Mexico. 1822. Hardy.
„ *inodo'rum* (scentless). 1½. White. June, July. Carolina. 1770.
N. macroste'mon (long-stamened). See MILLA MACROSTEMON.
„ *nerinifo'rum* (Nerine-flowered). 1. Rose, purple. China. 1843.
„ *striate'llum* (finely-lined). See N. STRIATUM STRIATELLUM.
„ *stria'tum* (lined). 1. White, lined greenish-purple. June. N. Amer. Hardy.
„ „ *striate'llum* (finely-lined). 1. Greenish-yellow. June. Chili. Half-hardy.

NOTHOSPA'RTIUM and **NOTHOSPE'RMUM.** See NOTOSPARTIUM.

NOTO'BASIS SYRI'ACA, or "Syrian Thistle." See CNICUS SYRIACUS.

NOTO'NIA. (A commemorative name. Nat. ord. Compositæ.)

Stove succulents with spathulate, fleshy leaves. Cuttings, allowed to dry for some days and then inserted in sand. Fibrous loam, leaf-mould, some finely broken bricks, and sand.

N. amanie'nsis (Amanian). 4. Yellow; scapes reddish. E. Trop. Africa. 1905.
„ *grandiflo'ra* (large-flowered). India.
„ *Gra'ntii* (Grant's). Trop. Africa.
„ *sempervi'va* (Sempervivum-like). See N. GRANTII.
„ *trachyca'rpa* (rough-fruited). Trop. Africa.

NOTOSPA'RTIUM. (From *notos*, southern, and *spartium*, broom; the plant has the habit of broom. Nat. ord. Leguminosæ.)

Half-hardy shrub, requiring a wall, except in the warmer parts of the country. Seeds. Loam and peat or leaf-mould.

N. Carmichæ'liæ (like Carmichælia). 2–15. Pink. New Zealand. 1883. "Makaka."

NOTY'LIA. (From *notos*, the back, and *tulos*, a hump; referring to a singular lump on the column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cirrhæa.)

Stove orchids. For culture, see CIRRHÆ'A.

N. a'lbida (whitish). White. March. Central Amer. 1851.
„ *Barke'ri* (Barker's). Straw. Mexico. 1837.
„ *bi'color* (two-coloured). Lilac, whitish. Guatemala. 1866.
„ *biparti'ta* (two-parted). Straw. Mexico. 1880.
„ *bre'vis* (short). White and yellow. S. Amer. 1895
„ *Bungero'thii* (Bungeroth's). Yellowish-green. Trop. Amer. 1887.
„ *incu'rva* (curled-in). Pale straw. Trinidad.
„ *la'xa* (loose). Greenish, spotted with orange. Brazil. 1882.
„ *laxiflo'ra* (loose-flowered). ½. Pale yellow. Para. 1839.
„ *micra'ntha* (small-flowered). Pale green. Demerara.
„ *puncta'ta* (dotted). ½. Yellow, green. Trinidad. 1822.
„ *te'nuis* (slender). Pale straw. Demerara. 1836.
„ *trise'pala* (three-sepaled). ½. Pale green. Mexico. 1850.

NOUE'LIA. (Commemorative of *M. A. A. Nouel*, of the Orleans Museum. Nat. ord. Compositæ.)

Half-hardy or greenhouse shrub or small tree. Seeds. Fibrous loam, leaf-mould, and sand.

N. insi'gnis (remarkable). White. Yunnan, China. 1889.

NUNNEZHA'RIA TENE'LLA. See CHAMÆDOREA TENELLA.

NU'PHAR. (From *neufar*, the Arabic for water-lily. Nat. ord. *Water-lilies* [Nymphæaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

A beautiful family of hardy, yellow-flowered water-plants. Seeds merely thrown in the pond where it is desired to grow them, and divisions of the roots.

N. a'dvena (stranger). July. N. Amer. 1772.
„ *kalmia'num* (Kalmian). See N. MINIMUM.
„ *lu'teum* (*common*-yellow). June. Britain. "Brandy Bottle."
„ *lu'teum kalmia'num* (Kalmian-yellow). See N. MINIMUM.

N. mi'nimum (smallest). Yellow. July. Europe (Scotland).
,, *polyse'palum* (many-sepaled). Yellow. July, August. N. Amer.
,, *pu'milum* (dwarf-*yellow*). See N. MINIMUM.
,, *sagitæfo'lium* (arrow-leaved). July. N. Amer. 1824.

NURSERY, or **RESERVE GARDEN**, is a garden, or portion of a garden, devoted to the rearing of trees, shrubs, and hardy plants, during their early stages of growth, before they are desired for the fruit or pleasure-grounds.

NURSERYMAN is one who raises fruit and ornamental trees and plants for sale.

NUTMEG. *Myri'stica fra'grans.*

NUTMEG, CALABASH. *Mono'dora Myri'stica.*

NUTTA'LLIA. (Commemorative of *Thomas Nuttall*, a North American botanist. Nat. ord. Rosaceæ. Allied to Prunus.)

A deciduous shrub, hardy in the more favoured parts of the country, but liable to get injured by late frosts, because it commences growth too early. Some plants are male only, but others have hermaphrodite flowers, and bear fruits like small cherries. Seeds, suckers, layers, and cuttings of half-ripe wood under a hand-light. Light, well-drained garden soil.

N. cerasifo'rmis (cherry-shaped). 3–6. White. March. N.W. Amer. 1848. "Oso Berry."

NUTTA'LLIA, of Barton. See CALLIRHOË.

N. corda'ta (heart-shaped). See CALLIRHOË DIGITATA.
,, *digita'ta* (digitate). See CALLIRHOË DIGITATA.
,, *grandiflo'ra* (large-flowered). See CALLIRHOË PAPAVER.
,, *malvæflo'ra* (mallow-flowered). See SIDALCEA MALVÆFLORA.
,, *papavera'cea* (poppy-like). See CALLIRHOË PAPAVER.
,, *peda'ta* (pedate). See CALLIRHOË PEDATA.

NUT TREE. *Co'rylus.*

NUT WEEVIL. BALA'NINUS NU'CUM.

NUY'TSIA. Fire-tree. (Called after *T. Nuyts*, a Dutch navigator. Nat. ord. *Loranths* [Loranthaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Very handsome shrubs, from Swan River, with such abundance of bright orange-coloured blossoms, that the colonists at King George's Sound compare it to a tree on fire; and it is also singular as being the only plant in this order of parasites which grows on the ground. Seeds; cuttings of firm side-shoots in May, in sand, under a bell-glass, and placed in a cold frame; sandy peat and fibrous loam. Winter temp., 40° to 48°.

N. floribu'nda (many-flowered). 15. Orange. 1837.
,, *ligustri'na* (privet-like). Orange. 1837. This is *Loranthus epigæus.*

NYCTA'NTHES. (From *nuctos*, night, and *anthos*, a flower; the flowers open in the evening. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Jasminum.)

This is the Hursingar of India, whose blossoms perfume the air at night, and cover the ground in the morning, when they are gathered and worn as necklaces, or in the hair of the native women. Stove evergreen shrub. Cuttings of half-ripened shoots in May, in sand, under a bell-glass, and in bottom-heat; sandy loam and fibrous peat, kept open by sand and charcoal. Winter temp., 55° to 60°; summer, 70° to 90°. A moist atmosphere when growing.

N. A'rbor-tri'stis (tree-of-sadness). 15. White. India. 1781.

NYCTERI'NIA. See ZALUZIANSKYA.

NYCTE'RIUM. See SOLANUM.

NYCTO'CALOS. (From *nux*, *nuktos*, night, and *kalos*, beautiful; the flowers of some species open at night and wither in the morning. Nat. ord. Bignoniaceæ.)

An ornamental stove climber. Short side-shoots getting firm, in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

N. Thomso'ni (Thomson's). White. Assam. 1868.

NYMPHÆ'A. Water-Lily. (From *nymphe*, a water-nymph. Nat. ord. *Water-lilies* [Nymphæaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

All most beautiful water-plants; all like a rich, loamy soil, and plenty of water above it. Propagated by seeds, dividing the roots in some, and separating the tuber-like bottoms of others. The stove kinds should be kept cooler and drier in winter, and receive fresh soil before starting them in spring. They much delight in a supply of fresh-heated water when growing, and then the atmosphere can be scarcely too hot and moist. Temp. for stove kinds, winter, 48° to 55°; summer, 70° to 90°.

HARDY.

N. a'dvena (stranger). See NUPHAR ADVENA.
,, *a'lba* (white). White. June. Britain.
,, ,, *canade'nsis* (Canadian). White. June. Canada. 1820.
,, ,, *candidi'ssima* (whitest). Flowers very large, white.
,, ,, *ro'sea* (rosy). See N. ALBA RUBRA.
,, ,, *ru'bra* (red). Rosy-pink. Sweden. 1878.
,, *biradia'ta* (double-rayed). See N. ALBA.
,, *Caspa'ryi* (Caspary's). See N. ALBA RUBRA.
,, ,, *a'lba* (white). See N. ALBA.
,, *fe'nnica* (Finland). White. July. E. Finland. 1899.
,, *kalmia'na* (Kalmian). See NUPHAR MINIMUM.
,, *lu'tea* (yellow). See NUPHAR LUTEUM.
,, *mi'nor* (smaller). See N. ODORATA MINOR.
,, *ni'tida* (sh ning-*cup-flowered*). White. July. Siberia. 1809.
,, *odora'ta* (sweet-scented). White. July, August. N. Amer. 1786.
,, ,, *mi'nor* (smaller). Flowers and leaves smaller than in the type. N. Amer. 1812.
,, ,, *ro'sea* (rosy). Pink.
,, ,, *ru'bra* (red). See N. ODORATA ROSEA.
,, ,, *sulphu'rea* (sulphur). Sulphur-yellow.
,, *orienta'lis* (oriental). See N. TETRAGONA.
,, *polyse'pala* (many-sepaled). See NUPHAR POLYSEPALUM.
,, *pygmæ'a* (pigmy). See N. TETRAGONA.
,, *renifo'rmis* (kidney-shaped). See N. TUBEROSA.
,, *sphæroca'rpa ro'sea* (rosy-spherical-fruited). See N. ALBA RUBRA.
,, *tubero'sa* (tuberous). White. July. N. Amer. 1823 Rootstock tuberous.
,, ,, *flave'scens* (yellowish). Creamy-white; stamens bright yellow.
,, *tetrago'na* (square). Small, white, fragrant. Himalaya, China, &c. 1805.
,, ,, *he'lvola* (helvola). Sulphur-yellow. Leaves blotched with bronze.
,, ,, *himalaye'nsis* (Himalayan). Snow-white, smaller than the type. Himalaya. 1904.
,, ,, *orienta'lis* (oriental). Pure white. Leaves coppery-green. Japan. 1904.

GREENHOUSE.

N. amazo'num (Amazon). Yellowish-white, fragrant Brazil.
,, *fla'va* (yellow). Pale yellow. July. Florida. 1884.
,, *mexica'na* (Mexican). Shining yellow. July. Mexico. 1889.
,, *mooria'na* (Moorian). Yellow. July. Australia. 1903.

STOVE.

N. a'mpla (large-*leaved*). White. July. W. Ind. 1801.
,, ,, *gerardia'na* (Gerardian). White, or creamy-white, with yellow anthers. Mexico. 1906.
,, ,, *specio'sa* (showy). White. July. Jamaica. 1801.
,, *Bau'mii* (Baum's). White, slightly fragrant. The smallest species known. S.W. Trop. Africa. 1907.
,, *bla'nda* (charming). White. July. S. Amer. 1820.
,, *cæru'lea* (blue). See N. STELLATA CÆRULEA.
,, *cape'nsis* (Cape). See N. STELLATA.
,, *Caspa'ryi* (Caspary's) of Henkel. See N. GIGANTEA CASPARYI.
,, *cya'nea* (*Indian*-blue). See N. STELLATA.
,, *denta'ta* (toothed-*leaved*). See N. LOTUS DENTATA.
,, *devonie'nsis* (Duke of Devonshire's). See N. LOTUS DEVONIENSIS.

N. edu'lis (eatable). See N. Lotus.
„ *e'legans* (elegant). Bluish-white. June. New Mexico. 1850.
„ *flavovi'rens* (yellow-green). Country unknown.
„ *gigante'a* (gigantic). Blue. Australia. 1852.
„ „ *Caspa'ryi* (Caspary's). Flowers smaller, paler. Australia. 1907.
„ *gra'cilis* (slender). Mexico.
„ *heakelia'na* (Henkelian). White or pale rose. Eastern India (?). 1907.
„ *Ho'ltzei* (Holtze's). Pale blue, flat, scented like violets. Australia. 1907.
„ „ *albiflo'ra* (white-flowered). Pure white. Melville Island, N. Australia. 1907.
„ „ *Eleono'ræ* (Eleonora's). See N. Holtzei albiflora.
„ *Lo'tus* (*Egyptian*-lotus). Pink. July. Egypt. 1802.
„ „ *denta'ta* (toothed). White. W. Trop. Africa. 1845.
„ „ *devonie'nsis* (Duke of Devonshire's). Rosy-red. June to September.
„ „ *magnifica* (magnificent). White flowers 10–12 in. across. 1906.
„ „ *monstro'sa* (monstrous).
„ „ *ortgiesia'na* (Ortgiesian).
„ „ *pube'scens* (downy). White. June to September. India. 1803. "Indian Lotus."
„ „ *ru'bra* (red). Red. July to September. E. Ind. 1803.
„ „ *ru'bra Krumbiege'lii* (Krumbiegel's). Large, bright red; stamens dark red. E. Ind. 1907.
„ „ *therma'lis* (warm-bath). White. July, August. Hungary. 1800. "Hungarian Lotus."
„ *micra'ntha* (small-flowered). See N. stellata albiflora.
„ *parkeria'na* (Parkerian). Pure white, large, fragrant. British Guiana. 1894.
„ *pube'scens* (downy). See N. Lotus pubescens.
„ *rehneltia'na* (Rehneltian). Pale blue, tips darker. S. Australia. 1910.
„ *ru'bra* (red). See N. Lotus rubra.
„ „ *ro'sea* (rosy). See N. Lotus.
„ *scutifo'lia* (shield-leaved). See N. stellata scutifolia.
„ *stella'ta* (starred-*flowered*). Blue. July. Trop. Africa and Asia. 1803.
„ „ *albiflo'ra* (white-flowered). White.
„ „ *cæru'lea* (blue). Blue. July to September. Egypt. 1792.
„ „ *Liste'ri* (Lister's). Bright gentian blue. 1911.
„ „ *purpu'rea* (purple). Purple.
„ „ *ro'sea* (rosea). Rose. 1911.
„ „ *scutifo'lia* (shield-leaved). Blue. July, August. S. Africa. 1792.
„ „ *versi'color* (various-coloured). White deepening to red. July to September. India. 1807.
„ „ *zanzibare'nsis* (Zanzibar). Violet-blue. June to September. Zanzibar. 1880.
„ „ *zanzibare'nsis azu'rea* (azure). Blue-violet; filaments yellow; anthers violet. 1897.
„ „ *zanzibare'nsis ru'bra* (red). Rose-purple. 1887.
„ *therma'lis* (warm-bath). See N. Lotus thermalis.
„ *versi'color* (various-coloured). See N. stellata versicolor.
„ *voalefo'ka* (voalefoka). Seems to be *N. stellata albiflora.*
„ *zanzibare'nsis* (Zanzibar). See N. stellata zanzibarensis.
„ *Zenke'ri* (Zenker's). White, with reddish tint and green tips. Cameroons. 1906.

NY'SSA. Tupelo-tree. (From *Nyssa*, a water-nymph so called. Nat. ord. *Dogwoods* [Cornaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*.)

Deciduous, green-flowered natives of the southern states of North America, where they attain the size of large trees, growing in watery places. They succeed best in peat swamps, and are highly deserving of cultivation, on account of their leaves dying off of an intensely deep scarlet; they are propagated from American seeds, also rather freely by layers; low, damp, moist situations suit them best. We are not aware that any seeds have been produced in England, as the male varieties only have bloomed, so far as we know.

N. aqua'tica (aquatic). May. 1735. "Tupelo Gum."
„ *biflo'ra* (two-flowered. *Mountain*). See N. sylvatica.
„ *ca'ndicans* (whitish). See N. Ogeche.
„ *grandidenta'ta* (large-toothed). See N. aquatica.
„ *Oge'che* (Ogeche). 20. 1806. "Ogeechee Lime"; "Sour Toupelo."
„ *sylva'tica* (wood). 6–10. May. N. Amer. 1739. "Tupelo"; "Pepperidge."
„ *villo'sa* (shaggy. *Sour Gum*). See N. sylvatica.

O

OAK. *Que'rcus.*

OAT. *Ave'na.*

OBERO'NIA. (*Oberon*, the Fairy King in "Midsummer Night's Dream." Nat. ord. Orchidaceæ.)

Epiphytical stove orchids. Offsets and divisions. Fibrous peat, sphagnum, potsherds and sand, kept on the top of pots.

O. acau'lis (stemless). See O. ensiformis.
„ *ensifo'rmis* (sword-shaped). Orange. March. Himalaya; Burma.
„ *iridifo'lia* (Iris-leaved). Yellow. India.
„ *Myosu'rus* (mouse-tail). Buff-coloured. Burma. 1896.
„ *orbicula'ris* (orbicular). Sikkim.
„ *rufila'bris* (red-lipped). Yellow, changing to pale red. Burma. 1881.
„ *tahite'nsis* (Tahiti). Yellow. June. Tahiti. 1840.
„ *umbrati'cola* (shade-loving). ½. Orange. Siam. 1909.

OBLIONKER TREE. *Æ'sculus Hippoca'stanum.*

O'CA. A name given to the tubers of *Oxa'lis tubero'sa.*

O'CHNA. (From *ochne*, the wild pear-tree; resemblance of the leaves. Nat. ord. *Ochnads* [Ochnaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Stove evergreens, all but one yellow-flowered. Cuttings of half-ripened shoots in summer, under a bell-glass, in sand, and in bottom-heat; sandy peat and fibrous loam, with pieces of broken charcoal and crocks to keep the soil open. Winter temp., 48° to 60°; summer, 60° to 85°.

O. arbo'rea (tree). 20. S. Africa. 1832.
„ *a'tro-purpu'rea* (dark purple). 4. Purple. S. Africa. 1816.
„ *Ki'rkii* (Kirk's). Trop. Africa.
„ *lu'cida* (bright). See O. squarrosa.
„ *mauritia'na* (Mauritian). 8. Mauritius. 1822.
„ *multiflo'ra* (many-flowered). 8. Sierra Leone. 1820.
„ *ni'tida* (shining). See O. squarrosa.
„ *obtusa'ta* (blunted). See O. squarrosa.
„ *pu'mila* (dwarf). India.
„ *squarro'sa* (spreading). 3–6. India. 1790.
„ *zeyla'nica* (Cingalese). See Gomphia angustifolia.

OCHRA'NTHE ARGU'TA. See Turpinia arguta.

OCHROCA'RPOS. (From *ochros*, yellowish, and *karpos*, a fruit; in reference to the colour of the fruit. Nat. ord. Guttiferæ.)

Stove tree, with berried fruits. Cuttings of mature wood, in sand, in a close case, with bottom-heat. Loam and sand.

O. africa'na (African). 50–60. Pale green. Trop. Africa. 1823.
„ *siame'nsis* (Siamese). 40–50. Green. Burma.

OCHRO'MA. (From *ochros*, pale; referring to the flowers. Nat. ord. *Mallow-worts* [Malvaceæ]. Linn. 16-*Monadelphia*, 2-*Pentagynia*. Allied to Cheirostemon.)

The wood of *O. Lago'pus* is so light that it is used in the West Indies for corks. Stove, white-flowered, evergreen trees. Cuttings of stubby, side, half-ripened shoots in sand, under a bell-glass, in heat; rich, sandy loam. Winter temp., 55° to 60°; summer, 60° to 85°.

O. Lago'pus (hare's-foot). 40. Jamaica. 1804.
„ *tomento'sa* (woolly-*leaved*). 20. S. Amer. 1816.

OCHRO'PTERIS. (From *ochros*, yellowish, and *pteris*, a fern; in allusion to the straw-coloured stalks of the frond. Nat. ord. Filices.)

A stove fern, requiring a moist atmosphere. Spores. Fibrous peat, one-fourth loam, and sand.

O. pa'llens (pale). 4. Frond four times divided. Mauritius.

OCHRO'SIA. (From *ochros*, pale yellow. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cerbera.)

Stove evergreen shrubs or trees. Cuttings of half-ripened shoots; treatment similar to Ochroma.

O. borbo'nica (Bourbon). 4–10. Cream. Bourbon. 1828.
,, *cocci'nea* (scarlet). Scarlet. Moluccas.
,, *elli'ptica* (elliptic). Yellow. New Caledonia.
,, *macula'ta* (blotched). See O. BORBONICA.

O'CIMUM. Basil. (From *ozo*, smell; the powerful odour of the plant. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

All but two are white-flowered; and most of them require to be treated as tender and half-hardy annuals. To be sown in a slight hotbed, and transplanted afterwards; the border kinds sown where they are to grow, in warm places and light, rich soil, late in May. See BA'SIL.

STOVE EVERGREEN SHRUBS, &c.

O. Boje'ri (Bojer's). 2. Madagascar. 1825. Herbaceous.
,, *ca'num* (grey). 1. July. Trop. Asia and Africa. 1822.
,, *febri'fugum* (febrifuge). See O. VIRIDE.
,, *filamento'sum* (thready). 2. September. Africa. 1802.
,, *grati'ssimum* (most agreeable). 2. July. India. 1751.
,, *menthoi'des* (mint-like). See GENIOSPORUM PROSTRATUM.
,, *micra'nthum* (small-flowered). ½. May. N. and S. Amer. 1825. Annual.
,, *monta'num* (mountain). See O. MICRANTHUM.
,, *sa'nctum* (holy). 1. Pale purple. July. E. Ind. 1703. Annual.
,, *scutellario'des* (Scutellaria-like). See COLEUS SCUTELLARIOIDES.
,, *vi'ride* (green). 2–3. Greenish-white. September. Trop. Africa. 1816.
,, *visco'sum* (clammy). 1½. Blue. August. E. Ind. 1826.

HARDY ANNUALS, &c.

O. Basi'licum (basil). 1. August. E. Ind. 1548. "Sweet Basil."
,, ,, *glabra'tum* (smooth). July. E. Ind. 1817.
,, ,, *pilo'sum* (soft-haired). 1. July.
,, ,, *thyrsiflo'rum* (thyrse-flowered). 1½. June. E. Ind. 1806.
,, *bi'color* (two-coloured). 2. October. Abyssinia. 1842. Deciduous shrub.
,, *como'sum* (tufted). 1. July. Blackish-purple. 1889.
,, *mi'nimum* (least). See O. BASILICUM.

OCOTE'A. (The native name of some of the S. American species. Nat. ord. Lauraceæ.)

Greenhouse evergreen trees. Cuttings of mature wood in sand, under a hand-light in gentle heat. Loam, a little peat, and sand.

O. botryophy'lla (bunch-leaved). 40–60. Yellow. Columbia. 1800.
,, *bulla'ta* (blistered). Green. S. Africa.
,, *califo'rnica* (Californian). See UMBELLULARIA CALIFORNICA.
,, *floribu'nda* (free-flowering). 60. White, yellow. Brazil. 1800. Stove.
,, *fœ'tens* (stinking). 20. Green, yellow. Canaries. 1760.
,, *pube'rula* (finely-downy). 40. White. S. Amer. 1800. Stove.

OCTADE'SMIA. (From *okto*, eight, and *desme*, a cluster; in allusion to the eight masses of pollen in the anther. Nat. ord. Orchidaceæ.)

Stove epiphytical orchids. Divisions at the commencement of growth. Fibrous peat, sphagnum, lumps of charcoal, and crocks.

O. monta'na (mountain). See O. SERRATIFOLIA.
,, *serratifo'lia* (saw-leaved). ½. White. Autumn. W. Ind. 1826.

OCTOME'RIA. (From *okto*, eight, and *meris*, a part; in allusion to the eight masses of pollen. Nat. ord. Orchidaceæ.)

Cool house orchids of epiphytical habit. Divisions in spring. Fibrous peat, sphagnum, lumpy charcoal, and crocks.

O. arcua'ta (curved). ½–¾. Light yellow, red-purple. Brazil. 1909.
,, *Baue'ri* (Bauer's). W. Ind.
,, *cochlea'ris* (shell-shaped). Whitish ochre, purple. Brazil. 1881.
,, *crassifo'lia* (thick-leaved). Brazil.
,, *deci'piens* (deceiving). ¼. Pale yellow. Brazil. 1910.
,, *dia'phana* (transparent). Brazil.
,, *gra'cilis* (slender). Brazil.
,, *graminifo'lia* (grass-leaved). ½. Light yellow, red. W. Ind. 1793.
,, *grandiflo'ra* (large-flowered). Brazil.
,, *juncifo'lia* (rush-leaved). Brazil.
,, *Loddige'sii* (Loddiges's). W. Ind.
,, *Oppenhei'mii* (Oppenheim's). ½. White. Brazil. 1909.
,, *saundersia'na* (Saundersian). Pale yellow, striped purple. Brazil. 1880.
,, *serratifo'lia* (saw-leaved). See OCTADESMIA SERRATIFOLIA.
,, *supraglau'ca* (glaucous-above). ½. Glassy-green, purple, yellow. Brazil. 1887.
,, *tri'color* (three-coloured). White. Brazil. 1872.

O'CYMUM. See OCIMUM.

ODONTADE'NIA. (From *odous*, *odontos*, a tooth, and *aden*, a gland; in reference to the toothed glands. Nat. ord. Apocynaceæ.)

Stove climbing shrub. Seeds; cuttings of short, mature shoots in sand, kept in a close case, with bottom-heat.

O. specio'sa (showy). Rich yellow. S. Amer. 1854.

ODONTOGLO'SSUM. (From *odous*, *odontos*, a tooth, and *glossa*, a tongue; tooth-like processes on the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Oncidium.)

Stove orchids. Division of pseudo-bulbs, when growth is commencing. The pots are three-parts filled with crocks and the pseudo-bulbs firmly fixed in position with fibrous peat, sphagnum, and potsherds placed round them. Winter temp., 55° to 65°; summer, 65° to 90°.

O. acuminati'ssimum (longest-pointed). Orange, blotched crimson and brown. 1882.
,, *acumina'tum* (long-pointed). See O. APTERUM.
,, *Alexa'ndræ* (Princess Alexandra's). See O. CRISPUM.
,, *a'nceps* (two-edged). Yellow, white. July. Mexico. 1852.
,, *andersonia'num* (Andersonian). Blotched or spotted with brown on a cream ground. Colombia. 1868.
,, ,, *baphica'nthum* (dyed-flowered). Soft yellow, finely spotted with purple. Colombia. 1876.
,, ,, *deltoglo'ssum* (triangular-lipped). Sulphur, orange, brown. 1881.
,, ,, *grusonia'num* (Grusonian). Pale yellow, with nearly black spots.
,, ,, *guttula'tum* (finely-spotted). Finely spotted with brown; lip white. 1882.
,, ,, *hebra'icum* (Hebraic). Pale yellow, with red-brown spots and markings. 1879.
,, ,, *hebra'icum lineoli'gerum* (line-bearing). More copiously spotted and marked. 1883.
,, ,, *immacula'tum* (unspotted). Primrose-yellow, without spots. 1893.
,, ,, *imperia'le* (imperial). Blotches large, chestnut-red. 1891.
,, ,, *jenningsia'num* (Jenningsian). Creamy-white, spotted cinnamon. 1878.
,, ,, *leea'num* (Leean). Bright yellow, with many brown spots. 1882.
,, ,, *limba'tum* (bordered). White, lilac, violet. 1870.
,, ,, *Marsha'lli* (Marshall's). Spotted with violet-purple. 1895.
,, ,, *pulve'reum* (dusty). Closely marked with red spots. 1895.
,, ,, *ruckeria'num* (Ruckerian). White, shaded rose, purple or violet, and spotted brown.
,, ,, *warocquea'num* (Warocquean). White, blotched brownish-purple.
,, *angusta'tum* (narrow) of Bateman. See O. RAMOSISSIMUM.

O. angusta'tum (narrow-*leaved*) of Lindley. See O. CLAVICEPS.
,, *a'pierum* (wingless). Green and white, spotted brown. Mexico.
,, ,, *candi'dulum* (white). White.
,, *aspe'rsum* (besprinkled). See O. HUMEANUM.
,, *aspirhi'num* (approaching). Clear yellow, blotched with red-brown. Colombia. 1895.
,, *astra'nthum* (star-flowered). Yellow, red-brown. Ecuador. 1867.
,, *auricula'tum* (auricled). Colombia.
,, *au'ro-purpu'reum* (golden-purple). Yellow and purple. Venezuela.
,, *bi'cloor* (two-coloured). See ONCIDIUM AUREUM.
,, *bictonie'nse* (Bicton). Lilac, green. April. Guatemala. 1837.
,, ,, *a'lbum* (white-*lipped*). Brown. white. April. Guatemala. 1843.
,, ,, *ru'brum* (red-*lipped*). Brown, red. April. Oaxaca. 1843.
,, ,, *specio'sum* (showy). Dark purple, banded with yellow. 1887.
,, ,, *sulphu'reum* (sulphur). Yellow; lip white.
,, *bla'ndum* (charming). White, spotted with crimson. Colombia. 1873.
,, ,, *albocu'preum* (white-copper). Banded with red-brown. 1893.
,, *Blu'ntii* (Blunt's). See O. CRISPUM.
,, *boddærtia'num* (Boddærtian). Yellow, with brown blotches. Venezuela. 1888.
,, *Bra'ndtii* (Brandt's). Yellow, spotted with brown; lip white, spotted. Colombia. 1889.
,, *brevifo'lium* (short-leaved). Purple. Loxa.
,, *ca'ndidum* (white). Guatemala. 1840.
,, *carini'ferum* (keel-bearing). Brown, yellow, white. Central Amer. 1870.
,, *Cervante'sii* (Cervantes'). ¾. White, yellow. June. Oaxaca. 1845.
,, ,, *punctati'ssimum* (most-spotted). Spotted all over with purple. 1878.
,, ,, *ro'seum* (rosy). Pale rose.
,, *cirrho'sum* (tendriled). Milk-white, spotted with purple-violet. Ecuador. 1876.
,, ,, *hrubya'num* (Hrubyan). Nearly without spots. 1885.
,, ,, *ma'ximum* (largest). Much larger than the type.
,, *citro'smum* (lemon-scented). 1. White, rose. March. Guatemala. 1840.
,, ,, *a'lbum* (white). White.
,, ,, *puncta'tum* (spotted). Pale rose, spotted with purple.
,, ,, *ro'seum* (rosy). Lip warm rose.
,, *cla'viceps* (club-headed). Cinnamon, edged with yellow. Ecuador. 1876.
,, *Clowe'sii* (Clowes's). See MILTONIA CLOWESII.
,, *cærule'scens* (bluish). White, blue. May. Mexico.
,, *compa'ctum* (compact). Yellow, purple. Peru. 1875.
,, *confe'rtum* (crowded). Cinnamon, ochre, brown, violet-purple. Ecuador. 1879.
,, *constri'ctum* (constrained). Yellow, brown, green. January. La Guayra. 1841.
,, ,, *casta'neum* (chestnut). Brown, with one or two white lines. 1886.
,, ,, *ma'jus* (larger). Yellow, brown. May. La Guayra. 1843.
,, ,, *pa'llens* (pale). Sulphur; lip palest yellow.
,, ,, *sanderia'num* (Sanderian). Flowers much larger.
,, *Coradi'nei* (Coradine's). 1. Sulphur-yellow, marked with brown. Colombia. 1872.
,, ,, *grandiflo'rum* (large-flowered). Large yellow, with chestnut spots. Colombia. 1887.
,, ,, *hemileu'cum* (half-white). White, striped and spotted brown. 1883.
,, ,, *kinlesidia'num* (Kinlesidian). White, edged yellow. 1885.
,, ,, *ligula're* (tongue-shaped). Orange-yellow, with 2–3 large brown blotches. 1882.
,, *corda'tum* (heart-*lipped*). 1. Greenish-yellow, brown. January. Mexico. 1837.
,, *corona'rium* (garland). 1. Reddish coppery-brown; lip bright yellow. Colombia. 1868.
,, ,, *chiriqué'nse* (Chiriquan). Sepals chestnut-brown; petals and lip yellow. Chiriqui.
,, ,, *minia'tum* (vermillion). Chestnut-brown; lip yellow. Ecuador.
O. costa'tum (ribbed). Yellow and brown. Venezuela.
,, *crini'tum* (bristly). Striped and blotched; lip covered with fringes. Colombia. 1882.
,, ,, *sapphira'tum* (sapphirated). Lip white, spotted with mauve. 1886.
,, *cri'spum* (curled). Yellow, purple. May. Colombia. 1844.
,, ,, *andersonia'num* (Andersonian). See O. ANDERSONIANUM.
,, ,, *apia'tum* (remote). Segments with one large and two smaller brown blotches. 1886.
,, ,, *au'reum magni'ficum* (magnificent - golden). Creamy-yellow, blotched chocolate-brown. 1883.
,, ,, *au'reum-rosefielde'nse* (Rosefield-golden). Bright canary-yellow. 1900.
,, ,, *bluthia'num* (Bluthian). Pale mauve, without spots.
,, ,, *citra'tum* (lemon). Citron-yellow; lip blotched with brown-purple.
,, ,, *citri'num* (lemon). Sepals bright yellow; the rest pale yellow. 1901.
,, ,, *Cookso'niæ* (Mrs. Cookson's). White, heavily blotched purple-red, 4 in. across. 1903.
,, ,, *fastuo'sum* (proud). Bluish lilac, with brown-violet blotches on white. 1878.
,, ,, *fla'veolum* (small-yellow). Yellow, with few red spots and lines. 1880.
,, ,, *gutta'tum* (spotted). White, closely spotted with brown or purple. Colombia. 1867.
,, ,, *hyperxa'nthum* (yellow above). White, with few yellow spots; lip yellow. 1887.
,, ,, *kinlesidia'num* (Kinlesidian). Petals with three sets of crest-like teeth. 1888.
,, ,, *Lehma'nni* (Lehmann's). Flowers numerous, purple, tinted with brown. 1880.
,, ,, *lu'teo-radia'tum* (yellowish-rayed). Segments each with a yellow radiating band.
,, ,, *Mari'æ* (Maria's). Pure white, with two red spots at base of lower sepals. 1878.
,, ,, *moorea'num* (Moorean). Flushed rose-purple, edged yellow; lip white. 1898.
,, ,, *oakwoodie'nse* (Oakwood). Primrose-yellow, heavily blotched rose-purple. 1900.
,, ,, *ocella'tum* (small-eyed). Speckled freely all over.
,, ,, *ruckeria'num* (Ruckerian). See O. ANDERSONIANUM RUCKERIANUM.
,, ,, *Steve'nsii* (Stevens's). White, heavily barred light brown. 1882.
,, ,, *sulphu'reum* (sulphur). Uniform sulphur-yellow. 1882.
,, ,, *trilabe'llum* (three-lipped). Sepals fringed, with yellow lip-like crests on the lateral ones. 1910.
,, ,, *veitchia'num* (Veitchian). White, with a zone of mauve and a few brown blotches. 1884.
,, ,, *Victo'ria Regi'na* (Queen Victoria). White, tinted rose-purple, with purple blotches. 1900.
,, ,, *xanthoglo'ssum* (yellow-tongued). Lip yellow, with a large brown blotch. 1883.
,, ,, *xantho'tes* (yellowness). White, with a few yellow spots.
,, *cristate'llum* (small-crested). Rich brown and yellow. Ecuador. 1878.
,, *crista'tum* (crested). Brown-spotted. Peru.
,, ,, *Lehma'nni* (Lehmann's). Yellow, marked with brown. Ecuador. 1890.
,, *croca'tum* (Crocus-like). Rich yellow. Peru. 1867.
,, *crocidi'pterum* (thrum-winged). Colombia. 1871.
,, *cuspida'tum* (sharp-pointed-*leaved*). Green, brown. May. Colombia.
,, ,, *xanthoglo'ssum* (yellow-tongued). Lip yellow. Colombia. 1881.
,, *dawsonia'num* (Dawsonian). See O. ROSSII.
,, *daya'num* (Dayan). Cream-white, closely spotted cinnamon; lip white, mauve. 1897.
,, *delle'nse* (Dell). See O. EXCELLENS.
,, *deltoglo'ssum* (triangular-lipped). See O. ANDERSONIANUM DELTOGLOSSUM.
,, *Deniso'niæ* (Mrs. Denison's). White, blotched with yellow. Colombia. 1872.
,, ,, *leroya'num* (Leroyan). 1890.
,, ,, *lyroglo'ssum* (lyre-tongued). Yellow, spotted with brown. 1885.
,, ,, *macrospi'lum* (large-blotched). Blotched with dark cinnamon. 1885.

O. *Deniso'niæ schrœderia'num* (Schrœderian). White, spotted with purple. 1882.
,, ,, *wilckea'num* (Wilckean). Pale yellow, blotched with brown. Colombia. 1880.
,, *densiflo'rum* (thickly-flowered). Yellow, red. March. Tanja.
,, *dicrano'phorum* (two-head-bearing). Sepals yellow, with two large brown spots. 1888.
,, *di'stans* (distant). Greenish-yellow; lip tinged rose. Colombia. 1909.
,, *donnia'num* (Donnian). See O. MACULATUM.
,, *dormannia'num* (Dormannian). Whitish, with numerous dark spots, yellow. 1884.
,, *Edwa'rdii* (Edward's). 3–4. Purple-violet; lip yellow. Ecuador. 1878.
,, *Egerto'ni* (Egerton's). White. April. Guatemala. 1840.
,, *Ehrenbe'rgii* (Ehrenberg's). See O. Rossii.
,, *e'legans* (elegant). Pale yellow, with narrow brown blotches; lip yellow, white. Ecuador. 1879.
,, *elega'ntius* (more elegant). Pale yellow, marked brown; lip pale yellow. Colombia. 1888.
,, *epidendroi'des* (Epidendrum-like). Yellow, purple. November. New Grenada.
,, *eua'strum* (beautiful-star). White, marked with mauve and brown. Colombia. 1887.
,, *euge'nes* (distinguished). White and yellow, blotched brown. Colombia.
,, *exce'llens* (excellent). Yellow and white, blotched with brown-purple. 1881.
,, ,, *chrysome'lanum* (yellow-black). Yellow, spotted all over. 1888.
,, ,, *harvengte'nse* (Harvengtan). Large, pale yellow, with many brown spots. 1894.
,, ,, *lu'teolum* (small-yellow). Sulphur-yellow, unspotted. 1896.
,, ,, *macula'tum* (blotched). Richly-spotted. 1884.
,, ,, *stelli'micans* (star-glittering). Yellow, reddish, purple. 1884.
,, *face'tum* (elegant). Pale yellow, spotted cinnamon; lip with curved brown blotch. 1881.
,, *ferrugi'neum* (rusty). Brown, with yellow tips; lip whitish-yellow. 1883.
,, *galeottia'num* (Galeotti's). White. April. Mexico. 1843.
,, *ghiesbreghtia'num* (Ghiesbreght's). Mexico.
,, *glorio'sum* (glorious). Yellow, thickly spotted with brown. Colombia. 1865.
,, *godseffia'num* (Godseffian). See O. DICRANOPHORUM.
,, *gra'cile* (slender). Reddish-brown, with white crests. Pseudo-bulbs blackish. Ecuador.
,, *gra'nde* (magnificent). 1. Cream, brown. March. Mexico. 1839.
,, ,, *labe'llo-a'lbum* (white-lipped). 1. Yellow, white. December. Guatemala.
,, ,, *Sande'ræ* (Mrs. Sander's). Lemon-yellow; lip white. 1898.
,, ,, *sple'ndens* (shining). Lip white, barred with purple. 1872.
,, ,, *williamsia'num* (Williamsian). A small variety. 1881.
,, *grusonia'num* (Grusonian) See O. ANDERSONIANUM GRUSONIANUM.
,, *gutta'tum* (spotted). Colombia.
,, *Ha'llii* (Hall's). Yellow, purple. November. Peru.
,, *harrya'num* (Harry Veitch's). Brown, with yellow bars and margins; lip yellow, white, blotched with mauve. Colombia. 1886.
,, ,, *flave'scens* (yellow). Wholly yellow. 1889.
,, ,, *pavo'nium* (peacocks'). Richly blotched and marked, fragrant. 1889.
,, *hasta'tum* (halbert-like). See ONCIDIUM HASTATUM.
,, *hastila'bium* (halbert-lipped). 1. White, yellow, brown. August. Guatemala. 1848.
,, *hebra'icum* (Hebraic). See O. ANDERSONIANUM HEBRAICUM.
,, ,, *lineoli'gerum* (line-bearing). See O. ANDERSONIANUM HEBRAICUM LINEOLIGERUM.
,, *Henni'sii* (Hennis's). Yellow, with brown spots; lip white, brown. Peru or Ecuador. 1891.
,, *Hi'nnus* (hinny). Wholly yellow, with brown spots. Ecuador. 1887.
,, *histrio'nicum* (stage-playing). Light sulphur, with brown cross-bars. 1887.
,, ,, *be'llum* (pretty). Yellow, with chocolate bars. 1882.

O. *Horsma'ni* (Horsman's). Sulphur, blotched cinnamon. Colombia. 1880.
,, *hrubya'num* (Hrubyan). Brown, with yellow tips; lip yellow with brown blotch. Peru. 1888.
,, *humea'num* (Humean). Pale yellow and white, blotched brown. 1876.
,, ,, *spiloglo'ssum* (spotted-lip). Lip lobed, with brown blotches. 1886.
,, ,, *You'ngii* (Young's). Yellow, blotched with brown. 1890.
,, *hunnewellia'num* (Hunnewellian). Yellow, with brown blotches; lip white, spotted brown. Colombia. 1889.
,, ,, *grandiflo'rum* (large-flowered). Larger; lip with brighter spots.
,, *hy'strix* (hedgehog). See O. LUTEO-PURPUREUM.
,, *imschootia'num* (Imschootian). Yellow, with brown-purple markings. 1891.
,, *Inslea'yi* (Insleay's). Brown, yellow, orange. July. Mexico. 1840.
,, ,, *leopardi'num* (leopard-spotted). Heavily spotted with purple-brown. 1876.
,, *io'plocon* (violet-braided). Mauve; lip tipped white. Ecuador. 1884.
,, *jenningsia'num* (Jenningsian). See O. ANDERSONIANUM JENNINGSIANUM.
,, *Kegelja'ni* (Kegeljan's). Yellow, with 2–3 red-brown blotches; lip concave, reddish-brown. Ecuador. 1877.
,, *Krame'ri* (Kramer's). Yellow, marked rose-purple or violet. Costa Rica. 1868.
,, ,, *a'lbum* (white). White. Costa Rica. 1893.
,, ,, *smithia'num* (Smithian). Ivory-white; lip sulphur, red, and orange. 1883.
,, *Krænzli'nii* (Krænzlin's). Pale yellow, with brown blotches; lip white, brown. Colombia. 1893.
,, *la'cerum* (torn). Yellow, spotted with brown. Peru.
,, *læ've* (smooth). White, yellow, marked with brown.
,, *læ've* (smooth-*lipped*). White, yellow, brown. June. Guatemala. 1841.
,, *lawrencea'num* (Lawrencean). See O. INSLEAYI.
,, *leea'num* (Leean). See O. ANDERSONIANUM LEEANUM
,, *le'pidum* (neat). Yellow, with 2–3 brown spots on sepals. Colombia. 1884.
,, *leroya'num* (Leroyan). See O. DENISONIÆ LEROYANUM.
,, *ligula're* (tongue-shaped). See O. CORADINEI LIGULARE.
,, *limba'tum* (bordered). See O. ANDERSONIANUM LIMBATUM.
,, *Linde'ni* (Linden's). Yellow. Colombia. 1852.
,, *lindleya'num* (Lindleyan). Yellow and white, with brown markings. Colombia. 1865.
,, ,, *au'reum* (golden). Yellow, without blotches. 1901.
,, ,, *Coradi'nei* (Coradine's). See O. CORADINEI.
,, ,, *mira'ndum* (wonderful). Yellow, suffused and lined with brown. Colombia. 1882.
,, *londesboroughia'num* (Lord Londesborough's). Yellow, marked brown. Mexico. 1877.
,, *longifo'lium* (long-leaved). Peru.
,, *luciania'num* (Lucianian). White, spotted with reddish-brown; lip with a curved blotch. Venezuela. 1887.
,, *lu'teo-purpu'reum* (yellow-purple). Yellow, purple. February. Colombia.
,, ,, *amesia'num* (Amesian). Pale yellow-green. 1891.
,, ,, *ampli'ssimum* (most-ampliate). Clear light yellow, with few large brown blotches. 1882.
,, ,, *face'tum* (elegant). See O. FACETUM.
,, ,, *Hi'nnus* (hinny). See O. HINNUS.
,, ,, *Mu'lus* (mule). See O. MULUS.
,, ,, *radia'tum* (rayed). Front lobe of lip broad, much dilated. 1900.
,, ,, *Sce'ptrum* (sceptre). Small round, chocolate-brown on yellow. Colombia. 1872.
,, ,, *Sce'ptrum masereelia'num* (Masereelian). Yellow. 1888.
,, ,, *vuylstekea'num* (Vuylstekean). Deep yellow, blotched with orange. 1884.
,, *lyroglo'ssum* (lyre-lipped). See O. DENISONIÆ LYROGLOSSUM.
,, *macrospi'lum* (large-blotched). See O. DENISONIÆ *macrospilum*.
,, *macula'tum* (spotted). 2. Yellow, brown. May. Mexico. 1838,

O. macula'tum ero'sum (erose). Lip erose-toothed with dark blotches.
,, ,, *grandiflo'rum* (large-flowered). Much larger than the type.
,, *madre'nse* (Madran). White, marked reddish-brown, yellow. Mexico. 1877.
,, *margine'llum* (narrow-edged). Ochre, spotted brown; lip reddish-brown. 1882.
,, *marriottia'num* (Marriottian). White, finely spotted with purple; lip yellow. Ecuador. 1881.
,, ,, *Vi'ctor* (conqueror). Yellow, marked with brown and white. 1883.
,, *maxilla're* (jaw-bone). Flesh, red, yellow. September. Mexico. 1846.
,, *membrana'ceum* (membrane-*sheathed*). See O. CERVANTESII.
,, *minia'tum* (vermilion). See O. CORONARIUM MINIATUM.
,, *mira'ndum* (wonderful). See O. LINDLEYANUM MIRANDUM.
,, *Mu'lus* (mule). Yellow, with cinnamon brown spots or blotches. Colombia. 1878.
,, ,, *tentacula'tum* (tentacled). Yellow and white. 1883.
,, *murrellia'num* (Murrellian). White; lip with purple spots. Colombia. 1875.
,, ,, *ci'nctum* (engirdled). White; lip with lilac spots. 1883.
,, *mya'nthum* (fly-flowered). Peru.
,, *mystaci'num* (whiskered). 1½. Yellowish. October. Peru. 1836.
,, *næ'vium* (spotted or moled). 1. White, densely spotted with purple. June. Colombia.
,, ,, *ma'jus* (larger). Flowers larger.
,, *nebulo'sum* (clouded). See O. APTERUM.
,, *nevade'nse* (Nevadan). Chocolate-brown and yellow. Colombia. 1870.
,, *odora'tum* (sweet-scented). Yellow, red. July. Venezuela.
,, ,, *latimacula'tum* (broad-blotched). Deep yellow, blotched brown-crimson. 1871.
,, ,, *ortgiesia'num* (Ortgiesian). White edged yellow, red. Colombia. 1891.
,, ,, *stria'tum* (lined). Markings elongated. Venezuela. 1872.
,, *Oerste'dii* (Oersted's). White, with a few red spots. Costa Rica. 1877.
,, ,, *ma'jus* (larger). Flowers larger. Costa Rica.
,, *oliga'nthum* (few-flowered). Yellow, speckled brown; lip yellow, edged brown. Guatemala. 1879.
,, *oncidioi'des* (Oncidium-like). See O. LONDESBOROUGHIANUM.
,, *orienta'le* (oriental). 2-3. Yellow, with dark spots. Eastern Andes of Ecuador. 1879.
,, *orna'tum* (adorned). Creamy-white, speckled with red. Colombia. 1891.
,, *ortgiesia'num* (Ortgiesian). See O. ODORATUM ORTGIESIANUM.
,, *owenia'num* (Owenian). White blotched brown; lip white. Colombia. 1892.
,, *pardi'num* (panther-like). Yellow, brown. Peru.
,, *parviflo'rum* (small-flowered). Dark purple, white. August. Mexico.
,, *pe'ndulum* (pendulous). See O. CITROSMUM.
,, *Pescato'rei* (Pescatore's). White, with purple spots. Colombia. 1852.
,, ,, *auranti'acum* (orange). Base of lip orange-yellow. 1883.
,, ,, *limbo'sum* (bordered). Lip bordered with a line of mauve spots. 1880.
,, ,, *Linde'nia* (Mme. Linden's). White, with one large purple blotch on each segment.
,, ,, *veitchia'num* (Veitchian). White, with broad mauve zones; lip yellow at the base.
,, ,, *melanoce'ntrum* (black-spurred). Column and base of lip blackish-purple. 1885.
,, ,, *schrœderia'num* (Schrœderian). White, with broad purple zones. 1883.
,, ,, *thomsonia'num* (Thomsonian). Richly spotted with purple. 1889.
,, ,, *veitchia'num* (Veitchian). White, with two broad mauve zones. 1882.
,, *Phalæno'psis* (Phalænopsis). See MILTONIA PHALÆNOPSIS.

O. pictura'tum (painted). Yellow, speckled with brown. 1891.
,, *platy'odon* (broad-toothed). See O. LINDENI.
,, *platychi'lum* (broad-lipped). Creamy-white; lip pink, spotted purple. Central Amer. (?) 1892.
,, *polyxa'nthum* (much-yellow). See O. KEGELJANI.
,, *præni'tens* (very-shiny). Yellow, spotted brown. Colombia. 1875.
,, *præ'stans* (excelling). Yellow, blotched brown. Colombia. 1854.
,, *prasi'num* (leek-green). Green, white, violet, and pale yellow. Ecuador. 1870.
,, *pulche'llum* (pretty). 1. White, yellow. June. Guatemala. 1839.
,, ,, *candi'dulum* (whitish). Creamy-white.
,, *pu'rum* (pure). Yellow, brown, purple. Colombia. 1872.
,, *radia'tum* (rayed). See O. LUTEO-PURPUREUM RADIATUM.
,, *ramosi'ssimum* (much-branched). White, spotted with purple, violet, or lilac. Colombia. 1875.
,, ,, *cœle'ste* (sky-blue). White, shaded with mauve. Colombia. 1893.
,, ,, *xanthi'num* (yellow). Yellow, spotted with mauve. 1880.
,, *ramulo'sum* (branched). Pale yellow, spotted dark purple. Colombia. 1855.
,, *Reichenhei'mii* (Reichenheim's). Mexico.
,, *retu'sum* (bent-back). Deep yellow. March. Peru.
,, ,, *la'tro* (soldier). Bright red. Ecuador. 1868.
,, *rhyncha'nthum* (beak-flowered). Yellow, marked brown. 1887.
,, *ri'gidum* (stiff). Yellow. Peru.
,, *ri'ngens* (gaping). Pale yellow, marked purple. Peru. 1870.
,, *Rœ'zlii* (Rœzl's). See MILLONIA RŒZLII.
,, *Ro'lliæ* (Lady Rolle's). July. Guatemala. 1841.
,, *ro'seum* (rosy). See COCHLIODA ROSEA.
,, *Ro'ssii* (Ross's). Yellow, brown, white. March. Mexico. 1839.
,, ,, *aspe'rsum* (besprinkled). See O. HUMEANUM.
,, ,, *cærule'scens* (bluish). White, marked blue. Mexico.
,, ,, *Ehrenbe'rgii* (Ehrenberg's). White, marked rose and crimson. Mexico. 1842.
,, ,, *humea'num* (Humean). See O. HUMEANUM.
,, ,, *immacula'tum* (unspotted). Sepals pale pink, the rest white. 1894.
,, ,, *rube'scens* (reddish). Pale rose, blotched purple. Nicaragua. 1849.
,, ,, *vire'scens* (greenish). White, blotched green.
,, *rube'scens* (reddish). See O. ROSSII RUBESCENS.
,, *rubigino'sum* (rusty). Pale yellow, with large chocolate blotches.
,, *ruckeria'num* (ruckerian). See O. ANDERSONIANUM RUCKERIANUM.
,, *sanderia'num* (Sanderian). See O. CONSTRICTUM SANDERIANUM.
,, *Sce'ptrum* (sceptre). See O. LUTEO-PURPUREUM SCEPTRUM.
,, *schilleria'num* (Schillerian). Yellow, brown, purple. Venezuela. 1884.
,, *schlieperia'num* (Schlieperian). Yellow, with orange-brown spots. Costa Rica. 1856.
,, *schrœderia'na* (Schrœderian). See O. DENISONIÆ SCHRŒDERIANA.
,, *Seri'nga* (Seringa). White, edged yellow, spotted brown-red. Seringa, Colombia. 1891.
,, *Shuttlewo'rthii* (Shuttleworth's). White, marked with red-brown. 1884.
,, *spilota'nthum* (blotched-flowered). Creamy-white, blotched brown. Colombia. 1872.
,, *Staura'strum* (false-cross). Yellow-green, blotched brown; lip white. 1887.
,, *stauroi'des gravesia'num* (Gravesian). Ochre, spotted brown; lip white. 1887.
,, *stella'tum* (starry-*flowered*). White, green. April. Mexico. 1839.
,, *stelli'micans* (star-glittering). See O. EXCELLENS STELLIMICANS.
,, *stenochi'lum* (narrow-lipped). Yellow, spotted brown. Ecuador. 1872.
,, *tentacula'tum* (tentacled). See O. MULUS TENTACULATUM.

O. tetrapla'sium (four-formed). White, marked purple. Peru. 1875.
„ *tripu'dians* (thrice-modest). Yellowish, blotched brown and violet. Colombia. 1871.
„ „ *harrya'num* (Harry Veitch's). Sepals and petals almost black, tipped yellow. 1883.
„ „ *xantholo'ssum* (yellow-lipped). Lip yellow, blotched mauve. 1881.
„ *triu'mphans* (triumphant). Golden-yellow, boldly blotched with brown. Colombia. 1867.
„ „ *au'reum* (golden). Yellow, blotched with orange-yellow. Colombia.
„ „ *volu'bile* (twining). Paler. Flower stem 4½ feet long, twining. Colombia. 1888.
„ *ulo'pterum* (wood-winged). Yellow, marked brown and white. Ecuador. 1872.
„ *Uroski'nneri* (Ure-Skinner's). Greenish-brown, spotted purple. Guatemala. 1859.
„ „ *a'lbum* (white). Lip pure white. 1893.
„ *ve'lleum* (woolly). Yellow, marked with brown and violet. Ecuador. 1874.
„ *vexati'vum* (provocative). Greenish-yellow, blotched chestnut-brown. Mexico. 1876.
„ *vexilla'rium* (standard). See MILTONIA VEXILLARIA.
„ *Vi'ctor* (conqueror). See O. MARRIOTTIANUM VICTOR.
„ *vimina'le* (twiggy). 1. Brown, edged yellow; lip sulphur, deep yellow. Colombia. 1885.
„ *vuylstekea'num* (Vuylstekean). See O. LUTEO-PURPUREUM VUYLSTEKEANUM.
„ *Walli'sii* (Wallis's). Reddish-brown, marked yellow. Colombia. 1870.
„ *Warne'ri* (Warner's). See ONCIDIUM WARNERI.
„ „ *purpura'tum* (purplish). See ONCIDIUM WARNERI PURPURATUM.
„ *warocquea'num* (Warocquean). See O. ANDERSONIANUM WAROCQUEANUM.
„ *Warszewi'czii* (Warszewicz's). See MILTONIA WARSCEWICZII.
„ *wattia'num* (Wattlian). Yellow, marked with purple and claret. 1890.
„ *Wei'rii* (Weir's). White, marked with purple. Colombia. 1875.
„ *Welto'ni* (Welton's). See MILTONIA WARSCEWICZII.
„ *wendlandia'num* (Wendlandian). Yellow, with brown spots. Colombia. 1889.
„ *wilckea'num* (Wilckean). See O. DENISONIÆ WILCKEANUM.
„ *You'ngii* (Young's). See O. HUMEANUM YOUNGII.

ODONTOLO'MA. (From *odous, odontos*, a tooth, and *loma*, an edge; fronds or leaves tooth-notched. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Davallia.)
O. borya'num (Bory's). See DAVALLIA REPENS.
„ *pulche'llum* (neat). See DAVALLIA PULCHELLA.
„ *tenuifo'lium* (slender-leaved). See DAVALLIA TENUIFOLIA.

ODONTOSO'RIA ACULEA'TA. See DAVALLIA ACULEATA.

ODONTOSO'RIA TENUIFO'LIA. See DAVALLIA TENUIFOLIA.

ODONTOSPE'RMUM. (From *odous, odontos*, a tooth, and *sperma*, a seed. Nat. ord. Compositæ.)
Hardy, half-hardy, and greenhouse annuals or perennials, rarely shrubby. Seeds; cuttings under a hand-light in summer. Light soil; for the greenhouse ones loam, leaf-mould, and sand.
O. aqua'ticum (aquatic). ½. Yellow. July. Mediterranean region. 1731. Hardy annual.
„ *mari'timum* (maritime). 1. Yellow. July. Mediterranean region. 1640. Perennial.
„ *pygmæ'um* (pigmy). ½. Yellow. July. Mediterranean region. 1892.
„ *seri'ceum* (silky). 3–4. Yellow. June. Canaries. 1779. Greenhouse shrub.
„ *stenophy'llum* (narrow-leaved). 2–3. Yellow. June. Canaries. 1818. Greenhouse shrub.

ŒCEO'CLADES. (From *oikeo*, to inhabit, and *klados*, a branch. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Referred to Angræcum.)
Œ. falca'ta (sickle-shaped). See ANGRÆCUM FALCATUM.

ŒDE'MONE. See HERMINIERA.

ŒNOCA'RPUS. (From *oinos*, wine, and *karpos*, a fruit; yields palm-wine and oil. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*. Allied to Areca.)
Stove Palms. Seeds, but generally suckers; rich, loamy soil. Winter temp., 60°; summer, 60° to 90°.
Œ. Baca'ba (Bacaba). 60. Guiana. 1849.
„ *Batau'a* (Bataua). 40. S. Amer. 1820. "Patana Palm."
„ *caracasa'nus* (Caracasan). Venezuela. 1849.
„ *mi'nor* (smaller). 8–10. Fruit purple-black. Brazil.
„ *rube'scens* (reddish). Colombia. 1846.

ŒNO'PLEA LINEA'TA. See BERCHEMIA RACEMOSA.

ŒNO'PLEA VOLU'BILIS (twining). See BERCHEMIA VOLUBILIS.

ŒNOTHE'RA. Evening Primrose. (From *oinos*, wine, and *thera*, imbibing; the roots of *bie'nnis* supposed to be an incentive to drinking wine. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
Annuals and biennials, by seed in the open border, in April; also in the autumn, to stand over the winter, and bloom early; perennials, by seeds also, by divisions of the plants in spring, and the more rare and tender by cuttings of the young shoots under a hand-light, in early summer.

HARDY HERBACEOUS.

Œ. acau'lis (stemless). ½. White. June to September. Chili. 1821.
„ *albicau'lis* (white-stemmed). ½–1. White, changing to red. June. N. Amer. 1826.
„ *aniso'loba* (unequal-lobed). 2. White. June. Chiloe. 1828.
„ *cæspito'sa* (tufted). 1. White. June. N. Amer. 1811.
„ *califo'rnica* (Californian). White to pale pink, fragrant. July. California.
„ *cardiophy'lla* (heart-leaved). 1. Yellow. July, August. N.W. Amer. 1883.
„ *caule'scens* (stem-forming). See Œ. CÆSPITOSA.
„ *cheiranthifo'lia* (wallflower-leaved). Yellow. June. Chili. 1820. Half-hardy.
„ *Drummo'ndii* (Drummond's). ½. Yellow. August. N. Amer. 1833.
„ *exi'mia* (choice). See Œ. CÆSPITOSA.
„ *formo'sa* (beautiful). ½–1. Pure white. 1899.
„ *Fra'seri* (Fraser's). See Œ. GLAUCA FRASERI.
„ *frutico'sa* (shrubby). 3. Yellow. August. N. Amer. 1737.
„ „ *ambi'gua* (doubtful). 1. Yellow. July. N. Amer. 1813.
„ „ *i'ndica* (Indian). 1½. Yellow. July. India.
„ „ *You'ngii* (Young's). 1½. Yellow. July, August.
„ *glau'ca* (milky-green). 2. Yellow. June. N. Amer. 1812.
„ „ *Fra'seri* (Fraser's). 1–1½. Yellow. June to September. S. Carolina. 1811.
„ „ *variega'ta* (variegated-*leaved*). 2. Yellow. July.
„ *gra'cilis* (slender). See Œ. PUMILA.
„ *Hava'rdi* (Havard's). ½. Deep yellow. July. Nevada and Texas. 1907.
„ *hy'brida* (hybrid). See Œ. FRUTICOSA AMBIGUA.
„ *linea'ris* (linear). See Œ. FRUTICOSA.
„ *macroca'rpa* (large-fruited). See Œ. MISSOURIENSIS LATIFOLIA.
„ *margina'ta* (margined). See Œ. CÆSPITOSA.
„ *missouri'nsis* (Missouri). 1. Yellow. June. N. Amer. 1818.
„ „ *latifo'lia* (broad-leaved). 1. Yellow. Leaves broader. N. Amer. 1811.
„ *nervo'sa* (*large*-nerved). 2. Yellow. July. 1827.
„ *nivertia'na* (Nivertian). Blush-white, tinted carmine. 1872.
„ *Nutta'llii* (Nuttall's). White. June. N. Amer. 1811.
„ *pa'llida* (pale). See Œ. ALBICAULIS.
„ *pu'mila* (dwarf). ½. Yellow. July. N. Amer. 1757.
„ *pusi'lla* (small). See Œ. PUMILA.
„ *ripa'ria* (river-bank). See Œ. PUMILA.
„ *ro'sea* (rosy). 1. Pink. June. N. Amer.; Peru. 1783.
„ *saxo'sa* (stony). See Œ. CÆSPITOSA.
„ *Sello'wii* (Sellow's). Monte Video. 1831.

Œ. sero'tina (late-*flowering*). 1½. Yellow. September. N. Amer. 1820.
„ *serrula'ta* (small-toothed). 1. Yellow. June. N. Amer. 1824.
„ *specio'sa* (showy). 1. White. June. N. Amer. 1821.
„ „ *ma'jor* (larger). 6. White. July. N. Amer.
„ *tanacetifo'lia* (tansy-leaved). See Œ. NUTTALLII.
„ *taraxacifo'lia* (dandelion-leaved). See Œ. ACAULIS.
„ *tetrago'na* (four-angled-*podded*). See Œ. FRUTICOSA.
„ *tetra'ptera* (four-winged). 1. White or blush. July to September. Mexico.
„ „ *ro'sea* (rosy). Rosy, with darker veins.

HARDY BIENNIALS.

Œ. a'lbicans (whitish). 2. Whitish. June. Peru. 1823.
„ *bie'nnis* (biennial). 4. Yellow. July. N. Amer. 1629. "Common Evening Primrose."
„ „ *grandiflo'ra* (large-flowered). 2–4. Very large, yellow. July to September.
„ *bi'frons* (two-faced). See Œ. AMŒNA.
„ *crucia'ta* (cross-*flowered*). See Œ. BIENNIS.
„ *ela'ta* (tall). 2. Yellow. July. Mexico. 1824.
„ *ero'sa* (jagged). 2. Citron-coloured. July. S. Africa. 1828.
„ *globula'ris* (globular). 3. Yellow. July. 1824.
„ *grandiflo'ra* (large-flowered). See Œ. BIENNIS GRANDIFLORA.
„ *hi'rta* (hairy). ½. Yellow. August. N. and S. Amer. 1836.
„ *inca'na* (hoary). See Œ. FRUTICOSA.
„ *lamarckia'na* (Lamarckian). See Œ. BIENNIS GRANDIFLORA.
„ *longiflo'ra* (long-flowered). 3. Yellow. August. Buenos Ayres. 1776.
„ *me'dia* (intermediate). See Œ. FRUTICOSA.
„ *noctu'rna* (night-*smelling*). 2. Yellow. July. S. Africa. 1790.
„ *odora'ta* (sweet-scented). 2. Yellow. June. S. Amer. 1790.
„ „ *vire'scens* (greenish). 2. Yellow. June. S. Amer. 1790.
„ *pube'scens* (downy). 1. White. July. S. Amer. 1825.
„ *salicifo'lia* (willow-leaved). See Œ. ELATA.
„ *simsia'na* (Sims's). 3. Yellow. July. Mexico. 1816.
„ *stria'ta* (streaked). Yellow. July. 1822.
„ *villo'sa* (shaggy). 2. Yellow. July. S. Africa. 1791.

HARDY ANNUALS.

Œ. albe'scens (whitish). 1½. Purple to white. June. Columbia River. 1841.
„ *amœ'na* (pleasing). 2. Purple. July. N. Amer 1825.
„ „ *rubicu'nda* (ruddy). Lilac-purple, with four blotches. California. 1834.
„ „ *vino'sa* (claret-coloured). White, with four purple splashes. California. 1835.
„ *berteria'na* (Berterian). Chili.
„ *bisto'rta* (twice-twisted). 1. Yellow. Summer. N.W. Amer.
„ „ *veitchia'na* (Veitchian). ½–1. Yellow, with four blood-red spots. S. California.
„ *clava'ta* (club-*leaved*). 1. White. July. Mexico. 1827.
„ *conci'nna* (neat). 1–1½. Pink. July to September. Chili.
„ *corymbo'sa* (corymbose). 2–3. Yellow. August, September. Mexico. 1816.
„ *decu'mbens* (lying-down). 1½. Purple. August. California. 1827.
„ *densiflo'ra* (close-flowered). 3. Purple. August. California. 1830.
„ *denta'ta* (toothed). 1. Yellow. August. N. and S. Amer. 1837.
„ *humifu'sa* (prostrate). Pink. Stems flat on the soil. N. Amer.
„ *Johnso'ni* (Johnson's). 2–3. Citron-yellow. July, August. N.W. Amer. 1898.
„ *le'pida* (pleasant). See Œ. DECUMBENS.
„ *Li'ndleyi* (Lindley's). See Œ. AMŒNA.
„ *minutiflo'ra* (minute-flowered). 1. Yellow. July, August. Chili. 1837.
„ *ova'ta* (egg-shaped). Yellow. July, August. California.
Œ. pinnati'fida (deeply-lobed). White. July. N. Amer. 1811.
„ *purpu'rea* (purple) of Bentham. See Œ. ALBESCENS.
„ *purpu'rea* (purple) of Curtis. 1. Purple. June, July. N. Amer. 1794.
„ *Pu'rshii* (Pursh's). See Œ. PINNATIFIDA.
„ *quadrivu'lnera* (four-blotched). 1–1½. Pink, with four crimson spots. N. Amer. 1826.
„ *Romanzo'wii* (Romanzow's). 1–1½. Purple. June to August. N. Amer. 1817.
„ *sinua'ta* (scolloped-*leaved*). 3. Yellow. July. N. Amer. 1770.
„ „ *mi'nima* (smallest). ¼. Yellow. July. N. Amer. 1825.
„ *stri'cta* (erect). See Œ. STRIATA.
„ *tene'lla* (slender). ½. Purple. June, July. Chili. 1823.
„ *tenuifo'lia* (thin-leaved). 1½. Purple. August. Chili. 1828.
„ *tri'loba* (three-lobed). ½. Yellow. June. N.W. Amer. 1822.
„ *vimi'nea* (twiggy). 2. Purple. July. California. 1826.
„ *vino'sa* (claret-coloured). See Œ. AMŒNA.
„ *virga'ta* (rod-shaped). 1½. Purple, white. July. Peru. 1823.
„ *Whitne'yi* (Whitney's). 1½–2½. Rosy, with four crimson blotches. July, August. Columbia River. 1831.
„ *Williamso'ni* (Williamson's). 1–2. Western United States.

OFFSETS are side bulbs produced by some bulbous roots, and by which the species can be propagated. Whatever checks the upward growth of the parent plant, as an early breaking down of the stem, compels the sap to find other organs for its reception, and, consequently, promotes the production of offsets. "The practice," says Dr. Lindley, "of scarring the centre of bulbs, the heads of echino-cacti, and such plants, and the crown of the stem of species like *Aga've geminiflo'ra*, in all which cases suckers are the result, is explicable on the foregoing principle."

O'FTIA. (Derivation not clear. Nat. ord. Myoporaceæ.)
Evergreen shrub for the greenhouse. Cuttings of half-mature shoots in sand, covered with a bell-glass in summer. Loam, leaf-mould, and sand.
O. africa'na (African). 2–3. White. July. S. Africa. 1710.

OGEECHEE LIME. *Ny'ssa Oge'che.*

OHIGGI'NSIA. See HOFFMANNIA.

OHLENDO'RFFIA. (Commemorative of *Dr. C. F. Ollendorff*, of Holstein. Nat. ord. Scrophulariaceæ.)
A small greenhouse shrub now generally referred to *Apto'simum depre'ssum*. Seeds; cuttings of half-mature shoots in sand under a bell-glass. Fibrous loam and peat in equal proportions and sand.
O. procu'mbens (lying-down). 1–2. Blue. July, August. S. Africa. 1836.

OI'DIUM. The name given to a group of allied fungi that attack the leaves, flowers, fruits, and other parts of plants. They appear to the naked eye as a white coating covering the parts of plants affected, and are generally known amongst gardeners and farmers as mildew. Under the microscope they are seen to consist of an interlacing mass of jointed filaments or fine threads, sending small rounded suckers into the tissues of the plants affected, and by means of which they absorb food to the great injury of the host-plants. Other branches of the fungi grow erect, forming rows of globular, barrel-shaped, or cylindrical cells (*conidia*), which fall off at maturity and spread the fungus on healthy plants with remarkable rapidity. The conidial form is merely the earlier stage of various higher fungi. Two of the most common are *Oidium Balsamii*, on turnips all over Britain, and *O. Tuckeri* on the grape vine, both under glass and outdoors. The higher stage of this latter is *Uncinula spiralis*, bearing numerous spirally coiled filaments on its perithecia, which are the fruit-producing bodies, and contain ascospores. Other well-known fungi of the group are *Erysiphe graminis*, on grass; *E. Martii*, on peas; *Microsphæra grossulariæ*, on gooseberries; *Sphærotheca*

mors-uvæ, the American gooseberry mildew; and *S. castagnei*, the hop mildew.

All are easily recognised, and as they are very destructive prompt measures should be taken to prevent them from spreading. Flowers of sulphur will destroy all these fungi, if dusted on the affected parts, and this should be done with vines before the mildew gets upon the berries. Sulphide of potassium, at the rate of one ounce to three gallons of water, sprayed on affected plants, is a very effective cure, and will act as a preventive, used before mildew appears.

OIL NUT. *Ri'cinus commu'nis.*

OIL PALM. *Ela'is guinee'nsis.*

O'LAX. (From *olax*, furrowed; flowers partially furrowed, or imbricated. Nat. ord. Olacinaceæ. Linn. 3-*Triandria*, 1-*Monogynia*.)

Stove, white-flowered, evergreen climbers, from the East Indies. Cuttings of ripened shoots in sand, under a bell-glass, in heat; sandy peat, fibrous loam, and a little dried leaf-mould. Winter temp., 50° to 55°; summer, 60° to 80°.

O. imbrica'ta (imbricated). 8. December. 1820.
„ *sca'ndens* (climbing). 8. December. 1820.
„ *stri'cta* (upright). 4. White. Australia. 1820.

OLDENBU'RGIA. (A commemorative name. Nat. ord. Compositæ.)

Greenhouse evergreen shrub, with a stout, unbranched stem. Seeds; cuttings of half-ripe wood in sand, under a bell-glass. Fibrous loam, peat, and sand.

O. Arbu'scula (little-tree). 3–6. Purple and white. S. Africa. 1903.

OLDENLA'NDIA. (Named after *H. B. Oldenland*, a Danish plant-collector. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Hedyotis.)

Cuttings of half-ripened shoots of *deppia'na* in April, in sand, under a glass, in bottom-heat; peat and loam. Winter temp., 50° to 55°; summer, 60° to 85°. The annuals sow in a gentle hotbed, in March; prick out the seedlings in the bed, and move them to the open border, after gradually hardening them, at the end of May.

O. cape'nsis (Cape). White. July. S. Africa. 1824. Annual.
„ *corymbo'sa* (corymbed). White. June. Jamaica. 1739. Annual.
„ *deppea'na* (Deppe's). 1. White. June. Mexico. 1835. Stove evergreen.
„ *dolicha'ntha* (long-flowered). 1. White, green, fragrant; tube 4 in. long. E. Trop. Africa. 1907.
„ *umbella'ta* (umbelled). ½. White. July. E. Ind. 1792.

OLDFIE'LDIA. (Commemorative of *R. A. Oldfield*, a trader at Sierra Leone. Nat. ord. Euphorbiaceæ.)

Evergreen stove tree. Seeds; cuttings of ripe wood in sand, in a close case with bottom-heat. Fibrous loam, leaf-mould, and sand.

O. africa'na (African). W. Trop. Africa. "African Teak." It affords valuable timber for the shipbuilder.

OLD MAN. *Artemi'sia Abro'tanum* and *Rosmari'nus officina'lis.*

OLD MAN'S BEARD. *Geropo'gon, Cle'matis Vita'lba*, and *Tilla'ndsia usneoi'des.*

O'LEA. Olive. (From *elaia*, the olive. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

The Olive will graft on the Privet, Phillyrea, Ash, Lilac, and others of the order. Evergreens, all white-flowered, except *O. fra'grans*. Cuttings of ripened shoots in spring, in sand, under a hand-light, in a close frame or pit; also, when procurable, by seeds and grafting; loam and peat, of an open, fibrous character. Winter temp., 38° to 48°. *O. sati'va* has stood for years against south walls near London. The scent of *fra'grans* is sufficient to perfume a large conservatory; where only one of the genus can be grown, this should be fixed upon.

GREENHOUSE EVERGREENS.

O. america'na (American). See OSMANTHUS AMERICANUS.
„ *ape'tala* (without petals). See NOTELÆA LONGIFOLIA.
„ *arbo'rea* (tree). 20. August. 1825.
O. buxifo'lia (box-leaved). See O. EUROPÆA.
„ *cape'nsis* (Cape). 5. July. S. Africa. 1730.
„ „ *undula'ta* (wave-*leaved*). See O. LAURIFOLIA.
„ *chrysophy'lla* (golden-leaved). 15. July. Mascarene Islands; Trop. Africa.
„ *europæ'a* (European). 5. July. Portugal. 1821. "Wild Olive."
„ „ *sati'va* (cultivated). August. S. Europe. 1570. "Olive."
„ *excel'sa* (tall). See NOTELÆA EXCELSA.
„ *fra'grans* (fragrant). See OSMANTHUS FRAGRANS.
„ *ferrugi'nea* (rusty-*leaved*). See O. CHRYSOPHYLLA.
„ *latifo'lia* (broad-leaved). See PHILLYRÆA LATIFOLIA.
„ *laurifo'lia* (laurel-leaved). 6. July. S. Africa. 1730.
„ *longifo'lia* (long-leaved). See O. EUROPÆA.
„ *obli'qua* (twisted-*leaved*). See O. EUROPÆA.
„ *Olea'ster* (oleaster). See O. EUROPÆA.
„ *panicula'ta* (panicled). 10. July. Australia. 1825.
„ *sati'va* (cultivated). See O. EUROPÆA SATIVA.
„ *verruco'sa* (warted). 6. April. S. Africa. 1814.
„ *undula'ta* (waved). See O. LAURIFOLIA.

STOVE EVERGREENS.

O. dioi'ca (dicœcious). 30. March. E. Ind. 1818.
„ *la'ncea* (spear-head-*leaved*). 20. August. Isle of France. 1819.
„ *robu'sta* (robust). See LIGUSTRUM ROBUSTUM.
„ *roxburghia'na* (Dr. Roxburgh's). See LIGUSTRUM NEILGHERRENSE.

OLEANDER. See NERIUM OLEANDER.

OLEA'NDRA. (The genus is founded on *neriifo'rmis*, or oleander-like. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns, with yellow spores. See FERNS.

O. articula'ta (jointed). June. Natal. 1837.
„ *Cumi'ngii* (Cuming's). June. Isle of Luzon.
„ *neriifo'rmis* (oleander-like). May. Amer.
„ *nodo'sa* (knotty). May. S. Amer. 1840.
„ *Walli'chii* (Wallich's). May. Nepaul.

OLEA'RIA. (From *olea*, an olive, and that from the Greek *elaia*, an olive; in allusion to the olive-like leaves of some species. Nat. ord. Compositæ. Allied to Aster.)

Hardy, half-hardy, and greenhouse evergreen shrubs of considerable beauty. Seeds; cuttings in sandy soil under hand-lights in a gentle heat. Light, well-drained soil. Winter temp., 35° to 50°; summer, 50° to 65°, for the greenhouse species.

O. alpi'na (alpine). See O. NITIDA.
„ *argophy'lla* (silvery-leaved). 4–10. White. March to May. Australia. 1804. "Musk Tree."
„ *chata'mica* (Chatham Island). 2–4. White; disc violet-purple. Chatham Island. 1907.
„ *chrysophy'lla* (golden-leaved). 3–10. White. Australia.
„ *chryso'tricha* (golden-haired). 2–3. White. Australia. 1841.
„ *cilia'ta* (eye-lashed). 1–2. Lilac. W. Australia. 1908. Greenhouse.
„ *denta'ta* (toothed). 3–4. Rose. Australia. 1872.
„ *Forste'ri* (Forster's). 3–6. White. New Zealand. 1866.
„ *furfura'cea* (scurfy). 6–10. White. New Zealand.
„ *glutino'sa* (clammy). Pale violet. Australia. 1839.
„ *gummo'sa* (gummy). 2–3. 1889.
„ *gunnia'na* (Gunnian). See O. STELLULATA.
„ *Haa'stii* (Haast's). 2–4. White. July, August. New Zealand. 1872. "New Zealand Daisy Bush." Hardy.
„ *insi'gnis* (remarkable). 2. White. New Zealand. Greenhouse.
„ *lira'ta* (lyre-formed). See O. STELLULATA LIRATA.
„ „ *quercifo'lia* (oak-leaved). See O. STELLULATA QUERCIFOLIA.
„ *lyra'ta* (lyre-formed). See O. STELLULATA LIRATA.
„ *macrodo'nta* (large-toothed). 3–4. White. August. New Zealand. 1884. Half-hardy.
„ *myrsinoi'des* (Myrsine-like). 2–4. Light purple. May. Australia. 1835.
„ „ *erube'scens* (reddish). 2–3. Light purple-red. May. Australia and Tasmania. Half-hardy.
„ *ni'tida* (shining). 2–3. White. New Zealand. 1851. Half-hardy.

O. nummulariæfo'lia (Nummularia-leaved). 1. White. New Zealand. 1899. Hardy.
„ *panno'sa* (woolly). 2–4. White. Australia. 1852.
„ *persoonoi'des* (Persoon-like). 2–3. White. Tasmania.
„ *quercifo'lia* (oak-leaved). See O. STELLULATA QUERCIFOLIA.
„ *ramulo'sa* (finely-branched). 2–3. White. March. Australia. 1818. Greenhouse.
„ „ *commu'nis* (common). Flower-heads fewer, smaller. 1908.
„ *specio'sa* (showy). 3. White. Australia. 1907. Half-hardy.
„ *stellula'ta* (small-starry). 2–4. White. June, July. Australia. 1823. Half-hardy.
„ „ *lira'ta* (lyre-formed). 2–3. White. July. Australia. 1812.
„ „ *quercifo'lia* (oak-leaved). 2–3. White. Australia. 1877.
„ *Travé'rsii* (Travers's). 2–4. White. New Zealand. 1887. Half-hardy.

OLEASTER or **WILD OLIVE.** See O'LEA EUROPÆ'A and ELÆA'GNUS.

OLEOBA'CHIA MACROPHY'LLA. See STERCULIA RUPESTRIS.

OLEOBA'CHIA PALU'STRIS. A corruption of *Delabe'chia rupe'stris*. See STERCULIA RUPESTRIS.

OLFE'RSIA. (Named after *Olfers*, a German botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Acrostichum.)
Stove Ferns, with yellowish-brown spores. See FERNS.
O. a'podum (stemless). June. W. Ind. 1824.
„ *blumea'num* (Blume's). April. Isle of Luzon.
„ *callæfo'lium* (Calla-leaved). August. Java. 1840.
„ *cervi'na* (stag-*horned*). May. W. Ind. 1840.
„ *confo'rme* (conformed). August. Cape of Good Hope. 1841.
„ *corcovade'nsis* (Corcovado). May. Brazil. 1837.
„ *longifo'lium* (long-leaved). 1. W. Ind. 1841.
„ *obtusifo'lium* (blunt-leaved). June. Isle of Luzon.
„ *scolopendrifo'lium* (Scolopendrium-leaved). August. Brazil. 1841.
„ *si'mplex* (simple). 1. July. Jamaica. 1793.
„ *squamo'sum* (scaly). July. W. Ind.
„ *villo'sum* (shaggy). 1. July. Jamaica. 1843.
„ *visco'sum* (clammy). August. W. Ind. 1826.

OLIBA'NUM. *Boswe'llia.*

OLIGOBO'TRYA. (From *oligos*, few, and *botrus*, a cluster of grapes; in allusion to the few clusters of flowers. Nat. ord. Liliaceæ.)
Hardy herbs with simple or slightly branched racemes of flowers. Offsets in spring; seeds. Good, well-drained soil.
O. He'nryi (Dr. Henry's). 3. White or pale yellow. Central China. 1909.
„ „ *viola'cea* (violet). 3. White; tube violet outside. Central China. 1909.

OLIVE. *O'lea.*

OLIVE-PARK-TREE. *Termina'lia Cata'ppa.*

OLIVERE'LLA E'LEGANS. (A plant found in cultivation at Amacamaca, near the city of Mexico, and described as a new genus of Crassulaceæ.)

OLIVE-WOOD. *Elæode'ndron.*

OLO'STYLA. (From *olos*, entire, and *stulos*, a style; the style being undivided. Nat. ord. Rubiaceæ.)
Evergreen stove shrub. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, peat, and sand.
O. corymbo'sa (corymbose). 5. White. New Caledonia. 1759.

OLY'RA. (From *olura*, a kind of corn grown in Egypt. Nat. ord. Gramineæ.)
Stove, ornamental, with short closely overlapping leaves. Seeds; divisions. Loam, leaf-mould, and sand.
O. conci'nna (neat). ½. Green. Costa Rica.

OMALA'NTHUS POPULIFO'LIUS. See HOMALANTHUS LESCHENAULTIANUS.

OMIME PLANT. *Plecta'nthrus.*

OMPHALO'BIUM. (From *omphalos*, the navel, and *lobos*, a pod. Nat. ord. *Connarads* [Connaraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Connarus.)
O. africa'num (African). See CONNARUS AFRICANUS.
„ *i'ndicum* (Indian). See CONNARUS MONOCARPUS.

OMPHALO'DES. Navel-wort. (From *omphales*, the navel, and *eidos*, like; referring to the seed. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Seeds of annuals in open border, in March, and once or twice more during the summer; the perennials, by division. *O. ve'rna* is a beautiful plant in the recesses of rock-works, in shady corners, thriving as well in shade as the interesting Periwinkles.

HARDY ANNUALS.

O. interme'dia (intermediate). See O. PAPILLOSA.
„ *linifo'lia* (flax-leaved). 1. White. July. Portugal. 1748. "Venus's Navel-wort."
„ *littora'lis* (shore). 1. White. July. France. 1826.
„ *papillo'sa* (nippled). 1. Blue. April. Asia Minor. 1836. Biennial.
„ *scorpioi'des* (scorpion-like). 1. Blue. July. Bohemia. 1825.

HARDY HERBACEOUS.

O. amplexicau'lis (stem-clasping). 1. White. July. Spain. 1823.
„ *longiflo'ra* (long-flowered). See LINDELOFIA SPECTABILIS.
„ *Luci'liæ* (Lucilia's). ½. Pink, changing to blue. Asia Minor. 1873. "Rock Navel-wort."
„ *myosotoi'des* (mouse-ear-like). See O. RUGULOSA.
„ *ni'tida* (shining). 2. White. May. Portugal. 1812.
„ *rugulo'sa* (finely-wrinkled). 1½. Blush. September. Asia Minor. 1838.
„ *sempervi'rens* (evergreen). See ANCHUSA SEMPERVIRENS.
„ *ve'rna* (spring). ½. Blue. March. S. Europe. 1633. "Creeping Forget-me-not."
„ „ *a'lba* (white). White. March. 1884.

ONCI'DIUM. (From *ogkos*, a tumour; referring to excrescences on the base of the lip, or labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Odontoglossum.)
Stove orchids. Divisions as growth is commencing in spring; very shallow baskets suit all the largest-leaved kinds, or they may be fastened to a block of wood, that fastened across the mouth of a pot, the pot filled loosely with pieces of wood and charcoal, to insure perfect drainage, and then rotten wood, sphagnum, and fibrous peat laid round the lower part of the plants, provided the base of the leaves is not covered. Hardy kinds, as *flexuo'sum*, require more packing; small, tender kinds must be carefully treated, to prevent damping, especially when not growing. Winter temp., 58° to 65°; summer, 60° to 90°.
O. aborti'vum (arrested). Pale yellow, with chestnut-brown markings. Venezuela. 1909.
„ *acina'ceum* (sabre-shaped). Violet, white, red. Peru. 1866.
„ *æ'mulum* (rivalling). Red-brown, yellow-brown. Colombia. 1872.
„ *a'lbo-verruco'sum* (white-warted). Bright yellow, barred brown; crest white. 1898.
„ *alcico'rne* (stag's-horn). Yellow. Colombia. 1872.
„ *alti'ssimum* (tallest). 4. Yellow, brown. March. Panama. 1793.
„ *ami'ctum* (frilled). 1. Yellow, brown-blotched. April. Brazil. 1846.
„ *amplia'tum* (broad-*lipped*). 2. Yellow, brown. March. Central Amer. 1832.
„ „ *citri'num* (citron). Citron yellow, unspotted. 1899.
„ „ *ma'jus* (larger-*flowered*). ½. Yellow. March. Guatemala. 1840.
„ *andi'genum* (Andes-born). Pale yellow, violet, and orange. Ecuador. 1869.
„ *anfra'ctum* (broken). Bright-yellow, with brown bars. Venezuela. 1909.
„ *annula're* (annular). Yellow, marked brown. Colombia. 1875.
„ *ano'malum* (anomalous). See O PANCHRYSUM.

O. asce'ndens (ascending). Yellow. April. Guatemala. 1837.
„ *aura'rium* (golden). 4–5. Fine yellow, spotted brown. Bolivia. 1884.
„ *au'reum* (golden). Violet, yellow. Peru.
„ *auri'ferum* (gold-bearing). Bright yellow. Colombia.
„ *auro'sum* (golden). See O. EXCAVATUM AUROSUM.
„ *Baldevia'mæ* (Mrs. Baldeviam's). Yellow, marked with brown. Colombia. 1873. Also written *Balderramæ*.
„ *Ba'llii* (Ball's). 1. Bright yellow, with brown markings. 1910.
„ *barba'tum* (bearded). 1½. Yellow. April. Brazil. 1818.
„ „ *cilia'tum* (eye-lashed). ½. Yellow, red. January. Brazil. 1818.
„ *Barke'ri* (Barker's). See O. TIGRINUM.
„ *batemania'num* (Bateman's). Yellow. April. Brazil. 1838.
„ „ *ramo'sum* (branched). Yellow. Brazil.
„ „ *spilo'pterum* (spotted-winged). Brown, with yellow markings. Brazil. 1844.
„ *Baue'ri* (Bauer's). Yellow, brown. April. W. Ind.
„ *beyrodtia'num* (Beyrodtian). 1½–1¾. Golden-yellow. Brazil. 1910.
„ *bicallo'sum* (two-warted). 1. Orange, brown. July. Panama. 1842.
„ *bi'color* (two-coloured-*flowered*). ½. Yellow. September. Mexico. 1841.
„ *bicornu'tum* (two-horned). See O. PUBES.
„ *bifo'lium* (two-leaved). ½. Yellow, purple. July. Monte Video. 1811.
„ „ *pa'llidum* (pale-*yellow*). ½. Pale yellow. July. Monte Video. 1832.
„ *brachya'ndrum* (short-anthered). Brown, marked yellow. Mexico. 1871.
„ *brachyphy'llum* (short-leaved). See O. CEBOLETTA.
„ *bractea'tum* (large-bracted). Yellow, brown. Central Amer.
„ *Brau'nii* (Braun's). Yellow, marked brown, small. 1886.
„ *brevila'brum* (short-lipped). Bright yellow, barred with brown. 1894.
„ *brienia'num* (O'Brienian). Bright sulphur, with cinnamon bars. Paraguay. 1881.
„ „ *fla'vida* (yellowish). Yellow. Paraguay. 1881.
„ „ *ru'fida* (reddish). Nearly covered with cinnamon. 1881.
„ *brunleesia'num* (Brunleesian). Greenish-yellow, brown; lip purple-brown. Brazil. 1883.
„ *bryolo'photum* (mossy-crested). Imperfect flowers greenish; perfect, golden. Central Amer. 1871.
„ *cæ'sium* (grey). See O. GEERTIANUM.
„ *cala'nthum* (beautiful-flowered). Yellow. Ecuador or Peru. 1870.
„ *caloglo'ssum* (beautiful-tongued). Yellow, marked brown; calli reddish. Brazil. 1885.
„ „ *co'ncolor* (one-coloured). Yellow. 1905.
„ *caminio'phorum* (furnace-bearing). Yellow, red. Venezuela.
„ *ca'ndidum* (white). White, yellow. March. Guatemala. 1843.
„ *Carde'ri* (Carder's). Brown, white, and yellow. Colombia. 1875.
„ *carina'tum* (keeled). See LEOCHILUS CARINATUS.
„ *carthagine'nse* (Carthaginian). 4. Olive. May. Trop. Amer. 1791.
„ „ *ma'jus* (larger). Flowers larger, rose. March. Honduras. 1839.
„ „ *pa'llidum* (pale). Pale rose. March. Honduras. 1839.
„ „ *ro'seum* (rosy). Rose. July. Mexico. 1838.
„ „ *sangui'neum* (blood-red). Crimson, red. La Guayra.
„ „ *Swa'rtzii* (Swartz's). White, purple. Jamaica.
„ *cavendishia'num* (Cavendishian). Yellow. Guatemala.
„ *Cebolle'ta* (Cebolleta). 1. Yellow. April. Brazil. 1825.
„ *cheiro'phorum* (hand-bearing). Yellow, marked with white. Colombia. 1860.
„ *chry'sops* (golden-eye). Light brown; lip yellow. 1888.
„ *chrysopy'ramis* (golden-pyramid). Yellow. Colombia.
„ *chrysorha'phis* (golden-needle). Pale yellow, nearly covered with brown spots. Brazil. 1888.

O. chryso'rnis (golden-bird). See O. OCHTHODES.
„ *chrysothy'rsus* (golden-thyrsed). Yellow, brown. Brazil. 1867.
„ *cilia'tum* (fringed-*lipped*). See O. BARBATUM CILIATUM.
„ *citri'num* (lemon-coloured). 5. Yellow. August. Trinidad.
„ *Clæ'sii* (Clæs's). Chocolate-red; lip deep carmine, shaded violet. Colombia. 1906.
„ *co'ncolor* (one-coloured). ¾. Lemon. May. Organ Mountains. 1839.
„ *confrago'sum* (uneven). See O. VIPERINUM.
„ *corni'gerum* (horn-bearing). ½. Yellow. July. Brazil. 1829.
„ *coryne'phorum* (club-bearing). 5. Rosy-violet, edged white; lip purple. Peru. 1905.
„ *cri'spum* (curled-*petaled*), 3. Orange. June. Brazil.
„ „ *lu'teum* (yellow). Yellow. May. Organ Mountains. 1838.
„ „ *ochra'ceum* (ochre). Ochre-brown. 1888.
„ „ *oliva'ceum* (olive). Olive, yellow, purple-black. Brazil. 1877.
„ *Cri'sta-ga'lli* (cock's-crest). Lemon and pink. Mexico and Peru. 1870.
„ *crista'tum* (crested). ¾–1. Bright yellow, with few red spots. Brazil. 1892.
„ *crocodi'liceps* (crocodile-headed). ¾. Greenish-sulphur, blotched brown. Mexico. 1885.
„ *Cræ'sus* (Crœsus). Yellow, heavily blotched with dark brown. Trop. Amer. 1872.
„ *crucia'tum* (crossed). Yellow, marked red and white. Brazil. 1878.
„ *cryptoco'pis* (hidden-dagger). Brown, yellow, grey. Colombia. 1870.
„ *cuculla'tum* (hooded). See O. OLIVACEUM.
„ *cu'rtum* (curtailed). Brown, yellow. Brazil. 1846.
„ *dactylo'pterum* (finger-winged). Yellow, marked with brown. Colombia. 1875.
„ *dasysta'lix* (thick-styled). Yellow and brown. Colombia. 1879.
„ *dasysty'le* (thick-styled). 1. Pale yellow, with brown-purple blotch. Brazil. 1873.
„ *deltoi'deum* (triangular-*lipped*). 1. Yellow. October. Luna. 1836.
„ *deto'rtum* (twisted-down). Light brown, marked with yellow. 1888.
„ *devonia'num* (Duke of Devonshire's). 2. Yellow, brown. January. Guatemala. 1836.
„ *Diade'ma* (diadem). Chocolate-brown, marked yellow. Ecuador. 1866.
„ *dichro'mum* (two-coloured). Reddish-purple; lip bright yellow. Peru. 1895.
„ *dimo'rphum* (two-formed). Yellow, marked with brown. Brazil. 1870.
„ *dio'don* (two-toothed). Brown; lip with yellow callus. 1880.
„ *divarica'tum* (spreading). 1½. Yellow, orange, brown. December. Brazil. 1826.
„ „ *cu'preum* (copper-coloured). 1½. Yellow, copper. December. Brazil. 1836.
„ *du'bium* (dublous). Brown, marked white and purple. 1873.
„ *echina'tum* (spiny). See ERYCINA ECHINATA.
„ „ *backhousea'num* (Backhousean). See ERYCINA ECHINATA BACKHOUSEANA.
„ *eleganti'ssimum* (very-elegant). Brown, with yellow bands and spots; lip yellow. Brazil. 1887.
„ *endo'charis* (beautiful-within). Bright orange. 1884.
„ *Eurycli'ne* (Eurycline). Reddish-ochre; lip yellow. 1883.
„ *euxanthi'num* (beautiful-yellow). Yellow and red. Brazil. 1869.
„ *exaspera'tum* (exasperating). Brown, yellow. Colombia. 1871.
„ *excava'tum* (hollowed). Yellow. May. Peru. 1840.
„ „ *auro'sum* (golden). 3. Golden-yellow, brown. Peru. 1866.
„ *falcipe'talum* (sickle-petaled). Brown. August. Venezuela.
„ *fimbria'tum* (fringed-*flowered*). Yellow. Brazil.
„ *flabelli'ferum* (fan-bearing). Brown, purple. July. Brazil. 1843.
„ *flexuo'sum* (zigzag). 1½. Yellow, brown. June. Brazil. 1818.
„ „ *ma'jor* (larger-*flowered*). 1½. Yellow. June. Brazil. 1839.

O. flexuo'sum radia'tum (rayed). Yellow, purple-brown. Brazil. 1872.
„ „ *uni'color* (one-coloured). Clear yellow, unspotted. 1900.
„ *Forbe'sii* (Forbes's). 1. Scarlet, yellow. September. Organ Mountains. 1837.
„ „ *Bradsha'wæ* (Mrs. Bradshaw's). Pale yellow, with bright yellow spots. 1902.
„ „ *borwickia'num* (Borwickian). Lip covered with blotches. 1879.
„ „ *ma'ximum* (largest). Flowers very large.
„ „ *measuresia'num* (Measuresian). Golden-yellow, with purple-brown edge. 1891.
„ *Forke'lii* (Forkel's). Yellow, crimson. June. Mexico. 1844.
„ *fusca'tum* (fuscous). See MILTONIA WARSCEWICZII.
„ *Gardne'ri* (Gardner's). Yellow, reddish-brown. Brazil. 1879.
„ „ *flave'scens* (yellowish). Yellowish, unspotted. 1895.
„ *Gautie'ri* (Gautier's). See O. UNICORNE.
„ *geertia'num* (Geertian). Yellow, grey. Mexico. 1854.
„ *globuli'ferum* (small-globe-bearing). Yellow, with red marks. Colombia.
„ „ *costarice'nse* (Costa Rican). Yellow, with red marks. Costa Rica. 1871.
„ *glossomy'stax* (moustache-lipped). ½. Light yellow, with brown spots. Mexico. 1879.
„ *godseffia'num* (Godseffian). Flowers smaller than *O. pubes*, and lateral sepals free. 1896.
„ *graci'llimum* (very-slender). Small yellow, with few brown marks. Peru. 1898.
„ *graminifo'lium* (grass-leaved). 1. Yellow, red. Mexico and Guatemala. 1838.
„ „ *fi'lipes* (thread-stalked). Brown, yellow. Guatemala.
„ „ *Wra'yæ* (Mrs. Wray's). 2. Yellow, brown. Guatemala. 1838.
„ *grandiflo'rum* (large-flowered). Brown, yellow. Colombia. 1881.
„ *gravesia'num* (Gravesian). Yellow, brown, 2 in. across. S. Brazil. 1892.
„ *gutta'tum* (spotted). See O. LURIDUM GUTTATUM.
„ *gyrobu'lbon* (curved-bulbed). Yellow, marked with brown. Central Amer. (?) 1869.
„ *hæmatochi'lum* (blood-red-lip). Green, blotched with red. Trinidad. 1857.
„ *harrisonia'num* (Harrison's). 1. Yellow-spotted. October. Brazil. 1830.
„ *Hartwe'gii* (Hartweg's). Brown. Ecuador and Peru.
„ „ *parviflo'rum* (small-flowered). Flowers smaller. Ecuador. 1870.
„ *hasta'tum* (halbert-*lipped*). Brown, yellow. August. Mexico. 1840.
„ „ *hemimela'num* (half-black). Black-purple. Mexico. 1887.
„ „ *Rœ'zlii* (Rœzl's). Yellow, brown. Guatemala. 1876.
„ *hasti'ferum* (halbert-bearing). See O. MACRANTHUM HASTIFERUM.
„ *hebra'icum* (Hebraic). Yellow, with maroon markings. Colombia. 1876.
„ *Henchma'nni* (Henchman's). See O. CARTHAGINENSE.
„ *hetera'nthum* (various-flowered). Flowers of various forms, yellow. Peru.
„ *hi'ans* (gaping-*flowered*). Brown, yellow. May. Brazil. 1837.
„ *holochry'sum* (wholly-yellow). See O. ONUSTUM.
„ *Hoo'keri* (Hooker's). Yellow; sepals united half their length. Brazil. 1887.
„ *hrubya'num* (Hrubyan). Brown, barred yellow. 1883.
„ *Hue'bschii* (Huebsch's). Brownish-yellow. Ecuador. 1885.
„ *huntia'num* (Hunt's). See O. CARTHAGINENSE.
„ *hyphæma'ticum* (interwoven). Yellow, marked with brown. Colombia (?). 1869.
„ *incu'rvum* (curled-back). Bluish-white. July. Mexico. 1839.
„ „ *a'lbum* (white). White. Mexico. 1882.
„ *inscu'lptum* (sculptured). Cinnamon and yellow. Trop. Amer.
„ *Inslea'yi* (Insleay's). See ODONTOGLOSSUM INSLEAYI.
„ *interme'dium* (intermediate). See O. LURIDUM.
„ *iridifo'lium* (Iris-leaved). ½. Yellow. June. Trop. Amer. 1835.
„ *iso'pterum* (equal-winged). Brazil.

O. Jamieso'ni (Jamieson's). Yellow, blotched with violet-purple. Peru. 1877.
„ *janeire'nse* (Rio-Janeiran). See O. LONGIPES.
„ *johnia'num* (Johnian). Yellow and crimson blotches. Brazil. 1906.
„ *jonesia'num* (Jonesian). Whitish ochre, with brown blotches. Paraguay. 1883.
„ „ *fla'vum* (yellow). Whitish, with yellow-green spots. 1888.
„ „ *phæa'nthum* (dusky-flowered). Brownish, without spots. Paraguay.
„ *juncifo'lium* (rush-leaved). See O. CEBOLLETA.
„ *Kapple'ri* (Kappler's). Yellow, with brown markings. Guiana. 1880.
„ *kienastia'num* (Kienastian). Yellow-brown, and yellow with brown bars. Peru. 1878.
„ *krameria'num* (Kramerian). Yellow, beautifully spotted with brown. Ecuador. 1873.
„ „ *resple'ndens* (resplendent). Bright yellow, spotted purple-mauve and purple-brown. 1888.
„ *la'cerum* (cut-*lipped*). See O. STIPITATUM.
„ *lamelli'gerum* (plate-bearing). Deep brown, edged yellow. Ecuador. 1876.
„ *lancea'num* (Lance's). 1½. Yellow, purple. August. Surinam. 1834.
„ „ *louvrexia'num* (Louvrexian). Yellow, red-brown; lip white. 1882.
„ „ *ma'jus* (larger). Green, purple. August. Guiana. 1836.
„ *lancifo'lium* (lance-leaved). 1. Yellow. May. Ecuador. 1848.
„ *Lansbe'rgii* (Lansberg's). Yellow-green, with chestnut blotches. Venezuela. 1876.
„ *larkinia'num* (Larkinian). Chocolate-brown, bright yellow. Brazil. 1890.
„ *lemonia'num* (Sir C. Lemon's). ½. Yellow-spotted. March. Havannah. 1836.
„ *leopoldia'num* (Leopoldian). White, with purple disc; lip violet-purple. Andes. 1890.
„ *le'pidum* (neat). Yellow, marked with brown and purple. Ecuador. 1870.
„ *leptu'rum* (slender-tailed). Flowers of many forms; perfect ones light yellow. Bolivia. 1886.
„ *leucochi'lum* (white-lipped). 1. Yellow, brown. August. Guatemala. 1835.
„ „ *dawsonia'num* (Dawsonian). Yellowish, black-purple. Mexico. 1873.
„ „ *specio'sum* (showy). Yellow-green, brown. Mexico. 1874.
„ *leuco'tis* (white-eared). Wholly yellow. Colombia. 1880.
„ *Lie'tzei* (Lietze's). Dull yellow. Brazil.
„ „ *au'reo-macula'tum* (golden-blotched). Yellow, spotted and barred with brown. 1888.
„ „ *bi'color* (two-coloured). Brown, marked with yellow. 1888.
„ *Limmi'nghei* (Limminghe's). Yellow, blotched brown. Venezuela. 1868.
„ *Linde'nii* (Linden's). See O. LURIDUM.
„ *linguifo'rme* (tongue-shaped). Yellow, rose. July. Merida.
„ *li'tum* (anointed). Brown, yellow; lip yellow, blotched brown. Brazil. 1883.
„ *longico'rnu* (long-horned). Yellow-green. Brazil.
„ „ *Grossma'nni* (Grossmann's). Pale yellow-green; lip straw-coloured. S. Brazil. 1907.
„ *longifo'lium* (long-leaved). See O. CEBOLLETA.
„ *lo'ngipes* (long-stalked). ½. Yellow, blotched brown. April, May. Brazil.
„ *loxe'nse* (Loxan). Olive, with cinnamon bars; lip orange. Loxa, Peru. 1884.
„ *lucasia'num* (Lucasian). Large golden-yellow, spotted brown. 1894.
„ *lu'dens* (playful). Brown, yellow-brown, cinnamon brown. 1885.
„ *luna'tum* (crescent-*lipped*). 1. Orange. June. Demerara. 1836.
„ *lu'ridum* (lurid). 2. Olive, brown. March. Jamaica. 1822.
„ „ *atra'tum* (dark). Olive-green, brown. Mexico.
„ „ *fu'lgens* (shining). Jamaica. 1838.
„ „ *gutta'tum* (speckled). 2. Yellow, red. July. Jamaica. 1837.
„ „ *interme'dium* (intermediate). 2. Orange. March. Cuba.
„ „ *ma'jus* (greater). Jamaica. 1838.

O. lu'ridum Morre'ni (Morren's). Rose, crimson, yellow.
" " *purpura'tum* (purple-stained). 2. Crimson, purple-speckled. September.
" *lute'scens* (yellowish). Dark brown, greenish-brown, edged yellow. 1887.
" *lu'teum* (yellow). 1½. Light yellow. 1893.
" *macranthe'rum* (large-anthered). See LEOCHILUS ONCIDIOIDES.
" *macra'nthum* (large-flowered). Yellow, shaded purple. April. Trop. Amer. 1867.
" " *hasti'ferum* (halbert-bearing). Lip with longer auricles.
" " *sple'ndens* (splendid). Colours brighter.
" *ma'cropus* (long-footed). Yellow, brown-spotted. Ecuador. 1868.
" *macula'tum* (blotched). 1. Green, purple. Vera Cruz. 1837.
" " *ecornu'tum* (hornless). 1. Yellow, purple. March. Mexico.
" " *parviflo'rum* (small-flowered). 1. White, yellow, purple. February. Guatemala. 1839.
" " *psittaci'num* (parrot-like). Yellow, much blotched. 1888.
" " *russellia'num* (Russellian). Spotted. March. Guatemala.
" *Manti'ni* (Mantin's). Chocolate-brown, yellow; lip yellow, reddish-brown. Brazil. 1888.
" " *Lo'wii* (Low's). Citron-yellow, with pale olive marks. 1910.
" *marshallia'num* (Marshallian). Yellow, crimson. Brazil. 1866.
" " *sulphu'reum* (sulphur). Yellow, almost unspotted. 1901.
" *martia'num* (Martian). Yellow. Brazil.
" " *bi'color* (two-coloured). Yellow, brown. Autumn. 1841.
" *Massa'ngei* (Massange's). Yellow, blotched purple-brown. Central Amer. 1877.
" *Mei'rax* (boy). Spotted with small yellow and brown spots. Venezuela. 1880.
" *me'lanops* (black-eye). Light yellow and blackish-purple in the centre. Ecuador. 1880.
" *melio'smum* (honey-scented). Rich yellow, blotched cinnamon. 1882.
" *meta'llicum* (metallic). Chestnut-brown, blotched yellow. Colombia. 1876.
" *micra'nthum* (small-flowered). See O. HARTWEGII.
" *microchi'lum* (small-lipped). Yellow, crimson. September. Guatemala. 1838.
" *micropo'gon* (small-bearded). Brazil. 1854.
" *millia'num* (Millian). Yellow, mottled with brown. Colombia. 1878.
" *mona'chicum* (monastic). Chocolate-brown, edged yellow. Colombia. 1883.
" *mono'ceras* (one-horned). See O. UNICORNE.
" *muri'num* (wall). Yellow; column crimson-purple. Ecuador. 1888.
" *na'num* (dwarf). White. La Guayra. 1842.
" *nebulo'sum* (cloudy). Yellow, brown. Guatemala.
" *nigra'tum* (darkened). Yellow, blackish-purple. British Guiana.
" *nodo'sum* (knotty). See O. KRAMERIANUM.
" *nubi'genum* (cloud-begotten). See O. OLIVACEUM NUBIGENUM.
" *nu'dum* (naked). Yellow, crimson. July. Caracas. 1834.
" *oblonga'tum* (oblong). Yellow. July. Mexico. 1844.
" *obryza'tum* (rooting). Yellow. Peru. 1863.
" " *dasysta'lix* (thick-styled). Base of lip velvety. Colombia.
" *octho'des* (bank-like). Yellow, marked cinnamon. Ecuador. 1871.
" *oliva'ceum* (olive). Red, purple. February. Colombia.
" " *Chesterto'ni* (Chesterton's). Olive, blotched with brown.
" " *grandiflo'rum* (large-flowered). Flowers larger. 1882.
" " *lawrencea'num* (Lawrencean).
" " *nubi'genum* (cloud-begotten). White, spotted with purple. June. Ecuador. 1867.
" *onu'stum* (loaded). 2. Yellow. October. Panama. 1848.
" *ornithopo'dum* (bird's-foot). Much like *O. ansiferum*. Trop. Amer. 1879.
" *ornithorhy'nchum* (bird's-beak). 1–2. White and pink. Autumn. Mexico. 1826.
O. ornithorhy'nchum a'lbum (white). White, with yellow crest, fragrant. Mexico. 1873.
" " *pa'llidum* (pale). Markings pale. Guatemala. 1835.
" *orthosta'tes* (standing-straight). British Guiana.
" *ortho'tis* (straight-eared). ¾. Yellow, barred with brown. 1888.
" *pachyphy'llum* (thick-leaved). Yellow, marked red Mexico.
" *panchry'sum* (wholly yellow). Yellow. Colombia 1849.
" *pandura'tum* (fiddle-shaped). Red-brown and yellow. Colombia. 1895.
" *Papi'lio* (butterfly-*plant*). 1½. Yellow, purple. June. Trinidad. 1823.
" " *Echha'rdtii* (Eckhardt's). Flowers larger.
" " *limba'tum* (bordered). 1½. Crimson, brown, yellow. October. Trinidad. 1823.
" *pardoglo'ssum* (pard-lipped). Chestnut; lip much marked with yellow. 1886.
" *pectora'le* (breast-plate). Brown, crimson. April. Brazil. 1842.
" *pelica'num* (pelican-*beaked*). See O. REFLEXUM.
" *peliogra'mma* (pelican-marking). Pale yellow, shaded brown. Central Amer. 1871.
" *pe'ndulum* (drooping-*flowered*). Brown, yellow. September. Guatemala. 1840.
" *pergami'neum* (parchment). Yellow. August. Guatemala. 1839.
" *Phalæno'psis* (Phalænopsis). Cream and violet. Ecuador. 1869.
" " *exce'llens* (excellent). Deeper violet, with larger blotches. 1897.
" *phylloglo'ssum* (leaf-tongued). Light brown, edged yellow. Colombia. 1881.
" *phymatochi'lum* (long-lipped). 2. White, yellow. April. Mexico. 1844.
" *pi'ctum* (painted). Yellow, blotched with brown. Colombia.
" *pinellia'num* (Pinelli's). See O. BATEMANNIANUM.
" *plagia'nthum* (oblique-flowered). Brown. Colombia. 1873.
" *planila'bre* (flat-lipped). Yellow and brown. Brazil. 1851.
" *platybu'lbon* (flat-bulbed). ½. Olive-yellow; lip yellow. Brazil. 1903.
" *plici'gerum* (fold-bearing). Brown. Ecuador. 1873.
" *pollettia'num* (Pollettian). Flowers large brown, barred yellow. 1886.
" *po'rrigens* (extended). Brown, amber, orange. Colombia. 1868.
" *præ'stans* (excelling). Yellow and brown. 1880.
" *præte'xtum* (toga-wearing). Yellow, brown; lip lobed in front. Brazil. 1873.
" " *be'llum* (pretty). Lip bordered with brown markings. 1884.
" " *leea'num* (Leean). Yellow, brown. 1882.
" *Pu'bes* (downy). 1. Green, red. April. Brazil. 1824.
" " *flave'scens* (yellowish). 1. Red, yellow. October. Brazil. 1839.
" *pulche'llum* (neat). ½. White-spotted. May. Jamaica.
" *pulvina'tum* (cushion-like). 8. Yellow, brown. June. Brazil. 1836.
" *pu'milum* (dwarf). ½. Yellow. May. Brazil. 1824.
" " *pa'llidum* (pale). ½. Pale yellow. May. Brazil. 1840.
" *pyramida'le* (pyramidal). Yellow, brown. Peru. 1845.
" *pyxido'phorum* (box-bearing). Yellow, with small box at base of lip. 1879.
" *quadripe'talum* (four-petaled). 1. Yellow, brown. April. Mexico and Jamaica. 1843.
" *rani'ferum* (frog-bearing). 1. Yellow. August. Brazil. 1838.
" " *ma'jus* (larger-*flowered*). 1. Yellow. August. Brazil.
" *refle'xum* (bent-back). Yellow. October. Mexico. 1836.
" *refra'ctum* (broken-back). Greenish-yellow, with brown bars. Colombia. 1894.
" *retemeyeria'num* (Retemeyerian). Yellow, brown, violet. Mexico. 1870.
" *retu'sum* (blunt-ended). Yellow and brown. Peru.
" *rivieria'num* (Rivierian). 2½. White, spotted brick-red and black. Brazil. 1904.

O. rigbya'num (Rigbyan). See O. SARCODES.
„ *robusti'ssimum* (very robust). Brown, yellow; lip yellow, striped brown. Brazil. 1888.
„ *Roge'rsii* (Rogers's). See O. VARICOSUM ROGERSII.
„ *rolfea'num* (Rolfean). Yellow and brown. Colombia. 1892.
„ *ro'seum* (rosy). See O. CARTHAGINENSE ROSEUM.
„ *ro'strans* (beaked). Yellow. Colombia. 1875.
„ *rotunda'tum* (rounded). Yellow and brown. 1873.
„ „ *rupe'stre* (rock). Yellow and brown. Peru.
„ „ *Ski'nneri* (Skinner's). Peru. 1859.
„ *russellia'num* (Russell's). See MILTONIA RUSSELLIANA.
„ *ru'sticum* (rustic). Brown, yellow, and orange. Ecuador. 1870.
„ *saintlegeria'num* (Saintlegerian). See O. SPILOPTERUM.
„ *saltabu'ndum* (dancing-freely). Pale yellow, blotched brown. Colombia. 1882.
„ *Sande'ræ* (Mrs. Sander's). Clear yellow, with brown bars. Peru. 1910.
„ *sanderia'num* (Sanderian). Rosy-red or chocolate-brown. Peru. 1893.
„ *sangui'neum* (crimson-*blotched*). See O. CARTHAGINENSE SANGUINEUM.
„ *sarco'des* (flesh-like). Yellow, banded with red. Brazil. 1849.
„ „ *discoida'le* (discoid). Lip without spots. 1886.
„ „ *punctula'tum* (finely-spotted). Lip finely-dotted with red-brown. 1897.
„ *schilleria'num* (Schillerian). Yellow, brown. Trop. Amer.
„ *Schli'mii* (Schlim's). Yellow, marked brown. Colombia.
„ *Se'mele* (Semele). Yellow, marked purple. Ecuador. 1870.
„ *serra'tum* (sawed). Brown, spotted yellow. Peru. 1850.
„ *se'ssile* (stalkless). See O. LANCIFOLIUM.
„ *sphacela'tum* (scorched). 2. Yellow, brown. February. Mexico. 1838.
„ „ *grandiflo'rum* (large-flowered). Yellow, brown. February. Mexico. 1840.
„ *sphegi'ferum* (wasp-bearing). Yellow, brown; lip with a wasp-like blotch. Brazil. 1843.
„ *spilo'pterum* (spotted-winged). ½. Brown, yellow. February. Brazil. 1844.
„ *sple'ndidum* (splendid). Yellow, barred with brown. Guatemala. 1862.
„ *Spru'cei* (Spruce's). Yellow, brown. Brazil.
„ *stelli'gerum* (star-bearing). Pale yellow, brown. Mexico. 1873.
„ „ *Erne'sti* (Ernest's). Pale yellow, with large brown spots; lip red-purple. Mexico. 1887.
„ *stipita'tum* (stalked). Yellow, spotted with crimson. Panama. 1844.
„ „ *pla'tyonyx* (flat-nail). Nail of lip broader than in type. Panama. 1878.
„ *strami'neum* (straw-coloured). Straw, crimson. Vera Cruz. 1837.
„ *sua've* (sweet-scented). Yellow. April. Mexico. 1835.
„ „ *Tayleu'rii* (Tayleur's). 2. Brown. August. Mexico. 1837.
„ *supe'rbiens* (superb). Chocolate, marked yellow. Colombia. 1872.
„ *Sutto'ni* (Sutton's). Brown, yellow. August. Central Amer. 1842.
„ *Tayleu'rii* (Tayleur's). See O. SUAVE TAYLEURII.
„ *te'ctum* (covered). Yellow, marked brown. Colombia. 1875.
„ *te'nue* (slender). ¾. Yellow, brown-spotted. August. Guatemala. 1841.
„ *teretifo'lium* (round-leaved). Small, bright yellow. 1882.
„ „ *a'lbens* (whitening). Pale yellow-white. 1877.
„ „ *lu'gens* (shining). Dark red-brown, yellow, green. 1886.
„ *tetra'copis* (four-daggered). Brown, marked yellow. Colombia. 1873.
„ *tetrape'talum* (four-petaled). See O. QUADRIPETALUM.
„ *tigri'num* (tiger-striped). 2. Yellow, barred brown. Mexico. 1840.
„ „ *leopardi'num* (leopard-like). 3. Yellow, barred brown.
„ „ *sple'ndidum* (splendid). See O. SPLENDIDUM.
„ „ *unguicula'tum* (long-clawed). 3. Yellow. October. Mexico. 1846.
„ *tricho'des* (hair-like). Yellow, brown. Brazil.
O. tri'color (three-coloured-*flowered*). See O. QUADRIPETALUM.
„ *tricuspida'tum* (three-cusped). Orange, brown, yellow. Costa Rica. 1884.
„ *trifurca'tum* (three-forked). Pale yellow, purple-red. Peru. 1845.
„ *trili'ngue* (three-tongued). Brown and yellow. Peru. 1850.
„ *trique'trum* (triangular-*leaved*). ½. White, purple. September. Jamaica. 1793.
„ *Tru'lla* (trowel). Small, brown and yellow. Colombia.
„ *trulli'ferum* (trowel-*lipped*). Brown, yellow. September. Brazil. 1838.
„ *unguicula'tum* (nail-*bearing*). See O. TIGRINUM UNGUICULATUM.
„ *uni'color* (one-coloured). Uniform yellow. Brazil. 1893.
„ *unico'rne* (one-horned). Pale yellow. January. Rio Janeiro. 1839.
„ „ *la'tum* (bright). Lip white, marked purple. 1882.
„ „ *pi'ctum* (painted). Lip white, purple, yellow. 1881.
„ *uniflo'rum* (one-flowered). ½. Brown, yellow. November. Organ Mountains. 1841.
„ *urophy'llum* (tail-leaved). 4. Clear yellow, with few brown markings. Brazil. 1841. Antigua. 1891.
„ *ustula'tum* (burned). Brown, yellow; lip reddish-purple. Colombia. 1883.
„ *varico'sum* (varicose). Greenish-yellow, brown; lip yellow. Autumn. Brazil.
„ „ *Roge'rsii* (Rogers's). Yellow, blotched brown; lip yellow, four-lobed. 1869.
„ *variega'tum* (variegated). 2. Yellow. July. W. Ind. 1824.
„ *verni'xum* (varnished). Brown, yellow, glossy. Ecuador. 1870.
„ *viperi'num* (poisonous). Pale yellow. July. Brazil. 1836.
„ *virgula'tum* (finely-twiggy). Yellow, brown, of many forms. Colombia. 1876.
„ *volu'bile* (twining). Yellow, brown. December. Brazil.
„ *Vo'lvox* (turning-round). Yellow, brown. Venezuela.
„ *Warne'ri* (Warner's). ½. Yellow, crimson. April. Mexico. 1844.
„ „ *purpura'tum* (purple). Purple, yellow. May. Mexico. 1845.
„ *Warscewi'czii* (Warscewicz's). Yellow and white, marked brown. Costa Rica. 1870.
„ *Welto'ni* (Welton's). See MILTONIA WARSCEWICZII.
„ *wentworthia'num* (Earl Fitzwilliam's). Yellow, crimson. March. Central Amer. 1839.
„ *wheatleya'num* (Wheatleyan). Purple-brown, yellow, purple. 1893.
„ *Widgre'ni* (Widgren's). Bright yellow, barred reddish-brown. Brazil. 1889.
„ *Wra'yæ* (Mrs. Wray's). See O. GRAMINIFOLIUM WRAYÆ.
„ *xanthoce'ntron* (yellow-spurred). Lip chocolate, with rhomboid yellow centre. Andes. 1880.
„ *xa'nthodon* (yellow-toothed). Yellow, brown. Autumn. S. Amer. 1868.
„ *zebri'num* (zebra-striped). White, marked with violet-purple. Venezuela. 1872.
„ „ *bru'nneum* (brown). White, marked with brown. 1876.
„ *zona'tum* (zoned). Varied in form, white, yellow, zoned with brown. Colombia. 1893.

ONCO'BA. (From *ogkos*, a protuberance. Nat. ord. Bixaceæ.)
A small evergreen stove tree. Seeds; cuttings in sand in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.
O. arista'ta (bearded). White or pale yellow. Trop. Africa. 1895. First flowered in 1900.

ONCOCY'CLUS. A section of Iris.

ONCOSPE'RMA. (From *ogkos*, a protuberance, and *sperma*, a seed. Nat. ord. Palmaceæ.)
Small stove Palms. Seeds. Fibrous loam, one-third peat and sand.
O. fascicula'tum (bundled). Ceylon.
„ *filamento'sum* (thready). Malaya. 1847.
„ *tigilla'rium* (little-stem). Singapore.
„ *van-houttea'num* (Van Houttean). See NEPHROSPERMA VAN-HOUTTEANUM.

ONE-SHIFT SYSTEM OF POTTING is giving a plant in a pot *one large* shift, instead of frequent small ones. Thus, instead of moving a plant successively from a three to a five-inch pot, thence to a seven or an eight, and thence again to a ten or a twelve, allowing the roots to become matted at the sides of the pot, or merely to reach there, according as *flowering* or *growing* is the object aimed at, the plant is moved at once from a three, four, or five-inch pot into one of eight, twelve, or sixteen inches in diameter. It is seldom that a cutting, or a seedling, or a very small plant, is at *once* moved into a large one, as during its *very* small state it can be more safely, easily, and economically attended to in a small pot. The one-shift system requires room for its adoption. Striking individual, rather than mere general results are its characteristics; and, therefore, where a constant show of bloom and considerable variety in a small space are chiefly desired, it should only be sparingly adopted. The chief object aimed at is rapidity of growth, and thus obtaining a beautiful specimen in a much shorter period than could easily be realised by the succession-shift system. By the one-shift system we obtain a vigorous growth; but yet, from being in a pot, luxuriance may be so controlled as not to interfere with the flowering. In fact, with the extra care and trouble involved, we obtain the advantage without the disadvantages of the planting-out system. For the one-shift system, as well as in every other case where a fine specimen is desired, a young plant must be commenced with that has *never* had its roots matted round the pot. Such a plant will soon overtake one four times its size, but which has several times densely filled its pot with roots.

The freely-growing plants, and whose existence is short, are the best to commence with. Many of them are best managed upon this system. Wherever rapidity and strength of growth are an object, annuals intended to flower in pots, after being once pricked off into small pots or preparatory beds, and thus established, can scarcely be too soon afterwards transferred to their blooming pots. Where double flowers, as in the Balsam, or swelling-off part of the flower, as the receptacle in the case of the Cockscomb, are wished for, then different methods may be adopted to secure a desired end. With such hard-wooded plants as Heaths and Epacrises the most striking results are obtained by the one-shift system; but as greater care is necessary to success with such plants, we would advise young beginners to try some of the above soft-wooded plants in the first place, and to keep in view, for all the cases they may try, whether the plants are soft-wooded or hard.

In common with other modes of potting, *the pots* should be sound, fairly burned, dry, and either new or thoroughly clean, outside and inside. Secondly, *good drainage*—always essential—must here form a chief element of success. In all plants intended to remain in the same pot for years, it cannot be too particularly attended to. Green moss, or chopped wheat-straw, strewed over the drainage, is a good thing for preventing the earthy particles above being washed into and choking it up. Broken charcoal, from whence the dust has been extracted, is also very useful for this purpose. Indeed, larger pieces of charcoal may constitute the chief part of the drainage, which will be lighter than most things that could be used—a matter of considerable importance. On this account alone it is valuable for mixing with the compost to keep it open, independently of any chemical properties it may possess. Thirdly, *soil*. This, whatever may be its constituents, should be rough and lumpy; the bulk, in general cases, consisting of pieces from the size of peas up to that of beans and walnuts; and in cases of larger pots, a few pieces may be as large as hens' eggs. In such compost the plants will grow rapidly; and even in the case of Heaths, &c., they will maintain a healthy appearance for years. Should much of the compost be in *larger pieces*, the plant will not at all be greatly injured for the first season, or more, nor yet as long as the roots are contented to crawl around the surface of the lumps; but when they have reached the side of the pot, and necessity leads them to penetrate the large pieces, a declining appearance is apt to present itself. Hence the complaints against the system, that though plants grow vigorously at first, they were short-lived. Such large shifts, in the fine-sifted soil of old, could not succeed, unless in potted specimens that received more care than can, in general, be given to plants. Using huge lumps of loam or peat would tend to produce a similar evil, though from causes apparently different. The middle course is the safe one; but with rough soil, it is necessary to surface with a little that is finer, that the air may not enter too freely. Fourthly. A plant never thrives well when the surface of the ball is sunk several inches below the rim of the pot; and there is something uncouth in observing the centre of the ball sticking up in the centre of the pot, like a molehill. In all cases, therefore, but especially where it is intended for a plant to continue for years, the compost should be pressed firmly before the young plant is set in the centre of the pot; and as, nevertheless, it will gradually sink a little, the surface of the old soil may just be a little below the rim of the pot. If the roots are the least matted, they should now be gently disentangled, and packed carefully with the hand in layers, putting the finest of the rough soil over the young rootlets, and the coarser towards the outside, next the side of the pot, and squeezing all rather firmly together with the hand, taking care, however, that the soil is in that happy medium that may be termed neither dry nor wet, and yet sufficiently *heated* to occasion no immediate check by cold. Fifthly. *Watering* is the most important of all points, and, where it cannot be properly attended to, the one-shift system should not be attempted. For some time you must merely water as far as the roots extend—the unappropriated soil must not be *soaked*, or it will become *sour* and unhealthy for the roots even before they get to it. No regular routine dash or dribble from the water-pot will do with the one-shift system. Sixthly. *Temperature*. On this system, for some time after potting, the plants should have from 5° to 10° more heat than they otherwise would require, and a close atmosphere until fresh growth is proceeding freely. A dash from the syringe frequently, in hot days, will be of great importance. Every incitement to growth must thus be given; and, when that has been accomplished, then air must be freely imparted, and a drier atmosphere maintained, that the fresh wood so freely made may be thoroughly matured. Seventhly. *Time of Potting*. Upon this system, in the case of all lasting plants intended to be our companions for years, this should take place in spring and early summer, in order, first, that growth may be quickly made, and then maturation of the wood be effected before the dark days come, when, in the generality of cases, the low temperature of winter will give them the *rest* they require before breaking and flowering vigorously and profusely the following season.

ONION. *A'llium Ce'pa.*

Soil, rich, open, and well-drained, in a situation entirely free from trees; if the soil be poor, abundance of dung should be applied in the preceding autumn or winter. Sea-sand, particularly if the ground is at all tenacious, is advantageously employed; coal-ashes, and especially soot, are applied with particular benefit. In digging over the ground, small spits only should be turned over at a time, that the texture may be well broken and pulverised.

Varieties.—(1) Silver-skinned Onion, hardiest; (2) Early Silver-skinned; (3) True Portugal; (4) Spanish; (5) Strasburg; (6) Deptford; (7) Globe (white or red); (8) James's Keeping Onion; (9) Pale Red; (10) Yellow; (11) Blood-red; (12) Tripoli; (13) Two-bladed; (14) Lisbon; (15) Ailsa Craig, Cranston's Excelsior, Rousham Park Hero, and Record (4½ lb.). These are some of the largest exhibition Onions, which are sown in heat early in February, grown on, and finally planted outside in April.

Sow for the main crop during March. Main crops may even be inserted as late as the beginning of April, and at its close a small sowing to draw young in summer, and for small bulbs to pickle; again in July and early in August, for salads in autumn; and finally in the last week of August, or early in September, to stand the winter, for spring and beginning of summer. Sow thinly in drills, eight inches apart. An ounce of seed is sufficient for a rood of ground, especially for the main crops, as they should never be allowed to grow to a size fit for salads without thinning. The beds should be about four feet wide, for the convenience of cultivation.

Cultivation.—In about six weeks after sowing, the plants will be of sufficient size to allow the first thinning and small hoeing, by which they are to be set out about two inches apart. If this is performed in dry weather,

it will keep the beds free from weeds for six weeks longer, when they must be hoed a second time, and thinned to four inches apart; and now, where they have failed, the vacancies may be filled up by transplanting there some of those thinned out. The best time for doing this is in the evening, and water must be given for several successive nights. In transplanting, the root only is to be inserted, and no part of the stem buried. No plant is more benefited by liquid-manure being given twice a week. After the lapse of another month they must be thoroughly gone over for the last time, and the plants thinned to six inches asunder. After this they require only occasionally the stirring of the surface, which the hoe effects. In order to prevent their running too much to blade, it is a good practice, in July, before the tips change to a yellow hue, to bend the stems down flat upon the bed, which not only prevents it, but causes the bulbs to become much larger than they otherwise would. The bend should be made about two inches up the neck.

Storing.—About the close of August the onions will have arrived at their full growth, which may be known by the withering of the foliage, by the shrinking of the necks, and by the ease with which they may be pulled up. As soon as these symptoms appear, they must be taken up, the bed being frequently looked over; for if the whole crop is waited for, the forwardest, especially in moist situations or seasons, are apt again to strike root.

Spread on mats in the sun, frequently turn, and remove under shelter at night. In two or three weeks, when the roots and blades are perfectly withered, and the bulbs become firm, they are fit for storing, being housed in dry weather, and carefully preserved from bruising. Previously to doing this, all soil and refuse must be removed from them; for these are apt to induce decay; to prevent this as much as possible, all faulty ones should be rejected. In the store-house they must be laid as thin as may be, or hung up in ropes, and looked over at least once a month. To preserve some from sprouting, for late use, it is useful to sear the roots and the summits with a hot iron, care being taken not to scorch the bulb.

Additional Modes of Cultivation.—For the winter-standing crop the only additional directions necessary are to tread in the seed regularly before raking, if the soil, as it ought to be, is dry and light. They must be kept constantly clear of weeds, as well as of the fallen leaves of trees, but they need not be thinned. Early in spring they are to be transplanted for bulbing. Sow in May. Cultivate the plants as in the other crops; and in October the bulbs, being of the size of nuts, are to be taken up, dried, and housed, as directed for the full-grown bulbs. About the middle of the following March they must be planted out in rows, six inches apart each way, and cultivated the same as the other crops. If sown earlier than May they run to seed when transplanted. Another mode, nearly as efficacious, is to sow in the latter part of August, to stand the winter, and in March, early or late, according to the forward growth of the seedlings, to be planted out in rows at the before-directed distance, and cultivated as usual.

In Portugal they sow in a moderate hotbed during November or December, in a warm situation, with a few inches of mould upon it; and the plants are protected from frost by hoops and mats. In April or May, when of the size of a swan's quill, they are transplanted into a light, rich loam, well manured with old-rotten dung, to bulb. Transplanting alone is of great benefit.

To save Seed, some old onions must be planted early in March, the finest and firmest bulbs being selected, and planted in rows ten inches apart each way, either in drills or by a blunt-ended dibble, the soil to be rather poorer, if it differs at all from that in which they are cultivated for bulbing. They must be buried so deep that the mould just covers the crown. If grown in large quantities, a path must be left two feet wide between every three or four rows, to allow the necessary cultivation. They must be kept thoroughly clear from weeds, and, when in flower, have stakes driven at intervals of five or six feet on each side of every two rows, to which a string is to be fastened throughout the whole length, a few inches below the heads, to serve as a support, and prevent their being broken down. The seeds are ripe in August, which is intimated by the husks becoming brownish; the heads must then be immediately cut, otherwise the receptacles will open and shed their contents. Being spread on cloths in the sun, they soon become perfectly dry, when the seed may be rubbed out, cleaned of the chaff, and, after remaining another day or two, finally stored. It is of the utmost consequence to employ seed of not more than one year old, otherwise scarcely one in fifty will vegetate. The goodness of seed may be easily discovered by forcing a little of it in a hotbed or warm water a day before it is employed; a small white point will soon protrude if it is fertile.

ONION-FLY. See ANTHOMYIA CEPARUM and EUMERUS ÆNEUS.

ONI'SCUS. *O. asel'lus, O. armadi'llo.* Woodlice. The first is most easily distinguished from the second by its not rolling up in a globular form when at rest. They are found in old, dry dunghills, cucumber-frames, &c., and they are injurious to many plants, fruits, &c., by gnawing off the outer skin. Gas-lime will expel them from their haunts, and two boards or tiles kept one-eighth of an inch apart form an excellent trap.

ONOBRO'MA. (From *onos*, the ass, and *broma*, food. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia.* 1-*Æqualis.* Now referred to Carduncellus and Carthamus.)

O. arbore'scens (tree-like). See CARTHAMUS ARBORESCENS.
„ *cæru'leum* (blue). See CARDUNCELLUS CÆRULEUS.
„ *cynaroi'des* (Cynara-like). See COUSINIA CYNAROIDES.
„ *glau'cum* (glaucous). See CARTHAMUS GLAUCUS.
„ *leucocau'lon* (white-stemmed). See CARTHAMUS LEUCOCAULOS.

ONO'BRYCHIS. Hen's-bill. (From *onos*, the ass, and *bruko*, to gnaw; favourite food of the ass. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Hedysarum.)

Best by seeds in spring, where they are to remain and bloom, as all move badly. Sandy, deep loam.

HARDY ANNUAL.

O. Ca'put-ga'lli (cock's-head). 1½. Flesh. July. Mediterranean region. 1731.

HARDY HERBACEOUS.

O. arena'ria (sand). 1. Red. July. Siberia. 1818.
„ *carpa'tica* (Carpathian). 1. Purple. July. Carpathia. 1818.
„ *confe'rta* (crowded). See O. GRACILIS.
„ *cornu'ta* (horned). 1. Red. July. Asia Minor. 1816. Evergreen.
„ *crini'ta* (haired). Lilac. June. Levant. 1837.
„ *echina'ta* (hedgehog). Flesh. June. Calabria. 1831.
„ *Fontane'sii* (Fontaine's). See HEDYSARUM HUMILE.
„ *gla'bra* (smooth). See O. VICIÆFOLIA.
„ *gra'cilis* (slender). 1. Pale red. July. Greece; Asia Minor. 1817.
„ *laco'nica* (Lacedæmonian). Bright pink. Greece; Servia. 1892.
„ *lasiosta'chya* (woolly-spiked). Asia Minor.
„ *Michau'xii* (Michaux's). Pale red. July. Levant. 1820.
„ *monta'na* (mountain). See O. VICIÆFOLIA.
„ *Palla'sii* (Pallas's). 1. Pale yellow. Iberia. 1820.
„ *petræ'a* (rock). 1. White, red. Caucasus. 1818.
„ *pilo'sa* (thinly-hairy). See O. TOURNEFORTII.
„ *procu'mbens* (lying-down). See O. VICIÆFOLIA.
„ *ptolema'ica* (Ptolemais). 1. Yellow. Egypt. 1816.
„ *radia'ta* (rayed). 1½. Pale yellow. Iberia. 1818.
„ *sati'va* (cultivated). See O. VICIÆFOLIA.
„ *saxa'tilis* (rock). 1. Lilac, yellow. S. Europe. 1790.
„ *supi'na* (supine). ½. Pale red. Switzerland. 1819.
„ *tanai'tica* (Tanais). See O. VICIÆFOLIA.
„ *Tournefo'rtii* (Tournefort's). Asia Minor, &c.
„ *viciæfo'lia* (Vicia-leaved). 1–2½. Rose, with red veins. Europe (England), &c. "Sainfoin."

ONOCLE'A. (*Onocleia* was the Greek name of a plant. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.*)

Hardy Ferns. See FERNS.

O. germa'nica (German). 2–3. July. Northern Hemisphere. 1760.
„ *obtusiloba'ta* (blunt-lobed). See O. SENSIBILIS.
„ *orienta'lis* (oriental). 1–2. Sikkim; Assam; Japan. 1869.
„ *pennsylva'nica* (Pennsylvanian). See O. GERMANICA.
„ *sensi'bilis* (sensitive). 1½. Brown. August, Virginia. 1799.

ONO'NIS. Restharrow. (From *onos*, an ass, and *onemi*, to delight; the ass delights to browse on the herbage. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Parochetus.)

Annuals, by seeds in April, in sandy, deep soil; perennials and creeping shrubs, by division in spring, and cuttings under a hand-light, in sand, in summer; deep, sandy loam for most of them. Hardy undershrub kinds, if of a creeping nature, answer well for rockworks. The tenderer species require a cold pit or a cool greenhouse in winter, and most of these like a little peat added to the sandy loam.

Hardy Perennials.

O. arbore'scens (tree-like). 2. Red. June. Algeria. 1826.
„ *arena'ria* (sand). See O. Natrix.
„ *arragone'nsis* (Arragonese). See O. Reuteri.
„ *arve'nsis* (field). 1. Purple. July. Europe, &c. 1820.
„ „ *re'pens* (creeping). See O. repens.
„ *campe'stris* (field). See O. spinosa.
„ *capita'ta* (*round*-headed). See O. Columnæ.
„ *Colu'mnæ* (Columna's). ½. Yellow. August. Mediterranean region. 1820.
„ *frutico'sa* (shrubby). 2. Pink. May. Europe. 1680.
„ „ *microphy'lla* (small-leafleted). 4. Purple, red. June. Arragon.
„ *Na'trix* (Natrix). 1–2. Yellow, with red veins. July. Mediterranean region. 1819. "Goat-root."
„ *procu'rrens* (procurrent). See O. arvensis.
„ *re'pens* (creeping). 1. Rosy-purple. July. Europe (Britain).
„ *Reute'ri* (Reuter's). 1½. Yellow. July. Spain. 1816.
„ *rotundifo'lia* (round-leaved). 2. Pink. May. S. Europe. 1570.
„ „ *arista'ta* (bearded). 2. Pink. June.
„ *spino'sa* (spiny). 1. Rosy-purple. July. Europe (Britain).
„ „ *a'lba* (white). 1. White. July. Britain.
„ *tribracte'ata* (three-bracted). 1½. Pink. June. S. Europe. 1800.
„ *tridenta'ta* (three-toothed). 1½. Purple. June Spain. 1752.

Tender Perennials.

O. angusti'ssima (narrowest-*leaved*). ½. Pink. June. Spain. 1825.
„ *cuspida'ta* (pointed-*leaved*). 1½. Yellow. June. Algeria. 1818.
„ *emargina'ta* (notched-*leaved*). See Crotalaria spinosa.
„ *falca'ta* (sickle-*podded*). See O. angustissima.
„ *gla'bra* (smooth). See Lotononis trichopoda.
„ *hispa'nica* (Spanish). See O. Natrix.
„ *hi'spida* (bristly). 1½. July. Algeria. 1818.
„ *longifo'lia* (long-leaved). See O. angustissima.
„ *peduncula'ris* (*long*-flower-stalked). 1. White, rose. April. Teneriffe. 1829.
„ *pi'cta* (painted). See O. Natrix.
„ *ramosi'ssima* (branchiest). See O. Natrix.

Annuals.

O. a'lba (white). 1. White. July. Barbary. 1823.
„ *A'pula* (Apulian). 1. Yellow. September. Naples 1834. Biennial.
„ *biflo'ra* (two-flowered). ½. Yellow, purple. July. Barbary. 1818.
„ *brachyca'rpa* (short-podded). ½. Yellow. June. Spain. 1823.
„ *breviflo'ra* (short-flowered). See O. viscosa.
„ *cape'nsis* (Cape). ½. Purple. Cape of Good Hope. 1800.
„ *Denha'rdtii* (Denhardt's). See O. serrata Denhardtii.
„ *diffu'sa* (spreading). See O. serrata.
„ *fœ'tida* (fetid). See O. porrigens.
„ *geminiflo'ra* (twin-flowered). See O. biflora.
„ *minuti'ssima* (smallest). ½. Yellow. June. France. 1818. Biennial.
„ *oligophy'lla* (few-leaved). 1½. White. July. Naples. 1823.
O. pe'ndula (drooping). 1½. Purple. July. S. Europe. 1818.
„ *po'rrigens* (extended). ½. Pink. June. Morocco. 1818.
„ *serra'ta* (sawed). ½. Purple. July. Mediterranean region. 1820.
„ „ *Denha'rdtii* (Denhardt's). 1. Yellow. August. Naples. 1832. Biennial.
„ *visco'sa* (clammy). ½. Yellow. August. S. Europe. 1800.

ONOPO'RDON. Cotton Thistle. (From *onos*, an ass, and *perdo*, to consume; eaten by the animal. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to the Thistle.)

Hardy biennials, the seeds of which merely require sowing in the commonest soil, either in the autumn or early spring.

O. Aca'nthium (Acanthium). 4–7. Purple. July, August. Europe (England).
„ *acau'lon* (stemless). ½. White. July. Pyrenees. 1739.
„ *alexandri'num* (Alexandrian). See O. sibthorpianum.
„ *ara'bicum* (Arabian). 8. Purple. July. S. Europe. 1686.
„ *bractea'tum* (large-bracted). 4–5. Lilac-purple. Asia Minor. 1901.
„ *cynaroi'des* (artichoke-like). See Cousinea cynaroides.
„ *deltoi'des* (delta-like). See Serratula atriplicifolia.
„ *ela'tum* (tall). See O. tauricum.
„ *elonga'tum* (elongated). See O. illyricum.
„ *illy'ricum* (Illyrian). 6. Purple. July. S. Europe. 1640.
„ *macraca'nthum* (long-spined). 6. Purple. July. W. Mediterranean region. 1798. Annual.
„ *polyce'phalum* (many-headed). 5–8. Rich pink-purple. Asia Minor; Turkestan. 1904.
„ *pyrena'icum* (Pyrenean). See O. acaulon.
„ *Salte'ri* (Salter's). 5. Country not stated. 1909.
„ *sibthorpia'num* (Sibthorpian). 4–6. Purple. Asia Minor, &c.
„ *tau'ricum* (Taurian). 7. Purple. July. S. Europe. 1816.
„ *tomento'sum* (felted). See O. Acanthium.
„ *uniflo'rum* (one-flowered). See O. acaulon.
„ *vi'rens* (green). See O. tauricum.
„ *visco'sum* (clammy). See O. tauricum.

ONO'SERIS. (From *onos*, an ass, and *seris*, chicory; considered a favourite plant of the ass. Nat. ord. Compositæ.)

Stove shrubs, or greenhouse in the case of *O. drakea'na*. Seeds; cuttings in sand in a close case. Fibrous loam, leaf-mould, and sand.

O. adpre'ssa (adpressed). 2. Rose. Peru. 1826. Evergreen.
„ *drakea'na* (Drakean). 2–3. Bright purple. Colombia. 1882.
„ *refle'xa* (reflexed). 2. Rose. August. Peru. 1830.
„ *rosiflo'ra* (rose-flowered). 2–3. Rosy. Colombia. 1859.

ONO'SMA. (From *onos*, an ass, and *osme*, smell; said to be grateful to the animal. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Echium.)

Herbaceous perennials or subshrubs, yellow-flowered, except where otherwise mentioned. Small, pretty plants for mounds, rock-work, and old walls, where, if once established, they will maintain themselves by seeds; seeds and divisions; sandy loam and sandy peat, and thin layers of decomposed vegetable matter; a few tender kinds require a cold frame, and *trine'rvium* a warm greenhouse in the winter.

Half-hardy.

O. pyramida'le (pyramidal). 1½–2. Bright scarlet. Himalaya. 1888.
„ *ri'gidum* (stiff). See O. stellulatum.
„ *rupe'stre* (rock). ½. May. Iberia. 1819.
„ *trine'rvium* (three-nerved). See Onosmodium strigosum.

HARDY.

O. a'lbo-ro'seum (white-rosy). White, changing to rose. Asia Minor. 1890.
„ *a'lbum* (white). See O. ALBO-ROSEUM.
„ *arena'rium* (sand). Europe.
„ *Bourgæ'i* (Bourgæ's). Armenia.
„ *bulbotri'chium* (bulbous-haired). Persia.
„ *calyci'num* (large-calyxed). See O. VISIANII.
„ *circina'tum* (coiled). See O. BOURGÆI.
„ *conge'stum* (crowded). See O. ALBO-ROSEUM.
„ *divarica'tum* (spreading). See ARNEBIA CORNUTA.
„ *echioi'des* (Echium-like). 1. White. May. S. Europe. 1683. "Golden Drop."
„ „ *arena'rium* (sand). 1. June. Hungary. 1804.
„ *Emo'di* (Mount Emodus). Pink. May. Himalaya. 1851.
„ *frute'scens* (shrubby). Greece.
„ *gigante'um* (giant). 3. April. Tauria. 1818.
„ *Gmeli'ni* (Gmelin's). See O. ECHIOIDES.
„ *laco'nicum* (Lacedæmonian). See O. STELLULATUM.
megalospe'rmum (large-seeded). See MEGACARYON ARMENUM.
„ *monta'num* (mountain). See O. STELLULATUM.
„ *orienta'le* (eastern). ½. May. Levant. 1752.
„ *polyphy'llum* (many-leaved). 1. July. Tauria. 1829.
„ *seri'ceum* (silky-*leaved*). ½. June. Iberia. 1752.
„ *simplici'ssimum* (simplest). 1. April. Siberia. 1768.
„ *stellula'tum* (small-starred). ½. April. Europe. 1819.
„ „ *helve'ticum* (Swiss).
„ *tau'ricum* (Taurian). See O. ECHIOIDES.
„ *Thompso'ni* (Thompson's). See ECHIUM RUBRUM.
„ *vaude'nse* (Vaudan). See O. ARENARIUM.
„ *vesti'tum* (clothed). See O. EMODI.
„ *Visia'nii* (Visiani's). Eastern Europe.

ONOSMO'DIUM. (From *Onosma*, the last genus, and *eidos*, like. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Echium.)

Hardy herbaceous North American perennials, except one, flowering in June; thriving in sandy loam, and propagated by seeds and division.

O. carolinia'num (Carolinian). See O. MOLLE.
„ *hi'spidum* (bristly). 1. Yellow. 1759.
„ *mo'lle* (soft). ½. White. 1812.
„ *strigo'sum* (strigose). 1. Yellow. Mexico. 1824. Half-hardy.
„ *virginia'num* (Virginian). See O. HISPIDUM.

ONY'CHIUM. (From *onux*, a claw; shape of the lobes of the fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove Ferns, with yellowish-brown spores. See FERNS.

O. aura'tum (golden). July. Himalaya; Malaya.
„ *cape'nse* (Cape). See O. JAPONICUM.
„ *japo'nicum* (Japanese). 1½–2. Brown. July. Japan; China; N. India. 1844.
„ *lu'cidum* (shining). See O. JAPONICUM.

OPERA GIRLS. *Manti'sia saltato'ria.*

OPERCULA'RIA. (From *operculum*, a lid; shape of calyx. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Pomax.)

Greenhouse herbaceous, white-flowered perennials. Seeds in spring, in a mild hotbed; division of some of the plants as growth commences; cuttings of the young shoots, best when several inches long; sandy loam and a little fibrous peat, and dried pieces of leaf-mould, and a few pieces of charcoal; a dry, cold pit or greenhouse in winter.

O. a'spera (rough-*seeded*). 1. June. Australia. 1790.
„ *diphy'lla* (two-leaved). ½. June. Australia. 1824.
„ *hi'spida* (bristly). 1. July. Australia. 1790.
„ *ocymifo'lia* (basil-leaved). See O. ASPERA.
„ *sessilifo'ra* (stalkless-flowered). See O. DIPHYLLA.

OPHE'LIA. (From *opheleia*, serviceable; medicinal. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. See SWERTIA.)

O. ala'ta (winged). See SWERTIA ALATA.
„ *angustifo'lia* (narrow-leaved). See SWERTIA ANGUSTIFOLIA.
„ *corymbo'sa* (flat-topped). See SWERTIA CORYMBOSA.
„ *panicula'ta* (panicled). See SWERTIA PANICULATA.
„ *purpura'scens* (purplish). See SWERTIA PURPURASCENS.
„ *umbella'ta* (umbelled). See SWERTIA CORYMBOSA.

OPHIOCAU'LON. (From *ophis*, a snake, and *kaulos*, a stem; in allusion to the twining stems. Nat. ord. Passifloraceæ.)

Evergreen stove climber. Seeds; cuttings of half-ripe wood in sand, placed in a close case, with bottom-heat. Fibrous loam, one-third peat or leaf-mould, and sand.

O. cissampeloi'des (Cissampelos-like). Yellow-green. Trop. Africa. 1871.

OPHIOGLO'SSUM. (From *ophis*, a snake, and *glossa*, a tongue; in allusion to the tongue-like, fertile branch of the frond. Nat. ord. Filices.)

Hardy and stove ferns. See FERNS.

O. bulbo'sum (bulbous). ½–¾. N. Amer. Half-hardy.
„ *lusita'nicum* (Portuguese). ½. Shores of Mediterranean; Guernsey. Hardy.
„ *palma'tum* (hand-shaped). 1–2. Cuba to S. Brazil.
„ *pe'ndulum* (drooping). Frond ribbon-like, pendulous, 1–15. Polynesia to N.S. Wales.
„ *reticula'tum* (netted). ½–1. Tropics of both Worlds.
„ *vulga'tum* (common). ½–¾. Old and New World (Britain). "Adder's Tongue."

OPHIOPO'GON. (From *ophis*, a serpent, and *pogon*, a beard. Nat. ord. *Bloodworts* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Herbaceous, white-flowered perennials, except where otherwise mentioned. Division of the plant at the roots, in spring, as vegetation is commencing; also by seed; sandy loam and a little peat; requires the protection of a cold pit, or a very dry, sheltered place in winter in cold parts of Britain, but hardy in the south, except *O. pro'lifer* and *O. Regnie'ri*.

O. interme'dius (intermediate). August. Nepaul. 1824.
„ „ *wallichia'nus* (Wallichian).
„ *Jabu'ran* (Jaburan). 1. July. Japan. 1830.
„ „ *variega'tus* (variegated). 1. Violet-blue. Leaves edged creamy-white. Japan. 1863.
„ *japo'nicus* (Japan). 1½. Lilac, yellow. June. Japan. 1784.
„ „ *arge'nteo-margina'tus* (silvery-edged). White. Leaves edged with white.
„ *pro'lifer* (proliferous). 1½. July. Penang. 1844. Greenhouse.
„ *Regnie'ri* (Regnier's). 1. Violet-white, tipped green. Leaves marbled with yellow. Cochin-China. 1906:
„ *spica'tus* (spiked). See LIRIOPE SPICATA.

OPHIO'PTERIS VERTICILLA'TA. See OLEANDRA NERIIFORMIS.

OPHIORRHI'ZA. (From *ophis*, a snake, and *rhiza*, a root, reputed cure for snake-bite. Nat. ord. Rubiaceæ.)

Greenhouse perennial herb. Seeds; cuttings in sand under a bell-glass. Loam, peat, and sand.

O. Mu'ngos (Mungos). 1–3. White, green, or rose. India; Malaya.

OPHIO'XYLON. (From *ophis*, a serpent, and *xulon*, wood; referring to its twisted roots. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 23-*Polygamia*, 2-*Dioecia*. See RAUWOLFIA.)

O. ma'jus (larger). See RAUWOLFIA MAJOR.
„ *serpenti'num* (serpentine). See RAUWOLFIA SERPENTINA.

O'PHRYS. (From *ophrus*, eyebrows; referring to the fringe of the inner sepals. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Elegant little ground-orchids, chiefly natives of England, but difficult to keep alive under cultivation. Division of the tuberous-like roots; also, most of the hardy ones by seed, which should be sown as soon as ripe, or permitted to sow itself by falling on loose, damp moss, whence it may be moved, and finally planted after growth has taken place. *Api'fera* prefers rich, heavy soil; most of the others, sandy, chalky loam, and a little peat. Considering their interesting appearance, they well deserve a frame or cold pit from amateurs, so that they might receive similar attention to small alpines.

HALF-HARDY.

O. arani'fera-limba'ta (bordered-spider-bearing). 1. Brown. April. Rome. 1826.
„ *atra'ta* (dark). ¾. Green, brown. May. Gibraltar. 1825.

O. fe'rrum-equi'num (horse-shoe). ¾. Brown, rose. April. Corfu.
,, *fuciflo'ra* (drone-flowered.) See O. ARANIFERA.
,, *fu'sca* (brown). ¾. Brown. Junc. Gibraltar. 1825.
,, *liliifo'lia* (lily-leaved). See LIPARIS LILIIFOLIA.
,, *lu'tea* (yellow). ¾. Yellow. April. Spain. 1818.
,, *mammo'sa* (nippled). See O. ARANIFERA.
,, *Sco'lopax* (woodcock). ½. Purple. May. Italy. 1825. "Woodcock Orchis."
,, *tenthredini'fera* (saw-fly-bearing). ¾. Yellow, brown. April. Barbary. 1815.
,, ,, *mi'nor* (smaller). ½. Yellow, brown. April. N. Africa. 1824.
,, *vespi'fera* (wasp-bearing). Yellow and brown. Barbary.

HARDY.

O. alpi'na (alpine). See HERMINIUM ALPINUM.
,, *api'fera* (bee-bearing). ¾. Rose. June. England. "Bee Orchis."
,, ,, *Tro'llii* (Troll's). Switzerland; England.
,, *Arachni'tes* (cobweb). ¾. Brown. June. England. "Black Spider Orchis."
,, ,, *exalta'ta* (lofty). Rose, brown. April. Italy. 1825.
,, *arachnoi'des* (spider-like). Brown, rose. April. Italy. 1805.
,, *arani'fera* (spider-bearing). ¾. Green. May. England. "Common Spider Orchis."
,, *Bertolo'nii* (Bertoloni's). 1. Italy.
,, *bombyliflo'ra* (humble-bee-flowered). ½. Chocolate, rose. April. Mediterranean region.
,, *cilia'ta* (hair-fringed). See O SPECULUM.
,, *cornu'ta* (horned). See O. ŒSTRIFERA.
,, *exalta'ta* (lofty). See O. ARACHNITES EXALTATA.
,, *fuci'fera* (drone-bearing). See O. ARANIFERA.
,, *grandiflo'ra* (large-flowered). See O. TENTHREDINIFERA.
,, *Mono'rchis* (Monorchis). See HERMINIUM MONORCHIS.
,, *muscifera* (fly-bearing). ¾. Purple. May. England. "Fly Orchis."
,, *œstri'fera* (gad-fly-bearing). ¾. White, purple. June. S. Europe. 1844.
,, *Spe'culum* (looking-glass). Brown, white. April. Mediterranean region. 1826.
,, *spira'lis* (spiral). See SPIRANTHES AUTUMNALIS.
,, *tabani'fera* (dun-fly-bearing). See O. BOMBYLIFLORA.

OPLI'SMENUS. (From *hoplismenos*, armed, or bristle-bearing; the glumes being awned. Nat. ord. Gramineæ.) Stove or greenhouse grasses, of which *O. Burmanni variegatus* is the best known, under the name of *Panicum variegatum*. Seeds; cuttings in spring in a moist, heated house. Loam, leaf-mould, and sand.

O. Burma'nni (Burmann's). ½. Green, purple. Tropics.
,, ,, *albi'dulus* (white). ½. Leaves white, with green midrib. India. 1886.
,, ,, *variega'tus* (variegated). Leaves striped with white, often changing to red.
,, *compo'situs* (compound). June, July. Tropics everywhere. 1795.
,, *hirte'llus* (slightly hairy) and *O. lolia'ceus* (Loliumlike). See O. COMPOSITUS.

OPO'PONAX. (From *opos*, sap or juice, and *ponax* or *panax*, all-heal; in allusion to its supposed medicinal properties. Nat. ord. Umbelliferæ.)
Hardy perennial herbs. Seeds and divisions in spring. Well-drained soil.

O. Chiro'nium (Chironium). 6. Yellow. June. Mediterranean region. 1640. "Opoponax Plant."
,, *hi'spidum* (hairy). 4. Yellow. Greece; Asia Minor.
,, *orienta'le* (oriental). See O. HISPIDUM.

OPORA'NTHUS LU'TEUS. See STERNBERGIA LUTEA.

O'PULUS VULGA'RIS. See VIBURNUM OPULUS.

OPU'NTIA. Indian Fig. (A Latin name, of which the derivation is not applicable to the species now placed under it. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)
Greenhouse evergreen succulents, with yellow flowers, when not otherwise mentioned. Cuttings, by taking pieces off at the joints, and drying them a little before inserting them in sandy loam, and giving them a brisk bottom-heat. The great point is to give them a high temperature and a moist atmosphere when growing in summer, say from 65° to 85° or 90°; to reduce the moisture gradually as autumn approaches, but not the temperature, until autumn is on the wane; and then to keep them in a low temperature (40° or 50°), and dry during the winter; sandy loam, fibrous peat, each one part; lime-rubbish, cow-dung, and charcoal, one-third part each. *Vulga'ris* has stood in dry situations out of doors near London, and has been unhurt when planted at the foot of a wall, and wet excluded during winter. All species of which we know nothing but the names have been omitted.

O. acanthoca'rpa (spiny-fruited). S. United States.
,, *a'lbicans* (whitish-*spined*). Mexico. 1835.
,, *albiflo'ra* (white-flowered). See O. SPEGAZZINII.
,, *Alca'hes* (Alcahes). California.
,, *alpi'na* (alpine). See O. PLATYACANTHA.
,, *america'na* (American). S. Amer. 1835.
,, *Amyclæ'a* (Amyclean). Mexico. 1825.
,, *andi'cola* (Andes-dwelling). Andes of Chili.
,, *aoraca'ntha* (sword-spined). Argentina. 1901.
,, *arbore'scens* (tree-like). 5. Purple. S. United States.
,, *articula'ta* (jointed). See CEREUS ARTICULATUS.
,, *Aube'ri* (Auber's). Spines white. Cuba.
,, *auranti'aca* (orange-*flowered*). 3. Orange, yellow. Chili. 1824.
,, *basila'ris* (basal). Rose-purple. S. United States.
,, *bergeria'na* (Bergerian). 5–10. Greenish-red, bright red. 1904.
,, *Bigelo'vii* (Bigelow's). 10–12. California.
,, *bolivia'na* (Bolivian). 1½. Spines 3–4 in. long. Bolivia.
,, *Bonpla'ndi* (Bonpland's). See O. TUNA.
,, *brasilie'nsis* (Brazilian). 25. July. Brazil. 1816.
,, *cama'nchica* (Camanha). S. United States.
,, ,, *orbicula'ris* (orbicular). Strong growing, with brown spines. Colorado. 1899.
,, *candelabrifo'rmis* (candelabra-formed). Prickles white. Mexico.
,, *cantabrigie'nsis* (Cambridge). Spines whitish. Country unknown. 1901.
,, *cervico'rnis* (stag's-horn). Yellow, changing to chamois. Colorado. 1906.
,, *chloro'tica* (greenish). California.
,, *Cho'lla* (Cholla). California.
,, *clavarioi'des* (Clavaria-like). Mexico.
,, *clava'ta* (clubbed). Yellow. Mexico. 1854.
,, *cochinilli'fera* (cochineal-bearing). See NOPALEA COCCINELLIFERA.
,, *corruga'ta* (wrinkled). Chili. 1824.
,, *cra'ssa* (thick-*lobed*). 2. Mexico. 1817.
,, *crini'fera* (bristle-bearing). Spines reddish. Brazil. 1837.
,, *curassa'vica* (Curassoa). 6. June. W. Ind. 1690.
,, ,, *elonga'ta* (elongated). 3.
,, ,, *lo'nga* (long). 6. June. Curassoa. 1690.
,, *cyli'ndrica* (cylindrical). 3. Scarlet. Peru. 1799.
,, *Davi'sii* (Davis's). Bronzy-green. New Mexico 1883.
,, *deci'piens* (deceiving). See O. IMBRICATA.
,, *decuma'na* (great-oblong). 10. S. Amer. 1768.
,, *decu'mbens* (lying-down). ½. June. Mexico. 1835.
,, *deje'cta* (dejected). See NOPALEA DEJECTA.
,, *diadema'ta* (daidemed). Argentina. 1814.
,, *dicho'toma* (two-rowed). Buenos Ayres. 1836.
,, *Dille'nii* (Dillenius's). 5. September. S. Amer. 1810.
,, *du'lcis* (sweet). See O. ENGELMANNI.
,, *echinoca'rpa* (hedgehog-fruited). Greenish-yellow. S. United States.
,, *ela'tior* (taller-*black-spined*). 6. July. S. Amer. 1731.
,, *Engelma'nni* (Engelmann's). 4–6. Yellow, with red centre. S. United States. 1854.
,, *exte'nsa* (outspread). Lilac, yellow. 1824.
,, *exuvia'ta* (cast-forth). See O. TUNICATA.
,, *fe'rox* (fierce). 3. S. Amer. 1817.
,, *Fi'cus-i'ndica* (Indian fig). 2. June. Trop. Amer. 1731.
,, *filipe'ndula* (thread-drooping). Texas.
,, *flocco'sa* (woolly). ½. Peru and Bolivia.
,, *folio'sa* (leafy). S. Amer. 1805.
,, *formida'bilis* (formidable). See O. AORACANTHA.
,, *fra'gilis* (brittle). 2. N. Amer. 1814.
,, ,, *brachya'rthra* (short-jointed). Small, yellow.
,, ,, *cæspito'sa* (tufted). Bright yellow, with red-brown centre; filaments red. Colorado. 1900.

O. fra'gilis tuberifo'rmis (tuber-formed). Bright yellow, greenish; filaments red. Colorado. 1900.
,, *frute'scens* (shrubby). See O. LEPTOCAULIS.
,, *fu'lgida* (shining). 10–15. Bright pink, fading to purple. S. United States. 1895.
,, ,, *mamilla'ta* (nippled).
,, *Gei'ssii* (Geiss's). Chili.
,, *glaucophy'lla* (glaucous-leaved). Mexico.
,, *glomera'ta* (round-*headed*). Argentina. 1829.
,, *gosselinia'na* (Gosselinian). 3–4. Flowers unknown. Lower California. 1907.
,, *gra'cilis* (slender). Mexico.
,, *Gra'hami* (Graham's). S. United States.
,, *gra'ndis* (great). Yellow. Mexico.
,, *haitie'nsis* (Haiti). 10–13. Yellow to orange. Spines 5 in. long. Haiti. 1908.
,, *hanburya'na* (Hanburyan). 3–5. Canary-yellow. Gardens of Riviera. 1904.
,, *Hernande'zii* (Hernandez's). Variegated. Mexico. 1827.
,, *ho'rrida* (horrid). See O. TUNA.
,, *imbrica'ta* (imbricated). 3. Scarlet. June. Mexico. 1820.
,, *ine'rmis* (unarmed). See O. STRICTA.
,, *interme'dia* (intermediate). See O. MESACANTHA GRANDIFLORA.
,, *invi'cta* (unconquered). California.
,, *karwinskia'na* (Karwinskian). Mexico. 1838.
,, *Klei'niæ* (Mrs. Klein's). S. United States.
,, *labouretia'na* (Labouretian). S. Amer. (?)
,, *lanceola'ta* (spear-head-shaped). 2. July. S. Amer. 1796.
,, *leptocau'lis* (slender-stemmed). Mexico. 1845.
,, *leucaca'ntha* (white-flowered). See O. MEGACANTHA.
,, *leuco'tricha* (white-haired). 4. White. Mexico. 1836.
,, *Lindhei'meri* (Lindheimer's). N.W. Amer.
,, ,, *littora'lis* (shore). California.
,, *littora'lis* (shore). See O. LINDHEIMERI LITTORALIS.
,, *longispi'na* (long-spined). Chili. 1829.
,, *lu'cida* (shining). 3–4. Yellow, fragrant. 1889.
,, *macrorhi'za* (large-rooted). See O. MESACANTHA MACRORHIZA.
,, *maculaca'ntha* (spotted-spined). Argentina.
,, *mamilla'ta* (nippled). See O. FULGIDA MAMILLATA.
,, *ma'xima* (largest). See O. DECUMANA.
,, *me'dia* (middle-*many-spined*). See O. POLYACANTHA.
,, *megaca'ntha* (large-spined). Mexico. 1835.
,, *mesaca'ntha* (middle-spined). 2. July. United States. 1596.
,, ,, *grandiflo'ra* (large-flowered). N.W. Amer.
,, ,, *macrorhi'za* (large-rooted). N.W. Amer. 1850.
,, *mexica'na* (Mexican). See O. MEGACANTHA.
,, *micro'dasys* (small-cushioned). June. Mexico. 1836.
,, ,, *mi'nor* (lesser).
,, *Millspau'ghii* (Millspaugh's). 2. Crimson-lake. Spines 4–6 in. long. Bahamas. 1908.
,, *missourie'nsis* (Missouri). See O. POLYACANTHA.
,, *monaca'ntha* (single-spined). 1. S. Amer. 1816.
,, ,, *variega'ta* (variegated).
,, *myriaca'ntha* (myriad-spined). Mexico. 1830.
,, *ni'gricans* (blackish-*spined*). 3. Pink. August. S. Amer. 1795.
,, *Nopali'lla* (small nopal). See O. KARWINSKIANA.
,, *Otto'nis* (Otto's). See ECHINOCACTUS OTTONIS.
,, *ova'ta* (egg-shaped). Chili. 1840.
,, *pachya'rthra fla'va* (thick-jointed-yellow). Bright yellow. Colorado. 1900.
,, *pachy'clada* (thick-branched). Colorado. 1899.
,, ,, *ro'sea* (rosy). Rose. Plant small-jointed, dwarf. Colorado. 1899.
,, ,, *spæthia'na* (Spæthian). Yellow, changing to brownish-salmon. Colorado. 1900.
,, *papyraca'ntha* (paper-spined). Flowers not seen. Stem short. Argentina. 1872.
,, *Parmentie'ri* (Parmentier's). Spines pale straw-coloured. Paraguay.
,, *pa'rvula* (least). Chili. 1825.
,, *Pentla'ndii* (Pentland's). Bolivia.
,, *Pe's-co'rvi* (crow's-foot). 1–2. Yellow. S. United States.
,, *phæaca'ntha* (dusky-spined). 3. Yellow. June. Mexico. 1811.
,, *platyaca'ntha* (broad-spined) of gardens. See O. DIADEMATA.
,, *Pœppi'gii* (Pœppig's). Pale yellow. Chili. 1884.
O. polyaca'ntha (many-spined). 1. S. United States. 1814.
,, ,, *albispi'na* (white-spined).
,, ,, *tricho'phora* (hair-bearing).
,, *polya'ntha* (many-flowered). 3. S. Amer. 1811.
,, *Pseu'do-tu'na* (false-tuna). S. Amer. 1811.
,, *pube'scens* (downy). June. Mexico. 1836.
,, *pulche'lla* (pretty). N.W. Amer.
,, *pulverule'nta* (powdery). S. Amer. 1850.
,, *pulvina'ta* (powdered). See O. MICRODASYS.
,, *pusi'lla* (small). See O. FOLIOSA.
,, *Rafine'squii* (Rafinesque's). See O. MESACANTHA.
,, *ramosi'ssima* (much-branched). S. United States.
,, *ramuli'fera* (branched). June. Mexico. 1836.
,, *re'ptans* (creeping). Mexico. 1838.
,, *rhoda'ntha* (red-flowered). Corolla and filaments red. Colorado. 1896.
,, ,, *brevispi'na* (short-spined). Spines short, reddish when young. Colorado. 1899.
,, ,, *flavispi'na* (yellow-spined). Spines longer, yellow when young. Colorado. 1899.
,, ,, *piscifo'rmis* (fish-formed). Bright carmine; filaments vivid red. Colorado. 1900.
,, ,, *robu'sta* (robust). Mexico.
,, ,, *schumannia'na* (Schumannian). Shell-shaped, dark carmine. Colorado. 1900.
,, *ro'sea* (rosy). Rose. June. Mexico. 1830.
,, *rube'scens* (red-*stemmed*). Brazil. 1828.
,, *ru'fida* (reddish). Mexico.
,, *salmia'na* (Salmian). 2. Yellow, red. Brazil. 1850.
,, *sa'nta-ri'ta* (Santa-rita). Deep yellow. Joints reddish. Spines often wanting. S.W. United States. 1909.
,, *Scho'tii* (Schott's). Texas.
,, *Schuma'nni* (Schumann's). 4–5. Yellowish, changing to dull red. 1904.
,, *Schweri'ni* (Schwerin's). Greenish-yellow. Spines white. Colorado. 1899.
,, *Sege'thi* (Segeth's). Light pink. Chili. 1883.
,, *semi'lis* (old-man) of Parm. See O. CRINIFERA.
,, *seri'cea* (silky). 1. Chili. 1827.
,, *Spegazzi'nii* (Spegazzin's). Small, white; fruit crimson. Paraguay. 1908.
,, *spinau'rea* (golden-spined). See O. PSEUDO-TUNA.
,, *spinosi'ssima* (spiniest). 20. July. Jamaica. 1732.
,, *spinuli'fera* (small-spine-bearing). Mexico. 1836.
,, *Stape'liæ* (Stapelia-like). June. Mexico. 1830.
,, *stenope'tala* (narrow-petaled). Yellow. Mexico. 1835.
,, *streptaca'ntha* (twisted-spined). Mexico.
,, *stri'cta* (upright). July. S. Amer. 1796.
,, *subine'rmis* (few-spined). 2. S. Amer. 1819.
,, *subula'ta* (awl-shaped). S. Amer. 1883.
,, *sulphu'rea* (sulphur-coloured). 2. Argentina. 1827.
,, *Taylo'ri* (Taylor's). Small, yellow. Haiti. 1908.
,, *Tesa'jo* (Tesajo). California.
,, *tessela'ta* (chequered). See O. RAMOSISSIMA.
,, *tetraca'ntha* (four-spined). 2–5. Greenish-purple. Arizona. 1896.
,, *tomento'sa* (shaggy). 2. S. Amer. 1820.
,, *triaca'ntha* (three-spined). See O. CURASSAVICA.
,, *tubercula'ta* (warted). 1. S. Amer. 1818.
,, *Tu'na* (Tuna). 3. July. S. Amer. 1731.
,, *tunica'ta* (tunicated). June. Mexico. 1830.
,, *Turpi'nii* (Turpin's). Argentina. 1844.
,, *Twee'diei* (Tweedie's). See O. SULPHUREA.
,, *utahe'nsis* (Utah). Carmine. Utah, United States. 1909.
,, *vulga'ris* (common). See O. MESACANTHA.
,, *Whi'pplei* (Whipple's). S. United States.
,, *xanthoso'ma* (yellow-bodied). 2. Colorado. 1898.
,, ,, *e'legans* (elegant). Soft rose. Colorado. 1898.
,, ,, *gra'cilis* (slender). 2. Small, carmine-red. Colorado. 1900.
,, *xanthoste'ma* (yellow-stamened). Carmine-red; filaments dark yellow. Colorado. 1896.
,, ,, *orbicula'ris* (orbicular). Carmine-red. Spines brown when young. Colorado. 1899.

ORACH. (*A'triplex horte'nsis.*) This is cooked and eaten in the same manner as spinach, to which it is much preferred by many persons, although it belongs to a tribe whose wholesomeness is very suspicious.

Soil.—It flourishes best in a rich, moist soil, and in an open part of the garden.

Sow about the end of September, and again in the spring for succession, in drills 6 inches apart. When

the seedlings are about an inch high, thin to 6 inches asunder, and those removed may be planted out at the same distance in a similar situation, and watered occasionally until established. For early production sow in a moderate hotbed at the same time as those in the natural ground. The leaves must be gathered for use whilst young, otherwise they become stringy and worthless.

To save Seed.—Some plants of the spring sowing must be left ungathered from, and thinned to about 8 inches apart. The seeds ripen about the end of August, when the plants must be pulled up, and, when perfectly dry, the seed rubbed out for use.

ORANGE. (*Ci'trus Aura'ntium.*) See Ci'TRUS.

ORANGE THORN. *Citrio'batus.*

ORA'NIA. (From *ouranos*, the heavens, the visible space above the earth. Nat. ord. Palmaceæ.)

Large, stove Palms. Seeds. Fibrous loam, one-third peat and sand.

O. macro'clada (long-branched). 40. Malaya. 1847.
„ *ni'vea* (snowy). Leaves white underneath. 1886.
„ *philippine'nsis* (Philippine). Philippines.
„ *porphyroca'rpa* (purple-fruited). See DIDYMOSPERMA PORPHYROCARPON.
„ *rega'lis* (royal). 7–10. Java. 1847.

O'RBEA. See STAPELIA.

ORCHARD is an enclosure devoted to the cultivation of hardy fruit-trees. With respect to the situation and aspect for an orchard, avoid very low, damp situations as much as the nature of the place will admit; for in very wet soils no fruit-trees will prosper, nor the fruit be fine; but a moderately low situation, free from copious wet, may be more eligible than an elevated ground, as being less exposed to tempestuous winds; though a situation having a small declivity is very desirable, especially if its aspect incline towards the east, south-east, or south, which are rather more eligible than a westerly aspect; but a north aspect is the worst of all for an orchard, unless particularly compensated by the peculiar temperament or good quality of the soil. Any common field or pasture that produces good crops of corn, grass, or kitchen-garden vegetables is suitable for an orchard; if it should prove of a loamy nature, it will be a particular advantage. Any soil, however, of a good quality, not too light and dry, nor too heavy, stubborn, or wet, but of a medium nature, friable and open, with not less than one spade deep of good staple, will be proper.

Drain thoroughly, and trench before planting. Plant in October, or, at the latest, in November. Trees will succeed if planted later; but those are the best months. Plant on stations (see STATIONS); and the following is a good selection:—Of *Apples*, plant for *Kitchen use* Keswick Codling, Mank's Codling, Blenheim Pippin, Dumelow's Seedling, Minshall Crab, Bedfordshire Foundling, Norfolk Beaufin, Hawthornden, Stirling Castle, Golden Noble, Warner's King, Lane's Prince Albert, Bramley's Seedling, Newton Wonder, and Northern Greening. For *Dessert:* Early Harvest, Early Red Margaret, Kerry Pippin, Beauty of Bath, Mr. Gladstone, Lady Sudeley, James Grieve, American Mother, King of the Pippins, Cox's Orange Pippin, Scarlet Nonpareil, Cockle's Pippin, Lord Burghley, Ribston Pippin, Ross Nonpareil, Old Nonpareil. Lamb-Abbey Pearmain, Sturmer Pippin, and Court Pendu Plat. Of *Cherries:* Early Purple Griotte, Early May Duke, Black Eagle, Elton, Bigarreau, Florence, Late Duke, Morello, and Buttner's October Morello. Of *Plums:* Early Prolific, Orleans, Drap d'Or, Greengage, Victoria, Kirke's, Reine Claude de Bavay, Jefferson, Denniston's Superb, Diamond, Rivers' Czar, Pond's Seedling, Reine Claude Violette, Coe's Golden Drop, St. Martin's Quetsche, Washington, Monarch, Magnum Bonum, and Ickworth Impératrice. In the preceding lists we have named the varieties in their order of ripening; but in this of *Pears* the months named are those in which the fruit is ripe *July*, Doyenné d'Été. *August*, Jargonelle. *Sept.*, Williams' Bon Chrétien, Beurré d'Amanlis, Dr. Jules Guyot, Marguerite Marillat, Souvenir du Congrès. *Oct.*, Beurré Hardy, Louise Bonne de Jersey, Marie Louise, Fondante d'Automne. *Nov.*, Beurré Bosc, Thompson's Doyenné du Comice, Glou Morceau. *Dec.*, Hacon's Incomparable, Triomphe de Jodoigne. *Jan.*, Beurré Sterckmans, Easter Beurré, Knight's Monarch. *Feb.*, Josephine de Malines, Marie Benoist, Nouvelle Fulvie. *March*, Olivier des Serres, Nec Plus Meuris. *April*, Beurré Rance, Bergamote d'Esperen.

ORCHARD HOUSE. This is the name applied by Mr. Rivers, nurseryman, Sawbridgeworth, to cheap glazed structures, in which he grows hardy fruits in pots, and planted in the borders.

We have found that such a greenhouse, without any heating apparatus, is most useful, not only for growing Grapes, Peaches, Nectarines, and Apricots, but early Peas, Radishes, Strawberries, Lettuces, small Salading, and Potatoes. Such a structure is the following, described by Mr. Rivers, in his highly useful work, *The Orchard House.*

We will suppose that an orchard house 30 feet long is required. A ground-plan, 30 feet long and 12 feet wide, must be marked out, ten posts or studs of good yellow deal, 4 inches by 3, and 9 feet in length, or if larch poles, 16 inches in girth, can be procured, they are quite equal in durability; these latter must be cut in two, and the flat sides placed outwards; these posts, or studs, whether larch or deal, must be fixed 2 feet in the ground firmly, and the ground ends must be charred 2 feet 4 inches from the bottom, which adds much to their durability: it will thus be seen that this, the back line of studs, will stand 7 feet in height clear from the surface. For the front wall, ten studs, 4 feet long, must be inserted in the ground 1½ feet, so that they stand 2 feet 6 inches clear from the surface; on these studs, both at front and back, must be nailed a plate 4 inches by 2½, on which the rafters are to rest; the studs are thus far arranged in two lines. Now, then, for the rafters: these must be 14 feet long, and 4 inches by 2 in thickness, placed with the narrow surface upwards, to spare the trouble of "ploughing," to make the rebate for the glass, which is great labour and waste of material. On the upper side of each rafter, exactly in the centre, must be nailed a slip of ¾-inch board, ¾ of an inch wide; this will leave ¾ an inch and ¾ on each side for the glass to rest on—not too much when the width of the glass is given. We have thus the rafters so far prepared for glazing, but not yet fitted on the plates at top and bottom: they must never be morticed, but let in at top by cutting out a piece, and sloped off at bottom.

To receive the glass at the top of the rafters, a piece of ¾-inch deal board, 6 inches wide, must be nailed along the top to the end of each rafter, so as to be even with the surface, and in this should be a groove to receive the upper end of each piece of glass; at the bottom, a piece of board, 1 inch thick and 6 inches wide, must be let in for the glass to rest on, and to carry off the water. We have thus so far a sloping roof, 7 feet 3 inches (with the plate) high at back, and 2 feet 9 inches high in front; but the glass is not yet in. The most economical glass is sixteen-ounce British sheet, which can be bought at 2½*d.* or 3*d.* per foot, and the best size 20 inches by 12; puttying the laps, as it prevents breakage by frost; placing it cross-wise, so that the rafters must be *about 20 inches asunder.* On and outside the back studs, ¾-inch boards must be nailed, well seasoned, so that they do not shrink too much; these must be painted white. In the back wall, sliding shutters, 2 feet 6 inches by 1 foot, in grooves, must be fixed, for complete ventilation; two close to the roof, and two about 18 inches from it.

The front must have, also, ¾-inch boards nailed on outside the studs; one of them, the upper one, to be on hinges, so as to let down the whole length of the house; these, when all open in hot weather, ventilate thoroughly. To add to this (and it is all required in summer), the boards will shrink and let in air: a fierce sunlight is thus admitted by the large glass, and abundance of air, in which all fruit-trees thrive to admiration. So much for the timber and glass; but when one sees that to walk along the centre of the building, which is about 4 feet 9 inches in height, a person must be of very diminutive stature, the inquiry arises, How is headroom to be made? How simple is the answer! Make a trench 2 feet 6 inches wide, and 2 feet deep, in the centre of the ground-plan; this will leave a border on each side 4 feet 9 inches wide. The bottom of this trench forms the footpath; its sides must be supported with boards, or with 4-inch brick-work. Now, as everything depends on these borders—for there must be no

benches and no shelves—care must be taken to make their surface loose and open: loose materials, such as coarse cinders, lime-rubbish from old walls, or bricks broken into pieces in size from a nut to a walnut, may be laid on them about 4 inches deep; they may then be forked over to about 9 inches in depth, well mixing the above materials with the soil; you thus have two borders not too far from the glass, and *on* which your orchard will thrive admirably. It will appear odd to read about trees thriving *on* instead of *in* a border; but when explained that this is to be an orchard in pots, it will not seem so contrary to our usual garden-culture.

ORCHIA'STRUM. See LACHENALIA.

ORCHIDS are divisible into two classes, the *Epiphytes*, or those growing upon trees, and *Terrestrial*, or ground-orchids, which grow upon the earth. The two classes require some difference as to the mode in which they are grown, a difference pointed out in this work under each genus in its alphabetical order. At present we shall confine ourselves to such general directions as are applicable to the cultivation of both classes of *Orchids requiring Stove treatment.*

House for Orchids.—As they require great light, the house ought to be so placed as to catch all the rays of light from the sun. A span-roofed one will do so, or to the greatest degree; and so low in the angle, that the plants, whether in pots or baskets, or on logs of wood, will all be near to the glass. We find the best aspect is for the roof to fall due east and west; then the lengthway of the house will, of course, be north and south. By this means the heat and light of the sun are more equalised. In the cold mornings of early spring the sun will sooner give light and heat on the east side, and will be at noon in such a position that his beams will be slanting to the angle of the roof, whilst in the afternoon his power to give light and heat will be considerably prolonged. Every plant in this house will thus have its due share of light and heat. During the hot months of May, June, July, and August, the shade or blind can be let down on the morning side of the house, drawn up at noon, and let down on the afternoon side just as the sun shines; thus giving the plants all the light possible, and at the same time protecting them from the burning rays of the sun. There need not be any upright glass at the sides or ends of the house. The walls ought to rise high enough to allow a comfortable walk and head-room. The rafters and lights ought to be fixed, and to give air a few openings may be easily contrived in the highest part of the house, and a few sliding panels near the floor in the walls. This cold air ought to flow in over the hot pipes, and to become heated before it comes in contact with the plants. In summer, when there is no heat in the pipes, the external air is naturally so warm that no injury will accrue to the plants by admitting it into the house without being artificially heated. It is almost absolutely necessary to have more than one house. However small the collection may be, there will be some that require more heat than the others. The orchids of South America will flourish far better in a house of moderate temperature than in a house highly heated. This house we would distinguish by the name of "the Mexican house." The orchids, natives of Java, Borneo, Singapore, the Philippine Islands, and the hot jungles of India, require, on the other hand, a much higher temperature, and close, moist atmosphere. The house for these plants we would designate "the East Indian house." By having two houses a considerable number of advantages will be secured. The Indian tribes, as soon as they have made their growth for the year, where there are two houses, may be removed into the cooler or Mexican house; and that removal or change of temperature will harden their pseudo-bulbs, and concentrate the sap, causing them thereby to become more healthy, robust, and free to flower. Should any of the South American species require a little more heat, they could be conveniently removed into the Indian house to make their growth. The cooler house will also be useful to place any of the Indian species in when in flower, which change will considerably prolong their season of blooming. The two houses may join each other, divided by a partition either of brick or glass. We should prefer glass, as being neater, and showing off the plants, in both houses, to greater advantage.

Heating.—As these plants require, during the seasons of growth, a larger amount of moisture than most other plants, the plan to effect this is to heat the houses with hot-water pipes, laid in tanks. The water in these tanks should be deep enough to cover the pipes about an inch with water. The tanks need not be more than 10 inches wide, inside measure. The diameter of the pipes should be 4 inches. At some convenient place there ought to be a tap to let off the water out of the tanks. This ought to be done frequently, in order to obtain a sweet moisture. If the water be allowed to remain in the tanks for a length of time it becomes foul, and then, when heated, sends forth a disagreeable smell, which is very unhealthy both to plants and persons. In winter, when the plants are, or ought to be, mostly at rest, they require a drier atmosphere. In order to induce this, the tanks ought to be emptied during the winter months, from the middle of October to the middle of February. Should the plants appear to shrivel too much, the pipes may be occasionally syringed early in the morning of fine days. The number of pipes and tanks required depends, of course, upon the size of the houses. The large house at Messrs. Henderson's, of Pine-Apple Place, has four tanks in it; the width of the house is 18 feet. Two of those tanks are open, that is, have no cover, and are placed under a platform formed with large, thick slates, spaces being left between each to allow the moisture to ascend amongst the plants. The other tanks have covers to them, with holes to let out the moisture. These holes have brass lids to them, so that the moisture can be confined as circumstances require. Now, this answers the purpose well during the months of spring; but we have too much moisture during winter, so that the plants grow more than they flower. Supposing, then, a house 18 feet wide requires four tanks, a house 14 feet will require three; 9 feet, two; and less than that, only one. The return-pipes may run under the tanks to the boiler, or, if the tanks are placed so near the floor that the return-pipes cannot be placed under, they may be arranged to run on one side. The best kind of boiler we know is one formed of several round pipes, connected at each end by a square one. From this square pipe the hot water rises into the tanks, and the return-pipes bring the water back to it to be reheated. Mr. Taylor, the hothouse builder at Kensal New Town, is in the habit of putting up these boilers, and they answer admirably.

Shelves.—In any convenient part of the house where a shelf can be put so near the glass as to allow plants in pots to be placed upon it, it is desirable to have them. We have always found small plants in pots, that have made a good start, do well in such a situation. The plants, however, should not be too near the glass. The extremity of the leaves should be at least 9 inches from it. The shelves, also, should not be placed where the water that overflows or runs through the pots will drop upon any plants.

Stages.—The arrangement of these will depend upon the width of the house. If the house is wide enough to allow a walk all round it, and a walk in the centre, there will be two stages. The centre walk should be elevated as high as possible, to allow head-room for the manager and visitors to walk comfortably. This elevated walk is of considerable use, affording a good opportunity to watch the progress and state of the plants, and to observe when they require watering, repotting, and cleaning from insects. An example of this arrangement may be seen in the orchid-house at Kew.

Shelves of the Stage.—Every shelf ought to be a shallow cistern to hold water. Blue slate is the best material to form each shelf on the stage. The upright slate forming the sides of each ought to be elevated at least 2 inches, and made water-tight. These cistern-shelves may either be filled with small, pebbly gravel, all the sand or other binding material being washed out of it, to prevent its setting hard, or they may be left empty, and shallow pots turned upside down, just high enough to allow the plants to stand clear of the water; for it is intended that these cistern-shelves should be, during summer, kept full of water. These shelves of the stage must be as near the glass as the size of the plant will allow. Several advantages to the health of the orchids accrue from this arrangement. The most important is a constant supply of moisture to the air, at a time when the heat of summer renders the application of heat to the tanks unadvisable. Another advantage is the prevention of the attacks of insects, such as woodlice and

slugs. These destructives cannot travel through water; and as the plant stands, as it were, upon a number of little islands, they are protected both day and night from these devouring enemies. Care, however, must be taken that the citadel itself does not harbour them. The cockroach and woodlouse often secrete themselves during the day amongst the rough pieces of turf and broken pots used as drainage. If there is any suspicion that these enemies are in these secret places, they must be diligently sought for, by visiting the houses with a bull's-eye lantern by night, and catching them at their depredations. Pursue them with all your diligence. Should the tender roots, or flower-shoots, still appear to be eaten occasionally, take the severe measure of turning the plants out of the pots, and search for the vermin amongst the peat and potsherds, and when they are once entirely got rid of, take care to place the plants so that their leaves do not come in contact with anything that will form a bridge for the insects to travel on.

Hanging up Plants on Logs or in Baskets.—Large-headed nails, or hooks, may be driven into the rafters, or strong iron rods, well painted, may be suspended along the roof over the walks, and strong iron hooks, shaped like the letter S, placed at proper distances to hang up the various kinds of plants that require such situations. We recommend the situation for these to be over the walks, to prevent the water, when applied upon the plants, falling on the stages or shelves.

Where these plants are numerous, it is advisable to devote a part of the house to them. Underneath would be a convenient situation for a cistern to contain the rain water that falls upon the roof—the best of all water for watering purposes.

Cistern.—This is almost indispensable. The one in the orchid-house at Messrs. Henderson's is formed with slate 1 inch thick. The great use is the heating the water for syringing and watering purposes. Another use, and an important one too, is for dipping the blocks with the plants on them; also to dip the *Stanho'peas, Gongo'ras*, and other plants in baskets. When those plants begin to grow in the spring they require a good steeping, and the cistern offers a proper place for that purpose. Two or three hours will not be too much to steep them. The peat during the time of rest becomes dry and hard, and requires this wetting to soften it, especially if the plants are to be shifted into new baskets.

As orchids require frequent syringing, sometimes twice or thrice a day, we have made use of pots—garden-pots, in fact, without holes. These are placed round the house, near the hot-water pipes, at a small distance, about 6 or 9 feet apart. Our readers that are in the habit of syringing will immediately perceive the great saving of time and labour by having these pots so handy. Instead of having the water to carry in garden watering-pans, these pots, being kept constantly full of warm water, are always ready.

Syringing in Winter.—During the dark days of winter the operation of syringing requires considerable judgment. A large number of orchids will be at rest, requiring but little water, especially those *in pots*. Others, *on logs*, must be syringed on such mornings as the sun is likely to shine. There are, however, a few plants, even in pots, that are much benefited by the free use of the syringe at all seasons of the year. *Hunle'ya viola'cea* and *H. Melea'gris* are two plants much improved by this mode of treatment; and the reason they are so improved is evident enough, when we consider the situation in which they grow naturally. Dr. Schomburgh found them growing on moist rocks, near to a cataract, on a river (Essequibo, we believe) in British Guiana.

All the warm house orchids that have no pseudo-bulbs require more syringing in winter than those that have such reservoirs of vegetable life to sustain them. The generic or family names of such as we mean are: *Ae'rides, Angræ'cum, Phalæno'psis, Renanthe'ra, Saccola'bium, Sarca'nthus*, and *Va'nda*. All these have a simple stem, clothed with leaves. If exposed to a high, dry heat, the leaves and stems will shrivel much more than is beneficial to their health; therefore, whenever a shrivelling is perceived, let them have a gentle syringing, thoroughly wetting the whole plant. This will revive them, and keep them fresh and healthy.

Syringing in Spring and Summer.—It is during these two growing seasons that the syringe is most beneficial, and then they should be deluged almost with showers from the syringe, taking the precaution to allow them to become dry once a day. They are sure to become dry enough during the night. Let the water from the syringe be milk-warm rain water, and let it fall gently upon the plants, thus imitating natural showers of rain as much as possible. We have found the plants much refreshed in summer by a gentle syringing, when it was actually raining out of doors. In truth, if such a thing could be managed, we should be glad to expose them, during the gentle, warm showers of April, to the rain that falls from the clouds. We are quite sure it would do them good. It is, however, the plants on logs that benefit most by the use of the syringe, both in winter and summer. Of course, they require the most when they are making fresh roots and growths; but even when at rest they must be syringed occasionally, to prevent the roots and pseudo-bulbs from shrinking too much. In that state, the finest-rosed syringe must be used, to prevent so much water falling upon the plants (if any) below.

During the seasons when the syringe is used most freely, should any of the plants have perfected their growth, and consequently require less water, place such in a corner of the house by themselves, and syringe them less frequently. Towards the end of summer the whole of the plants ought to be perfecting their growths, excepting the Indian ones above mentioned and the *Hunle'yas*. These grow, more or less, all the year, but others must have an entire rest; therefore, cease syringing so much as soon as you think there is a fullness and ripeness about the pseudo-bulbs, showing that they have made the growth for the year. If you continue syringing as much as ever, there is danger of starting them again into growing prematurely, and then you will have weak, puny shoots, and injure both the flowering and growth for the ensuing season. It is impossible to give any particular time when to cease syringing, or watering at the root with a garden-pot; experience and observation must guide the cultivator. In general, we may say the quantity of water, whether applied with the garden-pot or syringe, ought to be considerably lessened towards the end of summer—that is, about the end of August. The pseudo-bulbs ought to be then fully formed; and, whenever that is the case, they require much less water. By the middle of October the water ought to be entirely withheld, excepting just enough to prevent the plants from shrivelling.

Shading.—We use a kind of canvas called "bunting." It is thin and open in the mesh, yet just close enough to prevent the rays of the sun striking through the glass, and injuring the flowers and leaves. We shall try to describe how it is applied. First, a pole about 2 inches in diameter, of the length of the house, or rather longer, is made of deal, and quite round. At one end a kind of wheel is fixed, of larger diameter than the pole (about one-third). On each side of this wheel a round board is nailed, projecting beyond it about 3 inches. These boards are about ¼ of an inch thick, and are bevelled off from the inside. When this is done, it forms a groove. This is intended to receive the cord, it being nailed to the wheel. The canvas is then nailed to the long pole, it having first been sewn together of the size of the house. The pole, with the canvas attached to it, is then laid upon the house, a flat piece of wood 2½ inches wide, and ¼ inch thick, is nailed to the highest point of the house, and the canvas is tightly stretched and nailed to the flat piece of wood, using some narrow woollen lists, stretched along it previously to driving in the tacks. This prevents, in a great measure, the canvas from tearing off with the winds. Then, taking hold of the cord now wrapped round the wheel, and pulling at it, the wheel turns round, and, of course, the pole also; the canvas wraps round it, and, at last, is rolled up at the top; the cord is then fastened to a long kind of button, and there remains till shade is required. The cord is then unfolded, and the pole let gradually down to the bottom, where some pieces of wood stop it from going off the house, or tearing away the canvas from the top. It may be made to last longer, by having weather-boards fixed on the top of the house to receive the canvas when rolled up under it, thus sheltering it from the rain, which is the great cause of its decay. Care must be taken, when it is rolled up, that it is perfectly dry. During the dark, short days of winter, when the sun has not power to injure the plants, the blind may be stored away in some dry shed or room till the days lengthen,

and the sunshine becomes dangerous to the well-being of the plants.

The Proper Amount of Heat, Moisture, and Air the Plants require at All Times of the Year.—The power of *heating* should be *more* than is required in ordinary winters, in order to be prepared for those *very severe* ones that sometimes occur. It is always easy enough to give less heat in moderate weather by having less fire applied under the boiler. The degrees of heat required we shall now give for all the year.

Indian House.	Fahrenheit.			
	Day with Sun.	Day without Sun.	Night.	Morn.
Spring . . .	75	70	60	55
Summer . . .	85 or 90	70	65	60
Autumn . . .	70	65	60	55
Winter . . .	65	60	55	50
Mexican House.				
Spring . . .	70	65	60	55
Summer . . .	75	65	60	55
Autumn . . .	60	55	50	50
Winter . . .	55	50	50	45

Our readers will perceive that the lowest temperature at all seasons is in the morning; that is, before the fires are stirred. The heat in the mornings in summer will depend upon the heat of the atmosphere out of doors; the rest of the day may be regulated by giving air. The principle of having a lower temperature during the night is perfectly natural. The variations even in tropical countries, in that respect, are great.

Watering with the Garden-pot.—As a general rule, let it be laid down never to water an orchid except it requires it; therefore, in commencing to water, observe each plant well, but quickly, and water accordingly. An orchid requires watering when it is growing and dry. The quantity to be given depends, again, upon the stage of its growth. If the young shoots and new roots are just beginning only to make their appearance, they require a very moderate quantity; but, as then the plant ought to be repotted, and the new, fresh compost is, or should be, moist of itself, the water must be withheld until the surface, at least, feels quite dry to the touch. Again, the water should be applied at a small distance from the young shoots, which ought never to be saturated, or even wetted, especially either in the dark, cloudy days of winter or of early spring. In summer, when the heat is increased, the sun shining, and air given, the operator need not be so nice, as the extra water will soon evaporate, and dry up even from the young and tender shoots. When the young shoots begin to form pseudo-bulbs, the quantity of water may be increased, care being taken that it does not lodge in the leafy sheaths which surround the green or young bulbs, especially of *Ca'ttleyas*. We have often seen a year's growth destroyed by allowing the water to lodge in those tender parts. The way to remedy this is with a sharp knife, or a small pair of scissors, to slit open to the bottom the sheaths that hold the water; but this is an operation that must be done very carefully, without injuring the young pseudo-bulb, or the cure will be as bad as the disease; for, if you wound a pseudo-bulb, ten to one it will perish. As soon as these sheaths turn yellow, and not before, they may be entirely removed safely. When in that state they will easily part from the bulb without injuring it, if carefully pulled off. When the growths are young, whether the water is applied with the rose or spout alone, it will generally be quite sufficient to wet the earth or compost only round near the edge of each pot. If the water is poured indiscriminately all over the surface of the compost, especially in the early season of the year, the consequence will be to endanger the young shoots. At that season, and in that state, if the water is slushed upon the plants, it will cause several, if not all of the tender young growths to perish; but as those growths begin to approach their usual size, and the warm, long, sunshiny days prevail, that is the critical or very time orchids require an abundance of water.

Giving Air.—The method we recommend to give air by is with wooden shutters, let into the wall at intervals of 4 feet between each, on each side of the house. The wooden shutters, or doors, should be 2½ feet long by 15 inches broad. A frame of wood ought to be fitted into the opening in the wall, to hang the shutters on. These should swing on the centre with two iron pins, so that when they open they will be horizontal, and let the air into the house plentifully. When less air is required, every other aperture need only be opened, or the shutters may be propped only half open. When they are opened, the fresh air will rush in, and, meeting with the pipes in its progress, will be partially heated and softened before it comes in contact with the plants—a point worth attending to. For nine months in the year this way of giving air to the Indian house will be found all that is wanted. During the three hot months of summer, it will be necessary to give some air at the highest part of the roof. The ridge of the house should be made flat, about 9 inches broad, and parts of it made movable, to lift up with an iron rod whenever the heat of the internal air exceeds the proper degree. This is the guide on all occasions and all seasons. When the heat is too much, give air.

It will be found that the Mexican house requires more frequently to have air given to it than the other, because the plants in it do not require so much heat. To know, at all times, when to give air, have a copy of the table of heat for the orchid-house copied, and hung up in a convenient place to refer to.

Resting.—To know when the bulbs are in a proper state to go to rest may be, to our readers, of some consequence. They ought to be strong, and, if expected to flower, at least 3 feet high, stout, and firm, quite to the apex. All the leaves ought to turn yellow, and drop off in the same manner as any other annually leaf-shedding plant; and all this ought to take place early in autumn. As soon as it does so, remove the plant, or plants, into a *drier* and *cooler* house, and keep them there until the buds at the bottom of each pseudo-bulb begin to appear.

Cleansing the Leaves.—Take down the plant from its high position; if the moss or peat, whichever it may happen to be growing in, is dry, give it a good soaking in the cistern, the water of which is at a temperature of 70°. Whilst it is soaking, all dead leaves are to be carefully removed, and every part of the plant thoroughly washed with a sponge. If the leaves are thick and leathery, the sponge is to be rubbed over them several times with a heavy hand. In fact, it might be called a good scrubbing; being careful, of course, not to injure it. For more tender leaves we have, very lately, used something else. We observed that the sponge, though used ever so lightly on these tender, thin leaves, injured them slightly. Happening to observe a piece of thick leather, such as soldiers' belts are made of, it was taken and wrapped round the end of a small stick, fastening it firmly to it with some small copper wire, leaving half an inch of it projecting beyond the stick; it had then the appearance of a brush made of leather. With this instrument the leaves were washed, and it was so soft and pliable that it did not injure the youngest or tenderest leaf, yet effectually washed the dust and dirt off from the leaves. This washing not only clears off the parasites and any other obstruction, but also destroys insects, particularly the red spider and black thrip, two of the most pernicious enemies to orchids. Let every part of the plants be well cleansed—leaves, stems, and pseudo-bulbs. Not only will the plants look better, but they will be greatly benefited in their health.

Potting.—Generally speaking, the months of January, February, and March are the proper times; but as there is no rule without exceptions, some orchids require potting at all seasons of the year. The beginner may know when to pot his plants by this observation: Whenever they are determined to grow, they must be potted. The only precaution necessary to observe, in the dark seasons, will be to use the stuff you pot them in (for it can hardly be called soil) in a moderately dry state, and give no water excepting a sprinkling to settle the compost.

In the first place, have ready a quantity of broken pots or potsherds of several sizes; next, procure some good turfy peat, knock it into pieces with a heavy

hammer, crushing the finer soil entirely out of it; then pass it through a fine sieve, and what remains in the sieve is the best stuff for orchids: it is light, open, and porous. Next, have some charcoal at hand, broken into pieces no larger than a hen's egg, nor smaller than a hazel nut. Another article, and you will have all you need for pots and baskets; this is white bog-moss, or sphagnum, which should be partially chopped with a sharp hatchet, and the dust also sifted out of it. We have a great abhorrence for anything close or fine about orchids, excepting terrestrial ones.

Having all in readiness, take your plant, turn it out of the pot carefully, be mindful of the roots, and bruise or injure them as little as possible. Perhaps some roots will be found adhering very firmly to the sides of the pot, to part them from which we have used a long, thin-bladed knife, thrusting it carefully down between the root and the pot. In very bad cases we have found it necessary to break the pot; but this must be done very gently, or the very act of breaking may destroy the roots. The plant being cleared from the pot, shake away all the old compost; then examine the roots closely, and cut off all the dead ones. This is a convenient opportunity, also, to look after insects, especially the white scale, the most pernicious of all vermin to orchids, excepting, perhaps, the black thrip. With a brush clean them all off, and wash the whole plant with strong soap-water. Your plant is now ready for potting. Choose a pot of the proper size: generally speaking, orchids, to grow them well, take larger pots in proportion to their size than any other class of plants. Let your pots be perfectly clean both inside and out. Lay a large piece of potsherd over the hole at the bottom of the pot; then place some rather smaller pieces of the same, and over these the smallest ones. Altogether the pot ought to be three-parts filled with this drainage. This point is of the utmost importance, for if the plants are not superlatively well-drained they will not thrive long or satisfactorily. Over this drainage place a thin layer of charcoal, and then a layer of the turfy peat, mixing with it some broken pots and charcoal. Introduce the plant now, and spread the roots, if many, all over the surface of the compost, working it amongst them, gradually filling it in till the pot is full, and keeping the body of the plant well up; raise the compost up about 2 or 3 inches above the level of the edge of the pot in proportion to its width. A small pot need not have the plant above 1 inch raised, a middling plant 2 inches, and for the largest-sized plant 3 inches will be sufficient. The whole of the plant, pseudo-bulbs and all, excepting the roots, ought to stand clear up above the compost. It will be loose and ready to tumble over if of such kinds as *Cattle'yas* or *Dendro'biums;* to prevent which, thrust into the compost some stout sticks, and tie each pseudo-bulb to each stick firmly. These will secure the plant, and give it a neat, tidy appearance.

Orchids in Baskets.—A considerable number of species require baskets, because the flower-stems are pendent, and, consequently, naturally require a position to allow the flowers to grow down. In fact, some send the flower-stems perpendicularly down through the soil or compost. Now, if these are grown in pots, the flower-stems run down into the soil, and there perish. It is true they have been grown in pots on a hillock built up 6 inches or a foot above the rim of the pot, and then part of the flower-stems manage to find their way to the outside of the little mound; but a considerable number descend straight downwards, and soon rot for want of air and light. By growing them in baskets this evil is prevented, and every raceme (bunch) of flowers arrives at perfection.

The baskets should be of a size suitable for small plants—small ones requiring only small baskets, middling ones the middle-sized, and large ones in proportion. The way to basket the plants is this: Have the peat or compost prepared exactly as for potting above mentioned; cover the bottom of the basket with a thin layer of moss—green would do, though we prefer white, or sphagnum. This moss is to prevent the peat from dropping through the openings between the rods forming the bottom. Then place a portion of peat upon the moss. In the next place, prepare the plant by taking it out of the old basket or pot, or perhaps off from a log. Do this as carefully as possible, without injuring the living roots. If the old peat, in which it has been growing, perhaps, for years, is very hard, and the living roots are so firmly attached to it that they cannot be detached without breaking them, take the plant and put it into the cistern, and let it remain there till the peat is thoroughly soaked. Take it out, and set in some convenient place to drain off the water. If this is done a full week before you intend to re-basket the plant, it will be all the easier to do; the object being to soften the peat so as to be able to pick away, with a small-pointed stick, as much of the old peat as possible. Examine, also, the pseudo-bulbs and leaves, and clean them thoroughly from dirt and insects. Prune away all dead roots, and then the plant will be ready to be put in its new habitation. Place it in the middle of the basket, and fill in all round it with the new compost. Set the basket then on the floor, and, with the syringe held pretty close to the peat, give it a good watering, forcing the water out of the syringe pretty strongly: this will be found to make the compost firm, so that future waterings will not wash it off the basket on to the floor, or plants underneath. One thing we would especially guard our readers against, and that is, having the baskets made deep. Some may have an idea that if the plants have a large lot of stuff to grow in they will thrive better, and produce more flowers; but this is a mistaken notion. The roots of orchids of this class run on the surface, or, at least, very closely beneath it; in truth, if the air is properly surcharged with moisture, the roots will prefer running out of the compost. Frequently the long roots of *Stanho'peas*, that push strongly, and run along the surface of the compost, send forth fibres, not into the compost, but, strange to say, upwards into the congenial air, gathering, as it were, aërial food to support and feed the plant they belong to. This proves satisfactorily enough that deep baskets are no advantage even to the growth of the plant, but to the flower-stems of some kinds of Stanhopeas they are certainly injurious. We say *some kinds*, such as *Stanho'pea insi'gnis* and its varieties, *S. tigri'na* and its varieties, and all that have, like these, short and few-flowered racemes. Such kinds as *S. ocula'ta*, *Wa'rdii*, and *quadrico'rnis*, which have long flower-stems, may find their way through a deep basket, but would do so easier and safer through a shallow one.

Pots.—The kind we use and prefer may be described as a shallow, wide pot, the proportions of which are as two, three, and five; that is, 2 inches wide at the bottom, 3 inches deep, and 5 inches wide at the top, all inside measure. Larger pots to be in the same proportions. Small ones need only have one hole at the bottom; but it should be larger than those generally made. For the 2-inch-wide pots at the bottom, the hole ought to be ¼ of an inch in diameter, the great object being to allow the escape of water quickly. Larger pots must have three holes, each of the same diameter. Hard-burnt ones must be avoided for these plants, as well as for any other. The reason why we prefer these wide, shallow pots is, that the roots of orchids are, generally speaking, either on the surface or very near it; besides, a large proportionate surface is exposed to the benefit of air and moisture, both of which are beneficial to the roots of an epiphyte. Terrestrial orchids, whose roots descend deeper, will be better in the ordinary-shaped pot.

Baskets.— Various materials and forms have been used in this necessary article. The first probably was made of common iron wire, painted green, and the form round, deep, and with a flat bottom. This material is almost entirely disused, for, although the paint for a time prevented them from rusting, the great moisture and heat soon decomposed the paint, and then the wire became oxidised, or rusty, and is then very injurious to the roots, as well as being unsightly. Those made with copper wire are much better, lasting longer, and are not so injurious to the plants. The only objection we know of is the expense. Where that is no consideration, we should have no great objection to their adoption. Baskets have also been made of earthenware; but, if there was no other objection, their great weight would be sufficient to set them aside as bad. We have tried all these, and have come to the conclusion that baskets made of wooden rods are the best for this purpose. We mentioned before, that the most ornamental are made of corrugated or rough-barked maple rods; but, as these are not always to be met with, hazel rods may be used, and make excellent baskets. Teak wood baskets are the most durable, and are now very extensively employed. The way we make them is simple enough. First, the rods are sawn into proper lengths. The smallest we use are about the

thickness of a man's middle finger. With this size, the smallest baskets are made. These are 7 inches wide, and three rods deep. In this size, small *Stanho'peas*, and small plants of *Ae'rides*, *Saccola'biums*, *Va'ndas*, *Gongo'ras*, &c., are grown. For larger plants, larger baskets are made, and thicker rods used. The largest we ever had occasion to make was for a fine plant of *Ae'rides odora'ta*. This plant is 4 feet high, and 2½ feet through. The rods used for it are nearly as thick as a moderate-sized man's wrist. The basket is 2 feet square, which is the shape we prefer, as being the most simple and easiest made. When the rods are sawn into lengths, the ends are pared smooth with a knife; then small holes are bored through each, one at each end, as near it as possible without splitting. The instrument used to bore the holes with is a very small steel rod, about 6 inches long, with a wooden handle; it is filed to a point at the end intended to bore the hole with. We find it convenient to have two or three, for a reason we shall state presently. After a certain number of rods are cut and smoothened, they are taken to a place where there is a small, clear, red fire; the sharp end of one of the borers is put into it about 1 inch. As soon as that is red hot, the other is put in, the heated one drawn and thrust into the rod very near the end, and held there as long as it continues to burn its way without much pressure. If too much force is used, the wood will be apt to split. As soon, therefore, as the instrument ceases to burn its way through, it is replaced in the fire. The other by this time will be red also; this is then taken out of the fire, and applied to the hole. This operation is thus performed with each bore alternately till the hole is made through the rod. The description of this operation takes up considerably more time than the operation itself. It is quickly and easily done, as any of our readers may prove on trial. After as many rods are bored as may be wanted at one time, the next thing is to put them together. The articles necessary for this are some copper wire and a few flat-headed copper nails. Each basket will require four lengths of wire, the length of each to be in proportion to the size of the basket they are intended for. They should be long enough to meet at least 8 inches above the top of the smaller-sized baskets, and from a foot to 18 inches above the larger ones. At the end of each piece of wire make a loop so large that it will not draw through the holes; then lay the first two rods, and upon them, for the smallest basket, lay three others; nail these three to the two outside rods, thus forming a sort of raft, to use a nautical term for want of a better; turn this over, and underneath it put two other rods, to form the other two sides of the basket; then draw the four pieces of wire through the holes at each corner, the looped end being underneath. Continue to lay a pair of rods alternately, drawing the wire through each till the basket is of the required depth. The smallest size, three rods deep; the two next, four deep, and so on. When that is done, make four small pointed pegs, and drive them into each hole at the four corners. This will fasten the rods in their places, and prevent them from ever starting upwards; then draw the wires together at the top, twisting each pair over each other, and fasten them with a piece of fine wire. Your basket is now complete and ready for use.

Logs.—None are so good as the wood of the Acacia, commonly so called, but which really is the *Robi'nia Pseu'd-aca'cia*. Its wood is firm, and does not soon decay. The next best is the oak, and teak is equally or more durable. In all cases we strongly recommend the removal of the bark; our objection to retaining it being, that it only serves as a hiding-place for wood-lice, small snails, and various destructive insects, besides retaining in winter too great a quantity of moisture. The wood should be procured a year before it is used, and then the bark will come off very easily. We except cork wood, which we think very good when it can be procured readily for this purpose; and the bark of cork suits the orchids well, and, unlike the others, does not rot so soon, and, consequently, has not the objection to its use of being a receptacle for vermin. The best wood for baskets is the rough-barked, common maple. The branches of this tree make the handsomest baskets; but as it is not so plentiful as the hazel, the latter is the sort we recommend. Some object to baskets of this description on account of their soon perishing. This we consider no objection at all, but rather an advantage; for as soon as the basket is decayed the plant has grown so large that it requires a new one, and the rotten sticks of which the old basket is made are more easily broken and removed than sounder ones.

ORCHIDA'NTHA. (From *orchis*, and *anthos*, a flower; the flowers resemble those of an Orchis. Nat. ord. Scitaminaceæ.)

Dwarf stove perennial herb. Divisions in spring. Fibrous loam, peat, or leaf-mould, some nodules of charcoal and sand.

O. borneé'nsis (Bornean). 1–1½. Sepals yellowish, purplish; petals blackish-violet. Borneo. 1886.

ORCHI'DIUM AMERICA'NUM, O. A'RCTICUM, and **O. BOREA'LE.** See CALYPSO BOREALIS.

O'RCHIS. (From *orchis*, testiculate; referring to the two oblong, bulb-like tubers of many of the species. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Chiefly an European genus of ground-orchids. Seeds, as in Ophrys, when obtainable; division of the clumps of tuberous roots, though they do not relish transplanting well; it should be done when the plants are in a dormant state or just commencing to grow. The British species are chiefly found on chalky hills, and in pastures where calcareous matter abounds. The exotic kinds like an addition of fibrous peat. The tender ones, in fact all, when cultivated, should be treated as alpines; those found in rich pastures require a moister situation.

O. acumina'ta (pointed-*flowered*). See O. TRIDENTATA.
„ *anato'lica* (Anatolian). Asia Minor, &c.
„ *bifo'lia* (two-leaved). See HABENARIA BIFOLIA.
„ *cilia'ris* (eye-lashed). See HABENARIA CILIARIS.
„ *cine'rea* (grey). See O. MILITARIS.
„ *comperia'na* (Comperian). Taurus.
„ *corio'phora* (bug-bearing). 1. Brown. June. Switzerland. 1825. "Bug Orchis."
„ *ensifo'lia* (sword-leaved). See O. LAXIFLORA.
„ *folio'sa* (leafy-*spiked*). 1. Purple. May. Madeira.
„ *fra'grans* (fragrant). See O. CORIOPHORA.
„ *fu'sca* (dusky). See O. PURPUREA.
„ *fusce'scens* (*drying*-brown) See HABENARIA HERBIOLA.
„ *globo'sa* (round-*spiked*). ¾. Purple. June. Austria. 1792.
„ *Halle'ri* (Haller's). See O. GLOBOSA.
„ *hirci'na* (goat's). 1–2. Dull green, white, purple. June. Europe (England). "Lizard Orchis."
„ „ *roma'na* (Roman). Lip rosy-purple. Rome. 1871.
„ *ibe'rica* (Iberian). White. June. Caucasus. 1819.
„ *incarna'ta* (flesh-coloured). 1. Flesh-coloured. June. Europe (Britain).
„ *la'ctea* (milky). See O. TRIDENTATA.
„ *Lago'tis* (hare's-ear). See O. LATIFOLIA LAGOTIS.
„ *latifo'lia* (broad-leaved). 1. Pink. June. Britain. "Marsh Orchis."
„ „ *Barto'ni* (Barton's). Ireland. 1880.
„ „ *Lago'tis* (hare's-ear). Purple. Piedmont. 1869.
„ *laxiflo'ra* (loose-flowered). ¾. Purple. June. Europe. 1820.
„ *longibractea'ta* (long-bracted). 1½. Purple. May. Sicily. 1818.
„ *longicо'rnu* (long-horned). ¾. Purple. May. Barbary. 1815.
„ *longicru'ris* (long-shanked). Pale purple. May. Mediterranean region.
„ *ma'cra* (lean). See O. SIMIA.
„ *macula'ta* (spotted). 1½. Flesh. June. Britain. "Spotted Orchis."
„ *maja'lis* (May). See O. LATIFOLIA.
„ *ma'scula* (male-*early*). 1. Purple. May. Britain.
„ „ *a'lba* (white). White. Europe (Britain).
„ *milita'ris* (military). 1. Purple. May. Switzerland (England). 1825.
„ „ *ve'ra* (true). Purple. May. Switzerland. 1825.
„ *monophy'lla* (one-leaved). 1. Pale purple with darker spots. Burma. 1898.
„ *Mo'rio* (buffoon). ¾. Purple. May. Britain.
„ *Nicode'mi* (Nicodemus's). See O. MORIO.
„ *pa'llens* (pale). Light yellow. May. Europe. 1825.
„ *palma'ta* (hand). See O. LATIFOLIA.
„ *papiliona'cea* (butterfly). 1½. Purple. April. Rome. 1788.
„ *paucifo'ra* (few-flowered). Yellow; lip sometimes spotted. Italy.

O. provincia'lis (province). ¾. Purple, yellow. June. Mediterranean region. 1825.
„ „ *pauciflo'ra* (few-flowered). ¾. Purple. July. Italy. 1825.
„ *pseu'do-sambu'cina* (false-elder-*smelling*). ¾. Purple. April. Italy. 1828.
„ „ *lute'scens* (pale yellow). ¾. Yellow. June. Italy. 1828.
„ *purpu'rea* (purple). 1. Purple. June. Europe (England).
„ *quadripuncta'ta* (four-spotted). ¾. Purple. April. Italy. 1828.
„ *roberti'na* (Robertian). See O. LONGIBRACTEATA.
„ *ru'bra* (red). See O. PAPILIONACEA.
„ *sacca'ta* (pouched). ¾. Purple. April. Sicily. 1828.
„ *sambu'cina* (elder-*scented*). ¾. Yellow. April. Switzerland. 1825.
„ *sepulchra'lis* (sepulchral). Asia Minor.
„ *Si'mia* (Simia). 1½. Pale purple. May. Europe (England).
„ „ *densiflo'ra* (dense-flowered). 1. Purple, white. May. Europe.
„ *specta'bilis* (showy). Pink. June. N. Amer. 1801.
„ *stabia'na a'lba* (Stabian-white). See O. MASCULA ALBA.
„ *sulphu'rea* (sulphur). See O. PALLENS.
„ *tephrosa'nthos* (ash-coloured-flowered). See O. SIMIA.
„ *tridenta'ta* (three-toothed). 1. Purple. May. Europe. 1815.
„ *undula'ta* (wavy). 1. Pale purple. December. Sicily. 1818.
„ *undulatifo'lia* (wavy-leaved). See O. LONGICRURIS.
„ *ustula'ta* (scorched). ¼. Purple. May. England.
„ *variega'ta* (variegated). See O. TRIDENTATA.

ORCHIS, BEE. *O'phrys api'fera.*

ORCHIS, BUG. *O'rchis corio'phora.*

ORCHIS, FLY. *O'phrys musci'fera.*

ORCHIS, GREEN-WINGED. *O'rchis Mo'rio.*

ORCHIS, HUMBLE-BEE. *O'phrys bombyliflo'ra.*

ORCHIS, LIZARD. *O'rchis hirci'na.*

ORCHIS, MADEIRA. *O'rchis folio'sa.*

ORCHIS, MARSH. *O'rchis latifo'lia.*

ORCHIS, MILITARY. *O'rchis milita'ris.*

ORCHIS, SPIDER. *O'phrys arani'fera.*

ORCHIS, SPOTTED. *O'rchis macula'ta.*

ORE'LIA GRANDIFLO'RA. See ALLAMANDA CATHARTICA.

OREO'COME CANDO'LLII. See SELINUM CANDOLLII.

OREODA'PHNE BULLA'TA. See OCOTEA BULLATA.

OREODO'XA. (From *oros, oreos*, a mountain, and *doxa*, glory; in allusion to the stately character of the trees and their habitat. Nat. ord. Palmaceæ.)
Stove Palms, with pinnate leaves. Seeds. Fibrous loam, one-third peat and sand.
O. acumina'ta (long-pointed). See EUTERPE ACUMINATA.
„ *borinque'na* (Borinquen). 50–80. Trunk slender, ivory-white. Porto Rico. 1908.
„ *granate'nsis* (New Granadan). Colombia. 1880.
„ *olera'cea* (pot-herb). 100. W. Ind. 1656. "Cabbage Palm."
„ *re'gia* (royal). 50. Cuba and Panama. 1836.
„ *Sanco'na* (Sancona). 100. Colombia. 1847.
„ *ventrico'sa* (swollen). See GAUSSIA GHIESBREGHTII.

OREO'PANAX. (From *oros, oreos*, a mountain, and *panake* or *panakeia*, a panacea, or universal medicine; literally, the mountain Panax. Nat. ord. Araliaceæ.)
Evergreen stove or greenhouse trees of moderate stature with palmate leaves. Cuttings in sand in a close case with bottom-heat, or by grafting on roots. Fibrous loam, peat, and sand.
O. andrea'num (Andrean). Green. Andes of Ecuador. 1882. Greenhouse.
„ *argenta'tum* (silvery). Colombia.
„ *capita'tum* (headed). Green. August. S. Amer. 1779.
„ *catalpæfo'lium* (Catalpa-leaved). See O. CAPITATUM.
„ *dactylifo'lium* (finger-leaved). Mexico (?). 1864.
O. epremesnilia'num (Epremesnilian). Country unknown. 1882. Greenhouse.
„ *Linde'nii* (Linden's). Green. September. Colombia. 1854.
„ *peduncula'tum* (stalked). Country unknown.
„ *pelta'tum* (shield-shaped). Mexico. 1859.
„ *platanifo'lium* (plane-leaved). White. S. Amer.
„ *reticula'ta* (netted). Leaves dark green, with lighter veins. S. Amer.
„ *sanderia'num* (Sanderian). Small, green. Leaves three-lobed. Guatemala. 1892.
„ *Thibau'tii* (Thibaut's). Greenish, in small globose heads. Mexico. 1862.
„ *xalape'nse* (Xalapan). White. Mexico. 1817.

ORGYI'A ANTI'QUA. Vapourer Moth. The caterpillars of this moth feed on the leaves of cherries, pears, hawthorn, roses, and many other trees belonging to the rose family, and are exceedingly destructive, defoliating the trees when present in large numbers. The singular-looking caterpillar may readily be recognised by the brushes of long hairs, extending forwards and backwards on its back, recalling the hop-dog, but smaller. The male is a small reddish-brown moth, with a white spot near the hinder angle of each fore-wing, and may often, even in the streets of London, be seen flitting about in a desultory manner looking at brightly coloured flowers. The female has only rudimentary wings. The conspicuous caterpillars may readily be hand-picked. Spraying with arsenate of lead is also a sure remedy. The yellowish cocoons may be found attached to a great variety of plants in the garden during winter, and, as they are usually covered with woolly matter and a mass of eggs, they should be collected and burnt.

ORI'GANUM. Marjoram. (From *oros*, mountain, and *ganos*, beauty; referring to the natural places of growth. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)
The following are all hardy herbaceous perennials. Seeds, division of the roots, and cuttings; sandy soil. See MARJORAM.
O. ægypti'acum (Egyptian). See O. MARU.
„ *crassifo'lium* (thick-leaved). Purplish. June. Levant.
„ *Dicta'mnus* (Dictamnus). 1. Pink. July. Candia. 1551. "Dittany of Crete."
„ *heracleo'ticum* (bastard-winter-sweet). 1. White. August. S. Europe. 1640. "Winter Marjoram."
„ *horte'nse* (garden). See O. MAJORANA.
„ *hy'bridum* (hybrid). ½–1. Pink. July, August. Asia Minor. 1770.
„ *libano'ticum* (Lebanon). 1. Pink. Syria.
„ *Majora'na* (marjoram). 1–2. Pale purple. June, July. Europe. 1573. "Sweet or Summer Marjoram."
„ *majoranoi'des* (Majorana-like). See O. MAJORANA.
„ *Ma'ru* (mastic). 1. Pink. June. Syria and Arabia. 1731.
„ *microphy'llum* (small-leaved). 1. Pink. June, July. Crete.
„ *nervo'sum* (*large*-nerved). See O. MARU.
„ *norma'le* (normal). See O. VULGARE.
„ *Oni'tes* (Onites). 1. Whitish. August. Mediterranean. 1759. "Pot Marjoram."
„ *pulche'llum* (pretty) of gardens. See O. HYBRIDUM.
„ *pu'lchrum* (beautiful). ½–1. Pink. June, July. Greece.
„ *sipy'leum* (*Mount* Sipylus). 1. Pink. August. Levant. 1699.
„ *stoloni'ferum* (runner-bearing). See O. VULGARE.
„ *Tournefo'rtii* (Tournefort's). 1. Pink. August. Grecian Archipelago. 1788.
„ *vulga're* (common). 2. Pink. August. Britain. "Common Marjoram," or "Wild Marjoram."
„ „ *flo're a'lbo* (white-flowered). 1. White. June. Britain.
„ „ *hu'mile* (dwarf). 1. Purple. June. Asia. 1818.
„ „ *megasta'chyum* (long-spiked). 1–2. Spikes oblong. Bracts dark purple. England.
„ „ *prisma'ticum* (prism-shaped). White. July. Mediterranean.
„ „ *vi'rens* (green). 1. Purple. June. Portugal.

ORITHALI'A. See AGALMYLA.

ORITHYI'A OXYPE'TALA. See TULIPA UNIFLORA.

ORI'XA JAPO'NICA. See CELASTRUS ORIXA.

ORMOCA'RPUM. (From *ormos*, a necklace, and *karpos*, a fruit; in allusion to the beaded character of the pods. Nat. ord. Leguminosæ.)

Stove shrub. Cuttings of young shoots getting firm at the base, in sand, in a close case. Fibrous loam, peat, and sand.

O. coronilloi'des (Coronilla-like). See O. SENNOIDES.
„ *sennoi'des* (Senna-like). 3. White or pale yellow. May. Asia and Trop. Africa.

ORMO'SIA. Bead-tree. (From *ormos*, a necklace; referring to the seeds of *O. cocci'nea*, which are scarlet, with a dark spot, which are strung for necklaces. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Sophora.)

Stove evergreen trees, blue-flowered. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in May; sandy, fibrous peat, and a little loam. Winter temp., 48° to 55°; summer, 60° to 85°.

O. cocci'nea (scarlet-*seeded*). 10. July. Guiana. 1823.
„ *dasyca'rpa* (thick-fruited). 10. June. W. Ind. 1793.

ORNITHA'RIUM STRIA'TULUM. See SARCOCHILUS TERES.

ORNITHI'DIUM. (From *ornis*, *ornithos*, a bird, and *eidos*, like. Nat. ord. Orchidaceæ.)

Stove epiphytical orchids, with small flowers of no great beauty, though interesting. Division at the commencement of growth. Fibre of peat, sphagnum, and crocks in baskets.

O. a'lbum (white). See CAMARIDIUM OCHROLEUCUM.
„ *bi'color* (two-coloured). ½–1. Bright yellow; lip with crimson blotch. Colombia. 1909.
„ *cocci'neum* (scarlet). ½–1. Deep red. June. W. Ind. 1790.
„ *confe'rtum* (crowded). ½. W. Ind.
„ *de'nsum* (dense). ½. White, pale purple. Mexico. 1836.
„ *fra'grans* (fragrant). Whitish, suffused purple, fragrant. 1894.
„ *parvifo'rum* (small-flowered). ½. Venezuela.
„ *na'num* (dwarf). ½. Yellowish, small. W. Ind. 1894.
„ *ochra'ceum* (ochre). Ochraceous, with a few purple spots. Colombia. 1887.
„ *Sophroni'tis* (Sophronitis). ½. Scarlet. Colombia.
„ *struma'tum* (tubered). White. Costa Rica. 1874.

ORNITHOCE'PHALUS. (From *ornis*, *ornithos*, a bird, and *kephale*, a head; the column, anther, and rostellum resembling a bird's head. Nat. ord. Orchidaceæ.)

Stove epiphytical orchids. Divisions at the commencement of growth. Peat-fibre, sphagnum, and crocks in small baskets.

O. grandiflo'rus (large-flowered). ½. White, green. Brazil. 1882.
„ *multiflo'rus* (many-flowered). ½. White; crest bright green. Brazil. 1901.
„ *Obero'nia* (Oberonia). ½. Yellow, white. Trinidad. 1869.

ORNITHOCHI'LUS. (From *ornis*, *ornithos*, a bird, and *cheilos*, a lip; the lip being like the tongue of a bird. Nat. ord. Orchidaceæ.)

Stove epiphytical orchid. Divisions in spring. Peat-fibre, sphagnum, and crocks in small baskets.

O. fu'scus (dusky). Dusky-yellow, reddish-purple. Burma. 1865.

ORNITHO'GALUM. Star of Bethlehem. (From *ornis*, a bird, and *gala*, milk. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Pretty bulbous plants, white-flowered, where not otherwise specified. Offsets; sandy loam and a little leaf-mould for the hardy kinds; a little peat added for those that require a cold pit in winter. If the latter are planted out in a dry border, the border must be protected from wet and frost during winter, or the bulbs taken up, and kept in drawers or bags where no frost will reach them.

HARDY BULBS.

O. arcua'tum (arched). White. Caucasus.
„ *armeni'acum* (Armenian). 1. White, green. Asia Minor. 1879.
O. Bertolo'nii (Bertoloni's). See O. EXSCAPUM.
„ *bouchea'num* (Bouchean). See O. NUTANS BOUCHEANUM.
„ *brachy'stachys* (short-spiked). March. Dahuria. 1821.
„ *bulbi'ferum* (bulb-bearing). See GAGEA BULBIFERA.
„ *como'sum* (tufted). ½. July. Austria. 1596.
„ *conci'nnum* (neat). See O. UNIFOLIUM.
„ *cuspida'tum* (short-pointed). ½. Greenish-white. March. Mesopotamia. 1843.
„ *divarica'tum* (spreading). See CHLOROGALUM POMERIDIANUM.
„ *dive'rgens* (diverging). White. Europe.
„ *exsca'pum* (stemless). ½. May. Italy. 1824.
„ *fimbria'tum* (fringed). ½. February. Asia Minor. 1820.
„ *glaucophy'llum* (sea-green-leaved). White. Asia Minor. 1875.
„ *Gusso'nii* (Gusson's). See O. TENUIFOLIUM.
„ *Haussknе'chtii* (Haussknecht's). ½. White, green. Asia Minor. 1897.
„ *horte'nse* (garden). See O. UMBELLATUM.
„ *la'cteum* (milky) of Vill. See O. NARBONENSE.
„ *lanceola'tum* (lance-shaped). White. Syria.
„ „ *oliga'ntha* (few-flowered). Flowers few.
„ *latifo'lium* (broad-leaved). 3. White. June. Egypt, &c. 1629.
„ *margina'tum* (*white*-edged). See O. CUSPIDATUM.
„ *monta'num* (mountain). ½. May. Italy. 1824.
„ *na'num* (dwarf). ½. White, green on the back. March. Greece and Asia Minor. 1843.
„ *narbone'nse* (Narbonne). 1½. July. S. Europe. 1810.
„ „ *pyramida'le* (pyramidal). 2–3. White, green. June. Spain. 1752.
„ *nu'tans* (nodding). ½. June. Britain.
„ „ *bouchea'num* (Bouchean).
„ *oligophy'llum* (few-leaved). ½. White, green. Greece, Asia Minor, &c.
„ *orthophy'llum* (straight-leaved). White, green. Italy.
„ *pa'tulum* (spreading). See O. MONTANUM.
„ *pauciflo'rum* (few-flowered). See O. EXSCAPUM.
„ *pyramida'le* (pyramidal). See O. NARBONENSE PYRAMIDALE.
„ *pyrena'icum* (Pyrenean). 2. Green. June. England. "Bath Asparagus."
„ „ *flave'scens* (yellowish). Pale yellow. July. Hungary. 1823.
„ *refra'ctum* (broken-back). See O. DIVERGENS.
„ *rœgneria'num* (Rœgnerian). See O. FIMBRIATUM.
„ *soro'rium* (sisterly). White. Cilicia. 1875.
„ *squamo'sum* (scaly). See SCILLA LILIO-HYACINTHUS.
„ *Squi'lla* (Squilla). See URGINEA SCILLA.
„ *stachyoi'des* (Stachys-like). See O. NARBONENSE.
„ *sulfu'reum* (sulphur). See O. PYRENAICUM FLAVESCENS.
„ *tenuifo'lium* (slender-leaved). 1. White. April. S. Europe. &c. 1819.
„ *tri'gynum* (three-styled). See O. NARBONENSE.
„ *umbella'tum* (umbelled). 1. May. England.
„ „ *Leichtli'nii* (Leichtlin's).
„ *unifo'lium* (one-leaved). ½. Green. June. Spain and Portugal. 1797.

GREENHOUSE BULBS.

O. acumina'tum (long-pointed). See O. ECKLONI ACUMINATUM.
„ *albovi'rens* (whitish-green). 1–1½. Dull white, with green rib on back. Natal. 1878.
„ *allia'ceum* (onion-like). ½. September. Chili. 1821.
„ *ano'malum* (anomalous). See DRIMIA ANOMALA.
„ *apertiflo'rum* (open-flowered). 1½. Greenish-white. Orient. 1889.
„ *ara'bicum* (Arabian). 1½. May. Egypt. 1629.
„ *auranti'acum* (orange). ½. Bright orange-yellow. S. Africa. 1878.
„ *au'reum* (golden). See O. THYRSOIDES AUREUM.
„ *barba'tum* (bearded). 1. June. S. Africa. 1795.
„ *Be'rgii* (Bergius). White, green. March. S. Africa. 1816.
„ *bifio'rum* (twin-flowered). 1½. April. Peru and Chili. 1831.
„ *bifo'lium* (two-leaved). See O. BIFLORUM.
„ *calcara'tum* (spurred). 1. White, green on back. September. S. Africa. 1874.
„ *capita'tum* (headed). White, purple. S. Africa. 1863.
„ *cauda'tum* (tailed). 3. White, green. May. S. Africa. 1774.

O. chlora'nthum (green-flowered). 1. Dull green. S. Africa. 1875.
„ *chloroleu'cum* (greenish-white). See O. BIFLORUM.
„ *ciliа'tum* (hair-fringed). See URGINEA CILIATA.
„ *coarcta'tum* (compressed-*flowered*). 1½. White, green. June. S. Africa. 1804.
„ *co'nicum* (conical). See O. COARCTATUM.
„ *corymbo'sum* (corymbed). See O. ARABICUM.
„ *crenula'tum* (scolloped). ½. April. S. Africa. 1816.
„ *Ecklo'ni* (Ecklon's). 2. White, green on back. Trop. and S. Africa.
„ „ *acumina'tum* (long-pointed). 2. White, green on back. Algoa Bay. 1862.
„ *ela'tum* (tall). 3. March. Egypt. 1804.
„ *flavi'ssimum* (yellowest). See O. THYRSOIDES.
„ *fusca'tum* (dull). ½. Grey. June. S. Africa. 1820.
„ *geminiflo'rum* (twin-flowered). See O. BIFLORUM.
„ *gra'cile* (slender). See O. LACTEUM.
„ *grami'neum* (grassy). See NOTHOSCORDUM STRIATUM STRIATELLUM.
„ *graminifo'lium* (grass-leaved). ¾. White. July. S. Africa.
„ *hi'spidum* (bristly). ½. June. S. Africa. 1824.
„ *humifu'sum* (spread-on-ground). ½. White, green on back. S. Africa. 1874.
„ *ixioi'des* (Ixia-like). See BRODIÆA IXIOIDES.
„ *juncifo'lium* (rush-leaved) of Jacquin. ¾. July. S. Africa. 1794.
„ *juncifo'lium* (rush-leaved) of Ker-Gawler. See O. GRAMINIFOLIUM.
„ *la'cteum* (milk-white) of Jacquin. 1. June. S. Africa. 1796.
„ *longebracte'atum* (long-bracted). 2. May. S. Africa. 1817. "Onion Plant" of windows.
„ „ *variega'tum* (variegated). Greenish. Leaves variegated.
„ *macula'tum* (spotted). ½. May. S. Africa. 1823.
„ *Melle'ri* (Meller's). See ALBUCA MELLERI.
„ *minia'tum* (red-stained). See O. THYRSOIDES.
„ *natale'nse* (Natal). ½. White. Natal, at altitude of 6800 feet. 1893.
„ *ni'veum* (snowy). ½. May. S. Africa. 1774.
„ *nota'tum* (*brown*-marked). See O. MACULATUM.
„ *odora'tum* (sweet-scented). See O. SUAVEOLENS.
„ *ova'tum* (egg-shaped). 1. May. S. Africa. 1824.
„ *Paterfami'lias* (father-of-family). White. S. France.
„ *pilo'sum* (shaggy). 1. May. S. Africa. 1826.
„ *polyphy'llum* (many-leaved). See O. TUBEROSUM.
„ *prasi'num* (leek-green). Leek-green. S. Africa.
„ *revolu'tum* (rolled-backwards). 1. White; centre olive-brown. March. S. Africa.
„ „ *ma'jor* (larger). Flowers larger. S. Africa.
„ *rupe'stre* (rock). ½. May. S. Africa. 1795.
„ *Saunde'rsiæ* (Mrs. Saunders's). 3. White, tinted green on back. S. Africa. 1891.
„ *schlechteria'num* (Schlechterian). S. Africa.
„ *scilloi'des* (Scilla-like). 1. White. S. Africa.
„ *secu'ndum* (side-*flowering*). See URGINEA SECUNDA.
„ *Squi'lla* (squill-like). See URGINEA SCILLA.
„ *Sternbe'rgii* (Sternberg's). See GAGEA MINIMA.
„ *suave'olens* (sweet-scented). ½. June. S. Africa. 1788.
„ *subula'tum* (awl-shaped). ½. White, green on back. September. S. Africa. 1874.
„ *tene'llum* (delicate). ½. June. S. Africa. 1818.
„ *thyrsoi'des* (thyrse-like). 1½. Yellow. June. S. Africa. 1757.
„ „ *au'reum* (golden). 1. Golden-yellow. June. S. Africa. 1790.
„ „ *flave'scens* (yellowish). 1½. Yellow. June. S. Africa. 1800.
„ *tubero'sum* (tuberous). ½. White. June. S. Africa. 1824.
„ *vi'rens* (green). 1–1½. White. June. S. Africa. 1823.
„ *vitta'tum* (striped). ½–1. Yellow, with green ribs. June. S. Africa. 1802.

ORNITHOGLO'SSUM. (From *ornis, ornithos*, a bird, and *glossa*, a tongue; the petals being shaped like a bird's tongue. Nat. ord. Liliaceæ.)

Greenhouse bulbs. Seeds; offsets. Loam, leaf-mould, and sand.

O. glau'cum (sea-green). ½. Green, edged brownish-purple. December. S. Africa. 1824.
„ „ *undula'tum* (wavy). 1. Green and purple edge. July. S. Africa. 1814.
„ „ *vi'ride* (green) ½. Green. S. Africa.

ORNITHO'PTERIS. See PTERIS.

ORNI'THOPUS. Bird's-foot. (From *ornis*, a bird, and *pous*, a foot; referring to the claw-like seed-pods. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Low-growing, yellow, pea-blossomed, hardy annuals. Seed, sown in the garden-border in March.

O. du'rus (hard). ½. July. Portugal. 1816.
„ *ebractea'tus* (bractless). ½. July. S. Europe. 1700.
„ *perpusi'llus* (very-small). ½. White, red. June. Britain.
„ „ *nodo'sus* (very-small-knotted). ½. White, red. May. France.
„ *repa'ndus* (wavy-*leaved*). See CORONILLA REPANDA.
„ *sati'vus* (cultivated). ½. June. Spain. "Serradella."
„ *scorpioi'des* (scorpion-like). See CORONILLA SCORPIOIDES.
„ *tetraphy'llus* (four-leaved). See ZORNIA BRACTEATA.

ORNITHOXA'NTHUM. See GAGEA.

ORNI'TROPHE. See SCHMIDELIA.

O'RNUS. Flowering Ash. (From *oreinos*, ancient name of the Ash; applied on account of the resemblance and affinity. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. See FRAXINUS.)

O. america'na (American). See FRAXINUS ORNUS.
„ *europæ'a* (European). See FRAXINUS ORNUS.
„ *floribu'nda* (bundle-flowered). See FRAXINUS FLORIBUNDA.
„ *rotundifo'lia* (round-leaved). See FRAXINUS ROTUNDIFOLIA.
„ *stria'ta* (channelled). See FRAXINUS STRIGATA.

O'ROBUS. Bitter Vetch. (From *oro*, to excite, and *bous*, an ox; nourishing food. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. See LATHYRUS.)

O. a'lbus (white-*flowered*). See LATHYRUS PANNONICUS.
„ *alpe'stris* (rock). See LATHYRUS ALPESTRIS.
„ *america'nus* (American). See ABRUS PRECATORIUS.
„ *angustifo'lius* (narrow-leaved). See LATHYRUS ANGUSTIFOLIUS.
„ *a'tro-purpu'reus* (dark purple). See VICIA SICULA.
„ *aura'ntius* (orange). See VICIA AURANTIA.
„ *cane'scens* (hoary). See LATHYRUS FILIFORMIS.
„ *cocci'neus* (scarlet). See LATHYRUS SPHÆRICUS.
„ „ *uni'jugus* (paired). See LATHYRUS SPHÆRICUS UNIJUGUS.
„ *divarica'tus* (spreading). See LATHYRUS MONTANUS.
„ *ere'ctus* (erect). See VICIA TRUNCATULA.
„ *filifo'rmis* (thread-formed). See LATHYRUS FILIFORMIS.
„ *Fische'ri* (Fischer's). See VICIA SICULA.
„ *formo'sus* (beautiful). See PISUM FORMOSUM.
„ *hirsu'tus* (hairy). See LATHYRUS HIRSUTUS.
„ *hu'milis* (humble). See LATHYRUS ALTAICUS.
„ *Jorda'ni* (Jordan's). See LATHYRUS JORDANI.
„ *la'cteus* (milk-white). See LATHYRUS PANNONICUS.
„ *læviga'tus* (smooth). See LATHYRUS MONTANUS.
„ *lathyroi'des* (Lathyrus-like). See VICIA UNIJUGA.
„ *laxiflo'rus* (loose-flowered). See LATHYRUS HIRSUTUS.
„ *longifo'lius* (long-leaved). See ASTRAGALUS PICTUS.
„ *lu'teus* (yellow). See LATHYRUS LUTEUS.
„ *macrorrhi'zus* (large-rooted). See LATHYRUS MONTANUS.
„ *multiflo'rus* (many-flowered). See LATHYRUS VENOSUS.
„ *ni'ger* (black). See LATHYRUS NIGER.
„ *ochroleu'cus* (yellowish-white). See LATHYRUS OCHROLEUCUS.
„ *palle'scens* (palish). See LATHYRUS FILIFORMIS.
„ *pauciflo'rus* (few-flowered). See LATHYRUS PAUCIFLORUS.
„ *pisifo'rmis* (pea-formed). See LATHYRUS PISIFORMIS.
„ *pyrena'icus* (Pyrenean). See LATHYRUS MONTANUS.
„ *saxa'tilis* (rock). See LATHYRUS CILIATUS.
„ *sessilifo'lius* (stalkless-leaved). See LATHYRUS SESSILIFOLIUS.
„ *stipula'ceus* (stipuled). See LATHYRUS VENOSUS.
„ *sylva'ticus* (wood). See VICIA OROBUS.
„ *tenuifo'lius* (fine-leaved). See LATHYRUS MONTANUS TENUIFOLIUS.
„ *Tournefo'rtii* (Tournefort's). See LATHYRUS MONTANUS (?).

O. tubero'sus (tuberous). See LATHYRUS MONTANUS.
„ *variega'tus* (variegated). See LATHYRUS VARIEGATUS.
„ *va'rius* (various). See LATHYRUS PANNONICUS.
„ *vene'tus* (Venetian). See LATHYRUS VENETUS.
„ *veno'sus* (veiny). See LATHYRUS VENOSUS.
„ *ve'rnus* (spring). See LATHYRUS VERNUS.
„ „ *ca'rneus* (flesh-coloured). See LATHYRUS VERNUS CARNEUS.
„ *vicioi'des* (vetch-like). See VICIA OROBOIDES.

ORO'NTIUM. (An old Greek name for a plant that grew on the banks of the Orontes. Nat. ord. Araceæ.)
Perennial, aquatic or bog plant. Divisions. Good loamy soil and leaf-mould.
O. aqua'ticum (aquatic). Spathe pale green; spadix yellow. May, June. N. Amer. "Golden Club."
„ *japo'nicum* (Japanese). See ROHDEA JAPONICA.

OROTHA'MNUS ZE'YHERI. See MIMETES ZEYHERI.

ORO'XYLUM. (From *oros*, a mountain, and *xulon*, wood. Nat. ord. Bignoniaceæ.)
Stove and greenhouse trees with handsome foliage and flowers. Seeds; cuttings in sand in a close case, with bottom-heat for *O. i'ndicum*. Fibrous loam, leaf-mould, and sand.
O. fla'vum (yellow). 20–50. Yellow, in panicles. China. 1905.
„ *i'ndicum* (Indian). 40. White, purple. Trop. Asia. 1775.

ORPHANIDE'SIA. (A commemorative name, *Orphanides*. Nat. ord. Ericaceæ. Allied to Epigæa.)
A dwarf, prostrate leafy, hardy shrub. Layers. Loam and peat.
O. gaultherioi'des (Gaultheria-like). White. Asia Minor. 1891.

O'RPHIUM. (From *Orpheus*, of Greek mythology. Nat. ord. Gentianaceæ.)
A dwarf, evergreen greenhouse shrub. Cuttings in sand, under a bell-glass, with gentle heat. Loam, peat, and sand.
O. frute'scens (shrubby). 1–2. Red. S. Africa. 1756.

ORTGIE'SIA. (*Ortgies*, a commemorative name. Nat. ord. Bromeliaceæ.)
Stove herbs, with stiff, or rigid leaves in vasiform tufts. Seeds; suckers. Fibrous loam, peat, both turfy, some nodules of charcoal, and sand.
O. legrellia'na (Legrellian). ½. Red, purple. S. Amer. 1865.
„ *tillandsioi'des* (Tillandsia-like). ½. Red. Brazil and Uruguay. 1860.

ORTHOCA'RPUS. (From *orthos*, straight, and *karpos*, a fruit. Nat. ord. Scrophulariaceæ.)
Half-hardy annuals. Seeds. Sow in a frame in light soil and plant out in May.
O. eria'nthus (woolly). 1. Cream. June. N. Amer.
„ „ *ro'seus* (rosy). 1. Purple.
„ *purpura'scens* (purple). ½. Bracts, calyx and corolla purple. California.

ORTHO'CERAS. (From *orthos*, straight, and *keras*, a horn. Nat. ord. Orchidaceæ.)
Greenhouse terrestrial orchid. Fibrous loam, peat, and sand.
O. Sola'ndri (Solander's). See O. STRICTUM.
„ *stri'ctum* (upright). 1–2. Greenish-yellow. Australia and New Zealand.

ORTHOCHI'LUS. See EULOPHIA.

ORTHOPO'GON HIRTE'LLUS and **O. LOLIA'CEUS.** See OPLISMENUS COMPOSITUS.

ORTHO'SIPHON. (From *orthos*, straight, and *siphon*, a tube; referring to the tube of the flower. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Ocimum.)
Division of herbaceous, or cuttings of the young shoots, when growth is commencing; cuttings of half-ripened shoots of the evergreens; sandy loam and fibrous peat; common stove and greenhouse treatment.
O. a'sperus (rough). See COLEUS BARBATUS.
„ *incu'rvus* (bent-in). 1. Pale scarlet. May. Himalaya. 1839. Stove evergreen.
O. rubicu'ndus (ruddy). Purple. June. India and Burma. 1826. Greenhouse evergreen.
„ „ *virga'tus* (twiggy). Blue. June. India. 1826. Greenhouse evergreen.
„ *stami'neus* (long-stamened). 2. Lilac. July. E. Ind.; Malaya. 1869.

ORTHOSTE'MMA. See PENTAS.

ORTHOTÆ'NIA TURIONA'NA. See RETINIA TURIONANA.

ORTHROSA'NTHUS. (From *orthros*, morning, and *anthos*, a flower; flowers expand early in the day. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 3-*Triandria*. Allied to Sisyrinchium.)
Greenhouse herbaceous perennials. Seeds, and division of the plant in spring; sandy loam and leaf-mould; a cold pit in winter, to exclude the frost.
O. chimborace'nsis (Chimborazo). 1–1½. Peruvian Andes. 1876.
„ *multiflo'rus* (many-flowered). 1. Blue. June. Australia. 1820.

ORVA'LA LAMIOI'DES. See LAMIUM ORVALA.

ORY'ZA. Rice. (From the Arabic *ar-roz*, and Greek *oruza*. Nat. ord. Gramineæ.)
Stove grass from swampy parts of Tropical Asia. Seeds. Fibrous loam, leaf-mould, and sand. It thrives best if the base of the pot dips into a tank of warm water. It is extensively cultivated in warm countries for the grain, which is often the principal food of the natives.
O. sati'va (cultivated). 2–3. Green. September. Trop Asia.

OSAGE APPLE. *Maclu'ra.*

OSAGE ORANGE. See MACLURA AURANTIACA.

OSBE'CKIA. (Named after *P. Osbeck*, a Swedish naturalist. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Melastoma.)
Cuttings of side, firm, stubby shoots in sand, under a bell-glass, and in bottom-heat; sandy loam, fibrous peat, a little dried cow-dung, and charcoal. Winter temp., 48° to 58°; summer, 60° to 85°.

STOVE DECIDUOUS SHRUBS.

O. cane'scens (hoary). See DISSOTIS INCANA.
„ *glomera'ta* (crowded). See PTEROLEPIS GLOMERATA.
„ *nepale'nsis* (Nepaulese). 1½. Purple. June. Himalaya; Burma. 1821.
„ „ *albiflo'ra* (Nepaul-white-flowered). 1½. White. August. Nepaul. 1829.

STOVE EVERGREENS.

O. angustifo'lia (narrow-leaved). See O. CHINENSIS.
„ *a'spera* (rough). 2. Purple. July. India.
„ *chine'nsis* (Chinese). 2. Purple. July. China. 1818.
„ *cupula'ris* (cup-shaped). 2. Red. India.
„ *erythroce'phala* (red-headed). See O. CUPULARIS.
„ *glomera'ta albiflo'ra* (crowded-white-flowered). See PTEROLEPIS GLOMERATA ALBIFLORA.
„ *octa'ndra* (eight-stamened). 1. Rose. April. Ceylon. 1815.
„ *parvifo'lia* (small-leaved). 1–2. Rose. July, August. Ceylon.
„ *rostra'ta* (beaked). 2–3. Pink or mauve-purple. May. Himalaya. 1825.
„ *rubicu'nda* (red). 3. Purple. Ceylon. 1865.
„ *stella'ta* (starred). 1. Pink. July. Nepaul. 1820.
„ *ternifo'lia* (three-leafleted). See O. ROSTRATA.
„ *umlaasia'na* (Umlaasian). See DISSOTIS INCANA.
„ *wightia'na* (Wightian). 2. Purple. E. Ind. 1863.
„ *zeyla'nica* (Ceylon). 2. Yellow. August. Ceylon. 1799.

OSIER. Any species of Willow, used in basket-making, *Salix viminalis* being the common osier.

OSMA'NTHUS. (From *osme*, smell, and *anthos*, a flower; the flowers being fragrant, particularly those of *O. fragrans*. Nat. ord. Oleaceæ.)
Hardy, evergreen shrubs. Layers in July. Ordinary soil.
O. america'nus (American). 4–6. White. June. N. Amer. 1758.

O. Aquifo'lium (holly-leaved). 4–6. White. Japan. 1877.
„ „ *heterophy'llus variega'tus* (various-leaved-variegated).
„ „ *ilicifo'lius* (holly-leaved). A dwarfer, more compact bush, with spiny leaves.
„ „ *ilicifo'lius latifo'lius* (broad-leaved).
„ „ *ilicifo'lius latifo'lius variega'tus* (variegated).
„ „ *ilicifo'lius purpu'reus* (purple-leaved).
„ „ *ilicifo'lius variega'tus* (variegated).
„ „ *myrtifo'lius* (myrtle-leaved). Leaves small, spineless.
„ „ *rotundifo'lius* (round-leaved).
„ *Delava'yi* (Delavay's). Large pure white. February, March. Yunnan, China. 1904.
„ *fra'grans* (fragrant). 4–10. Pale yellow or white. Autumn. China and Japan. 1771.

OSMI'TES. (From *osme*, perfume; smells like camphor. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to Relhania.)
Greenhouse, white-flowered evergreens, from South Africa. Cuttings of half-ripened shoots in sand, under a bell-glass, in April or May, and without bottom-heat. Winter temp., 40° to 45°.
O. Bellidia'strum (Bellidiastrum). 1. June. 1816.
„ *camphori'na* (camphor-scented). 1½. May. 1794.
„ *denta'ta* (toothed). 1½. May. 1820.

OSMO'DIUM. See ONOSMODIUM.

OSMU'NDA. (The name of a Celtic deity. Others say *Osmunder*, one of the names of the god Thor. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Hardy brown-spored Ferns, except *O. javanica*. See FERNS.
O. cinnamo'mea (cinnamon). 2. June. N. Amer. 1772.
„ *claytonia'na* (Clayton's). 2. August. N. Amer. 1772.
„ *gra'cilis* (slender). See O. REGALIS GRACILIS.
„ *hu'milis* (humble). June. N. Amer. 1823.
„ *interru'pta* (interrupted). See O. CLAYTONIANA.
„ *japo'nica* (Japanese). See O. REGALIS JAPONICA.
„ *java'nica* (Javanese). 1½–4. June. Kamtschatka to Java. 1882.
„ *palu'stris* (marsh). See O. REGALIS PALUSTRIS.
„ *preslia'na* (Presl's). See O. JAVANICA.
„ *rega'lis* (royal). 2–6. July. N. and S. temperate regions (Britain).
„ „ *corymbi'fera* (corymb-bearing). Frond much divided at the apex. 1882.
„ „ *crista'ta* (crested). Fronds slightly crested.
„ „ *gra'cilis* (graceful). 1. June. N. Amer. 1827.
„ „ *japo'nica* (Japanese). 1. Fertile and barren fronds dissimilar. Japan and Himalaya.
„ „ *palu'stris* (marsh). 2½. Young fronds purplish, slender. 1831.
„ „ *palu'stris crispa'to-conge'sta* (crisped-crowded). ½. Fronds dense, crested, bronzy-green.
„ „ *palu'stris Ma'yi* (May's). 1–1½. Pinnæ crested; pinnules crisped, with creamy lines. 1906.
„ „ *purpura'scens* (purple).
„ *specia'bilis* (showy). See O. REGALIS.
„ *Vache'llii* (Vachell's). See O. JAVANICA.

OSSÆ'A. (Named after *Ossa*, curator of the Havannah Botanic Garden. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
Stove evergreen shrubs. Cuttings of young, side, stubby shoots, or the points of main ones, when a little firm, in sandy soil, under a bell-glass, and in heat; sandy peat and loam; common plant-stove treatment.
O. fascicula'ris (bundled). See HENRIETELLA FASCICULARIS.
„ *hirsu'ta* (hairy). 6. White. May. Jamaica. 1823.
„ *microphy'lla* (small-leaved). 2. White. May. Jamaica. 1820.
„ *purpura'scens* (purplish). See MECRANIUM PURPURASCENS.

OSTEOCA'RPUS. (From *osteon*, a bone, or stone of certain fruits, and *karpos*, a fruit; in allusion to the hard fruit. Nat. ord. Solanaceæ.)
A shrubby greenhouse plant. Seeds; cuttings of wood getting firm in sand in gentle heat. Loam, leaf-mould, and sand.
O. rostra'tus (beaked). 2. Blue. July. Chili.

OSTEOME'LES. (From *osteon*, bone, and *melon*, apple; the fruit. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*. Allied to Amelanchier.)
Half-hardy evergreen trees, requiring the shelter of a wall. For culture, see MEDLAR.
O. anthyllidifo'lia (Anthyllis-leaved). 4–6. White, fragrant, like hawthorn. Pacific Islands; China. 1893.
„ *ferrugi'nea* (rusty). July. Ecuador. 1847.
„ *glabra'ta* (smooth). White. Colombia.
„ *obtusifo'lia* (obtuse-leaved). See O. GLABRATA.

OSTEOSPE'RMUM. (From *osteon*, a bone, and *sperma*, a seed. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria*. Allied to Calendula.)
Greenhouse, yellow-flowered evergreens, from South Africa. Cuttings of small, half-ripened shoots in sand, under a bell-glass, in April or May; sandy loam and a little fibrous peat. Winter temp., 40° to 45°.
O. cæru'leum (blue-*flowered*). See GARULEUM VISCOSUM.
„ *calendula'ceum* (marigold-like). 2. July.
„ *corymbo'sum* (corymbed). 3. August. 1822.
„ *ilicifo'lium* (holly-leaved). 4. July. 1816.
„ *inca'num* (hoary). 3. August. 1815.
„ *monili'ferum* (necklace-bearing). 3. July. 1714.

OSTRICH FERN. See ONOCLEA GERMANICA.

OSTROW'SKIA. (Commemorative of *Ostrowsky*, a Russian botanist. Nat. ord. Campanulaceæ.)
Hardy perennial herb, requiring a cool situation for its roots, or an eastern aspect. Seeds; divisions in spring. Well-drained soil.
O. magni'fica (magnificent). 2–4. Pale lilac blue. Central Asia. 1887.

O'STRYA. Hop Hornbeam. (From *ostrua*, a scale; scaly catkins. Nat. ord. *Mastworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 9-*Polyandria*. Allied to the Hornbeam.)
Hardy deciduous trees. Seeds, which, if sown in the spring, the season after being gathered in the autumn, and kept in a rot-heap during winter, will make their appearance the year following; layers, cuttings, and grafting on the common Hornbeam; good, deep, moist soil.
O. carpinifo'lia (Carpinus-leaved). 20. May. Europe; Orient. 1724. "Hop Hornbeam."
„ *japo'nica* (Japanese). 10–15. May. Japan. 1893.
„ *virgi'nica* (Virginian). 20. April. N. Amer. 1622. "Ironwood."
„ *vulga'ris* (common). See O. CARPINIFOLIA.

OSTRYO'PSIS. (From *Ostrya*, and *opsis*, resemblance. Nat. ord. Cupuliferæ.)
Hardy tree, requiring treatment similar to that given Ostrya.
O. davidia'na (Davidian). 6. May. Eastern Asia.

OSWEGO TEA. *Mona'rda di'dyma.*

OSY'RIS. Poet's Cassia. (From *ozos*, a branch; referring to the numerous pliant branches. Nat. ord. *Sandalworts* [Santalaceæ]. Linn. 22-*Diœcia*, 3-*Triandria*. Allied to Santalum.)
Greenhouse evergreen shrub. Cuttings of ripened shoots under a hand-light in spring; sandy loam; requires the protection of a cold pit in winter, or a protective wall.
O. abyssi'nica (Abyssinian). 3. White. Abyssinia.
„ *a'lba* (white). 3. White. S. Europe. 1739.
„ *compre'ssa* (compressed). 3–4. S. Africa.

OTACA'NTHUS. (From *ote*, occasionally, and *acantha*, a thorn. Nat. ord. Acanthaceæ.)
Stove shrub. Cuttings in sand in a propagating case. Fibrous loam, leaf-mould, and sand.
O. cæru'leus (blue). Violet, blue. Brazil. 1862.

OTAHEITE CHESTNUT. *Inoca'rpus edu'lis.*

OTAHEITE MYRTLE. *Securi'nega ni'tida.*

OTAHEITE ORANGE. *Ci'trus Aura'ntium japo'nica.*

OTA'NDRA. See GEODO'RUM.

OTHE'RA JAPO'NICA, of Thunberg. See ILEX OTHERA.

OTHE'RA JAPO'NICA, of gardens. See I'LEX INTEGRA.

OTHO'NNA. Ragwort. (From *othone*, linen; referring to the soft, downy clothing of the leaves. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria*.)

Greenhouse, yellow-flowered plants, from South Africa, except where otherwise mentioned. Seeds in a mild hotbed, in spring; annuals may be hardened off afterwards; perennials, by division of the plant; tuberous-rooted, by dividing them; shrubs, by cuttings of half-ripened shoots in sand, under a glass, in May; sandy loam, and a little fibrous peat. Winter temp., 40° to 48°.

ANNUAL.

O. Tage'tes (marigold-*leaved*). See GAMOLEPIS ANNUA.

HERBACEOUS.

O. crassifo'lia (thick-leaved). Yellow. 1870. A pendent basket plant.
„ *linifo'lia* (flax-leaved). 2. July. 1824.
„ *pinna'ta* (leafleted). 3. May. 1759.
„ *pinnati'fida* (leaflet-like). See CINERARIA OTHONNOIDES.

TUBEROUS-ROOTED.

O. amplexicau'lis (stem-clasping). See O. AMPLEXIFOLIA.
„ *amplexifo'lia* (clasping-leaved). 1. Yellow. S. Africa.
„ *bulbo'sa* (bulbous). 2. May. 1774.
„ *filicau'lis* (thread-stemmed). 1½. April. 1791.
„ *lubero'sa* (tuberous). August. 1842.

EVERGREEN SHRUBS.

O. abrotanifo'lia (southernwood-leaved). See EURYOPS ABROTANIFOLIUS.
„ *arbore'scens* (tree-like). 2. July. 1723.
„ *Athana'siæ* (Athanasia-like). See EURYOPS ATHANASIÆ.
„ *carno'sa* (fleshy). ¾. Yellow. 1867.
„ *cheirifo'lia* (wallflower-leaved). See OTHONNOPSIS CHEIRIFOLIA.
„ *coronopifo'lia* (buckhorn-leaved). 2. August. 1731.
„ *cyli'ndrica* (cylindrical). 1. Yellow.
„ *denticula'ta* (tooth-*leaved*). 2. June. 1774.
„ *digita'ta* (finger-*leaved*). 1½. July. 1824.
„ *flabellifo'lia* (fan-leaved). See EURYOPS VIRGINEUS.
„ *frute'scens* (shrubby). 2–3. Yellow. August, September. S. Africa.
„ *furca'ta* (forked). Light yellow. January. Ichaboe, S. Africa. 1845.
„ *heterophy'lla* (various-leaved). 2. May. 1812.
„ *pectina'ta* (comb-like). See EURYOPS PECTINATUS.
„ *perfolia'ta* (leaf-stem-pierced). 1½. June. 1789.
„ *tenuissima* (finest-*leaved*). See EURYOPS TENUISSIMUS.
„ *trine'rvia* (three-nerved). 1–2. Yellow. S. Africa.
„ *tripline'rvia* (triple-nerved). 4–5. Yellow. 1862.
„ *virgi'nea* (virgin-like). See EURYOPS VIRGINEUS.

OTHONNO'PSIS. (From *Othonna*, and *opsis*, resemblance; it resembles some of the species of Othonna. Nat. ord. Compositæ.)

Greenhouse subshrub, but hardy in the southern and more favoured parts of the British Islands. Cuttings in sand under a hand-light in summer. Loam, leaf-mould, and sand; light soil outdoors.

O. cheirifo'lia (wallflower-leaved). 1½. Yellow. July. Algeria. 1752. "Barbary Ragwort."

OTI'DIA. See PELARGONIUM.

OTIORHY'NCHUS. (A genus of weevils, three of which are very destructive in gardens. The Clay-coloured Weevil (*O. picipes*) is the most common, and destroys the foliage, young shoots, and flowers of wall-trees, vines, and raspberries. It is clay-coloured, with darker spots on the wing-cases. The Black Vine Weevil (*O. sulcatus*) is dull black, with furrowed wing-cases. It destroys vines and strawberries. The Red-legged Garden Weevil (*O. tenebricosus*) when newly developed has the wing-cases covered with small patches or spots of silky yellow hairs, but these soon rub off, when it assumes a shining black or reddish-black colour. It attacks the buds, young shoots, and leaves of Peaches, Nectarines, Plums, Apricots, and other fruit-trees. All have short stout beaks, compared with many other hurtful weevils. The eggs are laid in the soil, and the legless white maggots prey on the roots of a great variety of garden plants. Those of *O. picipes* destroy the roots of Maidenhair and other Ferns, Echeverias, Chinese Primulas, and many other garden plants. The maggots of the Red-legged Garden Weevil destroy the roots of Raspberries, Strawberries, Gooseberries, Currants, vegetables, &c. Their habits are nocturnal, and the wing-cases being fixed they cannot fly. When their presence is detected in a house, a white sheet should be laid under the plants or trees infested, and a visit paid at night with a dark lantern. If this is suddenly flashed upon the infested plants the weevils will drop on the sheet. The plants may also be smartly tapped with the same object. The weevils can then be quickly gathered up and destroyed. All unnecessary rubbish should be cleared out of infested houses, and the cracks and crevices of walls cemented to destroy hiding-places. Traps, consisting of pieces of board, slates, and tiles can be laid about the house and examined in the morning to destroy the weevils found hiding there.

OTOCHI'LUS. (From *ous*, *otos*, an ear, and *cheilos*, a lip; the lip having ear-like lobes. Nat. ord. Orchidaceæ.)

Intermediate-house ephytical Orchids. Division when growth commences Peat fibre, sphagnum, potsherds, and some lumps of charcoal.

O. fra'grans (fragrant). See O. PORRECTUS.
„ *fu'scus* (dusky). ½–¾. Dusky-brown; lip deep yellow, rose. August. Himalaya. 1840.
„ *porre'ctus* (porrect). ¾. White. June. Himalaya. 1836.

OTO'PTERA. (From *ous*, an ear, and *pteron*, a wing; referring to an ear-like process on the wing-petals. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. See VIGNA.)

O. Burche'llii (Burchell's). See VIGNA BURCHELLI.

OTOSTE'GIA. (From *ous*, *otos*, an ear, and *stegos*, a covering. Nat. ord. Labiatæ.)

Half-hardy or greenhouse evergreen. Seeds, divisions; cuttings in sand under a hand-light in summer.

O. scario'sa (dry). ¾. Purple. August. Arabia; Abyssinia. 1752.

OTOSTE'MMA LACUNO'SA. See HOYA LACUNOSA.

OTTE'LIA. (The native name in Malabar. Nat. ord. Hydrocharidaceæ.)

Stove aquatic herbs. Seeds, offsets. Fibrous loam, peat, and sand.

O. alismoi'des (Alisma-like). White. Trop. Asia and Australia. 1806.
„ *i'ndica* (Indian). See O. OVALIFOLIA.
„ *ovalifo'lia* (oval-leaved). ¾. White, pale yellow. Summer. Australia. 1883.

OTTER MOTH. (*Hepialus humuli*.) This insect is also known as the Ghost Moth, from the colour of the male, and Ghost Swift, on account of its rapid flight in the evening. The caterpillars eat the roots of Hop and other plants, are cream with brown heads, and 1½ inch long or more. The male is 2 inches in expanse, and the wings are white above, the rest being tawny. The female is 3 inches in expanse; the fore wings are yellow above, with orange, wavy lines, while the hind wings are dusky or tawny. They rest among rank herbage and hedges during the day, and fly by night. The remedy, when plants are infested and drooping is to examine the roots and pick out the large caterpillars. Burdocks, Nettles, and other rank herbage in the neighbourhood should be cleared away, as the moths also feed on such plants.

OUGEI'NIA. (From a place named Ougeine. Nat. ord. Leguminosæ.)

Evergreen stove tree. Cuttings of half-ripe wood in sand in a close case, with bottom-heat. Loam, peat, and sand.

O. dalbergioi'des (Dalbergia-like). White. E. Ind.

OURA'TEA CUSPIDA'TA. See GOMPHIA CUSPIDATA.

OURI'SIA. (From *ouros*, a mountain; natives of mountains. Nat. ord. Scrophulariaceæ.)

Hardy or half-hardy herbs, best in a cold frame. Seeds; divisions in spring. Loam, leaf-mould, and sand.

O. cæspito'sa (tufted). White. New Zealand.
„ *cocci'nea* (scarlet). 1. Scarlet. June. Island of Chiloe. 1862.

O. cockaynia'na (Cockaynian). ½–¾. Pure white. New Zealand. 1910.
„ *macrophy'lla* (large-leaved). ½. White, sometimes streaked purple. New Zealand. 1909.
„ *Pea'rcei* (Pearce's). ½. Crimson, scarlet. Chili. 1863.

OUVIRA'NDRA. (From *ouvirandrano*, the water-yam of the natives. Nat. ord. Naiadaceæ.)

Stove aquatic herbs, with submerged or floating leaves, reduced, as a rule, to the venation and skeleton-like. The common one is known as the Lattice Leaf or Lace-leaved Plant, from this circumstance. Seeds and divisions. Loam and sand. The water should be kept at a temperature of 70° to 75°, and, if a small, dripping current of water is allowed to run constantly into the tank it will serve to keep the leaves clean.

O. berneria'na (Bernerian). 2. Pink. August. Madagascar. 1858.
„ *fenestra'lis* (window-like). 2. White. August. Madagascar. 1855.

OVARY. The central organ or part of a flower, which contains the ovules or young seeds before fertilisation. In the pea this consists of a single leaf, infolded and bearing the seeds on its margins. In the Aquilegia there are five of these ovaries or modified leaves; in the Pansy there are only three, but they are united in one piece, with the ovules on their sides; and in the Lily there are three, with their edges turned inwards and meeting in the centre, forming a three-celled ovary, with the ovules attached to the axis. Thus there are many modifications, which serve as characters for distinguishing natural orders and genera. The ovary becomes the young fruit immediately fertilisation has been effected. The ovary consists of an ordinary leaf or leaves modified for the purpose of bearing ovules and seeds. In double flowers the leaves forming the ovary often revert to an ordinary green leaf, as in the double cherry, or to a petal in the tuberous Begonia.

OVULE. The small structures in young ovaries, and which become the seeds, after fertilisation. It usually consists of two coats, and after fertilisation it contains the embryo, which, in the bean, consists of two seed leaves, the radicle, or primary root, and plumule, or primary stem, with its leaves.

O'XALIS. Wood Sorrel. (From *oxus*, acid; the acid taste of the leaves. Nat. ord. *Oxalids* [Geraniaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)

Natives of South Africa, except where otherwise stated. Hardy annuals, seed in open border, in April, in a shady place; perennials, by division and by seeds; tuberous and bulbous ones, by offsets; the tender ones succeed in a cool temperature in winter, if dry, and frost excluded; shrubby species, by seeds and cuttings in sandy soil, under a bell-glass, and grown in sandy loam and fibrous peat; all the bulbous kinds the least tender should be kept dry in winter, and the shrubby have the greenhouse.

Hardy Annuals.

O. cornicula'ta (small-horned). ½. Yellow. August. Temperate and tropical regions (Britain).
„ „ *atropurpu'rea* (dark-purple). Leaves dark purple.
„ „ *ru'bra* (red). See O. CORNICULATA ATROPURPUREA.
„ *Dille'nii* (Dillenius's). See O. CORNICULATA.
„ *læviga'ta* (smooth). ½. Purple. June. 1818.
„ *microphy'lla* (small-leaved). See O. CORNICULATA.
„ *proli'ferum* (proliferous). See BIOPHYTUM PROLIFERUM.
„ *sensiti'va* (sensitive). See BIOPHYTUM SENSITIVUM.
„ *stri'cta* (erect). ½–1. Yellow. July. N. Amer. (England). 1658.

Hardy Herbaceous.

O. Acetose'lla (Acetosella). ½. White, with purple veins. May and June. N. temperate regions (Britain). "Wood Sorrel."
„ „ *ro'sea* (rosy). ½. Rose. May and June.
„ *Lyo'nii* (Lyon's). See O. CORNICULATA.

Hardy Bulbs.

O. adenophy'lla (gland-leaved). ½. Rosy-purple, crimson. Chili. 1906.
„ *a'lba* (white-*flowered*). ¾. White. May. S. Amer. 1836.
O. america'na (American). See O. ACETOSELLA.
„ *Bowie'i* (Bowie's). See O. PURPURATA.
„ *crena'ta* (notched). 3. Yellow. September. Peru. 1829.
„ *e'legans* (elegant). ½. Purple. July. Peru.
„ *enneaphy'lla* (nine-leaved). ½. White, or tinted pink. June. Falkland Islands. 1876.
„ *hi'rta* (hairy). ¾. Lilac. October. 1787.
„ „ *fu'lgida* (fulgid). ½. Crimson. October. 1820.
„ „ *rosa'cea* (rose). ½. Rose. October. 1793.
„ *loba'ta* (lobed). ½. Yellow. October. Chili. 1823.
„ *orega'na* (Oregon). N.W. Amer.
„ *purpura'ta* (purple). ½. Purple to crimson. August. 1822.
„ *rube'lla* (small-red). See O. HIRTA ROSACEA.
„ *smithia'na* (Smithian). ½–¾. Bluish or lilac. S. Africa.
„ *vespertilio'nis* (bat's). ½. Mexico.
„ *viola'cea* (violet-coloured). ½. Violet. May. N. Amer. 1772.

Greenhouse Herbaceous.

O. alsinoi'des (Alsine-like). Chili.
„ *Andrieu'xii* (Andrieux's). Gardens.
„ *anthelmi'ntica* (anthelmintic). Purple or lilac. Abyssinia. 1893.
„ *arena'ria* (sand). ½. Purple. Chili. 1875.
„ *articula'ta* (jointed). Bright mauve-pink. Argentina. 1870.
„ *bine'rvis* (two-nerved). White. Root tuberous.
„ *bipuncta'ta* (two-spotted). See O. CORYMBOSA.
„ *catherine'nsis* (Santa Catherina). White. Santa Catherina, Brazil. 1887.
„ *corymbo'sa* (corymbose). White. July, August. Mascarene Islands. 1828.
„ „ *martia'na* (Martian). Yellow. July. Brazil. 1829. Stove.
„ *crassicau'lis* (thick-stemmed). Peru and Mexico.
„ *Cummi'ngii* (Cumming's). ½. Golden. September. Chili. 1831.
„ *di'scolor* (two-coloured). Violet, crimson. July. Mexico. 1844.
„ *floribu'nda* (bundle-flowered). 1½. Red. July. S. Amer. 1827.
„ „ *a'lba* (white). 1. White.
„ „ *cærule'scens* (bluish). 1. Pale blue.
„ „ *lilaci'na* (lilac). 1. Lilac.
„ *isope'tala* (equal-petaled). S. Amer. (?).
„ *lasia'ndra* (downy-stamened) of Graham. See O. FLORIBUNDA.
„ *lasia'ndra* (downy-stamened) of Zuccarini. 1½. Pink. May. Mexico. 1840.
„ *latifo'lia* (broad-leaved). ½. Violet. Mexico.
„ *martia'na* (Martin's). See O. CORYMBOSA MARTIANA.
„ *mojave'nsis* (Mojavan). Gardens.
„ *na'tans* (floating). ½. White. October. 1795. Aquatic.
„ *Nea'i* (Nea's).
„ „ *glabra'ta* (smooth). White. Trop. Amer. 1872.
„ *Otto'nis* (Otto's). See O. LOBATA.
„ *palu'stris* (marsh). Lilac. May. Brazil. 1828. Stove.
„ *peduncula'ris* (long-stalked). Ecuador.
„ *pere'nnans* (perennial). See O. CORNICULATA.
„ *pube'scens* (downy). Peru.
„ *racemo'sa* (racemose). See O. ROSEA.
„ *re'pens* (creeping-*stalked*). See O. CORNICULATA.
„ *ro'sea* (rosy). ½. Rose. March. Chili. 1826.
„ *ru'bro-ci'ncta* (red-edged). 1. Yellow. September. Guatemala. 1841.
„ *sca'ndens* (climbing). Colombia.
„ *Si'mmii* (Sims's). ½. Crimson. April. Chili. 1822.
„ *tubero'sa* (tuberous). 3–5. Chili. 1853. Root tuberous.
„ *u'rbica* (city). See O. CORYMBOSA.
„ *valdivia'na* (Valdivian). ½–1. Yellow. Chili. 1862.

Greenhouse Bulbs.

O. ambi'gua (ambiguous) of Jacquin. See O. MUTABILIS.
„ *arcua'ta* (bowed). See O. LINEARIS.
„ *asini'na* (ass's-*eared*). ½. Yellow. November. 1792.
„ *bi'fida* (cloven-*leaved*). ½. Violet. September. 1791.
„ *bifu'rca* (two-forked). ½–1. Pink. S. Africa.
„ *brasilie'nsis* (Brazilian). ½. Rose. October. Brazil. 1829.
„ *Burma'nni* (Burmann's). ½. Purple. June. 1820.

O. cane'scens (hoary). See O. TUBIFLORA.
,, *capri'na* (goat's-*foot*). See O. CERNUA.
,, *carno'sa* (fleshy). ½. Yellow. October. Chili. 1826.
,, *ce'rnua* (drooping). ½. Yellow. March. 1757.
,, ,, *flo're-ple'no* (double-flowered). ½. Yellow, double.
,, *cilia'ris* (hair-fringed-*leaved*). ½. Purple. October. 1793.
,, *Commerso'nii* (Commerson's). ½. Yellow. October. Argentina.
,, *compre'ssa* (compressed). ½. Yellow. December. 1794.
,, *conci'nna* (neat). See O. CERNUA.
,, *Conso'lei* (Console's). ½. White. October. 1795.
,, *conve'xula* (small-convex). ½. Pink. June. 1789.
,, *Coppole'rii* (Coppoler's). S. Africa (?).
,, *cri'spa* (curled). See O. FABÆFOLIA.
,, *cruenta'ta* (bloodied). ½. Purple. October. 1826.
,, *cunea'ta* (wedge-*petaled*). ½. Yellow, white. July. 1793.
,, *cuneifo'lia* (wedge-leaved). See O. CUNEATA.
,, *cu'prea* (copper-coloured). See O. OBTUSA.
,, *darvallia'na* (Darvallian). ½. Pale crimson. July.
,, *denta'ta* (toothed). ½. Flesh. October. 1793.
,, *De'ppei* (Deppe's). ½. Red. March. S. Amer. 1827.
,, *digita'ta* (fingered). See O. PENTAPHYLLA.
,, *di'sticha* (two-rowed). ½. Pale yellow. May. 1818.
,, *dive'rgens* (wide-spaced). ½. White. July. Mexico. 1829.
,, *elonga'ta* (elongated). See O. VERSICOLOR ELONGATA.
,, ,, *ame'na* (fine-*red*). See O. VERSICOLOR AMŒNA.
,, *esule'nta* (esculent). See O. TETRAPHYLLA.
,, *fabæfo'lia* (bean-leaved). ½. Red. October. 1794.
,, *fa'llax* (deceptive). See O. LUTEOLA.
,, *ferrugina'ta* (rusty). See O. MUTABILIS.
,, *filicau'lis* (thread-stemmed). See O. BIFIDA.
,, *filifo'lia* (thread-leaved). See O. POLYPHYLLA.
,, *flabellifo'lia* (fan-leaved). ½. Yellow, red. August. 1789.
,, *fla'ccida* (feeble). See O. MUTABILIS FLACCIDA.
,, *fla'va* (yellow). ½. Yellow. March. 1775.
,, ,, *flo're-ple'no* (double-flowered). ½. Yellow. March.
,, *fu'lgida* (fulgid). See O. HIRTA FULGIDA.
,, *furca'ta* (fork-*leaved*). See O. CORNICULATA.
,, *fusca'ta* (brown-*spotted*). ½. Yellow. May. 1795.
,, *genicula'ta* (kneed). ½. Yellow. October. Brazil. 1837.
,, *gla'bra* (smooth). ½. Purple. May. 1795.
,, ,, *veno'sa* (veiny). ½. Violet, yellow. October. 1823.
,, *glandulo'sa* (glanded). ½. White. October. 1822.
,, *gra'cilis* (slender). ½. Pink to vermilion. May. 1795.
,, *grandiflo'ra* (large-flowered). See O. VARIABILIS ALBA.
,, *hirte'lla* (small-hairy). See O. PARVIFOLIA.
,, *imbrica'ta* (overlapping). ½. Rose-pink. S. Africa.
,, ,, *flo're-ple'no* (double-flowered). ½. Rose-pink, double. 1887.
,, *incarna'ta* (flesh). ½. Flesh. May. 1739.
,, *jacquinia'na* (Jacquinian). ½. Pink. May. Mexico.
,, *laburnifo'lia* (Laburnum-*leaved*). ½. Yellow. September. 1793.
,, *lana'ta* (woolly-*leaved*). ½. White. October. 1791.
,, *lanceæfo'lia* (spear-head-leaved). See O. ASININA.
,, *lasiope'tala* (downy-petaled). ½. Pink. July. Buenos Ayres. 1841.
,, *lateriflo'ra* (lateral-flowered). ½. Purple. March. 1824.
,, *la'xula* (loose). See O. VARIABILIS ALBA.
,, *le'pida* (pretty). See O. MONOPHYLLA.
,, *lepori'na* (hare's-*eared*). See O. CONSOLEI.
,, *linea'ris* (narrow-*leaved*). ½. Violet. October. 1795.
,, *li'vida* (livid). ½. Flesh. October. 1793.
,, *longisep'ala* (long-sepalled). S. Africa.
,, *lupinifo'lia* (lupine-leaved). ½. Yellow. September. 1791.
,, *lu'teola* (yellowish). ½. Yellow. May. 1823.
,, *macrophy'lla* (large-leaved). See O. PES-CAPRÆ.
,, *macro'stylis* (large-styled). See O. TUBIFLORA.
,, *margina'ta* (*green*-edged). See O. PULCHELLA.
,, *mauritia'na* (Mauritian). ½. Pale rose. September. Isle of France. 1810.
,, *minia'ta* (vermilion). See O. GRACILIS.
,, *monophy'lla* (one-leaved). ½. Yellow. October. 1774.
,, *multiflo'ra* (many-flowered). See O. HIRTA.
,, *muta'bilis* (changeable) ½. White, with yellow tube. S. Africa. 1794.
O. muta'bilis fla'ccida (feeble). ½. White, with red border outside. September. 1812.
,, *obtu'sa* (blunt-*leaved*). ½. White. September. 1812.
,, *papiliona'cea* (butterfly). ½. Variegated. Brazil. 1819.
,, *parvifo'lia* (small-leaved). ½. Red. March. 1823.
,, *pectina'ta* (comb-*leaved*). See O. FLAVA.
,, *pentaphy'lla* (five-leaved). ½. Pink. June. 1800.
,, *Pe's-ca'præ* (goat's-foot). ½. Yellow. June. 1820.
,, *Pio'ttæ* (Piotta's). ½. Orange. June. 1816.
,, *polyphy'lla* (many-leaved). ½. Pale purple. May. 1791.
,, *pulche'lla* (pretty). ½. White. October. 1795.
,, *puncta'ta* (dotted). ½. Purple. May.
,, *purpu'rea* (purple). ½. Purple. October. 1812.
,, *reclina'ta* (reclining). See O. GRACILIS.
,, *repta'trix* (creeping-*rooted*). See O. VARIABILIS.
,, *rigi'dula* (stiffish). See O. VARIABILIS.
,, *rosa'cea* (rosyish). See O. HIRTA ROSACEA.
,, *rostra'ta* (beaked). See O. MONOPHYLLA.
,, *ru'bro-fla'va* (red and yellow). See O. MUTABILIS.
,, *sangui'nea* (bloody-*leaved*). See O. LABURNIFOLIA.
,, *secu'nda* (side-*flowering*). See O. TUBIFLORA.
,, *seri'cea* (silky). ½. Yellow. May. 1794.
,, *specio'sa* (showy). See O. VARIABILIS RUBRA.
,, *strumo'sa* (swollen-*styled*). See O. MUTABILIS.
,, *sulphu'rea* (sulphur-coloured). ½. Pale yellow. October. 1795.
,, *sylve'stris* (wood). See O. VERSICOLOR.
,, *tene'lla* (delicate). ½. Lilac. May. 1793.
,, *te'nera* (tender). ½. Yellow. May. Brazil. 1826.
,, *tenuifo'lia* (fine-leaved). ½. White, red. October. 1790.
,, *tetraphy'lla* (four-leaved). ½. Purple. June. Mexico. 1823.
,, *tomento'sa* (felted). ½. White, with yellow base. S. Africa.
,, *tortuo'sa* (tortuous). ½. Yellow. June. Chili. 1826.
,, *tri'color* (three-coloured). See O. MUTABILIS.
,, *tubiflo'ra* (tube-flowered). 1. Pink. November. 1790.
,, *undula'ta* (wave-*leaved*). See O. MUTABILIS.
,, *varia'bilis* (variable). ½. White, red. November. 1795.
,, ,, *a'lba* (white). ½. White. November. 1790.
,, ,, *grandiflo'ra* (large-flowered). See O. VARIABILIS ALBA.
,, ,, *ru'bra* (red). ½. Red. October. 1690.
,, ,, *Si'msii* (Sims's). ½. White. November. 1790.
,, ,, *venu'sta* (lovely). See O. PURPUREA.
,, *veno'sa* (veiny). See O. GLABRA VENOSA.
,, *versi'color* (various-coloured). ½. Crimson. February. 1774.
,, ,, *amœ'na* (lovely). ½. Copper. September. 1810.
,, ,, *elonga'ta* (elongated). ½. White. June. 1791.
,, *virgi'nea* (virgin-like). ½. White. September. S. Africa.

GREENHOUSE AND STOVE EVERGREENS.

O. Barrelie'ri (Barrelier's). 1½. Pale red. September. Caracas. 1824. Stove.
,, *bupleurifo'lia* (Bupleurum-leaved). 1. Yellow. Summer. Brazil. Stove.
,, *chine'nsis* (Chinese). ½. Yellow. August. China.
,, *di'spar* (unequal). 2. Golden-yellow. British Guiana. 1901.
,, *frutico'sa* (shrubby). See O. RUSCIFORMIS.
,, *Ortgie'sii* (Ortgies's). 1. Yellow. Leaves purple beneath. Peru. 1875. Stove.
,, *Plumie'ri* (Plumier's). 2. Yellow. S. Amer. 1823. Stove.
,, *ruscifo'rmis* (Ruscus-formed). 1. Yellow. December. Brazil. 1817. Stove.

O'XALIS DE'PPEI CULTURE.—Plant bulbs of this in pots at the beginning of March, and shelter in a cold pit or greenhouse. When all fear of frost is passed, plant them in a light soil, and in a southern aspect, about 12 inches apart each way; or the bulbs may be kept out of the ground altogether until the middle of April, and then be planted at once in the open soil. It should be trenched, and a little manure turned in with the bottom spit, as for other tap-rooted crops. The scaly bulbs, from which it is propagated, grow in a cluster round the crown of the root. The only cultivation required is to keep the crop free from weeds, and to water

plentifully in dry weather; otherwise, if the roots are allowed to become dry, they split upon the occurrence of moist weather. Protect from early frosts, in October or November, by a mat covering.

About ten roots are enough for a dish. They are very useful as a vegetable from early in October to the end of December. An inferior kind has often been substituted for it, viz. the *O'xalis jacquinia'na;* but this is distinguished by having pink flowers. In Belgium, the leaves, being gratefully acid, are used for the same purposes as sorrel, and the flowers are mixed with other salad-herbs.

As it is not a very common vegetable, it may be useful to state, as an improved mode of cooking, that after peeling the tubers, and cleaning out their hollow centres, they must be well boiled in rich stock (gravy), skimming off the fat, and then be served up hot, with a sauce made of a little butter heated until brown, with a spoonful of flour, and a little of the stock.

OXE'RA. (From *oxeros*, tasting like vinegar; in allusion to the taste. Nat. ord. Verbenaceæ.)

A very ornamental stove climber, flowering profusely. Cuttings of half-ripe wood in sand, in a close propagating case, with bottom-heat. Fibrous loam, a little peat, and sand.

O. pulche'lla (pretty). Greenish-white, funnel-shaped. New Caledonia. 1886.

OX-EYE. *Buphtha'lmum.*

OX-EYE-DAISY. *Chrysa'nthemum Leuca'nthemum.*

OX-LIP. *Pri'mula ela'tior.*

OXYA'NTHUS. (From *oxus*, sharp, and *anthos*, a flower; referring to the sharp-toothed calyx and corolla. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Gardenia.)

Stove, white-flowered, evergreen shrubs, from Sierra Leone. Cuttings of young shoots, a little firm, in sand, under a bell-glass, in bottom-heat, in May; sandy loam, fibrous peat, and a little dried cow-dung. Winter temp., 45° to 55°; summer, 60° to 85°.

O. hirsu'tus (hairy). See O. TUBIFLORUS.
,, *specio'sus* (showy). 3. July. 1789.
,, *tubiflo'rus* (tube-flowered). 3. July.
,, *versi'color* (various-coloured). July. Cuba. 1839.

OXYBA'PHUS. Umbrellawort. (From *oxus*, acid, and *baphe*, dyer's colour; referring to the coloured juice of the roots. Nat. ord. *Nyctagos* [Nyctaginaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to the Marvel of Peru.)

All purple-flowered, except where otherwise stated. Seeds in May, in the open border, but better in mild hotbed, in March, and planted out in the end of April; also, by division of the plant in spring; sandy loam; they all require dry places, and protection from severe frost in winter.

O. aggrega'tus (aggregate). 1. Pink. Mexico. 1811.
,, *a'lbidus* (whitish). 1½–2. White. N. Amer.
,, *angustifo'lius* (narrow-leaved). 1. August. Louisiana. 1812.
,, *califo'rnicus* (Californian). 1–2. Purple. California. 1888.
,, *Cervante'sii* (Cervantes'). See O. NYCTAGINEUS.
,, *chile'nsis* (Chilian). 1. Lilac. September. Chili. 1832.
,, *decu'mbens* (lying-down). See O. ANGUSTIFOLIUS.
,, *expa'nsus* (expanded). 2. July. Peru. 1819.
,, *floribu'ndus* (free-flowering). 1. Purple. July. N. Amer.
,, *glabrifo'lius* (smooth-leaved). 3. July. Mexico. 1811.
,, *hirsu'tus* (hairy). 1. August. Louisiana. 1812.
,, *multiflo'rus* (many-flowered). See MIRABILIS MULTIFLORA.
,, *nyctagi'neus* (nocturnal). 1. August. Missouri. 1823.
,, *ova'tus* (egg-*leaved*). 2. August. Peru. 1820.
,, *pilo'sus* (shaggy). 1. August. Missouri. 1812.
,, *viola'ceus* (violet). 1. Violet. July. Colombia. 1820.
,, *visco'sus* (clammy). 6. July. Peru. 1793.

OXYCO'CCUS. Cranberry. (From *oxus*, acid, and *kokkos*, a berry. Nat. ord. *Cranberries* [Vacciniaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Hardy, pink-flowered evergreens. Seeds, but generally by dividing the plants, by layering the shoots, by merely placing sandy peat around them, and by cutting off the points of shoots, and inserting them in sandy peat, under a hand-light, in summer. Marshy, peaty soil, such as a bed surrounded with water. The Cranberry, however, has been grown successfully in a bed on a north border, without any water round it, and the produce was good and plentiful. *O. macroca'rpus* produces the largest fruit. See AMERICAN CRANBERRY.

O. ere'ctus (upright). See VACCINIUM ERYTHROCARPUM.
,, *macroca'rpus* (large-fruited). ¾. May. N. Amer. 1760. "American Cranberry."
,, ,, *variega'tus* (variegated-*leaved*). ¾. May.
,, *palu'stris* (marsh). ¾. May. Britain. "Cranberry."

OXYDE'NDRON. (From *oxus*, acid, and *dendron*, a tree; the taste of the tree. Nat. ord. Ericaceæ.)

Hardy shrub or small tree. Imported seeds. Peaty and sandy moist soil.

O. arbo'reum (tree). 10–40. White. June, July. N. Amer. 1752. "Sorrel Tree," "Sourwood."

OXYGO'NIUM. (From *oxus*, sharp, and *gonos*, an angle; referring to the divisions of the leaf, or frond. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Asplenium.)

Stove, brown-spored Ferns, from the East Indies. See FERNS.

O. alismæfo'lium (Alisma-leaved). April.
,, *e'legans* (elegant). June. 1842.
,, *ova'tum* (egg-shaped). May. 1842.
,, *vittæfo'rme* (band-like). June. 1840.

OXYLO'BIUM. (From *oxus*, sharp, and *lobos*, a pod; the seed-pods ending in a sharp point. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Includes Podolobium.)

Greenhouse, yellow-flowered, evergreen shrubs, from Australia. Seeds sown in a mild hotbed in April, after being soaked in warm water; cuttings of young shoots, not too firm, in sand, under a bell-glass, in April or May; sandy peat, a few bits of fibrous loam, a greater quantity of charcoal, broken crocks, &c., and abundant drainage. Winter temp., 40° to 48°.

O. acu'tum (acute). 1–2. Yellow, red. March. 1842.
,, *arbore'scens* (tree-like). See O. ELLIPTICUM ANGUSTIFOLIUM.
,, *berberifo'lium* (Berberis-leaved) 2. Yellow. April. Australia. 1836.
,, *Calli'stachys* (beautiful-spike). 3–4. Australia. 1815.
,, *capita'tum* (*round*-headed).
,, *cordifo'lium* (heart-leaved). 3. June. 1807.
,, *cunea'tum* (wedge-shaped). 2. March. 1840.
,, ,, *obova'tum* (reverse-egg-shaped). 2. March. 1840.
,, *dilata'tum* (spread). See O. CUNEATUM.
,, *elli'pticum* (oval-*leaved*). 3. July. 1805.
,, ,, *angustifo'lium* (narrow-leaved). 6. May. 1805.
,, *ferrugi'neum* (rusty). 2. May. 1820.
,, *heterophy'llum* (various-leaved). 2–3. June. 1824.
,, *Huege'lii* (Baron Huegel's). 1845.
,, *linea're* (linear). 2. Yellow or reddish. 1838.
,, *obova'tum* (reversed-egg-shaped). See O. CUNEATUM OBOVATUM.
,, *obtusifo'lium* (blunt-leaved). 2. Scarlet. May. 1824.
,, *ovalifo'lium* (oval-leaved) of Meissner. See O. RETUSUM.
,, *ovalifo'lium* (oval-leaved) of Lindley and Paxton. See GASTROLOBIUM PYRAMIDALE.
,, *parviflo'rum* (small-flowered). 1840.
,, *Pultene'æ* (Pulteney's). 2. Dark orange. March. 1824.
,, *retu'sum* (jagged-*leaved*). 2. Orange. May. 1823.
,, *sca'ndens* (climbing). 3. Golden-yellow. April. 1824.
,, *specta'bile* (showy). 2. May. 1847.
,, *spino'sum* (spiny). See PULTENÆA TERNATA.
,, *staurophy'llum* (cross-leaved). 2. Yellow. April. 1822.
,, *triloba'tum* (three-lobed). 2. Yellow. April. 1791.
,, *virga'tum* (twiggy). 2. Orange and red. April, May. 1830.

OXYPE'TALUM. (From *oxus*, sharp, and *petalon*, a petal; petals sharp-pointed. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Asclepias.)

Stove evergreen climbers, from Brazil. Cuttings in sand, under a bell-glass, in bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 85°.

O. appendicula'tum (appendaged). 6. Yellow. 1823.
„ *Ba'nksii* (Banks's). Cream. June. 1826.
„ *cæru'leum* (sky-blue). 3–4. Light blue. Argentina. 1836.
„ *naudinia'num* (Naudinian). Country unknown.
„ *solanoi'des* (Solanum-like). 3. Purplish-scarlet. 1838.
„ *u'tile* (useful). Gardens.

OXYRA'MPHIS. (From *oxus*, sharp, and *rhamphos*, a beak; shape of the seed-pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Now referred to Lespedeza.)

O. macro'styla (long-styled). See LESPEDEZA ERIOCARPA.

OXYSPO'RA. (From *oxus*, sharp, and *spora*, a seed, which is here awned at both ends. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Rhexia.)

Stove evergreen shrub. Cuttings of young shoots in sandy soil, under a glass, in bottom-heat, in April; sandy peat, fibrous loam, and nodules of charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

O. panicula'ta (panicled). 3. Red. June. Nepaul. 1826.

OXYSTE'LMA. (From *oxus*, sharp, and *stelma*, a crown; referring to the acute little leaves accompanying the flower-head, or crown. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Araujia.)

Stove evergreen climber. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in May; sandy peat and fibrous loam. Winter temp., 50° to 60°; summer, 60° to 85°.

O. escule'ntum (eatable). 4. Yellow. Australia. 1816.

OXYTENANTHE'RA. (From *oxutenos*, extended to a point, and *anthera*, flowery; in allusion to the elongated and pointed character of the spikelets and flowers. Nat. ord. Gramineæ.)

A tall stove bamboo. Seeds and suckers. Good fibrous loam and sand.

O. abyssi'nica (Abyssinian). Stem 3 in. thick at base. Leaves 6 in. long. Trop. Africa. 1893.

OXY'TROPIS. (From *oxus*, sharp, and *tropis*, a keel; the keel-petals end in a sharp point. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Didaelphia*, 4-*Decandria*. Allied to Astragalus.)

Hardy herbaceous perennials, from Siberia, except where otherwise stated. Chiefly by seeds, sown where the plants are intended to remain, as they do not transplant well; though, also, by dividing the plants in spring, and by cuttings of young shoots under a hand-light, in a shady place, in summer; dry, sandy loam.

O. ambi'gua (ambiguous). ½. Purple. June. 1817.
„ *argenta'ta* (silvery). Pale. June. 1827.
„ *argyrophy'lla* (silvery-leaved). See O. ARGENTATA.
„ *baicale'nsis* (Baicalian). Siberia.
„ *breviro'stra* (short-beaked). ½. Blue. August. 1802.
„ *cachemiria'na* (Cashmir). Himalaya.
„ *cæru'lea* (blue). Blue. June. 1827.
„ *campe'stris* (field). ½. Pale yellow. June. Scotland.
„ *ca'ndicans* (whitish). Pale. June. 1827.
„ *cya'nea* (azure. *Caucasian*). ½. Blue. July. Caucasus. 1818.
„ *dealba'ta* (whited). See ASTRAGALUS ALBICAULIS.
„ *defle'xa* (bent-down). ½. Purple. June. 1800.
„ *dicho'ptera* (doubly-winged). See O. TRIPHYLLA.
„ *Fische'ri* (Fischer's). See O. VAGINATA.
„ *floribu'nda* (bundle-flowered). Purple. May. Turkestan. 1827.
„ *fœ'tida* (fetid). ½. Pale yellow or white. July. Switzerland. 1817.
„ *fri'gida racemo'sa* (frigid racemose). ½. Purple. Turkestan.
„ *gla'bra* (smooth). ½. Purple. July. Dahuria. 1823.
„ *grandiflo'ra* (large-flowered). ½. Red. June. 1820.
„ „ *lepto'ptera* (narrow-winged). ½. Blue. June. 1818.
„ *Halle'ri* (Haller's). See O. URALENSIS.
O. Lambe'rtii (Lambert's). 1. Purple. August. Missouri. 1811.
„ *lappo'nica* (Lapland). Europe, N. Asia.
„ *leptophy'lla* (fine-leaved). ½. Red. July. 1818.
„ *longicu'spis* (long-pointed). See O. VAGINATA.
„ *longiro'stra* (long-beaked). ½. Purple. 1820.
„ *microphy'lla* (small-leaved). ½. Pale yellow. July. 1819.
„ *monta'na* (mountain). ½. Purple, yellow. Austria. 1581.
„ *myriophy'lla* (myriad-leaved). ½. Purple, white. July. 1818.
„ *ochroleu'ca* (yellow-white). ½. Yellow-white. Turkestan; Siberia.
„ *oxyphy'lla* (sharp-leaved). ½. Purple. July. 1816.
„ *Palla'sii* (Pallas's). ½. Pale yellow. July. Caucasus. 1818.
„ *pilo'sa* (long-haired). ½. Pale yellow. July. 1732.
„ *prostra'ta* (prostrate). ½. Blue, white. July. 1820.
„ *seto'sa* (bristly). Purple. June. 1828.
„ *songa'rica* (Songarian). ½. Violet. June. Altai. 1824.
„ *sple'ndens* (splendid). Deep rose. Leaves silvery-white. N.W. Amer. 1900.
„ *strobila'cea* (cone-like). China.
„ *sulphu'rea* (sulphury). ½. Cream. July. 1820.
„ *sylva'tica* (wood). Purple. May. 1820.
„ *tene'lla* (tender). See O. FLORIBUNDA.
„ *triphy'lla* (three-leaved). ½. Blue. June. 1815.
„ *unca'ta* (hooked). See ASTRAGALUS UNCATUS.
„ *urale'nsis* (Uralian). ½. Purple. July. Europe (Scotland), N. Asia. 1800.
„ *vagina'ta* (sheathed). ½. Blue. July. Altai. 1817.
„ *verticilla'ris* (whorl-*leaved*). ½. Blue, white. July. 1819.
„ *visco'sa* (clammy). See O. FŒTIDA.

OXYU'RA CHRYSANTHEMOI'DES. (A synonym of a low yellow-flowering, composite, hardy annual from California, first named by Endlicher, *Tollatia*, but now referred to *Layia calliglossa*, which see.)

OYEDÆ'A. (From the Peruvian name. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia Frustranea*.)

Greenhouse evergreen shrub; same culture as for Buphthalmum.

O. buphthalmoi'des (ox-eye-like). Yellow. September. Peru. 1848.

OYSTER-PLANT. *Merte'nsia mari'tima.*

OZOTHA'MNUS. (From *ozos*, a branch, and *thamnos*, a shrub. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Helichrysum.)

Greenhouse, yellow-flowered evergreens, from Tasmania and Australia. Cuttings of young shoots in sand, with a little peat in it, under a bell-glass, in spring or summer; loam and peat. Require the greenhouse in winter.

O. cine'reus (grey). See HELICHRYSUM CINEREUM.
„ *ferrugi'neus* (rusty). See HELIPTERUM COTULA.
„ *rosmarinifo'lius* (rosemary-leaved). See HELICHRYSUM ROSMARINIFOLIUM.
„ *thyrsoi'deus* (thyrse-like). See HELICHRYSUM DIOSMÆFOLIUM.

P

PACHI'RA. (The native name of some of the species in South America. Nat. ord. Malvaceæ.)

Stove trees with large digitate leaves. Cuttings of mature wood in sand, in a close case, with bottom-heat. Loam, with a little peat and sand.

P. a'lba (white). 20. July. Colombia. 1817.
„ *aqua'tica* (aquatic). 30. Red, yellow, green. Trop. Amer. 1787.
„ *insi'gnis* (remarkable). 20–25. Red. Mexico. 1796.
„ *macroca'rpa* (large-fruited). 20–30. Red, yellow, green. Mexico.
„ *mi'nor* (smaller). 15–20. Red, yellow, green. Mexico. 1798.

PACHISTI'MA. (From *pachus*, thick, and *stigma*. Nat. ord. Celastraceæ.)

Hardy, much-branched, evergreen shrubs. Cuttings in a cold frame in summer or autumn. Ordinary garden soil.

P. Ca'nbyi (Canby's). Greenish. N. Carolina and Virginia. 1889.

„ *Myrsini'tes* (Myrsinites). 4. Greenish-white. June. Western N. Amer. 1818.

PACHYCHI'LUS. See PACHYSTOMA.

PACHY'GONE. (From *pachus*, thick, and *gone*, a seed; in allusion to the thick seed. Nat. ord. Menispermaceæ.)

Stove climbing shrub, with large kidney-shaped seeds. Seeds; cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

P. ova'ta (egg-shaped). 10. Green, yellow. India and Malaya. 1790.

PACHY'LOPHUS NUTTA'LLII. See ŒNOTHERA CÆSPITOSA.

PACHYNE'MA. (From *pachus*, thick, and *nema*, a filament; filaments thick. Nat. ord. Dilleniaceæ.)

Half-hardy or greenhouse herb, with scale-like leaves. Seeds. Fibrous loam, peat, and sand.

P. complana'tum (flattened). Yellow. Australia.

„ *di'stichum* (two-ranked). See P. COMPLANATUM.

PACHYPHY'LLUM. (From *pachus*, thick, and *phullon*, a leaf. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Brassia and Maxillaria.)

Cuttings of the young shoots any time during spring and summer, drying them at the base, and inserting them in sandy loam; sandy loam, a little brick-rubbish, and dried cow-dung; little water and plenty of light are required in winter. See ORCHIDS.

P. procu'mbens (lying-down). Green, blue. May. Mexico. 1836.

PACHYPHY'TUM BRACTEO'SUM. See COTYLEDON PACHYPHYTUM.

PACHYPO'DIUM. (From *pachus*, thick, and *podion*, a foot; referring to the stalks of the flowers. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Nerium.)

Greenhouse evergreens, from South Africa, with white and red flowers. Cuttings of young shoots in spring, base dried before inserting in dryish, sandy soil; sandy loam, a little brick-rubbish and peat, but little water in winter. Winter temp., 40° to 45°. Propagated also by a division of the fleshy, tuber-like roots.

P. bispino'sum (two-spined). 1. Pink. September. S. Africa. 1795.

„ *Gea'yi* (Geay's). 30–36. A tree, branched and leafy at the top only. Madagascar. 1907.

„ *Saunde'rsii* (Saunders's). Red. S. Africa.

„ *succule'ntum* (succulent). See P. TOMENTOSUM.

„ *tomento'sum* (felted). 1. Red. May. S. Africa. 1823.

„ *tubero'sum* (tuberous). 1. August. 1813.

PACHYRHI'ZUS. (From *pachus*, thick, and *rhiza*, a root; roots tuberous. Nat. ord. Leguminosæ.)

Stove twining, perennial herbs. Cuttings in sand, under a bell-glass in summer; also sprouts with a piece of tuber and seeds. Loam, leaf-mould, and sand. *P. angula'tus* is cultivated in the tropics for its tuberous, edible roots.

P. angula'tus (angled). 8–12. Violet-purple. July. Trop. Asia. 1781.

„ *thunbergia'nus* (Thunbergian). See PUERARIA THUNBERGIANA.

„ *tubero'sus* (tuberous). 6–10. Purple. W. Ind.

PACHYSA'NDRA. (From *pachus*, thick, and *aner*, a stamen. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 4-*Tetrandria*. Allied to Buxus.)

Division and suckers; common, sandy loam. The stove under-shrub, by cuttings in a little heat, but otherwise requiring no particular treatment. The herbaceous, by division in spring; sandy loam and peat.

P. coria'cea (leathery-*leaved*). See SARCOCOCCA PRUNIFORMIS.

„ *ere'cta* (erect). See P. PROCUMBENS.

P. procu'mbens (trailing). ¼. White. April. N. Amer. 1800. Hardy herbaceous. "Alleghany Mountain Spurge."

„ *termina'lis* (terminal). ½–¾. Leaves with a white border. Japan. 1882.

PACHYSTI'GMA PTELEOI'DES. See PELTOSTIGMA PTELEOIDES.

PACHYSTI'MA. See PACHISTIMA.

PACHYSTO'MA. (From *pachus*, thick, and *stoma*, a mouth; in allusion to the thick lip. Nat. ord. Orchidaceæ.)

Stove terrestrial orchid that may be grown in pans or small baskets in sandy, turfy loam, and finely broken bricks. Introduced rhizomes.

P. pube'scens (downy). Java.

„ *specio'sum* (showy). See IPSEA SPECIOSA.

„ *thompsonia'num* (Thompsonian). See ANCISTROCHILUS THOMPSONIANUS.

„ „ *punctula'tum* (finely-pointed). See ANCISTROCHILUS THOMPSONIANUS PUNCTULATUS.

PA'DUS. See PRUNUS PADUS.

PÆDE'RIA. (From *paideros*, opal, or a kind of paint for the face; referring to its transparent berries. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrub. Cuttings in sand, in summer, in a little bottom-heat, under a glass; sandy loam and leaf-mould. Winter temp., 48° to 55°; summer, 60° to 80°.

P. fœ'tida (stinking). 6. Purple. India and Malaya. 1806.

PÆDERO'TA. (From *paideros*, *paiderotos*, bear's breech, or *Acanthus mollis*; an old adopted name. Nat. ord. Scrophulariaceæ.)

Hardy, perennial herbs. Seeds; divisions in spring. Light, well-drained soil.

P. Age'ria (Ageria). ½. Yellow. May. Europe. 1824.

„ *amherstia'na* (Amherstian). See WULFENIA AMHERSTIANA.

„ *Bonaro'ta* (Bonarota). ½. Blue. May. Europe. 1818.

„ „ *chamædrifo'lia* (Chamædrys-leaved). ½. Blue.

„ *Churchi'llii* (Churchill's). Eastern Europe.

„ *multicau'lis* (many-stemmed). See WULFENIA CARINTHIACA.

„ *urticæfo'lia* (nettle-leaved). See P. AGERIA.

PÆO'NIA. Pæony. (Named after *Pæon*, a physician, who first used it medicinally. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 2-*Digynia*.)

Seeds for raising varieties, sown in September, in a cold pit, will appear some the first, and others the second, spring. Herbaceous kinds, by division of the roots. Tree, or Moutan, by division; by grafting on the herbaceous roots; by cuttings of the young shoots in spring, under a glass, and in a little heat; by layers and suckers; by layering young shoots, after ringing round each bud, so that each bud forms a plant; deep, good loam. The Moutans require a little protection in spring; do well for forcing, and for the borders of large, cool conservatories, where the temperature is not kept high in winter.

HARDY SHRUBS.

P. lu'tea (yellow). 2–3. Bright yellow. May. Yunnan, China. 1893.

„ „ *supe'rba* (superb). Flowers larger. 1905.

„ *Mou'tan* (Moutan). 3. Purple. May. China. 1789. "Tree Pæony."

„ „ *a'lbida-ple'na* (double-white). 2. White. May. China.

„ „ *Anne'slei* (Annesley's). 3. Pink. May. China.

„ „ *a'tro-purpu'rea* (dark-purple-*flowered*). 4. Purple. April. China. 1846.

„ „ *Ba'nksii* (Banks's). 3. Purple. May. China. 1794.

„ „ *ca'rnea-ple'na* (double-flesh-coloured). 2. Flesh. May. China.

„ „ *globo'sa* (globular-*flowered*). 3. White, purple. April. Shanghai. 1845.

„ „ *lilaci'na* (lilac-coloured). 3. Lilac. April. China. 1845.

P. Mou'tan Hu'mei (Sir Abercrombie Hume's). 2. Purple. May. China. 1817.
„ „ *papavera'cea* (poppy-like). 3. White. May. China. 1789.
„ „ *parvifio'ra* (small-flowered). 3. Pale rose. April. Shanghai. 1845.
„ „ *pi'cta* (painted). 3. Pale and deep-rose-striped. April. Canton. 1845.
„ „ *Rawe'sii* (Rawes's). 2. Pale pink. May. China. 1820.
„ „ *ro'sea* (rosy). 3. Pink. May. China.
„ „ *ro'sea-ple'na* (double-rose). 2. Red. May. China. 1804.
„ „ *ro'sea-se'mi-ple'na* (semi-double-rose). 2. Red. May. China. 1794.
„ „ *salmo'nea* (salmon-coloured). 3. Pale salmon. April. China. 1846.
„ „ *specio'sa* (showy). 2. Pink. May. China. 1825.

HARDY HERBACEOUS.

P. albiflo'ra (white-flowered). 2. White. May. Siberia. 1548.
„ „ *ca'ndida* (white). 2. Flesh. May. Siberia.
„ „ *fe'sta* (pleasant). 2. White, pink. June.
„ „ *fra'grans* (fragrant). 2. Red. May. China. 1805.
„ „ *Hu'mei* (Hume's *double-crimson*). 2. Red. May. China. 1808.
„ „ *Po'ttsii* (Potts's). 3. Crimson. June. China. 1822.
„ „ *reevesia'na* (Reevesian). 3. Crimson. May. China.
„ „ *Reeve'sii* (Reeves's-*double*). 2. Pink. June. China. 1822.
„ „ *rube'scens* (ruddy). 2. Pink. May. Siberia.
„ „ *sibi'rica* (Siberian). 2. White. May. Siberia.
„ „ *tata'rica* (Tartarian). 2. Flesh. May. Siberia.
„ „ *unifio'ra* (one-flowered). 2. Pink. May. Siberia.
„ „ *vesta'lis* (virgin). 2. White. May. Siberia.
„ „ *Whitle'yi* (Whitley's *double*). 2. Blush. May. China. 1808.
„ *ano'mala* (anomalous). 1½. Crimson. May. Siberia. 1788.
„ *arieti'na* (ram). 2. Purple. Levant.
„ „ *Anderso'nii* (Anderson's). Rose. June.
„ „ *Ba'rri* (Barr's).
„ „ *Baxte'ri* (Baxter's). 3. Crimson. Oxford.
„ „ *cre'tica* (Cretan). 2. White or blush. May. Crete.
„ „ *oxonie'nsis* (Oxford). 2. Pale blush. June.
„ *Ba'keri* (Baker's). 2. Deep rose, 4½ in. across.
„ *Bro'teri* (Broter's). 2. Crimson. Spain and Portugal. 1884.
„ *Bro'wnii* (Brown's). Red. May. N. Amer. 1826.
„ „ *califo'rnica* (Californian).
„ *Cambessede'sii* (Cambessedes's). Deep rose-pink. May. Balearic Isles and Corsica. 1907.
„ *coralli'na* (coralline). 3. Crimson. May. England.
„ *coria'cea* (leathery). Spain.
„ *co'rsica* (Corsican). See P. CORALLINA.
„ *cre'tica* (Cretan). See P. ARIETINA CRETICA.
„ *dau'rica* (Dahurian). See P. TRITERNATA.
„ *deco'ra* (comely). 2. Purple. May. Asia Minor.
„ „ *a'lba* (white). White, slightly tinted with pink. 1908.
„ „ *ela'tior* (taller). 2. Purple. May. Crimea.
„ „ *Palla'sii* (Pallas's) 2. Purple. May. Crimea.
„ *edu'lis* (edible). See P. ALBIFLORA.
„ „ *sine'nsis* (Chinese). See P. ALBIFLORA HUMEI.
„ *Emo'di* (Mount Emodus). 2–3. White. March. Himalaya. 1868. Half-hardy.
„ *ficifo'lia* (fig-leaved). See P. TENUIFOLIA.
„ *Fische'ri* (Fischer's). See P. ANOMALA.
„ *hu'milis* (dwarf). 2. Purple. May. Spain. 1633.
„ *hy'brida* (hybrid). See P. TENUIFOLIA.
„ *interme'dia* (intermediate). See P. ANOMALA.
„ *lacinia'ta* (cut-leaved). See P. TENUIFOLIA LATIFOLIA.
„ *loba'ta* (lobed). See P. OFFICINALIS LOBATA.
„ *lusita'nica* (Portuguese). See P. BROTERI.
„ *ma'scula* (male). See P. CORALLINA.
„ *microca'rpa* (small-fruited). 1½–2 Purple. Spain.
„ *Mlokosewi'tschii* (Mlokosewitsch's). 2. Yellow; stamens deeper yellow. Caucasus. 1908.
„ *mo'llis* (soft). 1½. Purple. May. Siberia.
„ *officina'lis* (shop). 3. Red. May. Europe. 1548.
„ „ *a'lbicans* (whitening). 3. White. May.
P. officina'lis anemonæflo'ra (Anemone-flowered). 3. Pink. May. 1830.
„ „ *Baxte'ri* (Baxter's). See P. ARIETINA BAXTERI.
„ „ *bla'nda* (bland). 3. White. May.
„ „ *cane'scens* (hoary). 3. White. May.
„ „ *loba'ta* (lobed). 2. Purple. May. Spain. 1821.
„ „ *multipe'tala* (many-petaled). 3. Crimson. May.
„ „ *ro'sea* (rosy). 3. Red. May.
„ „ *ru'bra* (*double*-red). 3. Red. May.
„ „ *variega'ta* (variegated-*leaved*). 3. Crimson. June.
„ *parado'xa* (paradoxical). 2. Purple. May. S. Europe.
„ „ *compa'cta* (compact). See P. PEREGRINA COMPACTA.
„ „ *fimbria'ta* (*double*-fringed). 2. Purple. May.
„ „ *Grevi'llei* (Greville's). See P. PEREGRINA GREVILLEI.
„ „ *peregri'na* (straggling). See P. PEREGRINA.
„ *peregri'na* (outlandish). 2. Deep purple. May.
„ „ *byzanti'na* (Byzantine). 2. Crimson.
„ „ *compa'cta* (compact). 1½. Deep purple or crimson. May.
„ „ *Grevi'llei* (Greville's). 2. Purple. May.
„ „ *leioca'rpa* (smooth-fruited). See P. MICROCARPA.
„ *pu'bens* (downy). See P. OFFICINALIS.
„ *reevesia'na* (Reeves's). See P. ALBIFLORA REEVESIANA.
„ *Ru'ssi* (Russ's). 2. Crimson. May. Sicily.
„ *sessilifo'ra* (stalkless-flowered). See P. VILLOSA.
„ *simplicifio'ra* (simple-flowered). Red. May. Levant.
„ *tata'rica* (Tartarian). See P. ARIETINA.
„ *tenuifo'lia* (fine-leaved). 1½. Red. May. Siberia. 1765.
„ „ *flo're-ple'no* (double-flowered). 1½. Red. May. Russia. 1831.
„ „ *latifo'lia* (broad-leaved). 2. Crimson. June.
„ *triterna'ta* (thrice-three-leafleted). 3. Purple. May. Siberia. 1790.
„ *Vei'tchii* (Veitch's). 2–2½. Purple-crimson, nearly 4 in. across, several on stem. W. China. 1909.
„ *villo'sa* (shaggy). 2. Red. May. S. Europe. 1816.
„ *witmannia'na* (Witmann's). 2. Greenish-yellow. May. Orient. 1842.

PAGLE, PAIGLE, and PAGIL. The Cowslip. *Pri'mula officina'lis.*

PAGODA TREE. *Fi'cus i'ndica, Plume'ria a'lba,* and *So'phora japo'nica.*

PAINTED CUP. *Castille'ja.*

PAINTED GRASS. *Aru'ndo.*

PALAFO'XIA. (Named after *Palafox*, a Spanish general. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Stevia.)

Herbaceous perennial, with white flowers. Seeds, divisions, and cuttings of the young shoots in spring; sandy loam. A cool greenhouse or cold pit in winter for *linea'ris*.

P. fastigia'ta (tapering). See POLYPTERIS INTEGRIFOLIA.
„ *hookeria'na* (Hookerian). See POLYPTERIS HOOKERIANA.
„ *linea'ris* (narrow-*leaved*). 2. June. Mexico. 1821. Greenhouse.
„ *texa'na* (Texan) of De Candolle. See POLYPTERIS TEXANA.
„ *texa'na* (Texan) of Hooker. See POLYPTERIS HOOKERIANA.

PALAU'A. (Commemorative of *A. Palau* of Verdera, a botanical professor at Madrid. Nat. ord. Malvaceæ.)

Hardy or half-hardy annuals. Seeds in heat, and planted out in May. Ordinary soil.

P. disse'cta (cut). ½. Mauve. June, July. Peru, &c. 1866.
„ *flexuo'sa* (flexuous). See P. DISSECTA.
„ *malvæfo'lia* (mallow-leaved). 1. Pink. S. Amer.
„ *rhombifo'lia* (diamond-leaved). 1. Rose. June to August. Peru. 1830.

PALA'VA. See PALAUA.

PALE-BRINDLED BEAUTY MOTH. *Phigalia Pilosaria.*

PALICOU'REA. (Named after *Le Palicour*, of Guiana. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Psychotria.)

Some of the species are used for killing rats and mice in Brazil. Stove evergreen shrubs. Cuttings in spring, in sand, under a glass, in a gentle hotbed; sandy loam and peat.

P. apica'ta (crowned-*fruited*). 4. Yellow. July. Caracas. 1824.
„ *cro'cea* (saffron-coloured) 4. Orange. July. W. Ind. 1823.
„ *di'scolor* (two-coloured). See P. NICOTIANÆFOLIA.
„ *gardenioi'des* (Gardenia-like). 2. White, almost perpetual flowering. Mexico. 1845.
„ *jugo'sa* (joined). Leaves shining green above, purple beneath. S. Amer. 1886.
„ *lu'tea* (yellow). 1. Yellow. Guiana. 1823.
„ *nicotianæfo'lia* (Nicotiana-leaved). Greenish-yellow. September. Brazil. 1888.
„ *orna'ta* (adorned). Leaves olive-green, with red veins. S. Amer. 1875.
„ *Pave'tta* (Pavetta-like). 2. White. August. W. Ind. 1823.
„ *racemo'sa* (racemed). 2–3. White. June. Guiana. 1818.
„ *ri'gida* (stiff). 3. Yellow. August. Caracas. 1820.
„ *viola'cea* (violet). 3–4. White. June. Guiana. 1824.

PALISO'TA. (Commemorative of the traveller, *Palisot de Beauvois*. Nat. ord. Commelinaceæ.)

Evergreen, perennial, stove herbs. Seeds; divisions. Loam, peat, or leaf-mould and sand. Most of them will thrive in shady situations.

P. Albe'rtii (Albert's). 1½–3. Leaves silvery-white beneath. Belgian Congo. 1910.
„ *Barte'ri* (Barter's). 1. Purple. Fernando Po. 1862.
„ *bi'color* (two-coloured). 1–1½. Leaves with greenish-yellow central area. Fernando Po. 1878.
„ *bracteo'sa* (large-bracted). 1–1½. White. Trop. Africa. 1879.
„ *Elizabe'thæ* (Elizabeth's). 2–3. Leaves with greenish-yellow centre. Belgian Congo. 1910.
„ *Maclau'dii* (Maclaud's). Hairs on sheaths and stalks black. Upper Guinea. 1896.
„ *Pynæ'rti* (Pynært's). 1. Pure white. Congo Free State. 1906.
„ „ *fo'liis variega'tis* (leaves-variegated). Leaves variegated. 1909.

PALIU'RUS. Christ's Thorn. (Name of a plant used by Dioscorides. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Zizyphus.)

Hardy deciduous shrubs, with greenish-yellow flowers. Suckers, which come freely; layers, and cuttings, and seeds. *P. austra'lis*, from its abundance in Judea, is supposed to be the plant from which our Saviour's crown of thorns was made; common garden soil.

P. aculea'tus (sharp-thorned). See P. AUSTRALIS.
„ *Aublе'tia* (Aublet's). See P. RAMOSISSIMUS.
„ *austra'lis* (southern). 4–8. Greenish-yellow. June to September. S. Europe, Western Asia. 1596. "Christ's Thorn."
„ *orienta'lis* (oriental). 8–10. Yellow. Fruits larger than those of *P. austra'lis*. Central China. 1910.
„ *ramosi'ssimus* (much-branched). 6. Yellow. August. China. 1817.
„ *virga'tus* (twiggy). See ZIZYPHUS INCURVA.

PALLA'SIA GRANDIFLO'RA. See ENCELIA HALIMIFOLIA.

PALLA'SIA HALIMIFO'LIA. See ENCELIA CANESCENS.

PA'LLENIS. (From *pallens*, pale-coloured; in allusion to the pale, chaffy scales of the receptacle. Nat. ord. Compositæ.)

Hardy annual. Seeds in April in the open ground. Ordinary garden soil.

P. spino'sa (spiny). 2–2½. Yellow. July. Mediterranean region; Orient. 1570.

PALM. Any species of the order Palmaceæ.

PA'LMA CHRI'STI. *Ri'cinus commu'nis.*

PALM, CABBAGE. *Oreodo'xa olera'cea.*

PALM, DATE. *Phœ'nix dactyli'fera.*

PALMETTO PALM. *Sa'bal Palme'tto.*

PALM, FAN. Any Palm with fan-shaped leaves.

PA'LMIA BI'COLOR. See HEWI'TTIA BI'COLOR.

PALMI'TE. *Prio'nium Palmi'ta.*

PALM OIL. *Elæ'is guinee'nsis.*

PALM, PATANA. *Œnoca'rpus Batau'a.*

PALM, SAVANAH. *Sa'bal mauritiæfo'rmis.*

PALM, THATCH. *Sa'bal blackurnia'na.*

PALMYRAS TREE. *Bora'ssus flabe'lliter.*

PALUMBI'NA CA'NDIDA. See ONCI'DIUM CA'NDIDUM.

PAMPAS GRASS. *Cortade'ria argе'ntea.*

PANÆ'TIA LESSO'NII. See PODOLEPIS LESSONII.

PA'NAX. (From *pan*, all, and *akos*, remedy; referring to the stimulant drug, Ginseng, to which miraculous virtue is ascribed by the Chinese. Nat. ord. *Ivyworts* [Araliaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*.)

Cuttings of young shoots under a hand-light, in spring and summer; sandy loam and fibrous peat. Of all the species the following are most worth notice:

P. arbo'reum (tree). New Zealand.
„ *arma'tum* (armed). Leaves bipinnate. India. 1876.
„ *au'reum* (golden). See P. FRUTICOSUM AUREUM.
„ *Balfou'rii* (Balfour's). Leaflets orbicular, blotched and edged with creamy-white. New Caledonia. 1899.
„ *cochlea'tum* (shell-formed). 10. White. Malaya. 1820.
„ *conchifo'lium* (shell-leaved). 10. Yellow. India. 1820. Stove evergreen.
„ *crassifo'lium* (thick-leaved). See PSEUDOPANAX CRASSIFOLIUM.
„ *crispa'tum* (crisped). Leaves pinnate, deeply cut. Brazil. 1888.
„ *diffi'ssum* (twice-cut). See P. FRUTICOSUM DIFFISSUM.
„ *disse'ctum* (dissected). Leaves bipinnate, drooping. 1882.
„ *divarica'tum* (spreading). See ACANTHOPANAX DIVARICATUM.
„ *dumo'sum* (bushy). Leaves pinnate and cut. Probably a form of *P. frutico'sum*. 1883.
„ *e'legans* (elegant). Leaves finely divided. 1880.
„ *fe'rox* (fierce). See PSEUDOPANAX FEROX.
„ *fi'ssum* (split). Leaves tripinnate. Polynesia. 1884.
„ *frutico'sum* (shrubby). 4–8. Trop. Asia.
„ „ *au'reum* (golden). Leaves variegated with yellow. W. Ind. 1899.
„ „ *deleaua'num* (Deleauan). Leaves much divided. Polynesia. 1883.
„ „ *diffi'ssum* (twice-cut). Leaves bipinnate, crisped. Polynesia. 1883.
„ „ *Guilfo'ylei* (Guilfoyle's). Leaves variegated with white. Polynesia. 1876.
„ „ *lacinia'tum* (cut-leaved). Leaves deeply cut. South Sea Islands. 1887.
„ „ *multi'fidum* (much-cut). Leaves three times divided. 1887.
„ „ *Victo'riæ* (Queen Victoria's). Leaves variegated with white. Polynesia. 1883.
„ *ho'rridum* (horrid). See FATSIA HORRIDA.
„ *le'pidum* (neat). Leaves biternately divided. Brazil. 1888.
„ *Lesso'nii* (Lesson's). See PSEUDOPANAX LESSONII.
„ *longi'ssimum* (longest). 10. Leaves very long and narrow. New Zealand. 1866.
„ *mastersia'num* (Mastersian). Leaves pinnate, 3 ft. long; leaflets 10 in. Solomon Islands. 1898.
„ *Murra'yi* (Murray's). 50. Leaves drooping, pinnate, 3–4 ft. long. Polynesia. 1874.
„ *ni'tidum* (shining). 3. Leaves roundish. Brazil. 1888.
„ *obtu'sum* (blunt). Java. 1875.
„ *orna'tum* (adorned). Leaves pinnate. Brazil. 1888.
„ *pluma'tum* (plumed). Leaves bipinnate. South Sea Islands. 1879.
„ *quinquefo'lium* (five-leaved). See ARALIA QUINQUEFOLIA.
„ *rotunda'tum* (rounded). Polynesia. 1879.
„ *sambucifo'lium* (elder-leaved). Green. Australia. 1873.
„ *serratifo'lium* (serrate-leaved). Leaves pinnate. Probably a form of *P. frutico'sum*. Polynesia. 1883.

P. sessiliflo'rum (stalkless-flowered). See P. MURRAYI.
,, *sple'ndens* (splendid). 40. White. Trinidad. 1846.
,, *spino'sum* (spiny). See ACANTHOPANAX SPINOSUM.
,, *Victo'riæ* (Queen Victoria's). See P. FRUTICOSUM VICTORIÆ.

PANCRA'TIUM. (From *pan*, all, and *kratos*, potent; supposed medicinal qualities. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Hymenocallis.)

Handsome bulbs, and white-flowered, except where otherwise mentioned. Seeds for new varieties, as well as for perpetuating the older; chiefly by offset-bulbs; sandy loam, fibrous peat, and rotten cow-dung. Temp. for stove kinds, winter, 50°; summer, 60° to 90°. Even the hardy require a little protection in severe weather.

HARDY.

P. carolinia'num (Carolina). See P. MARITIMUM.
,, *illy'ricum* (Illyrian). 1½. May. S. Europe. 1615.
,, *mari'timum* (sea). 2. June. S. Europe. 1579.
,, *rota'tum* (wheel-*crowned*). See HYMENOCALLIS LACERA.
,, *stella're* (starry). See P. ILLYRICUM.

STOVE.

P. acutifo'lium (sharp-leaved). See HYMENOCALLIS LITTORALIS.
,, *ægypti'acum* (Egyptian). White. Egypt.
,, *Ama'ncæs* (Hill of Amancæs). See HYMENOCALLIS AMANCÆS.
,, *amboine'nse* (Amboynan). See EURYCLES SYLVESTRIS.
,, *america'num* (American). See HYMENOCALLIS LITTORALIS.
,, *amœ'num* (lovely) of Andrews. See HYMENOCALLIS OVATA.
,, *amœ'num* (handsome) of Salisbury. See HYMENOCALLIS CARIBÆA.
,, *angu'stum* (narrow-*leaved*). See HYMENOCALLIS CARIBÆA.
,, *ara'bicum* (Arabian). White. Egypt and Arabia.
,, *auranti'acum* (orange). See STENOMESSON AURANTIACUM.
,, *australa'sicum* (Australasian). See EURYCLES SYLVESTRIS.
,, *biflo'rum* (two-flowered). See P. VERECUNDUM.
,, *calathi'num* (cup-shaped). See HYMENOCALLIS CALATHINA.
,, *canarie'nse* (Canary). 1½. June. Canaries. 1815.
,, *caribæ'um* (Caribæan). 1½. June. W. Ind. 1730.
,, *caribæ'um* (Caribæan) of Curtis. See HYMENOCALLIS SPECIOSA.
,, *caribæ'um* (Caribæan) of Linnæus. See HYMENOCALLIS CARIBÆA.
,, *cocci'neum* (scarlet). See STENOMESSON COCCINEUM.
,, *colli'num* (hill). 1–1½. White. Algeria.
,, *corona'rium* (garland). See HYMENOCALLIS CRASSIFOLIA.
,, *crassifo'lium* (thick-leaved). See HYMENOCALLIS CRASSIFOLIA.
,, *declina'tum* (leaning). See HYMENOCALLIS CARIBÆA.
,, *di'stichum* (two-ranked). See HYMENOCALLIS LITTORALIS.
,, *Drya'ndri* (Dryander's). See HYMENOCALLIS LITTORALIS.
,, *expa'nsum* (expanded). See HYMENOCALLIS EXPANSA.
,, *fœ'tidum* (fetid) of gardens. White.
,, *fra'grans* (fragrant). See HYMENOCALLIS OVATA.
,, *glau'cum* (sea-green). See HYMENOCALLIS GLAUCA.
,, *guiane'nse* (Guiana). See HYMENOCALLIS TUBIFLORA.
,, *hu'mile* (humble). See TAPEINANTHUS HUMILIS.
,, *incarna'tum* (flesh-coloured). See STENOMESSON INCARNATUM.
,, *latifo'lium* (broad-leaved) of Miller. See HYMENOCALLIS SPECIOSA.
,, *latifo'lium* (broad-leaved) of Ruiz and Pavon. See URCEOLINA LATIFOLIA.
,, *littora'le* (sea-side). See HYMENOCALLIS LITTORALIS.
,, *longiflo'rum* (long-flowered). 2. June. E. Ind. 1810.
,, *mexica'num* (Mexican) of Lindley. See HYMENOCALLIS LITTORALIS.
,, *mexica'num* (Mexican) of Linnæus. See HYMENOCALLIS LACERA.
,, *narcissiflo'rum* (Narcissus-flowered). See HYMENOCALLIS CALATHINA.
P. nervifo'lium (nerved-leaved). See EURYCLES SYLVESTRIS.
,, *nu'tans* (nodding). See HYMENOCALLIS NUTANS.
,, *ova'tum* (egg-*leaved*). See HYMENOCALLIS OVATA.
,, *parviflo'rum* (small-flowered). See VAGARIA PARVIFLORA.
,, *pa'tens* (spreading) of Lindley. See HYMENOCALLIS CAYMANENSIS.
,, *pa'tens* (spreading) of Redouté. See HYMENOCALLIS CARIBÆA PATENS.
,, *peda'le* (foot). See HYMENOCALLIS PEDALIS.
,, *petiola'tum* (stalked). See HYMENOCALLIS TUBIFLORA.
,, *plica'tum* (plaited). July. Macao. 1827.
,, *Saha'ræ* (Sahara). White. Sahara.
,, *Sickenbe'rgeri* (Sickenberger's). 1. White. Egypt and Arabia. 1883.
,, *specio'sum* (showy). See HYMENOCALLIS SPECIOSA.
,, *tiaræflo'rum* (tiara-flowered). See P. ZEYLANICUM.
,, *tortuo'sum* (twisted). 1. Greenish. Arabia and Egypt.
,, *tria'nthum* (three-flowered). 1. White. Spring and summer. Trop. Africa. 1894.
,, *tubiflo'rum* (tube-flowered). See HYMENOCALLIS TUBIFLORA.
,, *undula'tum* (wave-*leaved*). See HYMENOCALLIS UNDULATA.
,, *verecu'ndum* (ruddy). 1½. July. N. India. 1776.
,, *variega'tum* (variegated). A slight variety of *Stenomesson incarnatum*.
,, *viridiflo'rum* (green-flowered). See STENOMESSON VIRIDIFLORUM.
,, *zeyla'nicum* (Ceylon). 1. June. Ceylon. 1752.

PANDANOPHYLLUM HU'MILE and **P. WENDLA'NDI.** See MAPANIA HUMILIS.

PANDA'NUS. Screw-Pine. (From *pandang*, the Malay name. Nat. ord. *Screw-Pines* [Pandanaceæ]. Linn. 22-*Dicœcia*, 1-*Monandria*.)

Stove evergreen trees, with white flowers. Chiefly by suckers; sandy loam. Winter temp., 50° to 60°; summer, 60° to 85°.

P. amaryllidifo'lius (Amaryllis-leaved) of gardens. See P. LÆVIS.
,, *amaryllifo'lius* (Amaryllis-leaved). 20. Amboyna. 1820.
,, *aqua'ticus* (aquatic). N. Australia.
,, *augustifa'nus* (Augustian). Leaves broad, densely toothed. New Guinea. 1866.
,, *Bapti'sti* (Baptist's). Leaves narrow. New Caledonia. 1892.
,, *Barkly'i* (Barkly's). Mascarene Islands.
,, *Blanco'i* (Blanco's). See P. ODORATISSIMUS.
,, *bouchea'nus* (Bouchean). Madagascar. 1820.
,, *Buto'yei* (Butoye's). Leaves broad with claw-like prickles. Congo. 1903.
,, *Candela'brum* (candlestick). 60. Guinea. 1826.
,, *carico'sus* (sedge-like). 2–3. Yellow-white. Moluccas. 1878.
,, *cerame'nsis* (Ceram Island). See P. LABYRINTHICUS.
,, *cera'micus* (Ceram Island). See P. LABYRINTHICUS.
,, *conoi'deus* (cone-shaped). Malaya. 1872.
,, *deco'rus* (befitting). New Caledonia. 1870.
,, *di'scolor* (two-coloured). Leaves bronzy when young. India. 1884.
,, *doornia'nus* (Doornian). Mascarene Islands.
,, *dyeria'nus* (Dyerian). See P. BAPTISTI.
,, *edu'lis* (eatable). Madagascar. 1824.
,, *e'legans* (elegant). See P. SYLVESTRIS.
,, *eleganti'ssimus* (most-elegant). See P. UTILIS.
,, *Eydou'xia* (Eydouxia). Mascarene Islands.
,, *fascicula'ris* (fascicled). 20. E. Ind. 1822.
,, *flabelliflo'rmis* (fan-shaped). See P. UTILIS.
,, *fœ'tidus* (fetid). 5–10. India. 1842.
,, *Forste'ri* (Forster's). Lord Howe's Island.
,, *furca'tus* (forked). India and Malaya. 1824.
,, *glauce'scens* (sea-green). India. 1865.
,, *graminifo'lius* (grass-leaved). 1–2. Leaves very narrow, recurved. Tenasserim.
,, *grusonia'nus* (Grusonian). Leaves 3 ft. long, with red spines. Admiralty Isles. 1887.
,, *heteroca'rpus* (various-fruited). Leaves 3–6 ft. long, armed with white spines. Philippines. 1866.
,, *Houlle'tii* (Houllet's). Coppery-rose. Singapore. 1868.
,, *hu'milis* (dwarf). See P. SYLVESTRIS.

P. ine'rmis (unarmed) of Blanco. Philippines.
„ *ine'rmis* (unarmed) of Roxburgh. See P. LÆVIS.
„ *integrifo'lius* (entire-leaved). E. Ind. 1823.
„ *java'nicus* (Javan). Country unknown. 1854.
„ „ *variega'tus* (variegated). Leaves prickly, edged with white.
„ *Kercho'vei* (Kerchove's). Leaves long, narrow, with white spines. Admiralty Isles. 1886.
„ *kurzea'nus* (Kurzean). See P. POLYCEPHALUS.
„ *labyri'nthicus* (labyrinthic). Fruit cone-like, scarlet when ripe. Malaya. 1888.
„ *læ'vis* (smooth). India; Cochin-China. 1823.
„ *La'is* (Lais). Malaya.
„ *latifo'lius* (broad-leaved). See P. BOUCHEANUS.
„ *longifo'lius* (long-leaved). E. Ind. 1829.
„ *margina'tus* (margined). Mauritius. 1823.
„ *mauritia'nus* (Mauritian). See P. UTILIS.
„ *microca'rpus* (small-fruited). Mascarene Islands.
„ *Millo're* (Millore). Nicobar Islands.
„ *mi'nor* (smaller). Fruits yellow, with a claw-like spine. Stems 3 ft. long, prostrate. India. 1873.
„ *murica'tus* (point-covered). Madagascar. 1826.
„ *ni'tidus* (shining). See P. STENOPHYLLUS.
„ *odorati'ssimus* (sweetest-scented). 20. Trop. Asia. 1771.
„ *paci'ficus* (Pacific). Leaves broad. Pacific Islands. 1892.
„ *Panche'ri* (Pancher's). Leaves linear, prickly, 3–5 ft. long. New Caledonia. 1877.
„ *polyce'phalus* (many-headed). Leaves glaucus. Malaya. 1866.
„ *portea'nus* (Portean). Philippines. 1866.
„ *pygmæ'us* (dwarf). January. Mauritius. 1830.
„ *refle'xus* (bent-back). Mascarene Islands. 1818.
„ *Sande'ri* (Sander's). Habit of *P. Veitchi*, but leaves edged with yellow. 1898.
„ *se'ssilis* (stalkless). Trop. Africa. 1820.
„ *specta'bilis* (showy). Gardens.
„ *sphæroi'deus* (sphere-like). Mascarene Islands.
„ *spira'lis* (spiral). See P. ODORATISSIMUS.
„ *stenophy'llus* (narrow-leaved). Java.
„ *sylve'stris* (wood). 8. Mascarene Islands.
„ *tenuifo'lius* (slender-leaved). Trop. Amer. 1873.
„ *ungui'fer* (nail-bearing). See P. MINOR.
„ *u'tilis* (useful. *Red-spined*). 20–60. Madagascar.
„ *Vandermee'schii* (Van-der-Meesch's). 10–20. Mascarene Islands.
„ „ *mari'timus* (maritime).
„ *Vei'tchi* (Veitch's). 2–30. Leaves edged with white. Polynesia. 1868.
„ *wavrinia'nus* (Wavrinian). Leaves narrow, strap-shaped. Seedling form. 1903.
„ *zeyla'nicus* (Cingalese). Ceylon.

PANDO'REA. See TECOMA.

PANICLE is a loose, branching bunch of flowers, as in the Oat (*Ave'na*) and London Pride (*Saxi'fraga*).

PA'NICUM. Panic Grass. (An old Latin name for a kind of millet. Nat. ord. Gramineæ.)

A large and very varied genus of grasses, some of which are hardy or tender, while the perennials require a greenhouse or stove. Seeds, or divisions of the perennials. Ordinary soil for the hardy annuals; loam, leaf-mould, and sand for the tender species.

P. alti'ssimum (tallest). 6–25. Guiana.
„ *bulbo'sum* (bulbous). Mexico. Half-hardy perennial.
„ *capilla're* (hair-like). 2. Summer. Western hemisphere. 1758. Hardy.
„ *colo'num* (colonist). 1½–2. Tropics. "Millet Rice." Half-hardy.
„ *Cru's-ga'lli* (cock's-foot). 1. S. Europe, &c. "Barnyard Grass." Hardy.
„ *i'ndicum* (Indian). 2–3. Tropics of the Old World. 1818. Half-hardy.
„ *insi'gne* (remarkable). Abyssinia. Half-hardy.
„ *Isa'chne* (Isachne). Mediterranean region, &c. Hardy.
„ *ita'licum* (Italian). See SETARIA ITALICA.
„ „ *japo'nicum* (Japanese). A cultivated variety of *Setaria italica*. 1887.
„ *ma'ximum* (largest). 5–10. Trop. Amer. Stove.
„ *milia'ceum* (millet-like). 2. Tropical regions. Annual. "Millet."
„ *obtu'sum* (blunt). Mexico. Half-hardy.
„ *plica'tum* (plaited). 2–3. Summer. Tropics. 1821. Stove.
P. plica'tum ni'veo-vitta'tum (snowy-striped). Leaves striped with white. 1868. Stove.
„ *proli'ferum* (proliferous). N. Amer. Hardy.
„ *sanguina'le* (blood-red). Spikelets purple-red. Cosmopolitan. Hardy.
„ *specta'bile* (showy). Trop. Africa and Amer. Stove.
„ *Teneri'fæ* (Teneriffe). Mediterranean region, &c. Hardy.
„ *texa'num* (Texan). Texas. Hardy.
„ *to'nsum* (shorn). Inflorescence feathery, silvery. S. Africa. 1895. Greenhouse.
„ *variega'tum* (variegated). See OPLISMENUS BURMANNI VARIEGATUS.
„ *virga'tum* (twiggy). 2. August. N. Amer. 1781. Hardy.

PANTSEA. (From *pan*, all, and *isos*, equal; in allusion to the parts of the flower. Nat. ord. Orchidaceæ.)

Stove epiphytical orchid. Offsets at the commencement of growth. Fibrous peat, sphagnum, and pot-sherds.

P. tricallo'sa (three-callused). Yellow-green; calli yellow, tipped with brown. Assam. 1901.
„ *unifio'ra* (one-flowered). See CŒLOGYNE UNIFLORA.

PANNING is forming a pan or basin in the soil round the stem of a tree or shrub, in which to pour water.

PANO'PSIS. (From *pan*, all, and *opsis*, resemblance; possibly from its resemblance to various plants. Nat. ord. Proteaceæ. Allied to Roupala.)

Stove evergreen tree. Cuttings in sand, under a bell-glass, and after a time put in bottom-heat. Fibrous loam, fibrous peat, and sand.

P. hameliæfo'lia (Hamelia-leaved). 10. Green. Guiana. 1803.

PANSY. (*Vi'ola tri'color.*) The native situation of the wild Pansy is generally in fields of growing corn, where it is partially shaded from the wind and the heat of the midday sun. To grow the Pansy for the purpose of exhibition, the situation for the plants should also be one sheltered from all cutting winds, as these are very destructive, often injuring, and even killing, the plants close to the soil, by twisting them about. The situation should be open to the free circulation of the air, and exposed to the morning sun, but protected from the full influence of the midday sun, which injures the colour of the blooms. The plants should be placed together in beds made for the purpose. The situation should be cool and moist, but thoroughly drained; for although the Pansy requires considerable moisture during the blooming season, and through the summer months, yet it is very impatient of superabundant moisture, and the plants will be found never to do well when the soil becomes in any degree sodden.

The *Soil* should be rich and tolerably light. Decayed cucumber-bed dung is the best manure, and the soil a light, hazel loam, with a good portion of decayed turf from pasture land, thoroughly intermixed by frequent stirring and digging, and to three barrow-loads of this soil add one of the cucumber-bed manure two years old. Manure-water, particularly guano-water, applied during the blooming season, is very beneficial.

The *Plants* should be carefully selected for the purpose of producing blooms for exhibition, as it will be always found that when they have flowered well through one season, they never produce so fine blooms the second. Those who intend to grow the Pansy for exhibition should select young plants well established from cuttings for the purpose. For the spring exhibitions in May and June, select plants struck the previous autumn, in August and September; and for the autumn exhibitions in September, select plants struck early in the spring; and after these have produced their blooms, save them for store plants, to produce cuttings, always having a constant succession of young plants for the purpose of blooming.

Propagation.—The young side-shoots are to be prepared for cuttings, as the old, hollow stems seldom strike freely, and do not grow so strong for spring blooming. Take off a sufficient quantity of these side-shoots in August, or the beginning of September, and for autumn-blooming in April and May; these insert either under hand-glasses, or in pots placed in a cool frame in some good, light compost, mixed with a good quantity of

silver-sand, taking care to keep them moderately moist, and shading them from hot suns.

The *Disease* to which the Pansy is most subject is a withering away suddenly, as if struck by something at the root. This disease has received various names, as *root-rot, decline*, &c.; but both cause and remedy are unknown. Old plants are much more subject to it than young ones, and it appears to be most prevalent during hot and dry seasons. When a plant is thus struck, which is indicated by a withering of the foliage, if it be rare and choice kind, immediately take all the cuttings you can get, and strike them, as almost invariably the old plants die. Strong, stimulating manures are productive of this disease. As a preventive keep the surface of the soil frequently stirred.

Insects.—The worst foes of the Pansy are the slug and the snail. To destroy and keep away these vermin, water the bed late of an evening, in moist weather, with lime-water, and sprinkle the surface pretty thickly with fresh wood-ashes. See AGROMYZA.

Box for exhibiting Blooms.—Dr. Lindley says, that the best-constructed box for exhibiting twenty-four Heart's-ease is made of deal, of the following dimensions: 20 inches long, 1 foot wide, and 5 inches deep; the lid made to unhinge; a sheet of zinc fitted inside, resting upon a rim; four rows of six holes each cut in the zinc at 3 inches apart; under each hole a zinc tube soldered to the plate, and intended to contain the water; the apertures to admit the flower made in the form of a key-hole, as it will admit part of the calyx, and keep the flower in a flat position. The outside may be painted green; but the zinc plate should be painted of a dead white.

PANSY FLY. *Agromyza.*

PANTILES. See BRICKS.

PAPA'VER. Poppy. (From *papa*, pap, or thick milk; referring to the juice. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Seeds in March and April, where the plants are to remain; division of the roots of the perennial ones; light, rich, sandy soil.

HARDY PERENNIALS.

P. aculea'tum (prickly). 2. Brick-red. S. Africa. 1825.
„ *alpi'num* (alpine). ½. White. July. Arctic and alpine regions. 1759.
„ „ *puni'ceum* (red). 1. Red. June. Switzerland.
„ „ *ru'bro-auranti'acum* (red-orange). 1. Orange-red. Dahuria. 1822.
„ *armeni'acum* (Armenian). See P. CAUCASICUM.
„ *atla'nticum* (Atlantic). See P. RUPIFRAGUM ATLANTICUM.
„ *bractea'tum* (bracted). See P. ORIENTALE BRACTEATUM.
„ *Burse'ri* (Burser's). See P. ALPINUM.
„ *cauca'sicum* (Caucasian). 1–2. Red. June. Caucasus. 1813.
„ *cro'ceum* (saffron-coloured). See P. NUDICAULE.
„ *floribu'ndum* (free-flowering). See P. CAUCASICUM.
„ *fu'gax* (fugaceous). See P. CAUCASICUM.
„ *garie'pinum* (Gariepinan). See P. ACULEATUM.
„ *Heldrei'chii* (Heldreich's). See P. SCHINZIANUM.
„ *lateri'tium* (brick-red). 1½. Brick-red. Armenia.
„ *nudicau'le* (naked-stalked). 1½. Yellow. July. 1730. Arctic and alpine regions. "Iceland Poppy."
„ „ *glabra'tum* (smooth). ½. Yellow. July. Siberia. 1800.
„ „ *lu'teum* (yellow-*flowered*). 1½. Yellow. July. Siberia. 1730.
„ „ *radica'tum* (rooted). ½. Yellow. July. Norway. 1800.
„ *oly'mpicum* (Olympic). See P. PILOSUM.
„ *orienta'le* (eastern). 3. Red. May. Armenia. 1714.
„ „ *bractea'tum* (large-bracted). 3–4. Red. May. Siberia. 1817.
„ „ *co'ncolor* (one-coloured). 3. Scarlet. June. S. Europe. 1714.
„ „ *macula'tum* (spotted). 3. Scarlet. June. S. Europe. 1714.
„ *pe'rsicum* (Persian). 1½. Brick. June. Persia. 1830.
„ *pilo'sum* (long-hairy). Red. 2½. Bithynia.
„ *Polla'ki* (Pollak's). 3. Dark cherry-red. Persia. 1888.
„ *pyrena'icum* (Pyrenean). See P. ALPINUM.
„ „ *puni'ceum* (red). See P. ALPINUM PUNICEUM.
P. radica'tum (rooting). See P. NUDICAULE.
„ *ru'bro-auranti'acum* (red-orange). See P. ALPINUM RUBRO-AURANTIACUM.
„ *rupi'fragum* (rock-breaking). 1½–2. Salmon. April. Spain; Morocco. 1890.
„ „ *atla'nticum* (Atlantic). 1–2. Orange-red or scarlet. Morocco. 1890.
„ *schinzia'num* (Schinzian). 1–2. Brick-red. Probably a hybrid. 1910.
„ *villo'sum* (villous). See P. PILOSUM.

HARDY ANNUALS.

P. amœ'num (lovely). See P. SOMNIFERUM.
„ *a'pulum* (not-closed). S. Europe, &c.
„ *arena'rium* (sand). 1. Red. June. Caucasus. 1828.
„ *Argemo'ne* (Argemone). 1½. Scarlet. June. Britain.
„ *argemonoi'des* (Argemone-like). See P. APULUM.
„ *califo'rnicum* (Californian). 1. Clear orange, with yellow centre.
„ *commuta'tum* (changeable). 1. Scarlet. July. Siberia. 1839.
„ *corni'gerum* (horn-bearing). See P. PAVONINUM.
„ *du'bium* (doubtful). 2. Scarlet. June. Britain.
„ „ *flo're-a'lbo* (white-flowered). White. June. Tauria.
„ *glau'cum* (sea-green). 1. Deep scarlet-red. July. Armenia. 1891. "Tulip Poppy."
„ *Hoo'keri* (Hooker's). See P. RHŒAS LATIFOLIUM.
„ *ho'rridum* (horrid). See P. ACULEATUM.
„ *hy'bridum* (hybrid). 1½. Scarlet. June. England.
„ *læviga'tum* (smooth-*leaved*). 1½. Red. June. Caucasus. 1823.
„ *Mone'ti* (Monet's). Natural hybrid between *P. glaucum* and *P. Rhœas*.
„ *pavoni'num* (peacock-like). 1. Scarlet, with grey blotch, bordered by a black, horse-shoe shaped one on each petal. Afghanistan, &c. 1883.
„ *Rhœ'as* (Rhœas). 1–2. Bright red. June to August. Britain. "Corn Poppy," "Shirley Poppy."
„ „ *latifo'lium* (broad-leaved). 3–4. Pale rose to crimson-scarlet, with white or blue-black blotch at the base. India.
„ „ *umbro'sum* (shady). 1–2. Scarlet, with four large black blotches. 1877.
„ *Roubiæ'i* (Roubieus's). See P. RHŒAS.
„ *seti'gerum* (bristly). See P. SOMNIFERUM.
„ *somni'ferum* (sleep-causing). 4. White. July. Greece; Orient (England).
„ „ *a'lbo-ple'num* (double-white-*seeded*). 5. Variegated. July. Britain.
„ „ *a'lbum* (white-*seeded*). 5. White. July. Britain.
„ „ *fimbria'tum* (fringed). 4. Variegated. July. Britain.
„ „ *ni'grum* (black-*seeded*). 4. Purple. July. Britain.
„ „ *ru'bro-ple'num* (double-red). 5. Variegated. July. Britain.
„ „ *variega'tum* (variegated). 4. Variegated. July. Britain.
„ *spica'tum* (spiked). 1½–2. Salmon. Asia Minor.
„ *stri'ctum* (upright). Phrygia.
„ *tri'lobum* (three-lobed). See P. RHŒAS.
„ *umbro'sum* (shady). See P. RHŒAS UMBROSUM.

PAPA'YA, PAPAW-TREE. See CARICA PAPAYA.

PAPA'YA GRA'CILIS. See CARICA GRACILIS.

PAPER LIGHTS were never much employed, and, since the introduction of Whitney's and other compositions for rendering cloth semi-transparent, are still less likely to be employed. Cartridge paper is the best for the purpose. It should be damped before it is nailed upon the frame, because when dry it becomes taut. It may then be painted over with boiled linseed oil, in which a little white lead has been incorporated. In nailing on the paper, a strip of tape should be placed between the heads of the tacks and the paper, to check the tearing to which the paper is so subject.

PAPER MULBERRY. *Broussone'tia papyri'fera.*

PAPHI'NIA. (*Paphia*, a surname of Venus. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Lycaste.)

P. crista'ta (crested). See LYCASTE (PAPHINIA) CRISTATA.
„ „ *modiglia'na* (Modiglian). See LYCASTE CRISTATA MODIGLIANA.

P. gra'ndis (grand). See LYCASTE (PAPHINIA) GRANDIS.
,, *lindenia'na* (Lindenian). See LYCASTE LINDENIANA.
,, *Ra'ndi* (Rand's). See LYCASTE RANDI.
,, *rugo'sa* (wrinkled). See LYCASTE (PAPHINIA) RUGOSA.
,, ,, *Kalbre'yeri* (Kalbreyer's). See LYCASTE RUGOSA KALBREYERI.
,, ,, *sanderia'na* (Sanderian). See LYCASTE RUGOSA SANDERIANA.

PAPPERI'TZIA. (Commemorative of *W. Papperitz.* Nat. ord. Orchidaceæ.)
Stove epiphytical orchid. See ORCHIDS FOR CULTURE.
P. Leibo'ldi (Leibold's). Green. Mexico. 1886.

PAPY'RUS. (From *babeer*, pronounced *papeer*, Syrian; hence *papyrus*, paper of the Egyptians. Nat. ord. *Sedges* [Cyperaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Cyperus.)
P. antiquo'rum (ancient). See CYPERUS PAPYRUS.
,, *e'legans* (elegant). See CYPERUS ELEGANS.
,, *laxiflo'rus* (loose-flowered). See CYPERUS LAXIFLORUS.
,, *odora'tus* (sweet-scented). See CYPERUS GIGANTEUS.

PARACA'RYUM. (From *para*, with, and *karuon*, a nut; the fruit is nut-like. Nat. ord. Boraginaceæ.)
Hardy or half-hardy biennials or perennials. Seeds; division of perennials. Well-drained garden soil.
P. anchusoi'des (Anchusa-like). See P. HELIOCARPUM.
,, *angustifo'lium* (narrow-leaved). 1. Sky-blue. Greece; Asia Minor. 1899.
,, *azu'reum* (azure). See P. ANGUSTIFOLIUM.
,, *cœlesti'num* (sky-blue). 1–2. Blue. July, August. Himalaya. 1837.
,, *corymbifo'rme* (corymb-formed). See P. ANGUSTIFOLIUM.
,, *helioca'rpum* (sun-fruited). 1–2. Blue or purple-blue. May. Himalaya. 1840.
,, *myosotoi'des* (Myosotis-like). 1½. Blue. August, September. Greece; Asia Minor. 1838.

PARADISA'NTHUS. (From *paradeisos*, a park, Garden of Eden or Paradise, and *anthos*, a flower; in allusion to the handsome or striking combination of colours of the flower. Nat. ord. Orchidaceæ.)
Cool stove, epiphytical orchids. Offsets. Fibre of peat, sphagnum, charcoal, and crocks.
P. bahie'nsis (Bahian). White and purple. Bahia, Brazil.
,, *Mose'ni* (Mosen's). Green, brown, mauve, purple, white. Brazil. 1881.

PARADISE, GRAINS OF. The pungent seeds of *Amomum Melegueta*. They are also known as Guinea Grains and Melegueta Pepper.

PARADI'SIA. St. Bruno's Lily. (From *paradeisos*, a park, or Paradise. Nat. ord. Liliaceæ.)
Hardy border perennial. Divisions and seeds. Ordinary garden soil.
P. Lilia'strum (star-lily). 1–1½. White. June. Europe. 1629.
,, ,, *ma'jor* (larger). Flowers larger.

PARAGRA'MMA. See POLYPODIUM.

PARAGUAY TEA or **MATE.** *I'lex paragueⁿsis.*

PARANEPHE'LIUS UNIFLO'RUS. See LIABUM UNIFLORUM.

PARA NUT. *Bertholle'tia excе'lsa.*

PARA RUBBER. *Heve'a brasilie'nsis.*

PARASITIC PLANTS are such as derive their nourishment from other living plants by rooting into their sap-vessels. Examples are—the Mistletoe and Dodder, which attach themselves to the stem and branches of some plants; the Hypocistus and the Orobanche, or Broom Rape, affix themselves to the roots of others. The minute fungi which constitute the mildew are also parasites. There is some doubt whether the Ivy is at all parasitical; but whether it derives nourishment or not from trees, it certainly checks the respiration, and prevents the free access of light and air to those upon which it attaches. The orchidaceous plants which grow upon dead wood as readily as upon living timber are not parasites; they are termed epiphytes, that is, plants which attach themselves to others, merely to hold them in position, where they can get sufficient light, air, and nourishment. See SAPROPHYTES.

PARASTRA'NTHUS. (From *parastrepho*, to invert, and *anthos*, a flower; referring to the inverted position of the flowers. Nat. ord. *Bellflowers* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Referred to Lobelia.)
P. si'mplex (simple-*stalked*). See LOBELIA LUTEA.
,, *unidenta'tus* (one-toothed). See LOBELIA TENELLA.
,, *varifo'lius* (various-leaved). See LOBELIA VARIIFOLIA.

PARATRO'PIA TEIJSMANIA'NA. See HEPTAPLEURUM TOMENTOSUM.

PARATRO'PIA VENULO'SA. See HEPTAPLEURUM VENULOSUM.

PARDA'NTHUS. (From *pardos*, a leopard, and *anthos*, a flower; referring to the spotted flowers. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Referred to Belamcanda.)
P. chine'nsis (Chinese). See BELAMCANDA PUNCTATA.
,, *nepale'nsis* (Nepaulese). See BELAMCANDA PUNCTATA.
,, *sine'nsis* (Chinese). See BELAMCANDA PUNCTATA.

PARECHI'TES THUNBE'RGII. See TRACHELOSPERMUM JASMINOIDES.

PAREIRA BRAVA ROOT. *Chondrode'ndron tomento'sum.*

PARINA'RIUM. (From *parinari*, the Guianan name. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 7-*Heptandria*, 1-*Monogynia*.)
The rough-skinned or grey plum is the produce of *P. excе'lsum*. Stove evergreens. Cuttings of ripe shoots in spring, in sand, under a glass, in bottom-heat; sandy loam and dried leaf-mould. Winter temp., 50° to 55°; summer, 60° to 85°.
P. campe'stre (field). 6. Yellow. Guiana. 1824.
,, *excе'lsum* (tall). 60. White. Sierra Leone. 1822.
,, *macrophy'llum* (large-leaved). 3. White. Sierra Leone. 1822. "Gingerbread Plum."

PARING and BURNING are never to be practised by the gardener, except for the purpose of charring the turf, and rendering porous the soil cut from the banks of clayey ditches. When this is carefully done, a serviceable dressing is obtained. But paring and burning, as a general practice, is extremely wasteful; and, though it may give a good crop immediately afterwards, never fails, by speedy exhaustion, to demonstrate how great has been the dispersion of carbonaceous matter.

PA'RIS. (From *par*, equal; in allusion to the equal number of leaves, sepals, petals, stamens, and styles. Nat. ord. Liliaceæ.)
Hardy border perennials for shady situations. Seeds; divisions. Ordinary soil.
P. polyphy'lla (many-leaved). ½–2. Green, yellow. May. Himalaya; China. 1826.
,, *quadrifo'lia* (four-leaved). 1. Yellow-green. May, June. Europe, N. Asia (England).

PARI'TIUM ELA'TUM. Cuba Bast. See HIBISCUS ELATUS.

PARIVO'A. (The name in Guiana. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Referred to Eperua.)
P. grandiflo'ra (large-flowered). See EPERUA GRANDIFLORA.

PARK, in the modern acceptation of the word, is an extensive adorned inclosure surrounding the house and gardens, and affording pasturage, either to deer or cattle. But a park, strictly and legally, is a large extent of a man's own ground inclosed and privileged for wild beasts of chase by prescription or by royal grant.

PARKE'RIA. (Named after *C. S. Parker*, its discoverer. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. See CERATOPTERIS.)
Stove Ferns. See FERNS.
P. acrostichoi'des (Acrostichum-like). See CRYPTOGRAMME CRISPA ACROSTICHOIDES.
,, *Lockha'rti* (Lockhart's). See CERATOPTERIS THALICTROIDES.
,, *pteroi'des* (Pteris-like). See CERATOPTERIS THALICTROIDES PTEROIDES.

PA'RKIA. Nitta-tree. (Named after *Mungo Park*, the African traveller. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Mimosa.)

Stove evergreen trees, with crimson flowers. Cuttings of half-ripened shoots in sand, in heat, under a bell-glass, in May; sandy peat and loam. Winter temp., 48° to 50°; summer, 60° to 80°.

P. africa'na (African). 30. March. Trop. Africa. 1822.
„ *biglandulo'sa* (two-glanded). Brown-yellow, white. Malaya.
„ *biglobo'sa* (two-globed). See P. AFRICANA.
„ *Roxbu'rghii* (Roxburg's). Trop. Asia.
„ *uniglobo'sa* (one-globed-*flowered*). See P. AFRICANA.

PARKINSO'NIA. (Named after *J. Parkinson*, a botanical author. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Poinciana.)

Stove evergreen shrub. Seeds, when obtainable; cuttings of half-ripened shoots, treated like Parkia.

P. aculea'ta (prickly). 12. Yellow. Trop. Amer. 1739.

PARMENTIE'RA. (Commemorative of *A. Parmentier*, who wrote about esculent plants. Nat. ord. Bignoniaceæ.)

Evergreen stove tree. Cuttings of half-ripe wood in sand in a propagating case, with bottom-heat. Loam, peat, and sand.

P. cerei'fera (wax-bearing). White. Fruit waxy-yellow, 2–3 ft. long. Panama. 1866. "Candle Tree."

PARNA'SSIA. Grass of Parnassus. (Named after *Mount Parnassus*, where, from the elegance of these plants, they were fabulously said to have first sprung. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 5-*Pentandria*, 3-*Tetragynia*.)

P. palu'stris is one of our prettiest British marsh plants. Hardy, herbaceous, white-flowered perennials. Seeds and divisions in spring; shady, marshy places.

P. america'na (American). See P. CAROLINIANA.
„ *asarifo'lia* (Asarum-leaved). ½. July. N. Amer. 1812.
„ *carolinia'na* (Carolina). ½. May. N. Amer. 1802.
„ *fimbria'ta* (fringed). ½. July. N. Amer.
„ *nubi'cola* (cloud-dwelling). ½–1. White and green; fringe of glands yellow. July. Himalaya. 1881.
„ *nuda'ta* (naked). See P. ASARIFOLIA.
„ *palu'stris* (marsh). ½. July. Britain. "Common Grass of Parnassus."
„ „ *califo'rnica* (Californian). ½. White. July. California.
„ *parviflo'ra* (small-flowered). ½. June. N. Amer. 1820.
„ *specio'sa* (showy). See P. CAROLINIANA.
„ *vulga'ris* (common). See P. PALUSTRIS.

PARNASSUS, GRASS OF. See PARNASSIA PALUSTRIS.

PARO'CHETUS. (From *para*, near, and *ochetos*, a brook; its habitat. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Ononis.)

Half-hardy, evergreen, Nepaulese creepers. Division in spring; cuttings under a hand-light, in summer; loam and leaf-mould. The protection of a cold pit in winter.

P. commu'nis (common). Purple. July. 1820. "Blue-flowered Shamrock."
„ *ma'jor* (larger). Lilac. June. 1827.
„ *oxalidifo'lius* (Oxalis-leaved). See P. COMMUNIS.

PARONY'CHIA. Nail-wort. (From *paronuchia*, an old Greek name for a whitlow, which it was supposed to cure. Nat. ord. Illecebraceæ.)

Low, creeping, perennial herbs, suitable for the rockery or for carpeting the ground beneath taller plants. Seeds and divisions. Ordinary soil, well-drained.

P. argе'ntea (silvery). ¼. Silvery-white. Mediterranean region. 1879.
„ *capita'ta* (headed). ¼. Green. S. Europe, &c.
„ *chionе'a* (Chioan). See P. CAPITATA.
„ *frutico'sa* (shrubby). ¼. Green. July. Western Mediterranean region.
„ *Ka'pela* (Kapela). ¼. Green. S. Europe.
„ *serpyllifo'lia* (thyme-leaved). ¼. Silvery-green. Summer. S. Europe. 1882.

PARROT-BEAK PLANT. *Clia'nthus.*

PARRO'TIA. (Named after *M. Parrot*. Nat. ord. *Witch-Hazels* [Hamamelidaceæ]. Linn. 4-*Tetrandria*, 2-*Digynia*. Allied to Fothergilla.)

Hardy, deciduous trees of small size. Cuttings of young shoots getting firm, in sand, under a glass, in spring; peat and loam. Should be tried in well-drained light soil.

P. jacquemontia'na (Jacquemontian). 5–12. Himalaya.
„ *pe'rsica* (Persian). 10–18. Scarlet or red. Persia. 1848.

PA'RRYA. (Named after *Captain Parry*, the arctic navigator. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Arabis.)

Hardy, dwarf, perennial herbs. Seeds; common garden soil.

P. arabidiflo'rum (Arabis-flowered). ½. Purple. May. Siberia. 1800.
„ *a'rctica* (arctic). ½. Purple. Melville Island. 1820. Annual.
„ *integе'rrima* (very-entire-*leaved*). ½. Rose, purple. April. Siberia. 1829. Evergreen.
„ *macroca'rpa* (large-fruited). ½. Lilac. June. Arctic regions. 1883.
„ *Menzie'sii* (Menzies'). ½–1. Purple or rose-purple. California. 1906.
„ *microca'rpa* (small-fruited). ½. White. May. Altai. 1832.
„ *nudicau'lis* (naked-stemmed). See P. MACROCARPA.

PARSLEY. (*Ca'rum Petroseli'num.*) There are two varieties, the Common Plain-leaved and the Curly-leaved.

Sow annually, once in February, and again in the end of June. Sow moderately thick, in narrow drills barely ½ inch deep, 12 inches apart if in a bed by itself, or in a single one round the edge of a bed, the soil being raked level, and the stones immediately over the seed gathered off. The plants make their appearance in from two to six weeks. When 2 or 3 inches high, they may be gathered from as required. In early June, when they make a show for seed, the stems should be cut down close to the bottom, and again in September, if they have acquired a straggling, rank growth. This will cause them to shoot afresh, and acquire a strong growth before the arrival of severe weather. On the approach of frost, if protection is afforded to the plants by means of haulm or reed panels, so supported as not to touch them, it will preserve them in a much better state for use in winter and spring. But a still more effectual plan is to take up some of the strongest and best-curled plants in September, and plant them in pots, two or three plants in each, using a rich soil. If these be placed in a pit or greenhouse, and abundance of liquid-manure given, they will be very superiorly productive throughout the winter.

To obtain Seed.—Allow some of the plants to run up in June; they should not, however, be allowed to stand nearer than 18 inches to each other. The seed ripens in early autumn, and, when perfectly dry, may be beaten out and stored. Soot is an excellent manure for parsley, and preserves it from root-canker, the only disease affecting it.

PARSLEY FERN. *Cryptogra'mme cri'spa.*

PARSNIP (*Peuce'danum sati'vum.*) The two varieties, Hollow-crowned and Guernsey, are nearly alike.

Soil.—A rich, dry, sandy loam, and the deeper the better. The most inimical to it is gravel or clay. Trench the ground three spades deep, a little manure being turned in with the bottom spit. In the Isle of Guernsey, which has long been celebrated for the fineness of its parsnips, sea-weed is the manure chiefly employed. Of dung, that of pigeons is the best. Decayed leaves are also very favourable to its growth. The situation cannot be too open.

Sow from the end of February to the beginning of April, but the earlier the better. It has been recommended, in field cultivation, to sow them in September; in the garden, when sown at this season, they also obtain a finer size, but many of them run to seed. In the Isle of Guernsey they regulate their time of sowing according to the soil: in the most favourable soils they sow in January, or, if the soil is wet or stiff, they do not insert the seed until the latter end of March.

Sow in drills 10 inches apart, and ½ inch deep; the compartment being laid out in beds not more than 4 feet wide, for the convenience of weeding, &c. When

the seedlings are 2 or 3 inches high, thin to 10 inches apart, and remove the weeds both by hand and small hoeing. The beds require to be frequently looked over, to remove all seedlings that may spring up afresh, as well as to be frequently hoed until the plants so cover the ground as to render it impracticable.

The roots may be taken up as wanted in September, but they do not attain maturity till October, which is intimated by the decay of the leaves.

In November, part of the crop may be taken up, and, the tops being cut close off, layed in alternate layers with sand, for use in frosty weather. The remainder may be left in the ground, and taken up as required, as they are never injured by the most intense frost, but, on the contrary, are rendered sweeter. In February or March, however, any remaining must be taken up, otherwise they will vegetate. Being preserved in sand, they continue good until the end of April or May.

To obtain Seed.—Some of the finest roots are best allowed to remain where grown; or else, being taken up in February, planted in a situation open, but sheltered from violent winds. If of necessity some of those are employed which have been preserved in sand, such should be selected as have not had their tops cut off very close.

In dry weather water plentifully twice a week. At the end of August the seed is usually ripe; the umbels may then be cut, and when thoroughly dried on cloths, the seed beaten out and stored.

Seed should never be employed that is more than a twelvemonth old.

PARSNIP FLY. *Tephritis onopordinis*, the Celery Fly, also attacks the Parsnip. See CELERY FLY. The flowers and fruits of the Parsnip are consumed by the caterpillars of a small moth, *Depressaria Pastinacella*; also by the carrot-seed moth, *Depressaria depressella*. In both cases the caterpillars may be shaken down into tarred trays.

PARSO'NSIA, of P. Brown. See CUPHEA.

PARSO'NSIA. (Commemorative of *Dr. J. Parsons*, noted for his work with the microscope. Nat. ord. Apocynaceæ.)

Woody greenhouse climbers. Cuttings of short side-shoots getting firm at the base, in sand, under a hand-light in gentle heat. Loam, peat, and sand.

P. albiflo'ra (white-flowered). Creamy-white. May. New Zealand. Nearly hardy.
„ *heterophy'lla* (variable-leaved). See P. ALBIFLORA.
„ *linea'ris* (linear). New Caledonia.
„ *Paddiso'ni* (Paddison's). 15. Root tuberous, eaten in New South Wales. 1901.
„ *ro'sea* (rosy). Rose. New Zealand. 1850.
„ *varia'bilis* (variable). See P. ROSEA.
„ *veluti'na* (velvety). Australia.

PARTERRE. Another name for the summer Flower Garden.

PARTHE'NIUM. (From *parthenos*, a virgin; an old Greek name for a plant. Nat. ord. Compositæ.)

Nearly hardy or greenhouse annual, to be raised in gentle heat and planted out in May. Seeds. Ordinary soil.

P. Hystero'phorus (Hysterophorus). White. July. N. and S. Amer. "Bastard Feverfew."

PARTHENOCI'SSUS QUINQUEFO'LIA. See VITIS QUINQUEFOLIA.

PARTHENOCI'SSUS TRICUSPIDA'TA. See VITIS INCONSTANS.

PARTING the roots is a mode of propagation available with some plants; and where a large increase of an individual specimen by this mode is desired, its flower-stems should be removed as fast as they are produced. This makes the plant stool, for whatever prevents the formation of seed, promotes the development of root.

PARTRIDGE BERRY. *Mitche'lla re'pens.*

PARTRIDGE PEA. *Heiste'ria.*

PASCA'LIA. (Named after *Dr. Pascal*, professor at Parma. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Heliopsis.)

Half-hardy herbaceous. Division in spring; cuttings under a hand-light, in summer; should have a dry, warm spot, or the protection of a frame, in winter.

P. glau'ca (milky-green). 1½. Yellow. July. Chili. 1799.

PA'SITHEA. (The mythological nymph, *Pasithea*. Nat. ord. Liliaceæ.)

A beautiful, half-hardy or greenhouse plant with the habit of a Hemerocallis. Seeds; divisions in spring. Loam, leaf-mould, and sand.

P. cæru'lea (sky-blue). 1. Blue. May. Chili.

PASQUE-FLOWER. *Ane'mone Pulsati'lla.*

PASSERI'NA. Sparrowwort. (From *passer*, a sparrow; referring to the beaked seeds. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Dais.)

Greenhouse evergreens, white-flowered, and from South Africa, except where otherwise mentioned. Cuttings of the young shoots, half-ripe, in sand, under a glass, in April or May; sandy peat, with a few nodules of fibrous loam. Winter temp., 40° to 48°; summer, a rather shady place after the wood is ripe. *P. filifo'rmis* might be tried against a protective wall.

P. cilia'ta (hair-fringed). See CRYPTADENIA CILIATA.
„ *empetrifo'lia* (Empetrum-leaved). See THYMELÆA DIOICA.
„ *ericoi'des* (heath-like). 3. May. 1810.
„ *filifo'rmis* (thread-shaped). 1. July. 1752.
„ *grandiflo'ra* (large-flowered). See CRYPTADENIA BREVIFLORA.
„ *hirsu'ta* (hairy). 1½. White. July. Mediterranean region. 1759.
„ *la'xa* (loose). See ARTHROSOLEN LAXUS.
„ *linearifo'lia* (narrow-leaved). See GNIDIA LINOIDES.
„ *ri'gida* (stiff). 2. May. 1817.
„ *spica'ta* (spiked). See ARTHROSOLEN SPICATUS.
„ *Stelle'ri* (Steller's). See STELLERA CHAMÆJASME.
„ *tenuiflo'ra* (slender-flowered). See ARTHROSOLEN LAXUS.
„ *Thunbe'rgii* (Thunberg's). See GNIDIA SERICEA.
„ *uniflo'ra* (one-flowered). See CRYPTADENIA UNIFLORA.

PASSIFLO'RA. Passion-Flower. (From *passio*, suffering, and *flos*, a flower; referring to the filaments, or rays, and other parts, being likened to the circumstances of Chirst's crucifixion. Nat. ord. *Passionworts* [Passifloraceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*.)

Cuttings of young wood, in almost any stage during summer, in sand, under a bell-glass or hand-light; peat and loam. *P. cæru'lea* and its varieties are the hardiest. It not only flowers freely, but ripens fruit against a wall round London. *P. incarna'ta* is a pretty thing, of semi-herbaceous habit, which has also, in a few cases, been tried against a wall. The shoots of the *cæru'lea* group might easily be wrapped together, and defended in winter by a mat. The fruit of many is very pleasant and refreshing to most palates. The *edu'lis* fruits very freely in a stove, but the flower has no great beauty; it fruited a number of years with us in a cool conservatory, but it died at last. We found it hardier than the newest one, *Bello'ttii*. The *quadrangula'ris*, to be fruited, must be grown in a good, light situation, in a warm stove, and be artificially impregnated. See GRANADI'LLA.

HALF-HARDY CLIMBERS.

P. cæru'lea (*common*-blue). 30. White, blue. August. Brazil. 1699.
„ „ *a'lba* (white). White.
„ „ *Colvi'llei* (Colville's). White, blue, purple.
„ „ *glaucophy'lla* (milky-green-leaved). 20. Blue. August. Brazil.
„ *incarna'ta* (flesh-coloured). 30. Pink. June. Trop. and N. Amer. 1629.

STOVE CLIMBERS.

P. acerifo'lia (Acer-leaved). See P. SICYOIDES.
„ *acti'nia* (sea-anemone-like). 10. Whitish. November. Organ Mountains. 1842.
„ *adenophy'lla* (glanded-leaved). See P. ALBA.
„ *adiantifo'lia* (Adiantum-leaved). 15–20. Orange. July. Norfolk Island. 1792.
„ *ala'ta* (winged-*stalked*). 20. Green, blue, red. June. Peru. 1772.
„ „ *phœni'cea* (red). 20. Crimson. September. 1831
„ *a'lba* (white). White. August. Brazil. 1830.

P. a'lbo-ni'gra (white-black). White, maroon-purple. Hybrid. 1852.
„ *ama'bilis* (lovely). 10. Scarlet, white. May. Brazil.
„ *ambi'gua* (doubtful). White, pale pink, dotted with rose-purple, red, violet. Nicaragua. 1902.
„ *amethysti'na* (amethyst). 10. Purplish. November. Brazil. 1827.
„ *Anderso'nii* (Anderson's). Striped. August. Saint Lucia. 1823.
„ *angustifo'lia* (narrow-leaved). See P. SUBEROSA ANGUSTIFOLIA.
„ *arbo'rea* (tree). 10–14. White, yellow. July. Colombia and Ecuador. 1877.
„ *atoma'ria* (speckled). See P. ALBA.
„ *atropurpu'rea* (dark-purple). Reddish-violet, deep red. Hybrid, *racemosa* × *Loudoni*. 1883.
„ *aura'ntia* (orange). 10–15. White, red. July. New Caledonia.
„ *Ba'nksii* (Banks's). Purple. Australia. 1867.
„ *bauería'na* (Bauerian). Norfolk Island. 1871.
„ *baraquinia'na* (Baraquinian). See P. FŒTIDA.
„ *Bello'ttii* (Bellotti's). White, pink. July. 1848. Garden Hybrid. 1850.
„ *biflo'ra* (two-flowered). See P. LUNATA.
„ *biloba'ta* (two-lobed). Greenish. St. Domingo.
„ *Buonapa'rtea* (Buonaparte's). Red, blue, white. June. Garden Hybrid.
„ *capsula'ris* (capsular). Yellow, green. June. Trop. Amer. 1820.
„ „ *acuti'loba* (acute-lobed). Leaves bifid.
„ „ *geminiflo'ra* (twin-flowered). Flowers twin.
„ *caracasa'na* (Caracas). 15. Pink. June. Caracas. 1821.
„ *cardina'lis* (scarlet). See P. AMABILIS.
„ *Cavanille'sii* (Cavanilles'). See P. CUPREA.
„ *chelido'nea* (swallow-like). Greenish. Leaves swallow-tailed. Ecuador. 1879.
„ *chine'nsis* (Chinese). 30. White, blue. August. China. Greenhouse.
„ *cilia'ta* (hair-fringed). See P. FŒTIDA CILIATA.
„ *cincinna'ta* (ringletted). Violet, white. Brazil. 1868.
„ *cinnabari'na* (cinnabar-red). Cinnabar. Australia. 1855.
„ *cocci'nea* (scarlet). 20. Scarlet. September. Guiana. 1820.
„ *coria'cea* (leathery). Green, black. September. Brazil. 1844.
„ *cornu'ta* (horned). Brazil.
„ *cunea'ta* (wedged). 10. July. Caracas. 1816.
„ *cu'prea* (copper-coloured). 20. Orange. July. Bahama Islands. 1724.
„ *decaisnea'na* (Decaisnean). Carmine, white. Hybrid.
„ *diffo'rmis* (deformed). See P. CORIACEA.
„ *digita'ta* (finger-*leaved*). See P. SERRATA.
„ *di'scolor* (two-coloured). See P. MAXIMILIANA.
„ *edu'lis* (eatable). 30. White. July. Brazil. "Granadilla."
„ „ *verruci'fera* (wart-bearing). White, purple. Brazil. 1837.
„ *europhy'lla* (broad-leaved). Whitish. British Guiana. 1900.
„ *filamento'sa* (thready). 20. White, blue. August. S. Amer. 1817.
„ *fœ'tida* (fetid). White, purple, blue. Summer. Brazil. 1731.
„ „ *cilia'ta* (eye-lashed). 6. Pink. August, September. Jamaica. 1783.
„ „ *nigelliflo'ra* (Nigella-flowered). 10. White, green. September. Brazil. 1835.
„ *fu'lgens* (shining). See P. COCCINEA.
„ *galba'na* (greenish-yellow). Greenish-yellow, 3 in. across. Brazil. 1896.
„ *gla'bra* (smooth). 20. Orange. July. Norfolk Island. 1792.
„ *glau'ca* (sea-green). White. Mexico.
„ *gossypiifo'lia* (Gossypium-leaved). Green, white, purple. W. Ind.; Mexico.
„ *gra'cilis* (slender). 6. White. August. Brazil. 1823.
„ *Ha'hnii* (Hahn's). White, yellow. Trop. Amer. 1870.
„ *helleborifo'lia* (Helleborus-leaved). Rose, purple. Trop. Amer. 1866.
„ *herbertia'na* (Herbertian). 20–30. Green, white. July. Australia. 1821.
„ *heterophy'lla* (various-leaved). 15. Yellowish. St. Domingo. 1817.

P. hirsu'ta (hairy) of Linnæus. See P. SUBEROSA.
„ *hirsu'ta* (hairy) of Loddiges. See P. FŒTIDA.
„ *hispi'dula* (bristly). See P. SUBEROSA.
„ *holoseri'cea* (wholly-silky). White, red. June to August. Mexico. 1733.
„ *Hulle'tii* (Hullett's). See P. MACROCARPA.
„ *I'm-Thu'rnii* (Im-Thurn's). Sepals scarlet, petals rose or nearly white. Guiana. 1898.
„ *Inne'sii* (Innes's). White, red. Hybrid. 1870.
„ *insi'gnis* (remarkable). See TACSONIA INSIGNIS.
„ *Jenma'ni* (Jenman's). Guiana.
„ *jorulle'nsis* (Jorrulan). Yellow, orange. Guatemala. 1850.
„ *kermesi'na* (carmine). See P. RADDIANA.
„ *kewe'nsis* (Kew). Hybrid between *P. raddiana* and *P. cærulea*. 1888.
„ *laurifo'lia* (laurel-leaved). 20. Red, violet. August. W. Ind. 1690.
„ *lawsonia'na* (Lawsonian). Pale red. June to August. Hybrid. 1868.
„ *ligula'ris* (strap-shaped). 20. Green, purple. September. Trop. Amer. 1819.
„ *Loudo'ni* (Loudon's). 20. Purple. 1838. Garden Hybrid.
„ *luna'ta* (crescent-shaped). White, yellow. June to September. Trop. Amer. 1800.
„ *lu'tea* (yellow). 4. Yellow. May. W. Ind. 1714.
„ *macroca'rpa* (large-fruited). White, purple. Brazil. 1866.
„ *macula'ta* (blotched). See P. SUBEROSA.
„ *maculifo'lia* (blotched-leaved). Cream. Leaves blotched with yellow. Venezuela. 1902.
„ *Mado'nna* (Madonna). Hybrid between *P. racemosa* and *P. Buonapartea*.
„ *malifo'rmis* (apple-formed). 20. Green, red. September. W. Ind. 1731.
„ *manica'ta* (sleeved). See TACSONIA MANICATA.
„ *marmo'rea* (marbled). See OPHIOCAULON CISSAMPELOIDES.
„ *maximilia'na* (Maximilian). Green, white. Brazil. 1800.
„ *Medu'sæ* (Medusa's). See P. JORULLENSIS.
„ *middletonia'na* (Middleton's). 6. Rose, blue. June. S. Amer. 1837.
„ *Mie'rsii* (Miers's). White, pink; corona white, purple, violet. Brazil. 1888.
„ *moorea'na* (Mr. Moore's). 20. Whitish. July. Buenos Ayres. 1837.
„ *Munro'i* (Munro's). Garden hybrid between *P. alata* and *P. cærulea*. 1889.
„ *Murucu'ja* (Murucuja). 12. Scarlet. July. W. Ind. 1780.
„ *nigelliflo'ra* (Nigella-flowered). See P. FŒTIDA NIGELLIFLORA.
„ *oblonga'ta* (oblong). 10. Apetal. July. Jamaica. 1816.
„ *ony'china* (*Lieutenant Sulivan's*). See P. AMETHYSTINA.
„ *organe'nsis* (Organ-Mountains). Green, violet. Brazil. 1869.
„ *pa'llida* (pale). See P. SUBEROSA PALLIDA.
„ *palma'ta* (hand-shaped). See P. FILAMENTOSA.
„ *pelta'ta* (shield-shaped) See P. SUBEROSA.
„ *penduliflo'ra* (drooping-flowered). 20. Green. May. Jamaica. 1849.
„ *perfolia'ta* (leaf-stem-pierced). 15. Crimson. July. Jamaica. 1800.
„ *Pfor'dtii* (Pfordt's). See P. MUNROI.
„ *phœni'cea* (crimson). See P. ALATA PHŒNICEA.
„ *pictura'ta* (painted). 15. Red. September. Brazil. 1820.
„ *pri'nceps* (chief). See P. RACEMOSA.
„ *pruino'sa* (frosted). White; corona white, yellow, blue. British Guiana. 1897.
„ *puncta'ta* (dotted) of Loddiges. See P. TUBEROSA.
„ *puncta'ta* (dotted) of Linnæus. Pale yellow; corona yellow and violet. S. Amer. Reintroduced 1906.
„ *quadrangula'ris* (square-*stalked*). 20. Green, blue. August. Jamaica. 1763.
„ „ *aucubæfo'lia* (Aucuba-leaved). Leaves marbled. Nicaragua. 1875.
„ *quadriglandulo'sa* (four-glanded). Trop. Amer.
„ *racemo'sa* (racemed). 20. Scarlet. June. Brazil. 1815.
„ *raddia'na* (Raddian). 20. Crimson or carmine. July. Brazil. 1831.
„ *reflexiflo'ra* (reflexed-flowered). Ecuador.

P. rotundifo'lia (round-leaved). 8. White. June. Antilles. 1779.
„ *ru'bra* (red-*fruited*). 15. Red. June. W. Ind. 1831.
„ *sanguinole'nta* (blood-red). Red-violet. Colombia (?). Peru. 1868.
„ *serra'ta* (sawed). 12. Blue. Trinidad and Martinique. 1820.
„ *serratifo'lia* (serrate-leaved). S. Amer.
„ *sicyoi'des* (Sicyos-like). Green. July. Mexico. 1839.
„ *stipula'ta* (stipuled). White. August. Cayenne. 1779.
„ *subero'sa* (corky). Greenish-yellow, purple. June to September. W. Ind. 1759.
„ „ *angustifo'lia* (narrow-leaved). Pale yellow, purple. July to September. W. Ind. 1773.
„ „ *mi'nima* (smallest). Flowers smaller. July, August. Trop. Amer. 1690.
„ „ *pa'llida* (pale). 20. Yellow, green. August. St. Domingo.
„ *tiliæfo'lia* (lime-tree-leaved). 10. Green, red, blue. July. Peru. 1823.
„ *tinifo'lia* (Tinus-leaved). See P. LAURIFOLIA.
„ *trifascia'ta* (three-banded). Leaves having three purple bands. Brazil. 1868.
„ *tri'loba* (three-lobed). Violet; corona violet, banded with white. Peru. 1889.
„ *tubero'sa* (tuberous). Green, white, purple. June to August. Trop. Amer. 1810.
„ *tucumane'nsis* (Tucuman). 10. White, green July. Chili. 1836.
„ *verruci'fera* (wart-bearing). See P. EDULIS VERRUCIFERA.
„ *Vesperti'lio* (bat) of Ker-Gawler. See P. MAXIMILIANA.
„ *Vesperti'lio* (bat) of Linnæus. Trop. Amer.
„ *viola'cea* (violet). Pale lilac; corona blue, white, violet. Brazil. 1885.
„ *vitifo'lia* (vine-leaved). Vermilion-red. Panama; S. Amer. 1851.
„ *watsonia'na* (Watsonian). White, flushed violet, lilac; corona violet, white. Brazil. 1886.
„ *weberia'na* (Weberian). White; corona banded with white. Summer. Argentina. 1885.

PASSION FLOWER. *Passiflo'ra.*

PASTINA'CA. Parsnip. (From *pastinum*, a dibble; referring to the shape of the root. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
P. Opo'ponax (Opoponax). See OPOPONAX CHIRONIUM.
„ *sati'va* (cultivated). See PEUCEDANUM SATIVUM. See PARSNIP.

PATAGO'NULA. (From *Patagonia*, its native country. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen tree. Cuttings in sand, under a glass, in May; sandy loam and fibrous peat. Winter temp., 50° to 55°; summer, 60° to 85°.
P. america'na (American). 20. White. July. S. Amer. 1732.

PATERSO'NIA. (Named after *Col. W. Paterson*, a botanist. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Triandria*. Allied to Sisyrinchium.)
Greenhouse herbaceous perennials, from New South Wales, and blue-flowered, except where otherwise mentioned. For culture, see IRIS.
P. glabra'ta (smooth). 1½. Purple. June. 1814.
„ *glau'ca* (milky-green). 1. June. 1820.
„ *lana'ta* (woolly). 1. June. 1824.
„ *longifo'lia* (long-leaved). 1. June. 1818.
„ *longisca'pa* (long-stalked). 1½. June.
„ *me'dia* (intermediate). See P. GLABRATA.
„ *occidenta'lis* (western). 1. June. 1824.
„ *pygmæ'a* (dwarf). May.
„ *sapphiri'na* (sapphire). See P. OCCIDENTALIS.
„ *seri'cea* (silky). 1½. June. 1803.

PATIENCE, HERB. *Ru'mex Patie'ntia.*

PATRI'NIA. (Named after *M. Patrin*, a Siberian traveller. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)
Hardy biennials, except *heterophy'lla*, and all yellow-flowered. Seed in March, in light soil.
P. gibbo'sa (gibbous). ¾. Japan. 1907.
„ *heterophy'lla* (various-leaved). May. China. 1837. Hardy herbaceous.
P. interme'dia (intermediate). 1. June. Siberia. 1801.
„ *Jatama'nsi* (Jatamans'). See NARDOSTACHYS JATAMANSI.
„ *palma'ta* (hand-shaped). ½–1. Golden-yellow, fragrant. Japan. 1909.
„ *rupe'stris* (rock). See P. INTERMEDIA.
„ *scabiosæfo'lia* (scabious-leaved). 1. June. Dahuria. 1817.
„ *sibi'rica* (Siberian). 1. June. Siberia. 1751.
„ *villo'sa* (shaggy). Japan.

PAULLI'NIA. (Named after *S. Paullii*, a Danish botanist. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 3-*Trigynia*. Allied to Sapindus.)
Stove evergreen, white-flowered twiners. Cuttings of ripe shoots in sand, under a bell-glass, and in bottom-heat; loam and leaf-mould. Winter temp., 60°; summer, 60° to 85°.
P. asia'tica (Asiatic). See TODDALIA ACULEATA.
„ *bipinna'ta* (doubly-leafleted). 20. Brazil. 1816.
„ *carthagine'nsis* (Carthagena). See SERJANIA CURASSAVICA.
„ *caulifio'ra* (stem-flowering). 18. Caracas. 1822.
„ *Cupa'na* (Cupana). 20. Venezuela. 1818.
„ *hi'spida* (bristly). 20. S. Amer. 1825.
„ *ocea'nica* (ocean). Pacific Isles. 1875.
„ *pinna'ta* (pinnate). See SERJANIA CURASSAVICA.
„ *pube'scens* (downy). 16. S. Amer. 1820.
„ *senegale'nsis* (Senegal). See SERJANIA CURASSAVICA.
„ *so'rbilis* (little-Sorbus). See P. CUPANA.
„ *tetrago'na* (square-*stemmed*). 20. Cayenne. 1825.
„ *thalictrifo'lia* (Thalictrum-leaved). 2–4. Pale pink. S. Amer. 1871.
„ *Vesperti'lio* (bat). 20. W. Ind. 1823.

PAULOWILHE'LMIA. (Commemorative of *Paul Wilhelm*. Nat. ord. Acanthaceæ.)
A greenhouse evergreen subshrub allied to Ruellia. Cuttings in sand under a bell-glass. Loam, leaf-mould, and sand.
P. specio'sa (showy). 2. Blue. Abyssinia. 1889.

PAULO'WNIA. (Named after the hereditary princess of the Netherlands, daughter to the Emperor of Russia. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Cuttings of young shoots, when a little firm, under a hand-light. *P. imperia'lis* is deciduous, with beautiful foliage, quick growing, somewhat resembling a Catalpa, and said to be hardy, and has not only stood the winter, but flowered in England, though with us it has been killed nearly to the ground every season; deep, good loam; might stand better if starved in summer.
P. Duclou'xii (Ducloux's). 30–50. White, pale rose inside. Yunnan, China. 1908.
„ *Farge'sii* (Farges's). 20–30. White. Central China. 1908.
„ *imperia'lis* (imperial). 30. Lilac. June. Japan. 1840.
„ „ *a'lba* (white). White. China. 1905.
„ „ *lana'ta* (woolly). Plant more woolly-downy than in the type. Central China. 1908.

PAVE'TTA. (The East Indian name. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Ixora.)
Stove, white-flowered evergreens. Cuttings of half-ripened shoots in sand, under a bell-glass, in spring; sandy loam and fibrous peat. Winter temp., 45° to 48°; summer, 60° to 75°.
P. abyssi'nica (Abyssinian). 2. Abyssinia.
„ *a'lba* (white). See P. INDICA.
„ *angustifo'lia* (narrow-leaved). See P. HISPIDULA.
„ *areno'sa* (sandy-*leaved*). 3. June. China. 1799.
„ *borbo'nica* (Bourbon). 3. Leaves blotched with white and red. Bourbon. 1878.
„ *brachia'ta* (shouldered). 2–3. S. Africa.
„ *ca'ffra* (Caffrarian). 3. August. S. Africa. 1823.
„ *fœlidi'ssima* (most-fetid). See PUTORIA CALABRICA.
„ *gardeniæfo'lia* (Gardenia-leaved). 1–3. Abyssinia.
„ *hispi'dula* (rather-rough). 2–3. India.
„ *i'ndica* (Indian). 3. September. E. Ind. 1791.
„ *java'nica* (Javanese). See IXORA JAVANICA.
„ *madagascarie'nsis* (Madagascar).
„ *monta'na* (mountain). 1½–2. Java.

P. natale'nsis (Natalese). 2–3. S. Africa. 1888.
,, *odora'ta* (scented). 1½–3. White, fragrant. Java.
,, *specio'sa* (showy). 1½–2. Gardens.
,, *tomento'sa* (woolly). See P. INDICA.

PA'VIA. (Named after *P. Paw*, a Dutch botanist. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 7-*Heptandria*, 1-*Monogynia*. Now referred to Æsculus.)

P. califo'rnica (Californian). See ÆSCULUS CALIFORNICA.
,, *ca'rnea* (flesh-coloured). See ÆSCULUS CARNEA.
,, *di'scolor* (two-coloured). See ÆSCULUS FLAVA PURPURASCENS.
,, *fla'va* (yellow). See ÆSCULUS FLAVA.
,, *i'ndica* (Indian). See ÆSCULUS INDICA.
,, *macroca'rpa* (large-fruited). See ÆSCULUS PAVIA.
,, *macrosta'chya* (large-spiked). See ÆSCULUS PARVIFLORA.
,, *negle'cta* (neglected). See ÆSCULUS NEGLECTA.
,, *ru'bra* (red-*flowered*). See ÆSCULUS PAVIA.

PAVO'NIA. (Named after *J. Pavon*, a Spanish botanist. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Malvaviscus.)

Stove evergreens. Cuttings in sand, under a glass, in heat; sandy loam. Stove temperature.

P. cocci'nea (scarlet). 2. Scarlet. St. Domingo. 1816.
,, *makoya'na* (Makoyan). See GŒTHEA MAKOYANA.
,, *malacophy'lla* (soft-leaved). See P. VELUTINA.
,, *multiflo'ra* (many-flowered). Purple. August. Brazil. 1878.
,, *Schra'nkii* (Schrank's). 2. Orange, yellow. July. Brazil. 1823.
,, *veluti'na* (velvety). 3. Red. August. Brazil. 1823.
,, *Wio'ti* (Wiot's). See P. MULTIFLORA.

PAXTO'NIA. (Named after *Sir J. Paxton*, the celebrated gardener to the Duke of Devonshire. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Referred to Spathoglottis.)

P. ro'sea (rosy). See SPATHOGLOTTIS ROSEA.

PEA. (*Pi'sum sati'vum.*) There are many varieties, but a few will serve for gardens of small or moderate size. The earliest white round Peas are Lightning, 3 ft.; Giant Lightning, 4 ft.; and a very early blue round pea is Bountiful, 3½ ft., which may be sown in autumn. First-class, first-early Marrowfat Peas are Edward VII, 15 in.; William Hurst, 18 in.; Witham Wonder, 21 in.; Little Marvel, 15 in.; Ideal, 2½ ft.; May Queen, 2½ ft.; and Gradus, 4 ft., with rich Ne Plus Ultra flavour. Favourite, second-early round Peas are Pride of the Market, 2 ft.; and Telegraph, 2½ ft. Fine Marrowfat Peas of this class are Duke of Albany, 5 ft.; Edwin Beckett, 5½ ft.; Daisy, 2 ft.; Centenary, 5 ft.; Telephone, 5 ft.; and Duke of York, 5 ft. Marrowfat, maincrop Peas of first quality are Eureka, 3 ft.; Best of All, 4 ft.; Glory of Devon, 4 ft.; Alderman, 5 ft.; Quite Content, 5–6 ft.; Stratagem, 2½ ft.; Prizewinner, 2½ ft.; and Peerless, 3 ft. The best late Marrowfat Peas are Autocrat, 4 ft.; Ne Plus Ultra, 6 ft.; and Veitch's Perfection, 3 ft. Favourite exhibition Peas amongst the above are Duke of Albany, Centenary, Edwin Beckett, Telephone, Duke of York, Alderman, Best of All, Peerless, Stratagem, Quite Content, and Prizewinner.

One quart of an early variety of pea is quite sufficient for sowing a row 100 feet in length; half a pint less sown in the same distance of the blue varieties, and one pint of the large and tall kinds, are sufficient where the soil is rich, well pulverised, and pretty free from slugs, &c.

Soil.—A soil moderately rich and open is best, rather inclining to strong for the lofty growers and main crops, but for the early and late ones, light and dry. Dwarf varieties will grow on poorer and lighter soils than the others.

Early Peas.—The best mode of obtaining these is according to the following plan, suggested by Mr. Bishop, gardener to C. Baldwin, Esq., of Camberwell:

In the last week of January, cut some turf in strips of 3 inches in width, the length depending on the width of the hotbed in which they are to be placed. Lay the pieces of turf in the frame, grass downwards, close together; then make in the centre of each piece of turf, by pressing it with the edge of a board, a drill, in which sow the peas, which soon come up; and then take the lights entirely off in the daytime unless very cold, and shut them down at night. Keep them close till the beginning of March. When the peas are to be planted in the border, lift the box entirely off, and the strips of turf, in which the peas will be well rooted, and place them on a hand-barrow, and take them to the border for planting, which do in a drill cut so deep that they shall be about an inch lower than they were in the box. It may be necessary to protect them from frost and cool winds at first, and this may be done by putting some short sticks along the rows, and laying some long litter or cuttings of evergreens over them.—*Gard. Chron.*

Sowing.—In January they may be sown in sheltered borders, and larger supplies in an open compartment, and thence continued throughout February and until the end of May once every two or three weeks.

For the first production in the following year, a small sowing may be made at the close of October, and repeated about the middle of November and December, though it often happens that these are scarcely a week forwarder than those inserted in the following February.

Sow in drills, or by the dibble in rows, at a distance proportionate to the height to which the variety grows, as well as according to the season; Dwarfs at 2 feet, for the early and late crops, but 3 feet for the main ones; Marrowfats at 3½ or 4½ feet; Knight's Marrowfats and other gigantic varieties at 6 or 8 feet. Peas not intended to be supported require the least room. At the early and late sowings the seed should be buried 1 inch deep, but for the main crops 1½ in. With respect to the distances, it may be inserted in the row, of the Dwarfs, two in 1 inch; Blues and other middle-sized varieties for the main crops, three in 2 inches; the tall and Ne Plus Ultra, as well as others of similar stature, full 1 inch apart. The best mode is to sow in single rows, ranging north and south, and the sticks alternately on each side of the row. If the rows range east and west, put the sticks on the south side.

When the summer sowings are made, if dry weather is prevalent, the seed should be soaked in water for two or three hours previous, and the drills well watered.

When the plants have advanced to a height of 2 or 3 inches, they are to be hoed, and earth drawn around their stems. This should be done twice or three times gradually as they ascend, previous to the sticks being placed. It should be performed in dry weather; for the winter-standing crops it should be especially attended to, as it protects them greatly from frost.

Sticking is not required until the plants show their tendrils. If, during the time of blossoming or swelling of the fruit, continued drought should occur, water may very beneficially be applied, it being poured between the rows, if they are in pairs, or otherwise in a shallow trench, on one side of each. Watering the leaves is rather injurious. Failures in the rows of the earliest crops may be rectified by transplanting. This is best performed in March: the plants thus removed must be watered until they have taken root, and also shaded if the weather is hot. It is a good practice to nip off the top of the leading shoots of the early and late crops as soon as they are in blossom, as it greatly accelerates the setting and maturity of the fruit. Too much care cannot be taken, when the pods are gathered, not to injure the stems. We know, from lengthened experience, that if the pods are cut off with scissors, the plants produce one-fourth more than when roughly gathered from.

The more regularly the plants are gathered from, the longer they continue in production, as the later pods never attain maturity if the earlier ones are allowed to grow old before they are gathered. In very severe weather, the winter-standing crops require the shelter of litter or other light covering, supported as much as possible from the plants by means of branches; ropes or twisted straw-bands are good for this purpose, to be fixed along each side of the rows with wooden pins driven into the ground. Whichever mode of shelter is adopted, it must be always removed in mild weather, otherwise the plants will be spindled and rendered weaker.

To obtain Seed, leave some rows that are in production during July, or sow purposely in March. Care must be taken, however, that no two varieties are in blossom near each other at the same time. The plants intended for seed ought never to be gathered from. When in blossom, all plants which do not appear to belong to the variety among which they are growing should be removed. They are fit for harvesting as soon as the pods become brownish and dry. When perfectly free from moisture, they should be beaten out, otherwise, if

hot, showery weather occurs, they will open and shed their seed.

Forcing commences in December, in the early part of which month they may be sown in a hotbed to remain, or thick to transplant, during the succeeding month, into others for production. These may be repeated in January, and the transplanting takes place in February. It is also a common practice to sow in a warm border during October, and the plants being cultivated as a natural ground crop, are removed into a hotbed during January.

The hotbed must be moderate, and earthed equally over the depth of 6 or 8 inches with light, fresh mould not particularly rich. The seed must be buried 1½ inch deep. The frame, which is required to be 2½ feet high behind, and 1½ in front, ought to be put on three or four days before the crop is sown, that the steam and heat may abate. Seed may likewise be sown at the above times in pots or pans, and placed round the binns of the stove. At the close of September, also, some peas may be sown in pots, and sunk in the earth of any open compartment; when the frost commences, to be removed into the greenhouse. A border of fresh earth being made in the front of it early in December, the plants are removed into it, in rows 2 feet asunder, or, still better, in pairs, with 10 inches interval, and 2½ feet between each pair. These will come into production about the middle of March.

In every instance, as stated above, the rows should be 2 feet, the seed or plants being set an inch asunder. The plants are ready for moving when an inch or two high. They must be shaded and gently watered until they have taken root. Preserve as much earth about their roots at the time of removal as possible.

Transplanted peas are most productive, and run the least to straw in the forcing frames. Air must be admitted as freely as circumstances permit, the same precautions being necessary as for Cucumbers. Water must be given at first sparingly, otherwise decay or superluxuriance will be occasioned; but when they are in blossom, and during the succeeding stages of growth, it may be applied oftener and more abundantly, as it is necessary for the setting and swelling of the fruit.

The shading during hot days, and covering at night, must also be particularly attended to. From three to five months elapse between the times of sowing and production, according to the fineness of the season, length of the days, &c.

The temperature may be uniformly kept up throughout their growth, having 50° for the minimum at night, and 70° for their maximum by day.

PEA WEEVILS. See SITONA.

PEACH. *Pru'nus Pe'rsica.*

Select Varieties in the Order of their Ripening.—Those in *italics* are good forcing peaches. *Early Alexander, Hale's Early, Dr. Hogg, Grosse Mignonne, Dymond, Royal George, Alexandra, Noblesse, Bellegarde,* or Galande, Barrington, *Late Admirable,* Walburton Admirable, and Princess of Wales.

Propagation: Budding.—This is performed during July. (See BUDDING.) Some persons plant the stock against the wall in its permanent situation, and bud it there; but peaches are principally budded in the nursery. The bud is introduced at about 6 inches from the ground. It remains dormant until the succeeding spring, when the head of the stock is cut off close above the bud, and the wound pared off particularly neat, in order that the returning sap may heal and skin it over. It is a good practice to apply some white lead, or a similar material, in order to exclude the air and moisture. During this summer the young bud will produce a shoot of some 2 or 3 feet in length, and this is headed back in the succeeding spring to about five or six eyes, thus leaving about 5 or 6 inches of the base of the shoot. The bud generally produces laterals during the first summer, especially towards the upper end; and the point where these commence branching generally dictates the point to which they are cut back. In the summer following they will produce four or five shoots, which must be carefully trained, and kept totally free from insects, and in the succeeding autumn the tree is fit for removal to a wall. Plants with one shoot, or of the season next after the budding, are termed by our nurserymen *maidens;* but in the succeeding summer they are termed *trained* trees. There is no better *stock* for general peach-budding than the Plum, a kind called the Muscle being very generally used. Some persons advocate the use of either Almond stocks or Peaches raised from the stone; but it is scarcely safe to recommend the practice. The Americans, to be sure, raise many of their orchards from the stone; but they have a very different climate to deal with, and we hear, moreover, many complaints of the short-lived character of their trees. The peach stones may either be sown in heat to expedite them, or otherwise. They should be cleansed and dried at the ripening period, and may be sown late in the autumn, care being taken to preserve them from the mice. The seedlings must be carefully transplanted like other shrubs; those raised in heat in pots, and those in the open ground to the nursery immediately after one summer's growth, unless sowed to remain. Their pruning must be performed as other stocks, and their subsequent culture similar.

Soils, &c.—The selection of a proper soil, and the securing a sound and dry subsoil, are of as much importance with the peach as with the vine. Three-fourths of the trees in this kingdom have been ruined by borders too deep, too damp, and too rich. Unless proper means be taken to ripen the wood, all other labours are vain. The first step in root culture is to examine the subsoil; if this is not sound and dry, it must at once be thoroughly drained. As to depth of soil, we do not exceed 2 feet, and nobody has had greater success for many years. How much, however, that depth is above the ground-level must depend on the character of the locality: if a low and damp district, we would have nearly half the volume of the soil above the front walk; if a very dry and elevated spot, not more than a third. The latitude of the place should also have an influence; and in many parts of Scotland and the north of Ireland we should raise nearly the whole border above the ordinary level. No soil is fitter than a good, sound, hazel loam; but, whatever be the colour, it is absolutely essential that it be of a texture slightly adhesive. We introduce no manure with such a soil, but generally mix with it about one-third of ordinary dark, light garden soil, adding about one-sixth of ordinary tree or shrub leaves with the whole. We generally make an artificial subsoil, planting on what we term "prepared stations." The site being drained, and the excavations formed, brick-bats, or any imperishable rubbish, is strewed over the bottom, and then covered with cinders; the latter have a couple of barrows of half-decayed leaves spread over them. This comprises the whole of our preparations. As for manures, we top-dress systematically every year in May: this forms an essential accompaniment of the shallow border system.

Culture during the Growing Period.—Protection to the blossoms is the first thing in early spring. (See PROTECTION.) The next point is disbudding. Healthy trees are sure to produce a host of little shoots, which must not be retained. Disbudding is best performed by degrees, and about three periods two or three weeks apart suffice. At the first, which should be when the young shoots are from 2 to 3 inches in length, those shoots only need be removed which project nearly at right angles from the wall; as, also, those which shoot between the wall and the branch. Nothing can justify the reservation of any of these but bare spaces of walling; such should be covered, even if by shoots of inferior character. At the second disbudding a sort of "singling out" may be practised. At the third thinning a clever selection should be made, and in doing so we would direct especial attention to the preservation of the lowest-placed young shoots all over the tree, for on these mainly depends the supply of successional wood. By the fan mode of training, which is at least equal to any other mode, acute angles, of course, are formed by every two branches when they meet. The lowest shoot in this angle, then, must be carefully preserved, and if overtopping the next shoot ahead, it may at once be pinched. Our practice is to turn next to all the extreme points, and to set the leading shoot free. It is of no use suffering any side-shoots to compete with the leading ones; therefore, all within 4 or 5 inches may be stripped away, or, if doubtful, pinched. And now a regular thinning or disbudding must be carried out between the bole and the extremities of the branches; and the only requisite is not to suffer, if possible, two young shoots to proceed side by side from any given point. Thus, training from any young shoot at the base, we would not reserve another nearer than 4 or 5 inches up any given line, and

so on, all over the tree. One thing may be observed; if the operator is at any time doubtful about a young shoot, let him merely pinch the point instead of totally removing it; at the finishing disbudding he will perceive whether it may be entirely stripped away. Disbudding should be completed a little before Midsummer. During this period the fruit must be thinned, if too thick, and this may be done at three different periods; the first, when the fruit is as large as a marble, when all malformations, and those crowded behind the shoots, may be taken away. The remaining, if too thick, must be singled out, leaving none in pairs or touching each other. At this period, they may average 3 inches apart all over the tree. In about three weeks, another slight thinning may be made, taking away a few where crowded; and now the remainder may be reserved until the stoning is nearly completed, which will be in the course of July, when all not wanted may be plucked away. It is difficult to give any set rule as to distance, so much depends on the powers of the trees; from 6 to 8 inches apart, finally, may be considered a fair crop. Water should be liberally supplied during their swelling, if the weather is dry. All gross shoots, or robbers, should be pinched when about 6 inches in length, throughout all the growing season.

Culture during the Rest Period.—Do not brush off the foliage of peaches in the autumn; the practice is not only unscientific, but really absurd. If the summer's management has been right, the pruning will be but a small affair. It consists of thinning out the shoots which had escaped notice in summer, and shortening back as much of the point of each shoot as appears immature: this is readily told by its colour and general character. These things done, the trees must be neatly trained, and such should be completed by the beginning of February, about which time we cover ours to retard the blossom-bud. Before covering them we apply a sulphur-paint, as a preventive of the red spider. This is simply sulphur beaten up in soap-water, four ounces of soft soap to a gallon, adding nearly as much sulphur as it will carry, and plenty of clay to give it a body. This is applied in all directions, between the shoots, with a painter's brush. In order to soften the colour, it is well to add plenty of soot to the mixture.

Diseases.—The *Gum* is the principal; and as a gumming habit is readily induced by wounds, especially if the tree be growing in a deep and rich soil, great care must be exercised at all times not to wound them. Rich soils, also, must be avoided, and manurial matters applied, for the most part, on the surface. The *Mildew* is a great annoyance to some cultivators. Sulphur is the best remedy, and an avoidance of extremes of wet and dry at the root the best preventive. *Blistered leaves* are said to be caused by cold at the germinating period; but this we much doubt. It probably arises from imperfect ripening of the wood in the preceding season, caused by ungenial soil and ill-training; indeed, it would not be difficult to trace three-fourths of the evils to which the peach is liable to ill-conditioned wood. The immediate cause is the fungus, *Exoascus deformans*.

Insects.—See APHIS and ACARUS.

Forcing: Form of House.—The best form for a peach-house is that thus described by the late T. E. Knight, Esq.:

As the lights, to be moved to the required extent with facility, must necessarily be short, the back wall of the house must scarcely extend 9 feet in height, and this height raises the rafters sufficiently high to permit the tallest person to walk with perfect convenience under them. The lights are divided in the middle, and the lower are made to slide down to the ground, and the upper to the middle. The flue, or hot-water pipe, enters on the east or west end as most convenient, and passes within 6 inches of the east and west wall, but not within less than 2 feet of the low front wall, and it returns in a parallel line through the middle of the house, in the direction either east or west, and goes out at the point at which it entered. The house takes two rows of peach or nectarine trees, one of which is trained on trellises, with intervals between for the gardener to pass, parallel with the two end walls. These trees must be planted between the flue and the front wall, and the other row near the back wall, against which they are to be trained.

If early varieties be planted in the front, and the earliest where the flue first enters, these being trained immediately over the flue, and at a small distance above it, will ripen first; and if the lower lights be drawn down in fine weather to the ground, every part of the fruit on the trees, which are trained nearly horizontally across the peach-house, will receive the full influence of the sun. The upper lights must be moved as usual by cords and pulleys, and if these be let down to the middle, after the fruit in the front tree is gathered, every part of the trees on the back wall will be fully exposed to the sun, at any period of the spring and summer after the middle of April, without the intervention of the glass. A single fireplace will be sufficient for a house 50 feet long, and the foregoing plan and dimensions will be found to combine more advantages than can ever be obtained in a higher or wider house. Both the walls and the flue must stand on arches, to permit the roots of the trees to extend themselves in every direction beyond the limits of the walls, for whatever be the more remote causes of mildew, the immediate cause generally appears to be want of moisture beneath the soil, combined with excess of moisture or dampness above it. A bar of wood must extend from the wall to the ground, opposite the middle of each lower light, to support it when drawn down.—*Knight's Select Papers.*

The soil, culture, and pruning are the same as required for those trees grown on walls.

Forcing in Pots is a very excellent mode, and enables the peach to be thus grown in establishments where there is no regular peach-house. Pot a three-years'-old tree in a 12-inch pot, cutting it back to four buds, and shift every year until it has attained an 18-inch pot, a size which need never be exceeded. Let the soil be turfy, and mixed with decaying wood from the bottom of an old wood stock.

Commencing Forcing and Temperature.—The best and most successful directions on these points are the following, given by Mr. W. Hutchinson, gardener at Eatington Park. He says: "Bring the trees into the house in mild weather during November, a little earlier or later according to the state of the weather; do not start them all, however, at once; the last lot need not be put in until the 1st of January. Any later than this would not answer, as the weather, if clear, is then hot through the day; commence forcing them at 55° at night, allowing the thermometer to fall to 50° in the morning, if cold; but if the weather is mild, never to fall below 55°, and from that to 60°, is the usual temperature kept up throughout the period of forcing during the night. During the day I make up for low night temperature, when I have the chance, by sun heat. Do not be fastidious about a few degrees: to get it high enough is the main point, say from 70° to 85° and 90°, until the fruit is stoned; then keep them very hot during the day, viz. from 95° to 105°, and sometimes even as high as 110°. Of course a great deal of moisture is required with this high temperature. Syringe over-head twice a day, and sometimes oftener when the air is dry, and you will scarcely ever be troubled with either green-fly or red-spider. Watering at the root must be carefully attended to; very little is wanted until the trees get covered with leaves, but after the fruit is stoned they should be watered plentifully. Of course the watering must be gradually withdrawn as the fruit approaches maturity, in order to increase their flavour."—*Gard. Chron.*

When the blossoms are well opened, impregnation should be aided by applying the pollen with a camel's-hair pencil, by lightly brushing the flowers with a rabbit's tail, tied to a cane, and by tapping the trees with a cane or the hands, during the middle of the day, when the ventilators are open.

One essential for securing vigorous production in the peach-house is to have the roots of the trees well nourished. If these are not duly supplied with moisture and food during the time the fruit is setting and swelling, a failure of the crop is inevitable. To secure such a supply, it is a most effectual treatment to give the border a top-dressing, at the close of February, of charred turf. Liquid-manure and water, of course, must be given also, as the dryness of the soil and appearance of the trees indicate is necessary.

Standards.—In Essex we have grown the peach successfully, both as a standard and as an espalier, in a garden sloping to the south, and well protected from the east and strong westerly winds.

PEACH BLISTER or LEAF CURL. It is well known that Peach Blister is due to the work of the fungus,

Exoascus deformans, which lives perennially in the young wood, passing into the buds and the young leaves on the resumption of growth. It also attacks the almond. The young shoots are often swollen by the fungus. The leaves, at first, become much curled, distorted, thickened, and pale yellow-green, but, later on, rosy or purplish, and often deep red on the Almond. The fungus spreads inside the leaf, but breaks through when fruiting, and the blistered surface then presents a velvety appearance, due to the numerous cups or asci, containing eight ascospores, which serve to spread the fungus. Shoots bearing diseased leaves should be cut back beyond the point of infection and burnt. All fallen leaves should also be raked up and burnt. A sudden fall of the temperature, after the trees are in leaf, is favourable to the rapid spread of the fungus, while warm weather checks it. Spraying with a dilute solution of Bordeaux mixture, when the leaves commence to unfold, and again three weeks afterwards, will prevent fresh attack from spores brought by the wind.

PEAR. *Py'rus commu'nis.*

Superior Dessert Kinds, arranged in the Order of Ripening.—1, Citron des Carmes; 2, Beurré Giffard; 3, Jargonelle; 4, Williams's Bon Chrétien; 5, Souvenir du Congres; 6, Marguerite Marillat; 7, Dr. Jules Guyot; 8, Beurré d'Amanlis; 9, Fondante d'Automne; 10, Louise Bonne of Jersey; 11, Marie Louise; 12, Doyenné du Comice (the best flavoured Pear); 13, Hacon's Incomparable; 14, Thompson's; 15, Knight's Monarch; 16, Glou Morceau; 17, Nouvelle Fulvie; 18, Easter Beurré; 19, Winter Nelis; 20, Josephine de Malines; 21, Olivier des Serres; 22, Bergamote d'Esperen; 23, Nec plus Meuris; 24, Beurré Rance.

Kitchen Pears in the Order of their Ripening.—1, St. Lézin; 2, General Tottleben; 3, Catillac; 4, Bellissime d'Hiver; 5, Uvedale's St. Germain.

Useful and Profitable Orchard Pears.—1, Beurré de Capiaumont; 2, Beurré Clairgeau; 3, Louis Bonne of Jersey, Williams's Bon Chrétien; 4, Jargonelle; 5, Pitmaston Duchess; 6, Josephine de Malines. Those living north and south of the centre of England must make allowance accordingly.

Of *Dessert Pears*, Nos. 1, 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 21, will succeed well, if necessary, as espaliers, pyramids, &c.; that is to say, they will do very well without a wall. Of course, the orchard pears may be added to this section, if necessary. Nos. 5, 16, 22, 23, 24, should have a wall, if possible. In cold northern districts they should have a south aspect wall.

Propagation.—Grafting is the usual mode; and for this purpose two distinct kinds of stocks are used—the one called the free stock, or wild seedlings, the other the quince. The first is the most proper for the orchard pear, as this produces much larger trees; the latter is best adapted, in general, for espaliers, walls, cordons, and pyramidal trees in gardens.

Budding is done precisely as for other fruits, and for the same purposes as grafting. By this course, however, one year, or nearly so, may be considered as lost, in point of time.

Seed is resorted to, either to produce stocks, or to raise new kinds. The seeds should be washed from the pulp when the fruit is fully ripe, dried and preserved as other seeds, and sown in the February following. Care must be taken to preserve the seed from mice whilst germinating. Those who wish to expedite the process, for the sake of gaining time, with fancy seedlings, may sow and rear the young plants in a moderate bottom-warmth, sowing in January or February, potting off the plants when up, and hardening them off by the beginning of June, when they may be planted out in a warm spot. The best way to prove such seedlings is to graft them on a good bearing old tree, on a quince stock, if possible; they will thus fruit in half the time. Our nurserymen, who rear immense quantities for stocks, bury the pears in a pit in autumn, and take them up in the February following to sow, mixing abundance of sand with the mass, to separate the seeds from the pulp; the whole is then sown together.

Soil.—The pear delights in a sound loam, rather inclining to clayey than sandy. It will, however, grow freely in sandy loams; but the fruit is very apt to crack, or become otherwise disfigured, through their impatience of drought. Any ordinary soil of a sound texture will do for their culture; and if what is termed "in good heart," no manures are necessary. For standard trees in orchards, the soil should be at least 2 feet deep; but for espaliers, walls, pyramids, &c., half a yard may suffice, if sound. A dry subsoil is particularly necessary, especially for garden pears.

Culture during the Growing Period.—The chief point is to keep down watery spray, which is generally produced in abundance. Caution must be exercised in not doing this too early, or the embryo blossom-buds may be driven into growth. Our practice is to commence by disbudding; this is generally in the beginning of May. All gross *foreright* shoots are stripped away, and several of the more luxuriant shoots, where too thick. In a few weeks the shoots begin to lengthen considerably, and their character, as to fruitfulness, is in some degree determinable. Very few of our pears bear on wood of the previous year, but a great many shoots plainly show betimes that their tendencies are towards fructification; such should, by all means, be encouraged. About Midsummer, a selection may be made; most of those which look browner than the rest, and are shorter jointed, must be reserved; and much of the paler, longer-jointed, and more succulent-looking spray may be cut or pinched back, leaving about 4 inches at the base. Those reserved we tie down to the older branches, sometimes in a reverse position—indeed, just as they happen to lay. In about a month or so from this operation we pinch the points from all growing shoots, or nearly so. This is generally done about the middle of August, and has a tendency to cause the wood to become highly solidified, and thus induces fruitfulness. After this period, the only care is to pinch the points of all succulent spray which may arise.

Culture during the Rest Period.—When the summer culture of the pear is properly attended to, but little is left for the winter pruner. Nevertheless, there is still something to do. Some shoots will have escaped the summer dresser, and many "snags" must be cut entirely away. Most of those which had been pinched back to 3 inches at Midsummer, or after, must be pruned closely off. No stump or spur must be left, unless a blank space occur; as these, by what used to be termed spurring back, only produced their like again. These snags removed, the young shoots tied or nailed down must be examined, and all considered superfluous cut away. Those reserved must be tied down on the old stems, or nailed between them, and little more is necessary until the growing period returns.

Storing.—The conditions requisite for keeping pears are a rather cool room, and one that is dry. It is well known, however, that several of our superior pears require a certain amount of warmth when near the period of use, to give them their proper flavour. We, therefore, in advising a somewhat cool room, refer to one of the most important objects connected with the dessert-table—the providing a long and continuous succession. Still it has been generally found, that in proportion as any given kind has been kept past its natural period, it has, in like proportion, lost flavour, as, also, that buttery texture for which a ripe pear is so much esteemed. What is the best temperature is not quite certain; it probably differs somewhat in different kinds. We should say 55° to 60°; not more than the latter; probably, a condition of air similar to a fine, mild, October day.

Diseases.—(See CANKER.) They are also liable to decay at the points of the shoots in some soils, which, we think, generally arises from the roots entering improper subsoils.

Insects.—See ACARUS, ASPIDIOTUS, and SELANDRIA.

PEA'RCEA HYPOCYRTIFLO'RA. See ISOLOMA HYPOCYRTIFLORUM.

PEAT EARTH. See BOG EARTH.

PEAT PLANTS. See AMERICAN PLANTS.

PECTIA'NTIA MITELLOI'DES. See MITELLA PENTANDRA.

PECTINA'RIA. (From *pecten*, a comb; in allusion to the comb-like form of the plant with its short branches radiating on the ground. Nat. ord. Asclepiadaceæ.)

Small, succulent plants for dry, greenhouse culture. Seeds; cuttings allowed to dry for some days before insertion in sand. Loam, peat, finely broken bricks, and sand.

P. articula'ta (jointed). ½. Purple. S. Africa.
„ *asperifo'ra* (rough-flowered). ½. Dull purple, inside white, dotted with crimson. S. Africa. 1910.
„ *mammilla'ris* (teated). See BOUCEROSIA MAMMILLARIS.
„ *saxa'tilis* (rock). ½. Blackish-purple. S. Africa. 1904.

PE'CTIS. (From *pecten*, a comb; referring to the pappus teeth. Nat. ord. Compositæ.)
Half-hardy annual. Seeds in gentle heat, and the seedlings planted out in May. Ordinary soil.
P. angustifo'lia (narrow-leaved). Yellow, fragrant. N.W. Amer. 1865.

PEDA'LIUM. (From *pedalion*, a rudder; in allusion to the spreading spines on the fruit. Nat. ord. Pedaliaceæ.)
A slightly branched stove annual, producing large flowers, singly, in the axils of the leaves. Seeds. Fibrous loam, leaf-mould, and sand.
P. Mu'rex (purple-fish). 1–2. Yellow. India and Trop. Africa.

PEDICULA'RIS. Lousewort. (From *pediculus*, a louse; supposed effect on sheep eating it. Nat. ord. *Figworts* [Scrophulariaceæ). Linn. *14-Didynamia*, *2-Angiospermia*. Allied to Melampyrum.)
Seeds and cuttings. Loam and peat; the great proportion require the cold pit in winter. *Sce'ptrum-Carolī'num* is a giant among them, and one of the most beautiful. Most or all of them are half parasitical and might be sown amongst grass in the bog garden, in the case of the hardy species.

HARDY HERBACEOUS.

P. adsce'ndens (ascending). ½. Red. July. Switzerland. 1819.
„ *a'tro-ru'bens* (dark red). 1. Dark red. July. Switzerland. 1819.
„ *canade'nsis* (Canadian). ½. Yellow. July. N. Amer. 1780.
„ *como'sa* (tufted). 1. Yellow. July. Italy. 1775.
„ *compa'cta* (close-*headed*). 1. Yellow. July. Siberia. 1815.
„ *cu'rvipes* (curved-stalked). ½. Rose. Himalaya. 1900.
„ *dolichorrhi'za* (long-rooted). Golden-yellow. Central Asia. 1884.
„ *e'legans* (elegant). Purple. June. Siberia. 1827.
„ *fla'va* (yellow). ½. Yellow, with red stripes. July. Siberia. 1828.
„ *Hoffmei'steri* (Hoffmeister's). 1. Bright yellow. Himalaya, &c. 1836.
„ *incarna'ta* (flesh-coloured). ½. Pink. June. Austria. 1796.
„ *megala'nthа* (large-flowered). 1–2. Rose-purple. Himalaya.
„ *Oe'deri* (Oéder's). Yellow. July. N. Europe. 1827.
„ *pa'llida* (pale). Yellow. July. N. Amer. 1826.
„ *palu'stris* (marsh). 2. Purple. June. Britain.
„ *proboscī'dea* (nosed). Purple. June. Siberia. 1827.
„ *ro'sea* (rosy). Rose. July. S. Europe. 1825.
„ *ru'bens* (ruddy). See P. ULIGINOSA.
„ *specio'sa* (showy). Purple. June. Siberia. 1827.
„ *spica'ta* (spiked). 1 Purple. June. Dahuria. 1827.
„ *stria'ta* (channelled). Yellow, crimson. June. Dahuria. 1826.
„ *sylva'tica* (wood). 1. Pink. August. Britain.
„ *uligino'sa* (marshy). Red. May. Altai Mountains. 1827. Annual.

HALF-HARDY HERBACEOUS.

P. abrotanifo'lia (Abrotanum-leaved). 1. Yellow. June. Siberia. 1816.
„ *euphrasioī'des* (eyebright-like). 1½. Purple. Siberia. 1816.
„ *fla'mmea* (flame). 1. Yellow, scarlet. July. Switzerland. 1775.
„ *folio'sa* (leafy). 1. Cream. July. Austria. 1785.
„ *gyrofle'xa* (circular). ½. Purple. July. Switzerland. 1819.
„ *mo'llis* (soft-*leaved*). 1. Purple. June. Nepaul. 1850.
„ *myriophy'lla* (myriad-leaved). See P. ABROTANIFOLIA.
P. recuti'ta (circumcised). ½. Purple. June. Austria. 1787.
„ *resupina'ta* (lying-back). 1. Purple. July. Siberia. 1816.
„ *rostra'ta* (beaked). ½. Purple. June. Switzerland. 1819.
„ *Sce'ptrum-Carolī'num* (Charles's-sceptre). 5. Yellow. July. Sweden. 1793.
„ *tubero'sa* (tuberous). 1. Yellow. June. Switzerland. 1799.
„ *uncina'ta* (hook-*flowered*). 1. Yellow. July. Siberia. 1815.
„ *versi'color* (party-coloured). See P. OEDERI.
„ *verticilla'ta* (whorled). 1. Rose. July. Austria. 1790.

PEDILA'NTHUS. (From *pedilon*, a shoe, and *anthos*, a flower; in allusion to the form of the flower. Nat. ord. Euphorbiaceæ.)
Dry stove succulent shrubs. Cuttings allowed to dry for some days before insertion in sand, kept very moderately moist. When rooted they may be potted in loam, some well-decayed and dried cow manure, with a large proportion of finely broken bricks and sand, kept very dry in winter. Winter temp., 60° to 65°; summer, 65° to 80°.
P. bractea'tus (large-bracted). 1½. August. 1809.
„ *padifo'lius* (Padus-leaved). 1. S. Amer.
„ *tithymaloī'des* (Tithymalus-leaved). 2–3. Red. S. Amer. 1874.
„ „ *variega'tus* (variegated). Leaves edged with white.
„ „ *variega'tus cuculla'tus* (hooded). Leaves hooded or cupped.

PE'GANUM. (From *peganon*, rue, and *Peganon agrion* is *Peganum Harmala*, of Linnæus. Nat. ord. Rutaceæ.)
Hardy, evergreen herb. Cuttings in sand in a cold frame during summer. Ordinary garden soil, of a light character.
P. crithmifo'lium (Crithmum-leaved). See C. HARMALA.
„ *Ha'rmala* (Harmala). 1. White, with green veins. July, August. Mediterranean region. 1570. "Syrian Rue."

PEG-WOOD. *Co'rnus sangui'nea*, and *Euo'nymus europæ'us*.

PEIRE'SCIA. See PERESKIA.

PELARGO'NIUM. Stork's-bill. (From *pelargos*, a stork; referring to the beak-like formation of the ripe seed-pod. Nat. ord. *Cranesbills* [Geraniaceæ]. Linn. *16-Monadelphia*, *4-Heptandria*.)
All natives of South Africa, except where otherwise mentioned. Seeds; cuttings in light soil. Fibrous loam, leaf-mould, well-rotted cow manure, and sand.

GREENHOUSE BIENNIALS AND ANNUALS.

P. anemonifo'lium (Anemone-leaved). See P. MYRRHIFOLIUM BETONICUM.
„ *canarie'nse* (Canary). 1½. White, red. August. Canaries. 1802.
„ *caucalifo'lium* (Caucalis-leaved). ½. White or flesh, with red veins. July. 1812. Biennial.
„ *chamædrifo'lium* (Chamædrys-leaved) of Harvey. ½. Purple. May. Annual or biennial.
„ *coriandrifo'lium* (coriander-leaved). See P. MYRRHIFOLIUM CORIANDRIFOLIUM.
„ *fumarioī'des* (Fumaria-like). ½–1. Bright crimson. July. 1862. Annual or biennial.
„ *humifu'sum* (trailing). See P. PARVULUM.
„ *pa'rvulum* (very-small). ½. Red. June. 1801. Annual or biennial.
„ *senecioī'des* (groundsel-like). ½. White. June. 1775. Annual.

GREENHOUSE HERBACEOUS.

P. alchemilloī'des (Alchemilla-like). ½. Pink. June. 1693.
„ *althæoī'des* (marsh-mallow-like). ½. White. May. 1724.
„ *Andre'wsii* (Andrews's). Blush. June. 1802.
„ *bla'ndum* (soft). Blush. 1801.
„ *chamædrifo'lium* (Chamædrys-leaved) of Jacquin. ½. White. May. 1812.
„ *ci'nctum* (girt). ½. White, crimson. 1862.
„ *columbī'num* (dove's-*foot*). ½ Purple. August. 1795.

P. elonga'tum (elongated). See P. TABULARE.
„ *endlicheria'num* (Endlicherian). 1–2. Rose. July, August. Orient. 1855. Hardy on south and west coasts of Britain.
„ *fi'ssum* (split). ½–1. Pink. Summer. 1862.
„ *la'cerum* (torn-*leaved*). See P. MYRRHIFOLIUM LACERUM.
„ *lu'ridum* (lurid). Straw. August. 1811.
„ *multicau'le* (many-stalked). ½. Pale violet. July. 1802.
„ *myrrhifo'lium* (myrrh-leaved). The type of many forms.
„ „ *beto'nicum* (Betonica-like). 1–1½. Rose or white, with dark streaks. July. Subshrubby at base.
„ „ *coriandrifo'lium* (coriander-leaved). 1–1½. White, lined with purple. June. 1724.
„ „ *frutico'sum* (shrubby). 1–1½. Pale purple or white, with purple lines. June. 1696. Subshrubby.
„ „ *la'cerum* (torn). 1–1½. Small, rosy-purple, with dark lines. July. 1731.
„ „ *pe'ndulum* (drooping). Petals 4, rosy-purple, with red lines. 1805.
„ „ *Synno'ti* (Synnot's). ½. Petals 4, lilac. August. Leaves broader and less deeply cut than in *P. m. lacerum*. 1825.
„ *Œnothe'ræ* (Œnothera-like). 1. Rose. April. Trop. Africa. 1812.
„ *ova'le* (oval). 1½. Purple. June. 1774.
„ *parvifo'rum* (small-flowered). Purple, red. June. 1800.
„ *petroselinifo'lium* (parsley-leaved). Blush. July. 1802.
„ *procu'mbens* (lying-down). ½. Purple. April. 1801.
„ *ranunculophy'llum* (Ranunculus-leaved). 1. Pale pink. 1862.
„ *recurva'tum* (curled-back). White. July. 1790.
„ *tabula're* (tabular). ½. Pale yellow. June. 1775.

GREENHOUSE TUBEROUS-ROOTED.

P. affi'ne (kindred). ½. Purple. June. 1800.
„ *apiifo'lium* (celery-leaved). ½. Black, green. June. 1800.
„ *arista'tum* (awned). ½. White, red. June. 1800.
„ *asarifo'lium* (Asarum-leaved). ½. Dark purple. December. 1821.
„ *a'trum* (dark *brown*). ½. Dark brown. June. 1788.
„ *auricula'tum* (ear-*leaved*). See P. LONGIFOLIUM.
„ *barba'tum* (bearded). ½. Flesh. July. 1790.
„ *Bowke'ri* (Bowker's). 1–1½. Yellow, with purple lines deeply fringed. 1864.
„ *brevipe'talum* (short-petaled). ½–¾. Pale yellow. 1909.
„ *buboniifo'lium* (bubon-leaved). ½. White, purple. May. 1800.
„ *ca'rneum* (flesh-coloured). ½. Pink. May. 1812.
„ *carotæfo'lium* (carrot-leaved). See P. FLAVUM.
„ *cilia'tum* (hair-fringed). See P. LONGIFOLIUM CILIATUM.
„ *conge'stum* (crowded). ½. Lilac. June. 1824.
„ *conspi'cuum* (conspicuous). 1. Crimson. July. Africa. 1810.
„ *coronillæfo'lium* (Coronilla-leaved). ½. Brown. June. 1795.
„ *corydalifio'rum* (Corydalis-flowered). See P. RAPACEUM CORYDALIFLORUM.
„ *crassicau'le* (thick-stalked). ½. White, with a purple spot on petals. July. Africa. 1786.
„ *depre'ssum* (depressed). See P. LONGIFOLIUM LONGIFLORUM.
„ *dioi'cum* (dicœcious). See P. ATRUM.
„ *dipe'talum* (two petaled). ½. Pale purple. May. 1795.
„ *filipendulifo'lium* (dropwort-leaved). See P. TRISTE FILIPENDULIFOLIUM.
„ *fissifo'lium* (cloven-leaved). ½. White, red. June. 1795.
„ *fla'vum* (yellow. *Carrot-leaved*). ½. Yellow, brown. August. 1724.
„ *floribu'ndum* (bundle-flowered). ½. White. April. 1800.
„ *folio'sum* (leafy). ½. Yellow, red. May. Hybrid. 1800.
„ *geifo'lium* (Geum-leaved). See P. HERACLEIFOLIUM.
„ *glauciifo'lium* (horned poppy-leaved). Blackish-purple, fragrant. Summer. Hybrid. 1823.
„ *heracleifo'lium* (Heracleum-leaved). ½. Greenish-yellow. July. 1800.
P. heterophy'llum (various-leaved). ½. White, red. May. 1800.
„ *hirsu'tum* (shaggy). See P. ATRUM.
„ *incrassa'tum* (thickened). ½. Pale rose. May. 1801.
„ *lacinia'tum* (jagged-*leaved*). See P. LONGIFOLIUM LACINIATUM.
„ *lea'num* (Lee's). ½. White. May. 1823.
„ *linea're* (narrow-*petaled*). ½. Yellow. June. 1800.
„ *loba'tum* (lobed). 1. Yellow, brown. July. 1710. "Cow-parsnip-leaved."
„ *longifio'rum* (long-flowered). See P. LONGIFOLIUM LONGIFLORUM.
„ *longifo'lium* (long-leaved). ½. Flesh, or white and veiny. May. 1812.
„ „ *cilia'tum* (eye-lashed). ½. Flesh. May. 1795.
„ „ *lacinia'tum* (laciniate). ½. Flesh, or white, with dark lines or spots. May. 1800.
„ „ *longifio'rum* (long-flowered). ½. Primrose-yellow. May. 1812.
„ *lu'teum* (yellow). ½. Yellow. May. 1802.
„ *melana'nthum* (black-flowered). See P. ATRUM.
„ *millefolia'tum* (milfoil-leaved). See P. TRISTE MILLEFOLIATUM.
„ *multiradia'tum* (many-rayed). 1. Dark brown. May. 1800.
„ *nervifo'lium* (nerved-leaved). ½. Variegated. June. 1812.
„ *ni'veum* (snowy). ½. White. June. 1821.
„ *nummulariifo'lium* (moneywort-leaved). See P. AUSTRALE.
„ *nu'tans* (nodding). See P. RAPACEUM.
„ *oblonga'tum* (obversely-egg-shaped). ½. Cream; two upper petals with purple veins. 1872.
„ *obtusa'tum* (obtuse). Pale yellow. Namaqualand. 1881.
„ *orobifo'lium* (Orobus-leaved). ½. Blood. June. 1824.
„ *ovalifo'lium* (oval-leaved). ½. White. May. 1820.
„ *oxalidifo'lium* (wood-sorrel-*leaved*). ½. Yellow. June. 1801.
„ *pa'llens* (pale-*flowered*). See P. STIPULACEUM.
„ *pennifo'rme* (wing-formed). ½. Yellow. May. 1800.
„ *pi'ctum* (painted). See P. PULCHELLUM.
„ *pilo'sum* (long-haired). ½. Pink. June. 1801.
„ *pinna'tum* (pinnate). ½. White or flesh, veiny or with a spot on each petal. May. 1779.
„ *pulche'llum* (neat). ½. White. April. 1795.
„ *pulverule'ntum* (powdery). 1. Grey, blood. July. 1822.
„ „ *pedicella'tum* (long-stalked). 1. Green, brown. 1822. Pedicels longer than bracts.
„ *puncta'tum* (dotted-*flowered*). ½. Cream. May. 1794.
„ *purpura'scens* (purplish). See P. LONGIFOLIUM LACINIATUM.
„ *radica'tum* (*large*-rooted). ½. Yellow. June. 1802.
„ *rapa'ceum* (rape). ½. Purple. May. 1788. "Fumitory-flowered."
„ „ *corydalifio'rum* (Corydalis-flowered). Primrose-yellow; upper petals red at base. May. 1821.
„ „ *lu'teum* (yellow). Pale sulphur-yellow; upper petals with a dark spot. 1822.
„ „ *Seli'num* (Selinum-like). Rosy-white or flesh; upper petals mottled at base.
„ *refle'xum* (bent-back-*leaved*). ½. White. June. 1800.
„ *reticula'tum* (netted). ½. Pink. May. 1820.
„ *retu'sum* (bitten). ½. Dark crimson. June. 1824.
„ *revolu'tum* (rolled-back). ½. Purple. July. 1800.
„ *ro'seum* (rosy) of Aiton. ½. Rosy-red. April. 1792.
„ *ro'seum* (rosy) of Willdenow. See P. RADULA ROSEUM.
„ *rumicifo'lium* (dock-leaved). ½. Yellow. June. 1823.
„ *rutæfo'lium* (rue-leaved). ½. Yellow. 1869.
„ *schizope'talum* (cut-petaled). 1. Yellow, brown. June. 1821.
„ *Scho'tii* (Schott's). 1–1½. Crimson, with irregular black blotches, extending down on the veins. Hybrid. 1869.
„ *sele'ctum* (select). Hybrid (*P. lobatum* and unknown species). 1823.
„ *seto'sum* (bristly). ½. Rose. May. 1821.
„ *spathula'tum* (spathula-*leaved*). ½. Yellow. May. 1800.
„ „ *affi'ne* (kindred). ½. Yellow. April. 1794.
„ *stipula'ceum* (large-stipuled). ½–1. Cream-coloured. May. 1800.
„ *tene'llum* (slender). ½. Yellow. June. 1802.
„ *testa'ceum* (reddish-yellow). See P. PULVERULENTUM.
„ *triphy'llum* (three-leaved). ½. Flesh. May. 1812.

P. tri'ste (sad. *Night-smelling*). 1. Green, yellow. July. 1632.
„ „ *filipendulifo'lium* (dropwort-leaved). ½. Brownish-yellow, with dark spots. July. 1812.
„ „ *millefolia'tum* (milfoil-leaved). ½. Yellow, brown. July. 1824.
„ *undulæflo'rum* (wavy-flowered). ½. Black. June. Hybrid. 1821.
„ *undula'tum* (wavy-*leaved*) of Aiton. ½. White. June. 1795.
„ *undula'tum* (waved) of Harvey. See P. LONGIFOLIUM.
„ *viciæfo'lium* (vetch-leaved). See P. PINNATUM.
„ *violæflo'rum* (violet-flowered). ½. White. May. 1810.
„ *virgi'neum* (virgin). See P. LONGIFOLIUM.

GREENHOUSE EVERGREEN SHRUBS.

P. abrotanifo'lium (southernwood-leaved). 3. Red. May. 1791.
„ *acerifo'lium* (maple-leaved). 3. Pale purple. April. 1784. One of parents of show and fancy Pelargoniums.
„ *aceto'sum* (sorrel-*leaved*). 3. Pink. July. 1710.
„ *acugna'ticum* (d'Acunha). See P. GROSSULARIOIDES.
„ *adulteri'num* (counterfeit). 3. Purple. May. 1785.
„ *alnifo'lium* (alder-leaved). 2. Pink-veined. May.
„ *alte'rnans* (alternate). 1. White, purple. June. 1791. "Parsley-leaved Geranium."
„ *amœ'num* (lovely). See P. ZONALE.
„ *ampli'ssimum* (largest). 2. Purple. May.
„ *a'nceps* (two-edged). See P. GROSSULARIOIDES.
„ *angulo'sum* (angled). 3. Purple. August. 1724. One of parents of show and fancy Pelargoniums.
„ *a'rdens* (burning). Red. June. Hybrid. 1807.
„ „ *supe'rbum* (superb). Flowers larger.
„ *arma'tum* (armed). Purple. May. Hybrid (*P. echinatum* × *reniforme*). 1824.
„ *artemisiæfo'lium* (wormwood-leaved). White. June. 1817.
„ *a'sperum* (rough). Garden variety of *P. quercifolium*.
„ *astragalifo'lium* (Astragalus-leaved). ½. White, purple. July. 1788.
„ *athamanthoi'des* (Athamanta-like). Leaves grey-felted, twice deeply cut.
„ *austra'le* (southern). ½–1½. White or rose, with violet lines. Southern regions. 1792.
„ „ *acugna'ticum* (d'Acunha). See P. GROSSULARIOIDES.
„ „ *glomera'tum* (clustered). ½–1. White, lined with violet-purple. July. Australia. 1792.
„ „ *inodo'rum* (scentless). See P. INODORUM.
„ „ *littora'le* (shore). W. Australia. 1837.
„ *balbisia'num* (Balbisian). 1–2. Soft silvery-lilac, with maroon nerves. S. Africa. 1818.
„ *balsa'meum* (balsamic). See P. SCABRUM BALSAMEUM.
„ *Barrington'nii* (Barrington's). 3. Purple. May.
„ *beaufortia'num* (Beaufort's). 3. Lilac. June.
„ *Bella'rdii* (Bellard's). White. June. 1818.
„ *bentinckia'num* (Bentinck's). 2. Scarlet. May.
„ *betulæfo'lium* (birch-leaved). See P. CORDATUM.
„ *betuli'num* (birch-*leaved*). 3. White, red. July. 1759.
„ *bi'color* (two-coloured). 1½. Purple, white. July. 1778.
„ *blandfordia'num* (Blandfordian). 2. Blush-pink (*P. graveolens* × *echinatum*). 1805.
„ *blatta'rium* (moth *mullein*). See P. OVALE BLATTARIUM.
„ *bulla'tum* (blistered). See P. MYRRHIFOLIUM BETONICUM.
„ *cane'scens* (hoary). See P. INCISUM.
„ *ca'num* (hoary). See P. OVALE.
„ *capita'tum* (*round*-headed). 3. Purple. June. 1690. "Attar of Rose Geranium."
„ *carduifo'lium* (thistle-leaved). 3. Pale purple. July. 1816.
„ *carina'tum* (keeled). ½. White, purple. July. 1820.
„ *carno'sum* (fleshy-*stalked*). 1. Purple, white. May. 1724.
„ *ceratophy'llum* (horn-leaved). 1. White. June. Africa. 1786.
„ *ceri'num* (wax-like). See P. INQUINANS.
„ *citriodo'rum* (citron-scented). 3. White. July. 1800.
„ „ *mi'nimum* (smallest). Leaves very small.
„ *citro'sum* (lemon-scented). See P. CITRIODORUM.
„ *cochlea'tum* (twisted-shell-*leaved*). See P. ACERIFOLIUM.
P. co'mptum (decked). Pink, with purple centre, and numerous lines. June to November. Hybrid. 1825.
„ *conduplica'tum* (double. *Heart-leaved*). 3. Purple, white. May. 1774.
„ *consangui'neum* (kindred). 2. Pink. June.
„ *corda'tum* (heart-*leaved*). 3. Purple, white. May. 1774.
„ „ *rubroci nctum* (red-edged). 3. Purple, white. May. 1774.
„ *cordifo'lium* (heart-leaved). See P. CORDATUM.
„ *coronopifo'lium* (buckhorn-leaved). 1½. Pale red. August. 1791.
„ *cortusæfo'lium* (Cortusa-leaved). 2. Pink. July. Africa. 1786.
„ *corymbo'sum* (corymbose). See P. TOMENTOSUM.
„ *Coityle'donis* (navelwort-*leaved*). ½. White. June. St. Helena. 1765. "Hollyhock-leaved Geranium."
„ *crassifo'lium* (thick-leaved). See P. CRISPUM.
„ *crena'tum* (scolloped-*leaved*). 2. July. 1800.
„ *cri'spum* (curl-*leaved*). 3. Purple. September. 1774.
„ „ *ma'jus* (larger). Leaves larger.
„ „ *pustulo'sum* (pimply). 3. White, pink. June. Hybrid. 1820.
„ *crithmifo'lium* (samphire-leaved). 1. White, purple. May. 1790.
„ *cuculla'tum* (hooded-*leaved*). 3. Purple. May. 1690. Parent of show, fancy, and regal Pelargoniums.
„ „ *grandiflo'rum* (large-flowered). 4. Purple. May. 1818.
„ „ *ma'jor* (greater. *Royal George*). 4. Purple. May. 1812.
„ „ *parvifo'lium* (small-leaved). Purple.
„ „ *striatiflo'rum* (streaked-flowered). 4. Purple. May. 1810.
„ *cuspida'tum* (sharp-pointed). See P. GLAUCUM.
„ *cynosbatifo'lium* (eglantine-leaved). See P. MALVÆFOLIUM.
„ *dasycau'lon* (thick-stemmed). 1. White, purple. September. 1795.
„ *dasyphy'llum* (thick-leaved). See P. CRITHMIFOLIUM.
„ *deco'rum* (comely). Lilac. July. Hybrid. 1825.
„ *delphinifo'lium* (larkspur-leaved). 3. Pink. June.
„ *denticula'tum* (tooth-*leaved*). 3. Pink. June. 1789.
„ „ *filicifo'lium* (fern-leaved). Leaves more finely cut.
„ „ *ma'jus* (larger). Leaves larger.
„ *di'scipes* (disk-stalked). 3. Africa. 1808.
„ *diversifo'lium* (different-leaved). See P. GLAUCUM.
„ *Drummo'ndii* (Drummond's). See P. CAPITATUM.
„ *echina'tum* (bristly or prickly). 1. White, with dark red spot on upper petals. June. 1789.
„ *ela'tum* (tall). 2. White, purple. August. 1795.
„ *ele'ctum* (select). White. July. Hybrid.
„ *e'legans* (elegant). 3. White, red. April. 1795.
„ „ *ma'jus* (larger-*flowered*). 3. White, red. June. 1795.
„ „ *mi'nus* (smaller-*flowered*). 3. White, red. June. 1795.
„ *ere'ctum* (erect). Hybrid (*P. particeps* × *cortusæfolium*). 1823.
„ *erioste'mon* (woolly-*stemmed*). See P. OVALE.
„ *exstipula'tum* (unstipuled). 3. Violet. July. 1779.
„ *ferula'ceum* (combustible). Stem succulent, swollen at the joints. Flowers very small.
„ *formosi'ssimum* (handsomest). 2. White, red. July. 1759.
„ *Fothergi'llii* (Fothergill's). 2. Scarlet. August.
„ „ *purpu'reum* (purple). 3. Purple. August. 1810.
„ *fra'grans* (fragrant). 2. White, with red lines on upper petals. July. "Nutmeg-scented Geranium," "Penny-royal Scented Geranium."
„ *fu'lgidum* (shining. *Celandine-leaved*). 1½. Scarlet. May. 1723. "Celandine-leaved Geranium."
„ „ *igne'scens* (fiery). Scarlet. Summer and autumn. Hybrid. 1812.
„ *fusca'tum* (clouded). See P. FUSCIFLORUM.
„ *fusciflo'rum* (dusky-flowered). 3. Purple, red. May. 1812.
„ *gibbo'sum* (swollen). 1½. Green, yellow. June. 1712.
„ *glaucophy'llum* (glaucus-leaved). See P. GLAUCUM.
„ *glau'cum* (milky-green-*leaved*). 3. White, red. July. 1775.
„ *glomera'tum* (heaped). See P. AUSTRALE GLOMERATUM.
„ *glutino'sum* (sticky). 3. Pale rose. May. 1777.
„ „ *nigre'scens* (blackish). 4. Pale purple. May. 1777.
„ *grandiflo'rum* (large-flowered). 3. White, red. May. 1794.

P. gra'tum (grateful). 2. Pink. June. "Citron-scented Geranium."
„ *grave'olens* (strong-smelling). 3. Purple. May. 1774. "Rose-scented Geranium."
„ „ *variega'tum* (variegated-*leaved*). 3. Purple. May. 1804. "Lady Plymouth."
„ *grossularioi'des* (gooseberry-like). ½–1. Pink. June. 1788. Annual.
„ *hepaticæfo'lium* (Hepatica-leaved). Rose. July. 1791.
„ *hermanniæfo'lium* (Hermannia-leaved). 3. Pink. May.
„ *hetero'gamum* (dissimilar). 2. Pink. July. 1876.
„ *hi'rtum* (hairy). See P. TENUIFOLIUM.
„ *hi'spidum* (bristly). 3. Purple. June. 1790.
„ *holoseri'ceum* (velvety). See P. OVALE.
„ *hy'bridum* (hybrid). 2. Lilac. July. 1732.
„ *imbrica'tum* (imbricated). 3. Lilac, purple. June. Hybrid. 1800.
„ *inæqui'lobum* (unequal-lobed). Greenish-yellow, with purplish spot on each petal. E. Trop. Africa. 1901.
„ *inci'sum* (cut-*leaved*). 3. White, red. June. 1791.
„ *inodo'rum* (scentless). ½–1. Pale purple. July. Australia. 1796. Trailer.
„ *i'nquinans* (dyed-*flowered*). 2. Scarlet. July. 1714.
„ *ionidiflo'rum* (violet-flowered). Purple, with darker lines on upper petals.
„ *Jatrophæfo'lium* (Jatropha-leaved). Rose. Leaves with five finger-like lobes.
„ *læviga'tum* (smooth. *Three-leafleted*). 3. White, red. June. "Three-leafleted Geranium."
„ „ *oxyphy'llum* (sharp-leaved). Leaflets quite entire. 1800.
„ *lanceola'tum* (spear-head-*leaved*). White, purple. July. 1775.
„ *late'ripes* (side-stalked). 2. Pale purple. July. 1787. "Ivy-leaved Geranium."
„ „ *a'lbo-margina'tum* (white-margined). 2. Pale red. August. 1787.
„ „ *ro'seum* (rose-coloured). 2. Red. August. 1787.
„ „ *zona'tum* (zoned). 2. Pale purple. August. 1787.
„ *lateri'tium* (brick-coloured). See P. MALVÆFOLIUM.
„ *la'xum* (loose-*panicled*). See P. CRITHMIFOLIUM.
„ *leptope'talum* (slender-petaled). 2. Red. June. 1800.
„ *leuca'nthum* (white-flowered). See P. ZONALE.
„ *littora'le* (shore). See P. AUSTRALE LITTORALE.
„ *longicau'le* (long-stemmed). 1. Pale rose. June. Trailer.
„ *macula'tum* (spotted). Blush. July. 1796.
„ *malvæfo'lium* (mallow-leaved). 2. Pale red. July. 1811.
„ *micra'nthum* (small-flowered). Scarlet. September.
„ *mo'nstrum* (monstrous). 2. Red. July. 1784.
„ *multibracte'atum* (many-bracted) White. Leaves with a dark zone. Abyssinia to German E. Africa. 1892.
„ *nigre'scens* (dark). See P. GLUTINOSUM NIGRESCENS.
„ *no'thum* (spurious). 2. Pink. May.
„ *obtusifo'lium* (blunt-leaved). 3. Purple. June. Hybrid. 1820.
„ *odorati'ssimum* (sweetest-scented). 2. Pink. July. 1724.
„ *ova'le* (oval). 1½. White, with dark blotches to deep purple, with blotches. August. 1794.
„ „ *blatta'rium* (moth-mullein). ½. Deep purple. Leaves white-felted. July. 1720.
„ *oxyphy'llum* (sharp-leaved). See P. LÆVIGATUM OXYPHYLLUM.
„ *pa'llidum* (pale-*flowered*). 3. Pink. June.
„ *papiliona'ceum* (butterfly). 3. Pale white. June. 1724.
„ *patenti'ssimum* (most-spreading). 3. Lilac, white. June. 1820.
„ *pa'tulum* (spreading). 3. Pale blood. June. 1812.
„ *pedicella'tum* (*long*-flower-stalked). See P. PULVERULENTUM PEDICELLATUM.
„ *pelta'tum* (shield-like). 2. Purple. July. 1701. "Ivy-leaved Geranium."
„ „ *variega'tum* (variegated). 2. Purple. July. 1701.
„ *pe'ndulum* (weeping). ½. Red. May. Trailer.
„ *penicilla'tum* (pencilled). See P. BETULINUM.
„ *primuli'num* (primrose-*flowered*). See P. CRASSICAULE.
„ *principi'ssæ* (princess's). 3. Dark pink. August. 1820.
„ *pu'milum* (dwarf). See P. SCANDENS.
„ *pustulo'sum* (pimply). See P. CRISPUM PUSTULOSUM.
P. quercifo'lium (oak-leaved). 3. Purple. May. 1774.
„ „ *bipinnati'fidum* (doubly-leafleted). 4. Purple. May. 1774.
„ *quina'tum* (five-fingered). 1. Pale yellow. May. 1793.
„ *quinque'lobum* (five-lobed). 3. Red. July. 1820.
„ *quinquevu'lnerum* (five-spotted). 1½. Dark purple. July. 1796.
„ *radia'tum* (ray-*leaved*). ½. Dark purple. July. 1790.
„ *Ra'dula* (file- or rasp-). 2–5. Pale purple, with dark lines. Plant balsamic scented. June. 1774.
„ „ *ro'seum* (rosy). Rose.
„ *renifo'rme* (kidney-shaped). 2. Purple. July. 1791.
„ *ribifo'lium* (currant-leaved). 3. White. May. 1798
„ *ri'gidum* (stiff). See P. CRISPUM.
„ *ro'seum* (rosy) of Willdenow. See P. RADULA ROSEUM.
„ *ru'bens* (red-*flowered*). 3. Purple. June.
„ *rubroci'nctum* (red-edged). See P. CORDATUM RUBROCINCTUM.
„ *rugo'sum* (wrinkly). 3. Pink, lilac. July. 1800.
„ *sangui'neum* (blood-red). 1. Scarlet. July. 1810.
„ *saniculæfo'lium* (sanicle-leaved). 3. Pale red. July. 1806.
„ *saxifragoi'des* (Saxifraga-like). 1. Pink and purple. 1890. Belongs to Ivy-leaved section.
„ *sca'brum* (rough-*wedge-leaved*). 3. White, red. June. 1775.
„ „ *balsa'meum* (balsamic). Leaves 3–5 lobed, or 3–5 parted. Pink. 1790.
„ *sca'ndens* (climbing). 3. Rose. July. 1800.
„ *scuta'tum* (shield). White. August. 1701.
„ *semitri'lobum* (half-three-lobed). See P. ADULTERINUM.
„ *sisonifo'lium* (Sison-leaved). White, with red veins. 1868.
„ *Ske'lii* (Skel's). S. Africa.
„ *soro'rium* (sisters'). 3. White, red. May. Hybrid.
„ *specio'sum* (showy). 3. Purple. May. 1794.
„ *spino'sum* (thorny). 3. Pink. May. 1795.
„ *spu'rium* (spurious). 2. Violet. May.
„ *staphisagrioi'des* (staves-acre-like). 1½. Purple. July. 1825.
„ *stenope'talum* (narrow-petaled). See P. ZONALE STENOPETALUM.
„ *Synno'tii* (Synnot's). See P. MYRRHIFOLIUM SYNNOTII.
„ *tenuifo'lium* (fine-leaved). 3. Purple. June. 1768.
„ *terna'tum* (three-leafleted). 3. Pink. June. 1789.
„ *tetrago'num* (square-*stalked*). 2. Pink. July. 1774.
„ „ *variega'tum* (variegated). 2. Pink. July. 1774.
„ *tomento'sum* (downy). 3. White. June. 1790.
„ *tri'color* (three-coloured). See P. VIOLARIUM.
„ *tricuspida'tum* (three-pointed). 3. White, purple. June. 1780.
„ *triparti'tum* (three-lobed-*leaved*). 3. Pale yellow. June. 1789.
„ *unicolo'rum* (one-coloured). See P. WILLDENOVII.
„ *uniflo'rum* (one-flowered). 3. June. 1800.
„ *variega'tum* (variegated-*flowered*). 3. White, red. June. 1812.
„ *verbascifo'rum* (Verbascum-flowered). See P. OVALE.
„ *viola'rium* (Viola-like). 1. Two upper petals dark red, three lower white. July. 1791.
„ *viscosi'ssimum* (clammiest). 3. Lilac, white. June. 1820.
„ *vitifo'lium* (vine-leaved). 3. Purple. July. 1724.
„ *Watso'nii* (Watson's). 3. Purple. May. 1822.
„ *Willdeno'vii* (Wildenow's). 2. White-veiny or crimson. June.
„ *zona'le* (zoned). 2. Scarlet. August. 1710.
„ „ *cocci'neum* (scarlet). 3. Scarlet. August. 1710.
„ „ *crystalli'num* (crystalline). 3. Scarlet. August. 1710.
„ „ *margina'tum* (*white*-margined). 2. Scarlet. August.
„ „ *stenope'talum* (narrow-petaled). 1½. Scarlet. June. 1800.

PELARGONIUM CULTURE.—*Propagation by Seed* is the only way to raise superior varieties. The first and most important of their qualities is *form*, the next is substance, the next size, and the last colour. To these may be added habit and truss. Save seed only from such as possess already these points approaching to perfection. *In all attempts to hybridise, let the one to bear the seed possess the properly of form.* In order to obtain the other properties wanting, cut off the anthers of the well-formed variety before the pollen-cases shed their contents; and

the moment the hybridising is performed, cover the flowers with a close-fitting cap of fine muslin-net, to prevent insects from carrying strange pollen to the stigma dusted with pollen from such varieties as have the desirable properties. When the seed is ripe, gather it carefully, and divest it of its arils, or feather-like appendages, wrap it up in paper, and keep it in a dry drawer, in a cool room, till spring. Sow it early in March, and place it in a gentle heat; a hotbed that has been at work for a few weeks will answer admirably. Sow in wide, shallow pots, well-drained, in a light, rich compost, press the seed down gently, and cover it about ¼ inch. If the seed is good, it will quickly germinate, and should then be removed from the hotbed, and placed upon a shelf in the greenhouse near to the glass. Water very moderately, or the plants will be apt to damp off. As soon as the seedlings have made their second leaf, pot them off singly into 2-inch pots, in a compost of loam and leaf-mould, in equal parts, with a liberal addition of river-sand, finely sifted. Replace them on the shelf, and shade for a time from hot sunshine. The seedlings will soon fill these small pots with roots. They must then be re-potted into a size larger pot, and subsequently be treated in the same way as such as have been propagated by cuttings. Keep them close to the glass, and give abundance of air on all favourable occasions. As soon as the weather will permit, place them out of doors, upon a bed of ashes of sufficient thickness to prevent worms from entering the pots. The situation should be an open one, the grand object being to ripen the wood, and induce a stocky or bushy habit, so as to insure their flowering the following season. The size of pots to flower them in need not be more than 4½ inches. When there is a fear of autumnal frosts, remove them into the greenhouse, and place them on a shelf, at such a distance from the glass as will serve to keep them dwarf and bushy. There is no need to top them in the manner recommended hereafter for plants raised from cuttings the object being not to make fine specimens, but to get them to flower as quickly as possible the spring following.

By Cuttings.—Cuttings may be put in and struck from February to September; the general time, however, is when the plants have done flowering, and require cutting down to make bushy plants for the next season. This generally happens from the end of June to the beginning of August.

The best place to strike the cuttings in is a well-constructed propagating-house; but, as every one has not such a convenience, they may be very successfully propagated in a frame set upon a spent hotbed, first removing the soil, and replacing it upon a thick coat of coal-ashes, to keep out the worms. Upon this coat place another of dry sawdust, to plunge the cutting-pots. This dry sawdust will serve to absorb the moisture from the earth in the pots and the necessary waterings. The best soil is pure loam, mixed with silver sand. The size of the pots should neither be too large, nor too small—5 inches wide at the top is the most proper. Some use small pots, and only place one cutting in each. This, where the cuttings are few and the convenience small, will be suitable enough. It has this advantage, also, that the cuttings are, after being rooted, more conveniently repotted, without in the least injuring the young and tender roots; but where the quantity to be increased is large, the former method of putting several cuttings in 5-inch pots will be more convenient, and, with care, equally as successful. Whichever method is adopted, the pots must be well drained with broken potsherds, the larger pieces at the bottom, and smaller at the top. Fill them to the top with the prepared loam, which should be put through a rather coarse sieve to take out the stones, roots of grain, and other extraneous matter. It should not be pressed down too hard, but made firm enough to hold the cuttings fast. Another point is to use it in a state neither wet nor dry. The side-shoots which have not flowered, and are not more than 2 inches long, make the best cuttings. These should be cut off close to the stem from whence they spring with a sharp knife. Cut off the bottom leaves close to the stem, leaving only two of the uppermost. Place the cuttings, after they are made, in a shady situation, upon a dry board or slate, to dry up the wound. This will take an hour on a dry day, or two hours on a dull, cloudy one. Then put them in the prepared pots round the edge, inclining the leaves inwards, so that they may not touch the leaves of those in the contiguous pots when they are placed in the frames, or set upon the heated material in the propagating-house. When a pot is filled, give it a gentle watering, and set it on one side to dry up the moisture on the leaves and surface of the soil. Then plunge them in the frame, and shade them carefully and effectually from the sun, or even from the light. Reduce the shade gradually, using it only during bright sunshine. A little air may also be given every day, by tilting up the lights behind, if in a frame. The propagating-house will only require air when the heat is too great, to reduce the temperature to 55° or 60°. The cuttings must be frequently examined, to see if roots are formed; and as soon as they are an inch long, pot them off immediately into the smallest 60-pots, which are generally about 2 inches diameter. A small addition of well-decomposed leaf-mould may be mixed amongst the loam with advantage. When they are finished potting off, give another gentle watering, and replace them in the frame or propagating-house until fresh roots are formed; renew the shading, but disuse it as soon as it is safe to do so, and then give plenty of air, to prevent them being drawn up and spindly. To cause them to become bushy plants furnished with branches close to the pot, nip off the top bud; the lower side buds will then break and push forth, and these must be again stopped as soon as they have made three leaves. The plants will then be ready to receive a second potting, and should be removed into the open air.

The above remarks and directions, so far as the cuttings are concerned, relate only to the (as they are called) *show* varieties. There is another class of pelargoniums, which are denominated *fancy* varieties. These are more difficult to increase by cuttings. Place the cuttings in shallow pans, 1½ inch only deep, with a hole in the centre, in the usual loam and sand, placing them on a shelf in the propagating-house, or in the frame, close to the glass, upon topsy-turned pots. The cuttings are made very short, with a portion of the old wood at the bottom of each. Very little water is given till the callosities are formed, when it is given more freely, and then roots make their appearance, when they are immediately potted off, and the usual treatment followed.

By Buds.—Make a shallow pan ready for them, by first putting in a portion of pure loam and sand, then a covering of pure sand alone, give a gentle watering to settle it, and then prepare the buds. Take a shoot of moderate strength, cut off the leaves, but not quite close to the stem, then cut off the two lowest buds, leaving about ¼ inch of wood below each bud. After that, split the shoot containing the two buds down the centre. If the two buds are not exactly opposite, but one a little below the other, the upper one must be shortened below the bud to the proper length. The upper cut should be very nearly close to the bud. Make a sufficient number ready at once to fill the pan or pot, and plant them, using a short, blunt stick a degree thicker than the bud-cutting. Insert them so as only to leave the bud just above the sand. Plant them close to, and round the edge of the pan, placing the cut side close against the pot, which will, of course, place the bud side inwards. Then fill up the holes with a little dry sand, and water gently again. Place them either in a propagating-house, a shady part of a stove near the glass roof, or in a frame. Shade from bright sunshine in whatever situation they are placed, and water as required. The buds will soon break and show leaves, shortly to be followed by a shoot.

By Roots.—Some kinds of *Fancy Pelargoniums*, and most of the *Cape original species*, are difficult to increase by any of the above methods. In such cases there is left the mode of increase by cuttings of the roots. This is almost certain of success. Take an old plant, shake off carefully all the soil, and cut the roots into short pieces, retaining as many fibres as possible to each. Put each root-cutting singly into as small pots as they can be got into, leaving the top just visible. Place them in the house, or frame, appropriated to propagation; give a gentle watering, and shade effectually. New roots will soon push forth, and then shoots will appear, generally in clusters. When that takes place, reduce the shade, to give colour to the leaves and strength to the shoots. As these advance in growth, thin them gradually, by slipping one or two off at a time, till finally they are reduced to one which is to form the future plant. As soon as this shoot attains the height of 2 or 3 inches, nip off the top to cause side-shoots to grow, and so form a neat, bushy plant.

General Culture: the House.—Pelargoniums, like all other large families of plants, require a house to themselves, and one peculiarly adapted to produce fine specimens. The span-roofed form is the best, and for this satisfactory reason—that the plants in such a house grow on all sides alike. The sides of the house should be of glass, the side windows should move up and down, to allow a large circulation of air, and the top lights should also be movable, to let out the upper stratum of heated air. The plants should be placed upon stages near to the glass. These stages ought to be broad enough to allow large specimens to stand clear of each other upon them. The size of the house will depend upon the means of cultivation, and the number intended to be grown. To exhibit collections of ten or twelve in number, three or four times during the season, the house should be at least 50 feet long, and 20 feet wide. This will allow a stage in the centre 10 feet wide, walks round it 2½ feet wide, and a platform all round 2½ feet broad. This will leave the stage for three rows of twelve plants in each, full-sized and well-grown specimens. On the platforms next the front light smaller-sized plants may be placed, to succeed the others when they become unsightly through the bloom being over.

The only heat wanted is just enough to keep out the frost, and the best mode of obtaining that heat is by hot water circulating in cast-iron pipes. (See GREENHOUSE.)

Compost.—Procure from an old pasture, where the grass is of a fine texture, as much turf, 3 or 4 inches thick, as will serve to pot the collection for one year; cast it into the compost-yard, and have it immediately chopped up into small pieces, and as it is done, lay it up in a long ridge, facing east and west, so that the sun can shine upon each side morning and evening. The ridge or bank should not exceed 2 feet high, on a base of 3 feet wide. The grassy surface and green roots will soon begin to ferment during the process of decomposition, and the gases arising will penetrate to every particle of soil, and moderately enrich it, quite sufficient to grow geraniums. Let it be turned over every three months for a year, and then it will be fit for use. Unless it be very heavy, or of a close texture, it will not require any addition. If too heavy, add sand to render it of an open texture.

Culture of Established Plants.—Cut them down in July, leave them in a cold pit, and in eight or ten days after being cut down, and receiving moisture *about* the tops rather than *among* the roots, the pots may receive a fair watering—as much as will reach every good root. When the buds break, gradually give air. When 1 inch in length or so, take the plants to the potting-bench, shake the soil from the roots, examine and prune the roots a little, re-shift into similar, or, what in general will answer better, smaller-sized pots; place them again in the cold pit, and keep close until the fresh roots are running in the new soil; then give air gradually, until at length you expose them *entirely* to the atmosphere, steering clear, however, of cold rains and anything like frost. Plants cut down in June and July, if transferred to small pots, will require to be placed in blooming-pots in the end of October. Those cut down in the end of July, or during August, will not want repotting until the new year has brought lengthened sunshine; and from these different successions of bloom may be expected. To have it fine, cleanliness, air, light, *room*, and a temperature seldom below 45°, must be leading considerations. Through the winter, unless during sunshine, the temperature should never be higher. After a sunny day it may be from five to eight degrees lower at night with impunity. In the case of large plants, little stopping will be required after repotting. Thinning instead will often be necessary. Hence old plants generally produce the earliest bloom, as every general stopping of the shoots, as well as every shift given, retards the blooming period.

PELECY'PHORA. (From *pelekus*, an axe, and *phoreo*, to bear; in allusion to the form of the tubercles. Nat. ord. Cactaceæ.)

Greenhouse succulent perennials. Cuttings and offsets allowed to get dry for some days before insertion in sand. Loam, leaf-mould, or peat, with one-fourth finely broken bricks, and sand.

P. asellifo'rmis (little-ass-formed). ½. White, rose. June. Mexico. 1843.
„ „ *co'ncolor* (one-coloured). ½. Purple. Mexico. 1873.
„ *pectina'ta* (comb-like). ½. Rose. Mexico.

PELE'XIA. (From *pelex*, a helmet; the dorsal sepal and the petals are united in the form of a helmet. Nat. ord. Orchidaceæ.)

Terrestrial stove orchids. Divisions. Fibrous peat, fibrous loam, sphagnum, some charcoal and sand.

P. adna'ta (adnate). 1–3. Pale green. White. W. Ind. 1823.
„ *macula'ta* (spotted). 1. Green, tipped with pink. 1893.
„ *oliva'cea* (olive-coloured). Sepals olive-green, the rest white. Andes. 1891.
„ *ro'seo-a'lba* (rosy-white). 1. White. Brazil. 1892.
„ *sacca'ta* (sack-like). ½. Green; lip white. Guatemala.
„ *seta'cea* (bristly). 1–2. Pale green. Brazil. 1834.
„ *spiranthoi'des* (Spiranthes-like). See P. ADNATA.
„ *Travasso'sii* (Travasoss's). See P. ROSEO-ALBA.
„ *tri'loba* (three-lobed). Green. Brazil. 1870.
„ *wendlandia'na* (Wendlandian). 2. Greenish-brown; lip white. 1892.

PELICAN FLOWER. *Aristolo'chia grandiflo'ra*, *Lo'tus Berthole'tii*, and *Securi'gera Coroni'lla*.

PELIOSA'NTHES. (From *pelios*, livid, and *anthos*, a flower; the colour of the flowers. Nat. ord. Hæmodoraceæ.)

Stove perennial herbs of tufted, grass-like habit. Divisions or suckers. Loam, leaf-mould, and sand

P. a'lbida (white). 1. White Malay Peninsula. 1885.
„ *Ba'keri* (Baker's). 1. Himalaya.
„ *hu'milis* (low). 1. Pale green. May. Penang. 1809.
„ *java'nica* (Javanese). 1. Java.
„ *lu'rida* (lurid). 1. Lurid purple. Penang.
„ *stella'ta* (starry). Penang.
„ *Te'ta* (Teta). 1. Pale green. April. India. 1807.
„ „ *mantegazzia'na* (Mantegazzian). Leaves less rigid. Malaya. 1905.
„ *viola'cea* (violet). 1. Deep violet. India.
„ „ *Cla'rkei* (Clarke's). 1. Dark purple. Assam to Malay Peninsula. 1909.

PELLÆ'A. (From *pellos*, brownish or tawny; in allusion to the dark leaf-stalks. Nat. ord. Filices.)

Stove and greenhouse ferns. See FERNS.

GREENHOUSE.

P. adiantifo'lia (Adiantum-leaved). See P. HASTATA.
„ *andromedæfo'lia* (Andromeda-leaved). May. California and S. Africa. 1840.
„ *atropurpu'rea* (dark-purple). ½. May. N. Amer. 1770.
„ *be'llum* (pretty). California. 1873.
„ *brachy'ptera* (short-winged). California. 1873.
„ *Bridge'sii* (Bridges'). California. 1875.
„ *calome'lanos* (beautiful-black). Cape Colony to Zambesi Land; Himalaya. 1830.
„ *de'nsa* (dense). N. Amer.
„ *falca'ta* (sickle-shaped). 1. May. Australia. 1820.
„ *gra'cilis* (slender). North temperate zone, 9–10,000 ft.
„ *hasta'ta* (halbert-shaped). Fronds twice or three times pinnate. S. Africa. 1822.
„ „ *macrophy'lla* (large-leaved). Fronds once pinnate; pinnæ much broader.
„ *mucrona'ta* (mucronate). California, &c. 1865. Almost hardy.
„ *orni'thopus* (bird's-foot). California. 1875.
„ *parado'xa* (paradoxical). 1. May. Australia.
„ *rotundifo'lia* (round-leaved). 1½. New Zealand and Norfolk Island. 1824.
„ „ *robu'sta* (robust). Fronds very dark shining green. 1904.
„ *wrightia'na* (Wrightian). See P. MUCRONATA.

STOVE.

P. alabame'nsis (Alabama). Alabama, Georgia, and Tenessee.
„ *corda'ta* (heart-shaped). 1½. May. Mexico to Peru. 1820.
„ „ *flexuo'sa* (flexuous). Stalk zigzag. May. Peru. 1838.
„ „ *sagitta'ta* (arrow-shaped). Segments narrowed to the point. S. Amer. 1826.
„ *geraniæfo'lia* (Geranium-leaved). Tropics.

P. intramargina'lis (intramarginal). 1. Mexico. 1828.
„ *involu'ta* (rolled-inward). E. Africa.
„ *sagitta'ta* (arrow-shaped). See P. CORDATA SAGITTATA.
„ *ternifo'lia* (three-leafleted). 1–1½. Trop. Amer. 1838.

PELLIO'NIA. (Commemorative of *A. M. J. Alphonse Pellion.* Nat. ord. Urticaceæ.)
Perennial, creeping stove herbs, with handsome foliage. Divisions or cuttings at various times. Loam, leaf-mould, or peat and sand. They succeed best in a moist atmosphere, in pots, or planted out in borders of the stove.
P. daveaua'na (Daveauan). ⅓. Leaves bronzy, with pale markings. Cochin-China. 1880.
„ „ *vi'ridis* (green). ⅓. Leaves clear green, with indistinct white markings. 1882.
„ *java'nica* (Javanese). Malaya.
„ *pu'lchra* (beautiful). ⅓. Leaves dark bronzy-brown, with green markings. Cochin-China. 1883.

PELLITORY *Parieta'ria officina'lis.*

PELLITORY of Spain. *Anacy'clus Pyre'thrum.*

PELTA'NDRA. (From *pelte*, a little buckler, and *aner*, a stamen; in allusion to the form of the united stamens. Nat. ord. Araceæ.)
Hardy, perennial herb for the bog garden. Offsets. Loam and leaf-mould.
P. virgi'nica (Virginian). 1. June. N. Amer. 1759. "Arrow Arum."

PELTA'RIA. (From *pelte*, a little buckler; referring to the shape of the seed-pod. Nat. ord. *Crucifers* [Cruciferæ]. Linn. *Tetradynamia.* Allied to Isatis.)
Hardy, perennial herb. Seeds; divisions. Common soil.
P. allia'cea (garlic-scented). 1. White June. Austria. 1601
„ *glastifo'lia* (woad-leaved). See TEXIERA GLASTIFOLIA.

PELTO'PHORUM. (From *pelte*, a small buckler, and *phoreo*, to bear; the stigma is shield-like. Nat. ord. Leguminosæ.)
Stove tree. Seeds; cuttings in sand in a close case, with bottom-heat. Fibrous loam, peat one-third, and sand.
P. africa'num (African). Trop. Africa.
„ *ferrugi'neum* (rusty). Australia.
„ *Linnæ'i* (Linnæus'). 18–20. Yellow. Jamaica

PELTOSTI'GMA. (From *pelte*, a little shield, and *stigma*; in reference to the large stigma. Nat. ord. Rutaceæ.)
Evergreen stove shrub. Cuttings in sand, in a close case, with bottom heat. Loam, leaf-mould, and sand.
P. pteleoi'des (Ptelea-like). 10. Green. February. Jamaica. 1844.

PENÆ'A. (Named after *P. Pena*, a German botanist. Nat. ord. *Sarcocolads* [Penæaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia.*)
Greenhouse evergreens, from South Africa, and red-flowered, except where otherwise mentioned. Cuttings of stubby side-shoots in summer in sand, under a bell-glass; sandy peat and a little charcoal. Winter temp., 40° to 45°.
P. fruticulo'sa (small-shrubby). 1. June. 1822.
„ *fuca'ta* (dusky). 1. Red. June. 1825.
„ *imbrica'ta* (imbricated). See SARCOCOLLA IMBRICATA.
„ *laterifo'ra* (side-flowering). 1. June. 1825.
„ *margina'ta* (bordered). 1½. June. 1816.
„ *mucrona'ta* (pointed-*leaved*). 2. Yellow. June. 1787.
„ *myrtoi'des* (myrtle-like). 2. June. 1816.
„ *Sarcoco'lla* (thick-neck). See P. FUCATA.
„ *squamo'sa* (scaly). 1. Red. June. 1787.

PENICILLA'RIA. See PENNISETUM.

PENNISE'TUM. (From *penna*, a feather, and *seta*, a bristle; the bristles surrounding the flower glumes are feathery in some species. Nat. ord. Gramineæ.)
Hardy, half-hardy, and greenhouse grasses, annual or perennial. Seeds. Ordinary soil.
P. barba'tum (bearded). 1. E. Ind. 1823. Stove.
„ *cenchroi'des* (Cenchrus-like). 1½. Tropical and sub-tropical regions. 1777.
P. compre'ssum (compressed). 2–3. Spikes reddish-violet, white at apex. Japan. 1908. Hardy perennial.
„ *dicho'tomum* (forked). 2. Egypt, Arabia, &c. 1823.
„ *holcoi'des* (Holcus-like). 1. India. 1816.
„ *gigante'um* (giant). 5–6. Flower spikes nodding. Country unknown. 1884. Stove.
„ *japo'nicum* (Japanese).
„ *latifo'lium* (broad-leaved). 10. Argentina. 1869.
„ *longi'stylum* (long-styled). 1½. Pale purple. Abyssinia. Annual.
„ „ *viola'ceum* (violet). Violet, with metallic sheen. 1888.
„ *macrophy'llum* (long-leaved)
„ „ *atropurpu'reum* (dark-purple). Spikes silvery-rose. Leaves red-brown. 1906. Half-hardy.
„ *macrou'rum* (long-tailed). 2–3. S. Africa.
„ *nepale'nse* (Nepaulese). 2. Himalaya. 1822.
„ *orienta'le* (oriental). White or purple tails 1 foot long. India. 1891. Greenhouse.
„ *polysta'chyum* (many-spiked). See P. HOLCOIDES.
„ *ruppelia'num* (Ruppelian). See P. RUPPELLII.
„ *Ruppe'llii* (Ruppell's). 3. Green. Abyssinia. 1894. Annual.
„ *seto'sum* (bristly). 2. Tropical regions. 1817.
„ *trifio'rum* (three-flowered). See P. ORIENTALE.
„ *typhoi'deum* (Typha-like). 2. June to September. Tropical regions. 1592.
„ *villo'sum* (shaggy). Spikes long, white. Abyssinia. 1891. Stove perennial.
„ *viola'ceum* (violet). See P. TYPHOIDEUM.

PENNY GRASS. *Rhina'nthus Cri'sta-ga'lli.*

PENNY ROYAL. *Me'ntha Pule'gium.*

PENNY-CRESS. *Thla'spi arve'nse.*

PENNY-WORT or **PENNY LEAF.** *Cotyle'don Umbili'cus, Hydroco'tyle vulga'ris, Lina'ria Cymbala'ria.* and *Sibtho'rpia europæ'a.*

PENTACHÆ'TA. (From *pente*, five, and *chaita*, a bristle; in allusion to the five bristles forming the pappus. Nat. ord. Compositæ.)
A dwarf, hardy annual. Seeds. Light soil in a sheltered situation.
P. au'rea (golden). See P. BELLIDIFLORA.
„ *bellidifio'ra* (Daisy-flowered). ½. Golden-yellow. California. 1883.

PENTADE'SMA. (From *pente*, five, and *desma*, a bundle; referring to the disposition of the stamens. Nat. ord. *Guttifers* [Gutfiferæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*. Allied to Garcinia.)
Stove evergreen tree. Cuttings of ripe shoots in sand, under a bell-glass, and in bottom-heat; fibrous loam and sandy peat. Winter temp., 60°; summer, 60° to 90°.
P. butyra'cea (butter). 30. November. Sierra Leone. 1822. "Butter and Tallow Tree."

PENTAGO'NIA. (From *pente*, five, and *gonia*, an angle; in allusion to the angular structure of the corolla. Nat. ord. Rubiaceæ.)
Evergreen stove shrub. Cuttings in sand, in a close case, with bottom-heat. Loam, leaf-mould or peat, and sand.
P. Wendla'ndi (Wendland's). Yellow. Mexico. 1861. Fine foliage plant.

PENTA'LOPHUS LONGIFLO'RUS. See LITHOSPERMUM ANGUSTIFOLIUM.

PENTA'LOPHUS MANDANE'NSIS. See LITHOSPERMUM ANGUSTIFOLIUM.

PENTAMO'RPHA GRAVE'OLENS. See ERYTHROCHITON BRASILIENSIS.

PENTA'PANAX. (From *pente*, five, and *Panax*; all parts of the flower and fruit are in fives. Nat. ord. Araliaceæ.)
Stove, evergreen climber of woody character. Seeds; cuttings in heat or by grafting. Fibrous loam, leaf-mould, and sand.
P. Leschenau'ltii (Leschenault's). White. India and Burma. 1816.

PENTAPE'RA. (From *pente*, five, and *pera*, a pouch; the fruit being five-celled. Nat. ord. Ericaceæ.)
Nearly hardy evergreen shrub. Layers; seeds. Peaty, sandy soil.
P. si'cula (Sicilian). 1–2. White. Sicily. 1888.

PENTA'PETES. (From *pente*, five, and *petalon*, a petal; five petals in the flower. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Allied to Dombeya.)
Stove, scarlet-flowered plants, flowering in July. Cuttings of half-ripened shoots in sand, under a glass, in moist heat; also by seeds in a hotbed, in spring; sandy loam and leaf-mould. Stove temperatures.
P. Erythro'xylon. See MELHANIA MELANOXYLON.
„ *ova'ta* (egg-*leaved*). See MELHANIA ABYSSINICA.
„ *phœni'cea* (scarlet). 2. India. 1690.

PENTAPTERY'GIUM. (From *pente*, five, and *pterugion*, a small wing; the calyx is five-winged. Nat. ord. Vacciniaceæ.)
Greenhouse evergreen shrubs with small leaves and handsome flowers. Cuttings in sandy peat under a hand-light, shaded from sunshine. Peat and sand.
P. fla'vum (yellow). Yellow. Himalaya.
„ *rugo'sum* (wrinkled). 1½. White, red, green. May. Himalaya.
„ *se'rpens* (creeping). 2–2½. Red or scarlet, with darker V-shaped lines. May. Himalaya. 1884.

PENTA'PYXIS. (From *pente*, five, and *puxis*, a small box; the ovary and fruit are five-celled. Nat. ord. Caprifoliaceæ.)
Greenhouse shrub allied to Diervilla. Seeds; cuttings of half-ripe wood in sand, under a bell-glass. Fibrous loam, leaf-mould, and sand.
P. stipula'ta (stipuled). White or cream. Himalaya. 1858.

PENTARHA'PHIA. (From *pente*, five, and *rhaphis*, a needle; alluding to the form of the open calyx. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Warm greenhouse plants. For cultivation, see GE'SNERA.
P. calyci'na (large-calyxed). 1½. Red, white. Jamaica. 1824.
„ *calyco'sa* (large-calyxed). 1½. Red. Jamaica. 1824.
„ *catalpæflo'ra* (Catalpa-flowered). W. Ind.
„ *cube'nsis* (Cuban). 2. Scarlet. July. Cuba. 1854.
„ *floribu'nda* (free-flowering). Red. June to September. Cuba. 1878.
„ *hu'milis* (low). ¾. Cuba.
„ *libane'nsis* (Lebanon). ½. Crimson. June. W. Ind. 1847.
„ *longiflo'ra* (long-flowered). 1½. June. W. Ind. 1823.
„ *neglecta* (neglected). ½. Scarlet. August. Jamaica. 1847.
„ *sca'bra* (rough). 1–2. Scarlet. July. Jamaica. 1820.
„ *Sloa'nei* (Sloane's). 1. June. Jamaica. 1793.
„ *verruco'sa* (warty). Scarlet. June. Cuba.

PE'NTAS. (From *pente*, five; referring to the number of petals and stamens. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreens, from Tropical Africa, with pink flowers. Cuttings of young shoots in sandy soil, in a hotbed; sandy loam and fibrous peat. Winter temp., 45° to 58°; summer, 60° to 75°. Propagated in spring, in a hotbed, the plants so raised will bloom freely in the greenhouse during the summer.
P. ca'rnea (flesh-coloured). 1½. May. 1842.
„ „ *kermesi'na* (carmine). Carmine-rose. 1870.
„ „ *quartinia'na* (Quartinian). More floriferous. Abyssinia. 1893.
„ *parviflo'ra* (small-flowered). 2. May.

PENTHO'RUM. (From *pente*, five; in allusion to the five angles formed by the carpels. Nat. ord. Crassulaceæ.)
Succulent marsh or bog plant. Divisions in spring. Loam and peat.
P. sedoi'des (Sedum-like). 1. Greenish-yellow. July and August. N. Amer. 1768. "Ditch Stonecrop."

PENTLA'NDIA MINIA'TA. See URCEOLINA MINIATA.

PENTLA'NDIA SULIVA'NICA. See URCEOLINA MINIATA SULIVANICA.

PENTSTE'MON. "Beard Tongue." (From *pente*, five, and *stemon*, a stamen; four fertile and one abortive stamen. Nat. ord *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Chelone.)
Seeds sown in a hotbed, in spring, the plants will bloom in the flower-garden the same summer; division of the plant in spring, as growth commences; cuttings of the young shoots any time in spring, summer, or autumn, under a hand-light, in sandy soil; sandy loam and leaf-mould. *P. Hartwe'gii* and its varieties, *cocci'neus* and *a'lbus*, require a little protection in winter, when north of London; a few fir-boughs and some moss among the plants will generally be sufficient; but, to make sure, a few cuttings should be kept over the winter in a cold pit.

HALF-HARDY HERBACEOUS.

P. a'tro-purpu'reus (dark purple). See P. CAMPANULATUS.
„ *azu'reus* (blue-*flowered*). ½. Blue. June. Mexico. 1848.
„ *baccharifo'lius* (Baccharis-leaved). 1½. Crimson. August. Texas. 1851.
„ *campanula'tus* (bell-*flowered*). 1½. Lilac, purple. June. Mexico. 1794.
„ *Cobæ'a* (Cobæa-*flowered*). 2½. Pale purple. Texas. 1835.
„ „ *purpu'reus* (purple). Rich purple, violet. 1882.
„ *gentianoi'des* (Gentian-like) of Poir. 4. Purplish-blue. July. Mexico. 1846.
„ *Hartwe'gii* (Hartweg's). 2½. Crimson. June. Mexico. 1825.
„ „ *a'lbus* (white). White.
„ „ *dia'phanus* (transparent). 2½. Rose. Scarlet. July. Mexico. 1843.
„ *Ku'nthii* (Kunth's). See P. CAMPANULATUS.
„ *minia'tus* (vermilion). 1. Vermilion, rose. July. Mexico. 1846.
„ *pulche'llus* (pretty). See P. CAMPANULATUS.
„ *ro'seus* (rosy). See P. CAMPANULATUS.
„ *Wri'ghtii* (Wright's). 2. Rose. June. Texas. 1850

HARDY HERBACEOUS.

P. acumina'tus (pointed-*leaved*). Purple. July. N. Amer. 1827.
„ *a'lbidus* (whitish). ¾. White. July. Missouri. 1823.
„ *angustifo'lius* (narrow-leaved). See P. CÆRULEUS.
„ *antirrhinoi'des* (Antirrhinum-like). 2. Yellow. California. 1861.
„ *argu'tus* (neat). 3. Blue. N.W. Amer. 1825.
„ *atienua'tus* (wasted). Cream. July. N. Amer. 1827.
„ *barba'tus* (bearded). 2. Light scarlet. July. Western United States. 1794.
„ „ *ca'rneus* (flesh). 2. Flesh. July. 1839.
„ „ *ma'jor* (larger). 2½. Orange. July.
„ „ *Torre'yi* (Torrey's). 2–3. Scarlet. 1861.
„ *Barre'tæ* (Mrs. Barret's). N. Amer.
„ *breviflo'rus* (short-flowered). 2. White, pink. September. California.
„ *Bridge'sii* (Bridges'). 2½. Bright scarlet. California. 1904.
„ *cæru'leus* (sky-blue). ½. Blue. Western United States.
„ *carina'tus* (keeled). See P. BREVIFLORUS.
„ *centranthifo'lius* (Centranthus-leaved). 5–6. Scarlet. September. California. 1824.
„ *confe'rtus* (crowded-*flowered*). 2. Pale yellow. July. N. Amer. 1827.
„ „ *cæru'leo-purpu'reus* (blue-purple). 1. Blue-purple. July. N. Amer. 1827.
„ *cordifo'lius* (heart-leaved). 1. Scarlet. June. California. 1848.
„ *crassifo'lius* (thick-leaved). See P. MENZIESII.
„ *crista'tus* (crested). 1½. Violet. North-Western Amer. 1813.
„ *cyana'nthus* (blue-flowered). See P. GLABER CYANANTHUS.
„ *deu'stus* (blasted). 1. Cream. N. Amer. 1827.
„ *diffu'sus* (spreading). 1½. Purple. September. N. Amer. 1826.
„ *Digita'lis* (foxglove-like). See P. LÆVIGATUS.
„ *Eato'ni* (Eaton's). 1½. Crimson-scarlet. North-Western Amer. 1883.

P. erianthe'ra (woolly-anthered). See P. GLABER.
„ *Fendle'ri* (Fendler's). See P. ACUMINATUS.
„ *gentianoi'des* (Gentian-like) of Lindley. See P. HARTWEGII.
„ *gla'ber* (smooth). 1½. Dark purple. August. Louisiana. 1811.
„ „ *Brande'gii* (Brandeg's).
„ „ *cyana'nthus* (blue-flowered). Light blue. May. Western United States.
„ „ *sple'ndens* (splendid). Dark blue. N. Amer. 1895.
„ „ *stenose'palus* (narrow-sepaled). See P. GLAUCUS STENOSEPALUS.
„ *glabe'rrimus* (smoothest). 2. Blue. N.W. Amer. 1835.
„ *glandulo'sus* (glanded). 2. Pale blue. June. N. Amer. 1827.
„ *glau'cus* (milky-green). 1. Pale lilac. July. N. Amer. 1827.
„ „ *stenose'palus* (narrow-sepaled). Violet-purple. N. Amer. 1875.
„ *Gordo'ni* (Gordon's). See P. GLABER.
„ *gracile'ntus* (rather-slender). N.W. Amer.
„ *gra'cilis* (slender). 1. Blue. August. N. Amer. 1824.
„ *grandiflo'rus* (large-flowered). Purple. July. N. Amer. 1811.
„ *grandifo'lius* (large-leaved). 2–3. Lilac. Rocky Mountains. 1865.
„ *Ha'llii* (Hall's). Rocky Mountains, Colorado.
„ *heterophy'llus* (various-leaved). 1½. Red. July. California. 1834.
„ *hirsu'tus* (*narrow-leaved*-hairy). See P. PUBESCENS.
„ *hu'milis* (low). ½. Blue, red. June. N.W. Amer. 1874.
„ *jeffreya'nus* (Jeffreyan). See P. AZUREUS.
„ *labro'sus* (large-lipped). 3–5. Scarlet-red. August. California. 1883.
„ *læviga'tus* (smooth). 2. Lilac. August. N. Amer. 1776.
„ *Lewi'sii* (Lewis's). See P. MENZIESII LEWISII.
„ *Lo'bbii* (Lobb's). See P. ANTIRRHINOIDES.
„ *mackaya'nus* (Sir W. Mackay's). See P. PUBESCENS.
„ *Menzie'sii* (Menzies'). 1. Blue. June. North-Western Amer. 1838.
„ „ *Dougla'sii* (Douglas's). 1. Lilac-purple. June.
„ „ *Lewi'sii* (Lewis's).
„ „ *Newbe'rryi* (Newberry's).
„ „ *Robinso'ni* (Robinson's). Lilac-rose. North-Western Amer. 1872.
„ „ *Scou'leri* (Scouler's). 3. Purple. May. North-Western Amer. 1827.
„ *murraya'nus* (Murray's. *Scarlet*). 3. Scarlet. August. St. Felipe. 1835.
„ *Newbe'rryi* (Newberry). See P. MENZIESII NEWBERRYI.
„ *ni'tidus* (shining). See P. ACUMINATUS.
„ *ova'tus* (egg-*leaved*) 4. Blue. July. N. Amer. 1826.
„ *Palme'ri* (Palmer's). 3–5. Lilac, purple. Western United States. 1873.
„ *perfolia'tus* (stem-pierced). Mexico.
„ *pro'cerus* (tall). See P. CONFERTUS CÆRULEO-PURPUREUS.
„ *pruino'sus* (frosted). 1. Blue. June. N. Amer. 1827.
„ *pube'scens* (*broad-leaved*-downy). 1½. Pale purple. August. N. Amer. 1758.
„ „ *gra'cilis* (slender). See P. GRACILIS.
„ „ *multiflo'rus* (many-flowered). See P. LÆVIGATUS.
„ *puni'ceus* (scarlet). 2½. Scarlet. Arizona. 1889.
„ *Richardso'nii* (Richardson's). 1½. Dark purple. July. N.W. Amer. 1825.
„ *Rœ'zlii* (Rœzl's). 1½. Lilac. North-Western Amer. 1782.
„ *rotundifo'lius* (round-leaved). 2. Bright brick-red. Mexico. 1888.
„ *Scou'leri* (Scouler's). See P. MENZIESII SCOULERI.
„ *secundiflo'rus* (side-flowered). Blue, suffused with bronze. Colorado. 1896.
„ *serrula'tus* (finely-sawed). See P. DIFFUSUS.
„ *specio'sus* (showy). See P. GLABER.
„ *specta'bilis* (showy). 2–3. Blue, purple. California. 1861.
„ *staticifo'lius* (Statice-leaved). See P. GLANDULOSUS.
„ *stri'ctus* (erect). North-Western Amer.
„ *triflo'rus* (three-flowered). 3. Coral-red. Mexico. 1910.
„ *trichy'llus* (three-leaved). 1½. Pale red. July. California. 1827.
„ *venu'stus* (graceful). 2. Purple. June. N. Amer. 1827.
P. virga'tus (twiggy). 1½–2. Pale lilac. Mexico. 1901.
„ *Watso'ni* (Watson's). ½. Blackish-blue. North-Western Amer. 1896.

PE'NTZIA. (Commemorative of *Charles John Pentz*. Nat. ord. Compositæ.)
Greenhouse shrub. Cuttings in sand under a bell-glass. Loam, leaf-mould, and sand
P. crena'ta (crenate). 2½. Yellow. June to August. S. Africa. 1774.
„ *flabellifo'rmis* (fan-shaped). See P. CRENATA.

PEPERO'MIA. (From *piperis*, the pepper bush, and *homoios*, like. Nat. ord. Piperaceæ.)
Mostly dwarf, evergreen, fine foliaged stove plants. Cuttings in sand, in a close case, with bottom-heat. Loam, leaf-mould, and sand.
P. acumina'ta (long-pointed). Leaf ribs red beneath. Peru. 1865.
„ *argyrei'a* (silvery). Leaves with silvery markings. S. Amer. 1867.
„ „ *fo'liis variega'tis* (leaves variegated). Variegated. 1888.
„ *arifo'lia* (Arum-leaved). Leaves marked with grey and green. Brazil. 1864.
„ *bla'nda* (pleasant). Venezuela.
„ *Botte'rii* (Botter's). Green. Mexico. 1869.
„ *bre'vipes* (short-stalked). Trop. Amer.
„ *clusiæfo'lia* (Clusia-leaved). See P. OBTUSIFOLIA.
„ *coria'cea* (leathery). Green. E. Ind. 1815.
„ *di'scolor* (two-coloured). 4. July. Jamaica. 1821.
„ *ebu'rnea* (ivory). Leaves with ivory-white stalks. Colombia. 1871.
„ *emargina'ta* (notched). Peru.
„ *Fe'nzlii* (Fenzl's). Country unknown. 1879.
„ *galioi'des* (Galium-like). Colombia.
„ *heterosta'chya* (various-spiked). Leaves with grey ribs. Peru. 1869.
„ *inca'na* (hoary). Brazil.
„ *inquili'na* (foreign). Leaves green, orbicular. Stems red. Central Amer. 1892.
„ *Langsdo'rffi* (Langsdorff's). Brazil.
„ *maculo'sa* (blotched). Leaves with grey ribs and spotted stalks. W. Ind.
„ *magnoliæfo'lia* (Magnolia-leaved). 1½. Green. S. Amer. 1868.
„ *marmora'ta* (marbled). Leaves marbled with grey. Brazil. 1866.
„ *meta'llica* (metallic). 1. Bronzy metallic green, with paler markings. Peru. 1892.
„ *microphy'lla* (small-leaved). Green. Colombia. 1860.
„ *nummulariæfo'lia* (moneywort-leaved). Stems creeping and pendent. Trop. Amer. 1866.
„ *obli'qua* (oblique). Green. September. Peru. 1815.
„ *obtusifo'lia* (blunt-leaved). Trop. Amer.
„ *pellu'cida* (pellucid). 1–1½. Green. Trop. Amer. and Africa. 1867.
„ *peltæfo'rmis* (shield-shaped). Leaves banded with light green. Brazil. 1864.
„ *polysta'chya* (many-spiked). W. Ind.
„ *prostra'ta* (prostrate). Leaves round, variegated. Stems creeping. Colombia (?). 1879.
„ *pube'rula* (finely-downy). Green. Guatemala. 1870.
„ *pubifo'lia* (downy-leaved). Leaf rib silvery. Country unknown. 1865.
„ *pulche'lla* (pretty). ½. Green. Jamaica.
„ *re'pens* (creeping). See P. SCANDENS.
„ *resedæflo'ra* (mignonette-flowered). 1. White. June to August. Colombia. 1870.
„ *Sande'rsii* (Sanders's). Leaves with silvery curved veins. Brazil. 1866.
„ *sca'ndens* (climbing). Stems climbing. Peru.
„ *subrotu'nda* (subrotund). See P. MAGNOLIÆFOLIA.
„ *trine'rvis* (three-nerved). Peru.
„ *uroca'rpa* (stinging-fruited). Brazil.
„ *variega'ta* (variegated). See P. MACULOSA.
„ *veluti'na* (velvety). Leaves with silvery-grey bands. Ecuador. 1872.
„ *verticilla'ta* (whorled). See P. PULCHELLA.

PEPI'NIA APHELANDRÆFLO'RA. See PITCAIRNIA APHELANDRÆFLORA.

PEPPER. *Pi'per.*

PEPPERMINT. *Me'ntha piperi'ta.*

PEPPER VINE. *Vi'tis arbo'rea.*

PEPPERWORT. *Lepi'dium.*

PERDI'CIUM BRASILIE'NSE. See TRIXIS DIVARICATA.

PERDI'CIUM CHILE'NSE. See CHÆTANTHERA CHILENSIS.

PERDI'CIUM RO'SEUM. See LEUCERIA RUNCINATA.

PEREI'RIA ME'DICA. See COSCINIUM FENESTRATUM.

PERENNIAL. A plant of any kind that lives for more than two years.

PERE'SKIA. Barbadoes Gooseberry. (Named after *Pieresk*, a French patron of botany. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Opuntia.)

Stove succulents. Cuttings in sandy loam, in heat, at almost any time; sandy loam, lime-rubbish, and a little peat and old cow-dung. Winter temp., 40° to 55°; summer, 60° to 80°.

P. aculea'ta (prickly). 5. White. October. W. Ind. 1696.
„ „ *godseffia'na* (Godseffian). Young leaves crimson, apricot and green above. 1908.
„ „ *ru'bens* (red).
„ *Ble'o* (Bleo). 5. Pale red. November. Mexico. 1827.
„ *calandriniæfo'lia* (Calandrinia-leaved). Mexico.
„ *crassicau'lis* (thick-stemmed). See P. SPATHULATA.
„ *fœ'tens* (stinking). Leaves bright green, almost yellow-green. Argentina. 1904.
„ *grandiflo'ra* (large-flowered). See P. GRANDIFOLIA.
„ *grandifo'lia* (large-leaved). 3. Brazil. 1818.
„ *grandispi'na* (large-spined). Mexico. 1818.
„ *longispi'na* (long-spined). See P. ACULEATA.
„ *Pitita'che* (Pititache). Mexico. 1838.
„ *Pœppi'gii* (Pœppig's). Leaves cylindrical, green. Chili.
„ *portulacæfo'lia* (Portulaca-leaved). 3. Purple. W. Ind. 1820.
„ *rotundifo'lia* (round-leaved). Mexico.
„ *spathula'ta* (spathulate). Mexico. 1838.
„ *subula'ta* (awl-shaped). Chili.

PERESKIO'PSIS. (From *Pereskia*, and *opsis*, like; resembling and allied to Pereskia in habit and foliage, but to Opuntia in the flowers. Nat. ord. Cactaceæ.)

Greenhouse spiny shrub. Cuttings in sand under a bell-glass. Loam, peat, lime-rubbish, and sand.

P. veluti'na (velvety). 3. Outer sepals green or red, tinted with yellow. Petals bright yellow. Mexico. 1907.

PERE'ZIA. (Commemorative of *Lazarus Perez*, a Spanish apothecary. Nat. ord. Compositæ.)

Hardy annual and perennial. Seeds. Ordinary garden soil.

P. multiflo'ra (many-flowered). Brazil.
„ *sonchifo'lia* (Sonchus-leaved). White, like miniature Camellias. Uruguay. 1896.
„ *visco'sa* (clammy). Purple. Chili. 1863. Perennial.

PERGULA'RIA. (From *pergula*, trellis-work; referring to its quick climbing growth. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Stephanotis.)

Stove evergreen climbers. Cuttings of firm side-shoots in sand, under a glass, and in bottom-heat; fibrous loam, sandy peat, leaf-mould, and dry cow-dung. Winter temp., 55° to 65°; summer, 60° to 85°.

P. gla'bra (smooth). See VALLARIS PERGULANA.
„ *mi'nor* (smaller). 8. Yellow, green. June. E. Ind. 1790.
„ *odorati'ssima* (sweetest-scented). 15. Green. June. E. Ind. 1784.
„ *sanguinole'nta* (bloody). See CRYPTOLEPIS SANGUINOLENTA.

PERIA'NDRA. (From *peri*, around, and *aner*, *andros*, a man, or stamen; the stamens are equal all round the style. Nat. ord. Leguminosæ.)

Annual and perennial herbs. Seeds. Loam, leaf-mould, and sand.

P. berteria'na (Berterian). Yellow. June. St. Domingo. 1824. Trailing annual.
„ *cocci'nea* (scarlet). 4. Scarlet. July. Brazil. Perennial.

PERICA'MPYLUS. (From *peri*, around, and *campulos*, curved; the seed is curved or horse-shoe shaped. Nat. ord. Menispermaceæ.)

Stove, woody climber. Seeds; cuttings in sand in a close case, with bottom-heat.

P. inca'nus (hoary). 10. White, green. India and Malaya. 1820.

PERI'COME. (From *peri*, around, and *kome*, hair; in allusion to the cup-shaped, fringed pappus. Nat. ord. Compositæ.)

Half-hardy, shrubby perennial. Seeds; cuttings in sandy soil under a hand-light. Loam, leaf-mould, and sand.

P. cauda'ta (tailed). 3–4. Yellow. Colorado. 1880.

PERI'LLA. (Native name in India. Nat. ord. Labiatæ.)

Half-hardy annuals. Seeds in heat to be planted out at the end of May. Ordinary soil.

P. argu'ta (acute). 1½–2. Purple. August. China.
„ „ *atropurpu'rea* (dark purple). Leaves blackish bronzy purple. China. 1852.
„ „ *ro'sea* (rosy). Leaves variegated with red, rose, green, and whitish. 1897.
„ *heteromo'rpha* (various-formed). See P. OCIMOIDES.
„ *nankine'nsis* (Nankin). See P. ARGUTA ATROPURPUREA.
„ „ *ro'sea* (rosy). See P. ARGUTA ROSEA.
„ *ocimoi'des* (Ocimum-like). 3. White. August. India. 1770.
„ „ *cri'spa* (crisped). See P. ARGUTA ATROPURPUREA.

PERILO'MIA. (From *peri*, around, and *loma*, a margin; referring to the membranous border of the fruit. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Scutellaria.)

Half-hardy evergreen shrub. Cuttings of young shoots in sand, under a glass, in April; sandy peat. Winter temp., 40° to 45°.

P. ocymoi'des (basil-like). See P. SCUTELLARIOIDES.
„ *scutellarioi'des* (Scutellaria-like). 3. Purple. August. Peru. 1829.

PERIPHRA'GMOS DEPE'NDENS. See CANTUA BUXIFOLIA.

P. flexuo'sus. See CANTUA PYRIFOLIA.
„ *fœ'tidus.* See VESTIA LYCIOIDES.
„ *uniflo'rus.* See CANTUA OVATA.

PERIPLA'NETA AMERICA'NA. See INSECT PESTS.

PERI'PLOCA. (From *periploke*, an intertwining; referring to the habit of the plant. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Hardy deciduous twiners. Layers and cuttings under a glass, during summer and autumn. Any good soil will do. *Græ'ca* will soon cover an arbour or wall. The tender species are not worth culture.

P. africa'na (African). Purple, white. September, October. S. Africa. 1726.
„ *angustifo'lia* (narrow-leaved). See P. LÆVIGATA.
„ *græ'ca* (Grecian). 10. Brown. July. Syria. 1597.
„ *læviga'ta* (smooth). 6. Purplish. Mediterranean region. 1800.
„ *se'pium* (hedge). 4. Brown. July to September. N. China. 1909.

PERISTE'RIA. Dove Flower. (From *peristera*, a dove; dove-like appearance of the column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Acineta.)

Stove orchids. Division, or separating the pseudobulbs, as growth commences. See ORCHIDS.

P. aspe'rsa (besprinkled). Yellow-brown, spotted with dull red. Venezuela.
„ *Ba'rkeri* (Barker's). See ACINETA BARKERI.
„ *ceri'na* (waxen). 1. Yellow. June. Spanish Main. 1835.
„ *ela'ta* (lofty. *Dove-plant*). 4. White. July. Panama. 1826.
„ *Ephi'ppium* (Ephippium). Pale yellow or white. Trop. Amer. 1883.
„ *expa'nsa* (broad). White. July. Panama. 1839.
„ *fu'lva* (tawny). See ACINETA HUMBOLDTII.
„ *gutta'ta* (spotted). ½. Yellow, purple. August. S Amer. 1837.

P. Humbo'ldtii (Baron Humboldt's). See ACINETA HUMBOLDTII.
„ *læ'ta* (cheerful). Bright yellow, dotted with Indian purple. 1887.
„ *lentigino'sa* (speckled). Yellow. May. Guiana. 1837.
„ *Linde'nii* (Linden's). Light yellow, washed with dark purple, spotted with purple.
„ *pe'ndula* (weeping). 1. White-spotted. September. Guiana.
„ *rossia'na* (Rossian). Pale whitish-yellow. 1889.
„ *selli'gera* (stool-bearing). Pale yellow. Demerara. 1887.
„ *stapelioi'des* (Stapelia-like). Yellow, brown. May. Spanish Main. 1839.

PERISTRO'PHE. (From *peri*, around, and *strophe*, a turning round; the corolla is twisted round. Nat. ord. Acanthaceæ.)

Subshrubby, evergreen stove perennials. Cuttings in sand, in a close case, with bottom-heat in spring. Fibrous loam, leaf-mould, a little dried cow-dung and sand.

P. lanceola'ria (lance-shaped). Purple. India; Burma. 1866.
„ *salicifo'lia* (willow-leaved). Rose. Java.
„ „ *au'reo-variega'ta* (golden-variegated). Leaves feathered with yellow. Java. 1871.
„ *specio'sa* (showy). 1½–2. Purple, or rosy-purple. Autumn and winter. Himalaya. 1826.
„ *tincto'ria* (dyer's). 1. Pale purple. August. India; Malaya. 1815.

PERI'TOMA AU'REUM. See CLEOME LUTEA.

PERIWINKLE. *Vi'nca.*

PERNE'TTYA. (Named after *Don Pernetty*, author of *A Voyage to the Falkland Islands*. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Gaultheria.)

Hardy evergreen, white-flowered shrubs. Seeds and layers in spring; peat border; requires similar treatment to Azaleas and Rhododendrons.

P. angustifo'lia (narrow-leaved). 2. June. Valdivia. 1834.
„ *cilia'ris* (ciliated). 3. Peru.
„ *Cummi'ngii* (Cumming's). See P. MUCRONATA.
„ *empetrifo'lia* (Empetrum-leaved). 4. June. Magellan. 1825.
„ *floribu'nda* (free-flowering). Berries crimson, larger than those of *P. mucrona'ta*. S. Amer. 1883.
„ *fu'rens* (raging). Prickly. March. Chili.
„ *mucrona'ta* (pointed-*leaved*). 6. May. Magellan. 1828.
„ *Pentla'ndi* (Pentland's). Berries blue-black. June. Andes. 1875.
„ *pilo'sa* (downy). April. Mexico. 1839.
„ *prostra'ta* (prostrate). May.
„ *pu'mila* (dwarf). See P. EMPETRIFOLIA.
„ *rupi'cola* (rock-loving). Chili.

PERO'NIA STRI'CTA. See THALIA DEALBATA.

PERONO'SPORA. See POTATO DISEASE.

PEROV'SKIA. (Commemorative of *M. Perovsky*, a Russian botanist. Nat. ord. Labiatæ.)

A subshrubby, hardy perennial. Seeds; divisions in spring; cuttings under a hand-light in summer. Light, well-drained soil.

P. atriplicifo'lia (Atriplex-leaved). 3–4. Violet-blue. Himalaya; Afghan.

PE'RSEA. Avocado or Alligator Pear. (Name of a tree from Theophrastus. Nat. ord. *Laurels* [Lauraceæ]. Linn. 9-*Enneandria*, 1-*Monogynia*.)

Stove evergreen trees; or deciduous in the case of *P. carolinensis* and *P. Lingue*. Layers of ripened shoots in autumn; cuttings of firm shoots in May, in sand, under a bell-glass, and in bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 90°.

P. caroline'nsis (Carolinian). 15. Yellow, green. May. N. Amer. 1806.
„ „ *gla'bra* (smooth). Yellow, green. May. N. Amer. 1806.
„ „ *obtu'sa* (blunt). 15. Yellow, green. April. Carolina. 1806.
„ „ *pube'scens* (downy). 15. Yellow, green. April. N. Amer. 1806.
P. grati'ssima (most grateful). 40. Green. W. Ind. 1739. "Avocado Pear."
„ *i'ndica* (Indian). 20. Green, yellow. July. Canaries. 1765.
„ *Li'ngue* (tongue). Yellow, green. Chili.

PERSIAN SUN'S EYE. *Tu'lipa O'culus-so'lis.*

PE'RSICA. Peach. (From *Persia*, its supposed native place. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Should be united to Prunus, which see. See NECTARINE and PEACH. All bloom in April.

P. læ'vis (smooth). See P. VULGARIS ISPAHANENSIS.
„ *vulga'ris* (common). 15. Red. Persia. 1562. "Peach."
„ „ *a'lba* (white). 14. White. Persia.
„ „ *compre'ssa* (flat-*fruited*). 15. Red.
„ „ *flo're-ple'no* (doubled-flowered). 15. Red. Persia.
„ „ *fo'liis variega'tis* (variegated-leaved). 15. Persia.
„ „ *fru'ctu ple'no* (double-fruited). 15. Red. China. 1845.
„ „ *hispa'nica* (Spanish). White. Spain. 1847.
„ „ *ispahane'nsis* (Ispahan). 15. Red. Ispahan, Persia. 1562. "Nectarine."
„ „ *pe'ndula* (drooping). White. 1842.
„ „ *sangui'nea ple'na* (double-red). 15. Red. China. 1845.

PERSIMMON. *Diospy'ros virginia'na.*

PERSOO'NIA. (Named after *C. H. Persoon*, a distinguished botanist. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from New South Wales, yellow-flowered, except where otherwise mentioned. Cuttings of ripened shoots in sand, under a bell-glass, in spring, and kept in a temperate pit until roots are formed; fibrous loam and sandy peat. Winter temp., 38° to 45°; summer, 60°; a little shaded.

P. acero'sa (sharp). Orange. July. 1824.
„ *brevifo'lia* (short-leaved). 1840.
„ *Chamæ'pitys* (ground-pine). 4. June. 1824.
„ *ferrugi'nea* (rusty). 3. Yellow, red. June. 1823.
„ *flexifo'lia* (bent-leaved). See P. NUTANS.
„ *Fra'seri* (Fraser's). See P. SACCATA.
„ *heterophy'lla* (various-leaved). Swan River.
„ *hirsu'ta* (hairy). 4. June. 1800.
„ *juniperi'na* (juniper-like). 4. June. 1826.
„ *lanceola'ta* (spear-head-*leaved*). 4. June. 1791.
„ *latifo'lia* (broad-leaved). See P. LANCEOLATA.
„ *linea'ris* (narrow-*leaved*). 5. July. 1794.
„ *lu'cida* (shining). June. 1824.
„ *macrosta'chya* (large-spiked). See P. SACCATA.
„ *mo'llis* (soft). 3. July. 1826.
„ *myrtilloi'des* (Myrtillus-like). White. 1837.
„ *nu'tans* (nodding). ½. 1824.
„ *pa'llida* (pale). See P. ACEROSA.
„ *pinifo'lia* (pine-leaved). 4. June. 1822.
„ *pruino'sa* (frosty). See P. LINEARIS.
„ *sacca'ta* (pouched). 2–6. July. 1837.
„ *salici'na* (willow-*leaved*). 7. Pink. July. 1795.
„ *sca'bra* (scurfy). 4. June. 1824.
„ *spathula'ta* (spathulate-*leaved*). See P. SCABRA.
„ *tenuifo'lia* (thin-leaved). June. 1822.
„ *To'ru* (Toru). June to August. New Zealand.

PE'RTYA. (Probably a commemorative name. Nat. ord. Compositæ.)

A hardy, deciduous shrub. Cuttings in summer in a pit, cold frame, or under a hand-light. Ordinary soil.

P. sine'nsis (Chinese). 4–6. Pink. Central China. 1910.

PERU BALSAM-TREE. *Myro'xylon perui'ferum.*

PERUVIAN BARK. *Cincho'na.*

PERUVIAN DAFFODIL. *Hymoca'llis Ama'ncæs.*

PERUVIAN MASTIC. *Schi'nus.*

PERYME'NIUM. (Meaning not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Cuttings, taken from the points of shoots, or the firm side-shoots; sandy loam and a little peat. Winter temp., 38° to 48°.

P. barclaya'num (Barclay's). Copper. July. Mexico. 1830

PESCATO'REA. (Commemorative of *M. Pescatore.* Nat. ord. Orchidaceæ. Now referred to Zygopetalum.)

P. backhousia'na (Backhousian). See ZYGOPETALUM BACKHOUSIANUM.
„ *be'lla* (pretty). See ZYGOPETALUM BELLUM.
„ *ceri'na* (waxy). See ZYGOPETALUM CERINUM.
„ *cochlea'ris* (shell-shaped). See ZYGOPETALUM COCHLEARE.
„ *daya'na* (Dayan). See ZYGOPETALUM DAYANUM.
„ *dormannia'na* (Dormannian). See ZYGOPETALUM DORMANNIANUM.
„ *euglo'ssa* (beautiful-tongue). See ZYGOPETALUM RŒZLII.
„ *fimbria'ta* (fringed). See ZYGOPETALUM FIMBRIATUM.
„ *gairia'na* (Gairian). See ZYGOPETALUM GAIRIANUM.
„ *Klabocho'rum* (Messrs. Klaboch's). See ZYGOPETALUM KLABOCHORUM.
„ *lamello'sa* (plaited). See ZYGOPETALUM LAMELLOSUM.
„ *Lehma'nni* (Lehmann's). See ZYGOPETALUM LEHMANNI.
„ *Rœ'zlii* (Rœzl's). See ZYGOPETALUM RŒZLII.
„ *ruckeria'na* (Ruckerian). See ZYGOPETALUM RUCKERIANUM.
„ *russelia'na* (Russelian). See ZYGOPETALUM RUSSELIANUM.
„ *triu'mphans* (triumphant). See ZYGOPETALUM TRIUMPHANS.
„ *Verve'ti* (Vervæt's). See ZYGOPETALUM VERVÆTI.
„ *Walli'sii* (Wallis's). See ZYGOPETALUM WALLISII.

PESOME'RIA. (From *pipto, peso,* to fall, and *meros,* a part; the sepals fall off soon after expansion. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria,* 1-*Monandria.* See PHAIUS.)

P. tetrago'na (four-cornered-*stem*). See PHAIUS VILLOSUS.

PETALA'CTE. (From *petalon,* a petal, and *acte,* a ray. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia,* 2-*Superflua.* Allied to Antennaria.)

Greenhouse evergreen shrubs, from South Africa. Cuttings of young side-shoots, getting firm at the base, in sand, under a bell-glass, in May; sandy loam and fibrous peat, with pieces of charcoal, and well-drained pots. Winter temp., 38° to 48°.

P. bi'color (two-coloured). See P. CORONATA BICOLOR.
„ *corona'ta* (crowned). White. May. 1816.
„ „ *bi'color* (two-coloured). Purple, white. May. 1816.

PETALI'DIUM. (From *petalon,* a petal; referring to the conspicuous flowers. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia,* 2-*Angiospermia.* Allied to Ruellia.)

Stove evergreen climber. Cuttings of shoots in April or May, in sandy loam, in a hotbed; sandy, fibrous loam, and a little peat. Winter temp., 48° to 60°; summer, 60° to 80°.

P. barlerioi'des (Barleria-like). 4. White. June. India.

PETALO'LEPIS BI'COLOR. See PETALACTE CORONATA BICOLOR.

PETALOSTE'MON. Prairie Clover. (From *petalon,* a petal, and *stemon,* a stamen; stamens joined to the bottom of the petals. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia,* 2-*Pentandria.* Allied to Dalea.)

Hardy North American herbaceous perennials. Division in spring; sandy loam, and a little peat or leaf-mould.

P. ca'ndidus (white). 1. White. July. 1811.
„ *ca'rneus* (flesh-coloured). ½. Flesh. July. 1811.
„ *corymbo'sus* (corymbed). 1½. White. August. 1811.
„ *folio'sus* (leafy). Rose-purple. 1882.
„ *villo'sus* (shaggy). Red. July. 1826.
„ *viola'ceus* (violet). 1. Violet. August. 1811.

PETASI'TES. Butter Burr. (From *petasos,* a broad-brimmed hat; in reference to the broad, roundish leaves. Nat. ord. Compositæ.)

Hardy perennial herbs. Divisions in spring or autumn. Ordinary soil.

P. africa'na (African). See GUNNERA PERPENSA.
„ *a'lbus* (white). 1. White. March. Europe. 1683.
„ *alpi'nus* (Alpine). See HOMOGYNE ALPINA.
„ *di'scolor* (two-coloured). See HOMOGYNE DISCOLOR.
P. fra'grans (fragrant). ½–1. White. December to February. Mediterranean region. 1806. "Winter Heliotrope."
„ *fri'gidus* (frigid). ½. White. April. Northern and southern regions. 1710.
„ *japo'nicus* (Japanese). 3. White. March. Japan.
„ „ *gigante'us* (gigantic). 5–6. White. Japan. 1897.
„ *læviga'tus* (smooth). ½. Yellow. May. Bohemia; Siberia. 1816.
„ *ni'veus* (snowy). 1. White. April. Europe. 1713.
„ *officina'lis* (shop). ½–1. White, pink. March. Europe (Britain). "Common Butter Burr."
„ *palma'tus* (hand-shaped). ½. White. April. Western Asia; N. Amer. 1778.
„ *sagitta'tus* (sagittate). ½. White. April. N. Amer.
„ *spu'rius* (spurious). White. Europe.
„ *tomento'sus* (felted). See P. SPURIUS.
„ *vulga'ris* (common). See P. OFFICINALIS.

PETASO'STYLIS NIGRE'SCENS. See LEIANTHUS NIGRESCENS.

PETI'TIA. (Possibly a commemorative name. Nat. ord. Verbenaceæ.)

Greenhouse evergreen shrub. Cuttings of young shoots, in sand, under a bell-glass in spring. Loam, peat, leaf-mould, and half a part of sand.

P. ole'ina (olive-like). 2. Green, white. May. Mexico. 1840.

PETIVE'RIA. (Named after *J. Petiver,* an English naturalist. Nat. ord. *Phytolaccads* [Phytolaccaceæ]. Linn. 7-*Heptandria,* 1-*Monogynia.*)

Stove evergreen, West Indian, white-flowered shrubs. Cuttings of half-ripened shoots in May, in sand, under a bell-glass, and in a sweet bottom-heat; peat and sandy loam. Winter temp., 48° to 60°; summer, 60° to 85°.

P. allia'cea (garlic-scented). 2. June. 1737.
„ *octa'ndra* (eight-stamened). See P. ALLIACEA.

PETRE'A. (Named after *Lord Petre.* Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia,* 2-*Angiospermia.* Allied to Duranta.)

Stove evergreen trees. Cuttings of short, firm side-shoots in summer, in sand, under a bell-glass, and in bottom-heat; rich, sandy loam. Winter temp., 60°; summer, 60° to 90°.

P. arbo'rea (tree-like). 10. Blue. Colombia. 1823.
„ *ere'cta* (erect). See P. ARBOREA.
„ *guiane'nsis* (Guianan). 20. Lilac. June, July. Guiana. Twiner.
„ *macrosta'chya* (large-spiked). See P. GUIANENSIS.
„ *rugo'sa* (wrinkly). 10. Blue. Caracas. 1824.
„ *Stape'liæ* (Stapelia-*flowered*). 20. Lilac. June. S. Amer. Twiner.
„ *volu'bilis* (twisting). 20. Purple. July. Vera Cruz. 1733. Twiner.

PETRO'BIUM. (From *petros,* a rock, and *bios,* life or living; literally, rock-dweller. Nat. ord. Compositæ.)

Stove tree. Cuttings in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

P. arbo'reum (tree-like). Yellow. June. St. Helena. 1816.

PETROCA'LLIS PYRENA'ICA. See DRABA PYRENAICA.

PETROCA'RYA CAMPE'STRIS. See PARINARIUM CAMPESTRE.

PETROCO'PTIS. See LYCHNIS.

PETRO'PHILA. (From *petros,* a rock, or stone, and *phileo,* to love; referring to their natural habitation. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria,* 1-*Monogynia.* Allied to Protea.)

Greenhouse, evergreen, white-flowered, Australian shrubs. Cuttings of ripe shoots in spring, under a bell-glass, and placed in a cold frame; fibrous, rather tenacious loam, and a little peat. Winter temp., 38° to 48°.

P. acicula'ris (needle-shaped). 5. June. 1824.
„ *brevifo'lia* (short-leaved). See P. MEDIA.
„ *divarica'ta* (spreading). Australia.
„ *fastigia'ta* (pyramidal). 5. July. 1820.
„ *filifo'lia* (thread-leaved). See P. ACICULARIS.
„ *glanduli'gera* (gland-bearing). See P. SERRURIÆ.
„ *heterophy'lla* (various-leaved).
„ *juncifo'lia* (rush-leaved). See P. MEDIA.

P. me'dia (intermediate). Australia.
„ *pedunculā'ta* (*long*-flower-stalked). 4. July. 1824.
„ *pulche'lla* (neat). 5. July. 1790.
„ *ri'gida* (stiff). 5. June. 1823.
„ *Serru'riæ* (Mrs. Serruria's). 3. May. 1840.
„ *terelifo'lia* (round-leaved). 4. July. 1824.
„ *tri'fida* (three-cleft) of Loddiges. See ISOPOGON TRILOBUS.
„ *tri'fida* (three-cleft) of R. Brown. 4. July. 1820.

PETROSELI'NUM SATI'VUM. See CARUM PETROSELINUM.

PETTE'RIA. (Commemorative of *Franz Petter*, a botanical traveller. Nat. ord. Leguminosæ.)
Hardy shrub, with the habit of Cytisus. Cuttings in sand under a hand-light in summer; grafting. Well-drained soil.
P. ramenta'cea (chipped). 5–10. Yellow. May, June. Dalmatia. 1840.

PETTIGREE or **PETTIGRUE.** *Ru'scus aculea'tus.*

PETTY-WHIN. *Geni'sta a'nglica.*

PETU'NGA. (Its Indian name. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a slight bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 80°.
P. Roxbu'rghii (Roxburgh's). 3. White. May. India; Malaya. 1818.

PETU'NIA. (From *petun*, Brazilian name for tobacco, to which Petunia is allied. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Half-hardy herbaceous perennials. Seeds sown in a hotbed, in March; seedlings pricked out, and finally transplanted into the borders in May; cuttings of the points of shoots, or small side-shoots, in spring, in heat, and in summer and autumn without heat, except being covered with glass; scarcely any of them will stand frost. It is best to keep the plants in a cold, dry pit during the winter; for growing, light, rich, sandy loam. Temp., not below 38° in winter.
P. acumina'ta (pointed-*leaved*). See NICOTIANA ACUMINATA.
„ *compa'cta eleganti'ssima* (very elegant). Mauve. 1881. Garden form.
„ *interme'dia* (intermediate). See SALPIGLOSSIS LINEARIS.
„ *Melea'gris* (guinea-hen). White, blue. Hybrid. 1850.
„ *nyctaginiflo'ra* (marvel-of-Peru-flowered). 4. White. August. S. Amer. 1823.
„ *phœni'cea* (purple-*flowered*). See P. VIOLACEA.
„ *puncta'ta* (dotted). Blue, rose, crimson, white. Hybrid. 1842.
„ *viola'cea* (violet-coloured). 2–2½. Rose, purple, or crimson. August. Buenos Ayres. 1831.

PEUCE'DANUM. Hog's Fennel. (From *peukedanon*, an old Greek name for *P. officinale*. Nat. ord. Umbelliferæ.)
Hardy biennials or perennials. Seeds: divisions of the perennials. Ordinary soil.
P. au'reum (golden). Yellow. Canary Islands.
„ *Cerva'ria* (Cervaria). Central Europe; Northern Asia.
„ *Galba'num* (Galbanum). S. Africa.
„ *grave'olens* (strong-smelling). 1–2. Yellow. July. India. 1810. "Dill."
„ *officina'le* (shop). 2–3. Yellow. Central Europe; N. Asia (England). "Sulphur-wort."
„ *Ostru'thium* (Ostruthium). 2–3. White. July, August. Europe (Britain). "Master-wort."
„ *palu'stre* (marsh). 3–5. White. July, August. Europe (England). "Milk Parsley."
„ *sati'vum* (cultivated). 2–3. Yellow. July, August. Europe (England). "Wild Parsnip."
„ *So'wa* (Sowa). See P. GRAVEOLENS.

PEU'MUS. (The Chilian name. Nat. ord. Monimiaceæ.)
Greenhouse, evergreen shrubs. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.
P. Bo'ldus (Boldus). 3–20. White. May. Chili. 1844.
„ *fra'grans* (fragrant). See P. BOLDUS.

PEYROU'SIA. (Named after *La Peyrouse*, the French navigator. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Lapeyrousia.)
P. aculea'ta (prickly). See LAPEYROUSIA COMPRESSA ACULEATA.
„ *a'nceps* (two-edged). See LAPEYROUSIA COMPRESSA.
„ *corymbo'sa* (corymbed). See LAPEYROUSIA CORYMBOSA.
„ *Fabri'cii* (Fabricius's). See LAPEYROUSIA FABRICII.
„ *falca'ta* (sickle-*leaved*). See LAPEYROUSIA FALCATA.
„ *fascicula'ta* (fascicled). See LAPEYROUSIA FASCICULATA.
„ *fissifo'lia* (cleft-leaved). See LAPEYROUSIA FISSIFOLIA.
„ *silenoi'des* (catchfly-like). See LAPEYROUSIA SILENOIDES.

PFA'FFIA. (Commemorative of *C. H. Pfaff*, a professor at Kiel. Nat. ord. Amarantaceæ.)
A stove herbaceous perennial. Seeds; divisions, and cuttings under a bell-glass. Fibrous loam, leaf-mould, and sand.
P. gnaphalioi'des (Gnaphalium-like). 1. White. July. Brazil. 1822.

PFEI'FFERA CEREIFO'RMIS. See RHIPSALIS CEREIFORMIS.

PHA'CA. (Name of a plant mentioned by Dioscorides. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Now united to Astragalus.)
Hardy herbaceous perennials. Seeds sown in a little heat, in April, and seedlings planted out, will bloom the same season; many will do so if sown in good places in the open air; division of the roots in spring; cuttings under a hand-light, in summer; sandy loam. *Cane'scens* requires protection from frost in winter.
P. alpi'na (alpine). See ASTRAGALUS ALPINUS.
„ „ *dahu'rica* (Dahurian). See ASTRAGALUS ALPINUS DAHURICUS.
„ *arena'ria* (sand). See ASTRAGALUS CHORINENSIS.
„ *astraga'lina* (Astragalus-like). See ASTRAGALUS ALPINUS.
„ *austra'lis* (southern). See ASTRAGALUS LUSITANICUS.
„ *bæ'tica* (Bætic). See ASTRAGALUS LUSITANICUS.
„ *cane'scens* (hoary). 1. Pale rose. July. Valparaiso. 1831.
„ *densifo'lia* (crowded-leaved). See ASTRAGALUS MENZIESII.
„ *exalta'ta* (tall). See ASTRAGALUS SECUNDUS.
„ *florida'na* (Floridan). See SESBANIA PLATYCARPA.
„ *fri'gida* (cold). See ASTRAGALUS FRIGIDUS.
„ *gla'bra* (smooth). See ASTRAGALUS AUSTRALIS.
„ *lappo'nica* (Lapland). See ASTRAGALUS ARCTICUS.
„ *lu'tea* (yellow). 1. Yellow. July. Siberia. 1827.
„ *oroboi'des* (Orobus-like). See ASTRAGALUS OROBOIDES.
„ *triangula'ris* (three-cornered). See ASTRAGALUS TRIANGULARIS.

PHACE'LIA. (From *phakelos*, a bundle; the disposition of the flowers. Nat. ord. *Hydrophyls* [Hydrophyllaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Includes Eutoca and Whitlavia.)
Annuals, by seeds; perennials, by seed and division in April; sandy, common garden-soil.

HARDY ANNUALS.

P. campanula'ria (bell-shaped). ½–¾. Deep blue, with five white spots. California. 1882.
„ *conge'sta* (crowded-*racemed*). 1½. Purple, blue. June. Texas. 1835.
„ *divarica'ta* (divaricate). 1. Pale violet. May. California. 1833.
„ „ *wrangelia'na* (Wrangelian). 1. Blue. August. N. Amer. 1835.
„ *fimbria'ta* (fringed). ¾. Pale flesh. June. N. Amer.
„ *grandiflo'ra* (large-flowered). 3–4. Sky-blue, purple-veined. June to September. California. 1901.
„ *hi'spida* (roughly-hairy). 1½. Lilac. California.
„ *loasæfo'lia* (Loasa-leaved). 1–2. July. California.
„ *Menzie'sii* (Menzies'). Purple. June. N.W. Amer. 1826.
„ *orcuttia'na* (Orcuttian). White, with yellow centre. California. 1890.
„ *Pa'rryi* (Parry's). Violet, with five yellow spots. California. 1885.
„ *parviflo'ra* (small-flowered). Blue. June. N. Amer. 1826.
„ *platyca'rpa* (broad-fruited). Lilac. August. Mexico. 1827. Half-hardy.
„ *ramosi'ssima hi'spida* (roughly-hairy). See P. HISPIDA.

P. seri'cea (silky). 1–1½. Blue. N.W. Amer. 1827.
„ *tanacetifo'lia* (tansy-leaved). 2. Blue. June. California. 1832.
„ *Whitla'via* (Whitlavia). 1–2. Blue. June. California. 1854.
„ *vinifo'lia* (vine-leaved). 1½. Light blue. September. Texas. 1834.
„ *vi'scida* (clammy). 1–2. Bright blue, with grey eye. July, August. California. 1834.

HARDY HERBACEOUS.

P. A'ldea (Aldea). See P. CIRCINATA.
„ *bipinnati'fida* (doubly-leafleted). 2. Blue. June. N. Amer. 1824.
„ *circina'ta* (rounded). 1½. Pink. June. Magellan. 1817.
„ *Frankli'nii* (Franklin's). 1. Pink. May. N. Amer. 1827.

PHÆDRANA'SSA. (From *phaidros*, gay, and *anassa*, queen. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Coburgia.)

Peruvian bulbs, requiring the protection of a greenhouse, and succeed best in a strong, yellow loam, like Coburgia; they rest in winter, or may be made to rest in summer. For culture, see COBU'RGIA.

P. Carmio'li (Carmiol's). 2. Tube bright red; limb green, with pale edge. Costa Rica. 1867.
„ *chlora'cea* (greenish-yellow). 1. Crimson, green. December. 1844.
„ „ *obtu'sa* (obtuse). December. 1844.
„ *eucrosioi'des* (Eucrosia-like). 1. Green, red. Ecuador. 1878.
„ *Lehma'nni* (Lehmann's). Tube green; limb deep red. Andes of Colombia. 1883.
„ *obtu'sa* (blunt). See P. CHLORACEA OBTUSA.
„ *ru'bro-vi'ridis* (red-green). See EUSTEPHIA COCCINEA.
„ *schiza'ntha* (cut-flowered). 1. Tube green; limb bright red. Andes of Ecuador. 1880.
„ *viridiflo'ra* (green-flowered). 1. Greenish-yellow. Andes of Ecuador. 1877.

PHÆNOCO'DON. See LAPAGERIA.

PHÆNO'COMA. (From *phaino*, to shine, and *kome*, hair; colour of involucrum. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Helichrysum.)

Greenhouse evergreen shrub. Cuttings of young side-shoots, getting firm at the base, in sand, over peat, in pots three-parts filled with drainage, under a bell-glass, and kept near the glass of a house or pit in summer; sandy peat and a little fibrous loam. Winter temp., 40° to 48°.

P. proli'fera (proliferous). 4. Crimson. September. Cape of Good Hope. 1789.

PHÆNOGAMS or **PHANEROGAMS.** Flowering plants, or those having stamens, pistils, and ovules, which become seeds as a result of fertilisation, in contradistinction to cryptogams, like Ferns, Selaginellas, &c., which do not have flowers.

PHÆNOSPE'RMA. (From *phaino*, to shine, and *sperma*, a seed; referring to the colour of the seeds. Nat. ord. Gramineæ.)

A hardy grass. Seeds in spring. Ordinary soil.

P. globo'sa (globose). China. 1874.

PHAIOCALA'NTHE. A set of hybrids between *Phaius* and *Calanthe*.

PHAI'US. (From *phaios*, shining; referring to the flowers. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Bletia.)

Stove orchids. Division of the pseudo-bulb-like shoots, as growth commences, in spring; grown in pots. See ORCHIDS.

P. (*Thu'nia*) *a'lbus* (white). 2. White. July. Sylhet. 1836.
„ „ *fla'vo-ti'nctus* (yellow-tinted). Lip with a yellow area in front. 1883.
„ „ *gigante'us* (giant). Flowers larger; lip golden-yellow. 1896.
„ „ *supe'rbus* (superb). Colours richer.
„ *amboine'nsis* (Amboyna). White, with veins on the lip. Malaya. 1907.
P. angustifo'lius (narrow-leaved). Green. July. Trinidad. 1821.
„ (*Thu'nia*) *Benso'næ* (Mrs. Benson's). 2. Purple, yellow. July. Burma. 1867.
„ *Berna'ysii* (Bernays'). See P. BLUMEI BERNAYSII.
„ *bi'color* (two-coloured). 2. Maroon, white. July. Ceylon.
„ „ *Owe'niæ* (Mrs. Owen's). A rich dark variety. 1894.
„ *Blu'mei* (Blume's). 2–3. Brownish-red, white. April. Java. 1879.
„ „ *assa'micus* (Assamese). Varying in colour, yellow, with mauve or purple shades. Assam; Burma. 1882.
„ „ *Berna'ysii* (Bernay's). 2–3. Sulphur-yellow Australia. 1873.
„ „ *sanderia'nus* (Sanderian). Yellow-brown; lip white and purple. Java. 1905.
„ (*Thu'nia*) *brymeria'nus* (Brymerian). 2. White; lip yellow, with crimson lines. Burma. 1894.
„ *callo'sus* (thick-*lipped*). Reddish-brown. March. Java. 1848.
„ (*Thu'nia*) *candidi'ssimus* (whitest). Wholly white. 1888.
„ *Coope'ri* (Cooper's). Red-brown, pale yellow; lip white changing to light yellow. Malaya (?). 1910.
„ (*Thu'nia*) *Dodgso'nii* (Dodgson's). White; lip yellow, veined with red. India (?). 1877.
„ *fla'vus* (yellow). Yellow. India. 1837.
„ *fra'grans* (fragrant). Rose, white, red. Madagascar. 1901.
„ *grandifo'lius* (large-leaved). White, brown. April. China. 1778.
„ *Humblo'tii* (Humblot's). Rose, with white and red blotches. Madagascar. 1880.
„ *inquili'nus* (strange). Creamy, with yellow ridges. Hybrid. 1867.
„ *interme'dius* (intermediate). India. 1839.
„ *irrora'tus* (besprinkled). A synonym of *Phaiocalanthe irrorata*.
„ *macula'tus* (spotted-*leaved*). 2. Yellow. June. Nepaul. 1823.
„ *Ma'nnii* (Mann's). See P. WALLICHII MANNII.
„ (*Thu'nia*) *Marsha'lliæ* (Mrs. Marshall's). 2. White, lemon. Moulmein. 1871.
„ „ *a'lbus* (white). White, with sulphur-yellow disc. 1906.
„ „ *purpura'tus* (purple). White, spotted with purple; lip with purple veins outside. 1888.
„ „ *tri'lobus* (three-lobed). Lip with reddish-brown veins and darker crests. 1888.
„ *mishmie'nsis* (Mishmian). 1½. Pale rose, with white spots. Himalaya. 1893.
„ *pauciflo'rus* (few-flowered). Java.
„ *philippine'nsis* (Philippine). Reddish orange-brown; lip white. Philippines. 1889.
„ *Robe'rtsii* (Robert's). Brownish-red, streaked yellow. New Caledonia. 1884.
„ *Rœbli'ngii* (Rœbling's). Reddish Indian yellow, fragrant. Khasia Hills. 1895.
„ *ro'seus* (rosy). See P. MISHMIENSIS.
„ *si'mulans* (resembling). 1½. White, lip yellow and rosy, spotted with purple. Madagascar. 1881.
„ *tetrago'nus* (four-angled). 2. Brown. Mauritius. 1837.
„ *tuberculo'sus* (tubercular). Colours as in *P. simulans*. Crest reduced. Madagascar. 1901.
„ (*Thu'nia*) *veitchia'nus* (Veitchian). White, mauve. Hybrid. 1885.
„ *Walli'chii* (Dr. Wallich's). 2. Orange, yellow. April. Khasia. 1837.
„ „ *flave'scens* (yellowish). Sepals and petals light yellow; front of lip paler. 1900.
„ „ *Ma'nnii* (Mann's). Larger and darker than the type. Assam. 1889.
„ *villo'sus* (shaggy). 2. Brown. December. Mauritius. 1837.
„ *Warpu'ri* (Warpur's). See P. TUBERCULOSUS.
„ (*Thu'nia*) *winnia'nus* (Winnian). Rosy-lilac; lip maroon. 1895.

PHALÆNO'PSIS. Butterfly-Plant. (From *phalaina*, a moth, and *opsis*, like; the appearance of these handsome flowers. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, grown in baskets or on blocks. Pieces of offset shoots, kept dry at the base, for a day or two, before setting them growing. See ORCHIDS.

P. alcico'rnis (elk's-horn). Creamy-white, pale yellow. Natural hybrid. 1887.
„ *ama'bilis* (lovely) of Blume. White, pink. September. Malaya. 1847.
„ „ *au'rea* (golden). Disc and side lobes yellow.
„ „ *rimestadia'na* (Rimestadian). Very large, pure white; lip yellow on side lobes. 1901.
„ *amethysti'na* (amethyst). Cream; lip amethyst. Sunda Islands. 1865.
„ *antenni'fera* (antennæ-bearing). See P. ESMERALDA.
„ *Aphrodi'te* (Aphrodite). 1½. White, pink. June. Manilla. 1836.
„ „ *longifo'lia* (long-leaved). White. Year. Manilla. 1842.
„ „ *rotundifo'lia* (round-leaved). White. Year. Manilla. 1837.
„ *Boxa'llii* (Boxall's). Sulphur, barred brown, white. Philippines. 1883.
„ *buyssonia'na* (Buyssonian). Bright purple, edged white; lip scarlet. August. Cochin-China. 1888.
„ *ca'sta* (pure). White, tinted rose. Natural hybrid. Philippines. 1875.
„ *corningia'na* (Corningian). Purple-brown, striped; lip purple violet. 1879.
„ *Co'rnu-ce'rvi* (stag's-horn). Green, white, purple. Malaya. 1864.
„ *Cy'nthia* (Cynthia). White, with purple markings. Natural hybrid. 1890.
„ *delica'ta* (delicate). Natural hybrid. 1882.
„ *denisia'na* (Denisian). 1. Greenish-yellow, with red-brown spots; lip white. Philippines. 1899.
„ *denticula'ta* (finely-toothed). 1. White, brown, pale yellow. Trop. Asia. 1888.
„ *equе'stris* (equestrian). See P. ROSEA.
„ *Esmera'lda* (Esmeralda). 2. Light rose, striped; lip amethyst. Cochin-China. 1877.
„ „ *candi'dula* (whitish). White, streaked rosy-purple. Cambodia.
„ *fascia'ta* (bundled). Light yellow. Philippines. 1882.
„ *Færsterma'nnii* (Færstermann's). Small, white, with some brown lines. 1887.
„ *fu'gax* (fleeting). See SARCOCHILUS UNGUICULATUS.
„ *fusca'ta* (dusky). Yellow, brown. Malaya. 1874.
„ *gigante'a* (giant). Whitish, with many brown spots. Borneo. 1909.
„ *glorio'sa* (glorious). Allied to *P. amabilis*. Sulu Archipelago. 1888.
„ *grandiflo'ra* (large-flowered) of Lindley. See P. AMABILIS.
„ *interme'dia* (intermediate). White, pink. Hybrid. Philippines. 1852.
„ „ *brymeria'na* (Brymerian). White, purple; lip crimson-violet. Hybrid. 1876.
„ „ *Po'rtei* (Porte's). White, lilac. Philippines. 1867.
„ *Kunsile'ri* (Kunstler's). 1. Red-brown, golden-yellow; lip white. Malaya. 1903.
„ *leucorrho'da* (white-red). White; lip spotted with purple. Natural hybrid. Philippines. 1875.
„ *Linde'ni* (Linden's). Rosy. 1895.
„ *Lo'bbii* (Lobb's). See P. INTERMEDIA.
„ *Lo'wii* (Low's). Yellow, purple. Burma. 1862.
„ *lueddemannia'na* (Lueddemannian). White, purple. Philippines. 1865.
„ „ *hierogly'phica* (hieroglyphical). Ochraceous, spotted with brown. Philippines. 1887.
„ „ *ochra'cea* (ochraceous). Rosy-ochraceous, brown. Philippines.
„ „ *pu'lchra* (beautiful). Dark purple, blue. Philippines. 1875.
„ *macula'ta* (spotted). Pale, with purple-brown blotches, purple. Borneo. 1881.
„ *Ma'nnii* (Mann's). Yellow, brown, spotted purple. Assam. 1871.
„ *Mari'æ* (Mrs. Maria Burbidge's). White, barred chocolate-red; lip magenta-purple. Sulu Archipelago. 1883.
„ *Micholi'tzii* (Micholitz's). Creamy-white. Philippines. 1890.
„ *pa'llens* (pale). Green. Philippines.
„ *Pari'shii* (Parish's). ½. White, purple. Burma. 1865.
„ „ *Lo'bbii* (Lobb's). Lip white, with brown bars. 1870.
„ *regneria'na* (Regnerian). Rose; lip dark purple. Siam. 1887.
„ *reichenbachia'na* (Reichenbachian). Whitish-green; lip mauve-blue. Philippines. 1882.
„ *ro'sea* (rosy). 1½. Deep vermilion. Manilla. 1848.
P. ro'sea leuca'spis (white-asp). Callus white. 1881.
„ *Rucke'ri* (Rucker's). See SARCOCHILUS UNGUICULATUS.
„ *sanderia'na* (Sanderian). 1. Rosy; lip white, lined brown and purple. Philippines. 1883.
„ „ *marmora'ta* (marbled). Yellowish-white; lip with purple spots. 1883.
„ *schilleria'na* (Schillerian). 1–2½. Pale purple or pink. Winter. Philippines. 1860.
„ „ *a'dvena* (stranger). Pale purple; lip white. 1885.
„ „ *a'lba* (white). White; callus of lip yellow. 1882.
„ „ *immacula'ta* (unspotted). Rose, white, violet. Philippines. 1875.
„ „ *purpu'rea* (purple). Dark rosy-purple. 1892.
„ „ *splе'ndens* (splendid). Rose, washed with deeper rose. Philippines. 1886.
„ „ *vesta'lis* (vestal). White. Philippines. 1882.
„ *specio'sa* (showy). Purple; lip and base of petals white. Andamans. 1881.
„ „ *christia'na* (Christian). Rose-madder; lip white. 1882.
„ „ *Impera'trix* (empress). Larger rose-purple. 1882.
„ *stobartia'na* (Stobartian). Apple-green; lip amethyst. 1877.
„ *stuartia'na* (Stuartian). White, yellow, spotted with crimson; lip white. Philippines. 1881.
„ „ *be'lla* (pretty). Lip blotched with purple-brown, with red lines. 1888.
„ „ *hrubya'na* (Hrubyan). Purple on the back, edged white. 1884.
„ „ *no'bilis* (noble). Creamy, orange. 1882.
„ „ *punctati'ssima* (much-spotted). With numerous mauve spots. Philippines. 1882.
„ „ *punctula'ta* (finely-spotted). Dotted with red.
„ *sumatra'na* (Sumatran). White, barred with brown. Sumatra. 1865.
„ „ *kimballia'na* (Kimballian). Bright yellow, barred with red; lip yellowish. 1888.
„ „ *paucivilla'ta* (few-striped). Brownish-purple, bars few; lip with mauve stripes. 1882.
„ „ *sangui'nea* (blood-red). Lateral sepals dark red. 1881.
„ *tetra'spis* (four-asp). White. Andamans. 1881.
„ *Valenti'ni* (Valentine's). Purple, white at base; lip mauve, white and yellow. Malaya. 1883.
„ *veitchia'na* (Veitchian). Purple, with darker spots. Philippines. 1872.
„ „ *bra'chyodon* (short-toothed). White; lip purple. 1884.
„ *viola'cea* (violet). Rose, white, yellow. Malaya. 1861.
„ „ *bowringia'na* (Bowringian). Light yellow, with purple marks. 1884.
„ „ *murtonia'na* (Murtonian). Lemon-yellow, marked with purple. 1878.
„ „ *schræderia'na* (Schrœderian). Larger and more brilliantly coloured. 1882.
„ *Wi'ghtii* (Wight's). See DORITIS WIGHTII.

PHALA'NGIUM. (From *phalaggion*, a spider. Nat. ord. Liliaceæ. Now referred to Anthericum.)

P. arge'nteo-linea're (silver-lined). See CHLOROPHYTUM ELATUM ARGENTEO-LINEARE.
„ *ela'tum* (tall). See CHLOROPHYTUM ELATUM.
„ *Lilia'go* (Liliago). See ANTHERICUM LILIAGO.
„ *Lilia'strum* (Liliastrum). See PARADISIA LILIASTRUM.
„ *nepale'nse* (Nepaulese). See CHLOROPHYTUM NEPALENSE.
„ *pomeridia'num* (afternoon). See CHLOROGALUM POMERIDIANUM.
„ *ramo'sum* (branched). See ANTHERICUM RAMOSUM.
„ *virga'tum* (twiggy). See NOLINA GEORGIANA.

PHA'LARIS. Canary Grass. (From *phalaros*, shining, referring to the shining seeds. Nat. ord. *Grasses* [Gramineæ]. Linn. 3-*Triandria*, 2-*Digynia*.)

P. canarie'nsis produces the Canary-seeds of commerce. Seeds; common soil.

P. appendicula'ta (appendaged). See P. PARADOXA.
„ *arundina'cea* (reed). 3–5. Green or purple. July. North temperate regions (Britain).
„ „ *gigante'a* (gigantic). 6–8. Green. July. France. 1877.
„ „ *variega'ta* (variegated). Leaves striped with creamy-white. "Ribbon Grass" or "Gardener's Garters." A very common garden plant.
„ *cærule'scens* (bluish). 1. June. Italy. 1823.

P. canarie'nsis (Canary). 2. July. Europe (Britain). "Canary Grass."
„ *carolinia'na* (Carolinian). See P. INTERMEDIA.
„ *commuta'ta* (changed). See P. CÆRULESCENS.
„ *interme'dia* (intermediate). 2. Green. N. Amer.
„ *nodo'sa* (large-jointed). See P. TUBEROSA.
„ *parado'xa* (paradoxical). 1. June. Mediterranean region. 1820.
„ *tubero'sa* (tuberous). 2. June. Mediterranean region.

PHALE'RIA. (From *phaleros*, shining or white. Nat. ord. Thymeleaceæ.)
Stove evergreen shrub. Seeds; cuttings of half-ripe shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
P. ambi'gua (doubtful). Pure white, fragrant. Java.
„ *laurifo'lia* (laurel-leaved). 4–6. White. Island of Timor. 1869.

PHALEROCA'RPUS HISPI'DULUS and **P. SERPYLLIFO'LIA.** See CHIOGENES SERPYLLIFOLIA.

PHALOCA'LLIS PLU'MBEA. See CYPELLA PLUMBEA.

PHARBI'TIS. (From *pharbe*, colour; deep and varied colours of the flowers. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Ipomœa.)
P. barba'ta (bearded). See IPOMŒA HEDERACEA.
„ *barbi'gera* (beard-bearing). See LETTSOMIA BARBIGERA.
„ *cærule'scens* (bluish). See IPOMŒA HEDERACEA.
„ *catha'rtica* (purgative). See IPOMŒA CATHARTICA.
„ *cuspida'ta* (short-pointed). See IPOMŒA BICOLOR.
„ *Dille'nii* (Dillenius's). See IPOMŒA BICOLOR.
„ *diversifo'lia* (diverse-leaved). See IPOMŒA HEDERACEA.
„ *hedera'cea* (Ivy-leaved). See IPOMŒA HEDERACEA.
„ *hi'spida* (roughly-hairy). See IPOMŒA PURPUREA.
„ *Lea'rii* (Lear's). See IPOMŒA LEARII.
„ *Ni'l* (Nil). See IPOMŒA HEDERACEA.
„ *ostri'na* (purple). 20. Purple. July. Cuba. 1840. Stove.
„ *puncta'ta* (spotted). See IPOMŒA HEDERACEA.
„ *sca'bra* (rough). See IPOMŒA HEDERACEA.
„ *tri'loba* (three-lobed). See IPOMŒA HEDERACEA.
„ *tyria'nthina* (purple). See IPOMŒA TYRIANTHINA.
„ *va'ria* (variable). See IPOMŒA PUBESCENS.

PHA'RIUM FISTULO'SUM. See BESSÈRA FISTULOSA.

PHARNA'CEUM. (Commemorative of *Pharnaces*, King of Pontus. Nat. ord. Ficoidaceæ.)
Greenhouse evergreen or subshrubby plants, which may be used for salad, on account of the agreeably acidulated character of their fleshy leaves. Seeds; cuttings in sand, under a bell-glass, in summer. Fibrous loam, with some finely broken bricks, and sand. Give full exposure to sunshine and little water in winter.
P. a'cidum (acid). White. St. Helena. 1869.
„ *inca'num* (hoary). Pale green and white. June to September. S. Africa. 1782.
„ *linea're* (linear). 1½. White. S. Africa. 1800.
„ *refle'xum* (reflexed). 1. Pale yellow. S. Africa. 1802.

PHA'RUS. (From *pharos*, a cloak or loose robe; the natives use it to thatch their huts. Nat. ord. Gramineæ.)
Stove ornamental grass. Divisions. Fibrous loam, leaf-mould, and sand.
P. latifo'lius (broad-leaved). Green. Trop. Amer. 1796.
„ „ *vitta'tus* (striped). Leaves with white bands. 1848.

PHASE'OLUS. Kidney Bean. (From *phaselus*, a little boat; fancied resemblance of the pods. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)
For culture of annuals, see KIDNEY BEANS; perennials, by division and cuttings, and usual greenhouse or stove culture.

STOVE DECIDUOUS TWINERS.

P. Caraca'lla (Caracalla). 1½. Lilac. August. India. 1690.
„ *dera'sus* (leathery). Greenish-white. Seeds black. Brazil. 1888.
„ *loba'tus* (lobed-*leaved*). 6. Yellow. September. Buenos Ayres. 1843. Evergreen.
„ *Mu'ngo* (Mungo). Trop. regions.
„ „ *au'reus* (golden). Seeds yellow. India.
P. Mu'ngo Ma'x (Max). Seeds black.
„ „ *radia'tus* (rayed). India.
„ *pilo'sus* (hairy). S. Amer.
„ *Roxbu'rghii* (Roxburgh's). See P. MUNGO RADIATUS.
„ *specio'sus* (showy). 6. Scarlet. July. Orinoco. 1820.
„ *tubero'sus* (tuberous). Cochin-China.
„ *wightia'nus* (Wightian). See P. MUNGO.

GREENHOUSE DECIDUOUS TWINER.

P. sylve'stris (wood). 6. Scarlet. July. Mexico. 1825.

HARDY DECIDUOUS TWINERS.

P. multiflo'rus (many-flowered). 12. Scarlet. July. S. Amer. 1633. "Scarlet Runner."
„ „ *albiflo'rus* (white-flowering). 12. White. August. S. Amer. 1633.
„ *pere'nnis* (perennial). 3. Dark purple. July. Carolina. 1824.
„ *ricciardia'nus* (Ricciardian). Origin unknown. 1833.
„ *vulga'ris* (common). 1. White. July. India. 1597. "Dwarf Bean," "French Bean."
„ „ *fascia'tus* (banded-*seeded*). White. July. India. 1597.
„ „ *variega'tus* (variegated-*seeded*). White. July. India. 1597.

TWINING ANNUALS.

P. aconitifo'lius (aconite-leaved). 2. Pink. July. India; Arabia. 1731.
„ *adena'nthus* (gland-flowered). 4. Red. July. India, &c. 1820.
„ *amœ'nus* (pleasing). See P. ADENANTHUS.
„ *chrysa'nthos* (golden-flowered). 3. Yellow. July.
„ *gonospe'rmus* (angled-seeded). See P. VULGARIS.
„ *heterophy'llus* (variable-leaved). 4. Red. June. Mexico. 1820.
„ *lathyroi'des* (Lathyrus-like). See P. SEMIERECTUS.
„ *luna'tus* (crescent-shaped). 4. Red. July. Tropics. 1818.
„ *microspe'rmus* (small-seeded). 1. Dark purple. June. Cuba. 1825.
„ *rostra'tus* (beaked). See P. ADENANTHUS.
„ *semiere'ctus* (half-erect). 2. Red. July. Tropical regions. 1781.
„ *toro'sus* (uneven). 4. Violet. July. Nepaul. 1818.
„ *viola'ceus* (violet). 3. Violet. July. Africa. 1800.
„ *Xuare'zii* (Xuarez's). See P. LUNATUS.

PHAYLO'PSIS. (From *phaios*, dusky, *hule*, wood, and *opsis*, resemblance. Nat. ord. Acanthaceæ.)
Stove perennial herbs. Seeds; cuttings in sand in a close case with bottom-heat. Fibrous loam, leaf-mould, and sand.
P. Barte'ri (Barter's). White, passing to pale pink. Trop. Africa. 1905.
„ *longifo'lia* (long-leaved). Green. Trop. Africa. 1822.

PHEASANT'S EYE ADONIS. *Ado'nis autumna'lis.*

PHEBA'LIUM. (From *phibale*, a myrtle; the appearance of the plants. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Crowea.)
Greenhouse evergreen, yellow-flowered, Australian shrubs. Cuttings of half-ripened shoots, or short, stumpy side-shoots, in sand, under a bell-glass, in May; sandy peat, with a third portion of fibrous loam. Winter temp., 38° to 48°.
P. au'reum (golden). See P. SQUAMULOSUM.
„ *Billardie'rii* (Billardière's). 10. May. 1825.
„ *denta'tum* (toothed). 3. June. 1825.
„ *ela'tum* (tall). See P. BILLARDIERII.
„ *lachnoi'des* (Lachnæa-like). 3. May. 1824.
„ *linea're* (narrow-*leaved*). 3. June. 1825.
„ *salicifo'lium* (willow-leaved). See P. DENTATUM.
„ *squamulo'sum* (scaly). 2½. May. 1824.

PHEGO'PTERIS. See POLYPODIUM.

PHEGO'PTERIS LACHNO'PODA. See NEPHRODIUM AMPLUM.

PHEGO'PTERIS SUBMARGINA'LIS. See NEPHRODIUM CARIPENSE.

PHEGO'PTERIS TRICHO'DES. See NEPHRODIUM SETIGERUM.

PHELLODE'NDRON. (From *phellos*, cork, and *dendron*, a tree; in allusion to the thick corky bark. Nat. ord. Rutaceæ. Allied to Ptelea, the Hop Trefoil.)

Hardy ornamental trees with long, pinnate leaves. Seeds; cuttings in sandy soil in a cold frame in autumn. Ordinary soil.

P. amure'nse (Amurland). 10–20. Green. July. Amurland.
„ „ *a'lbo-variega'tum* (white-variegated). Leaves with large white blotches. 1907.
„ *japo'nicum* (Japanese). Green. Japan.
„ *Lava'llei* (Lavalle's). Green. Trunk corky. Japan. 1908.
„ *sachaline'nse* (Sachalin). Green. Japan. 1905.

PHELYPÆ'A. (Commemorative of the family *Phelipeaux*, patrons of botany. Nat. ord. Orobanchaceæ.)

A parasite of the broomrape family, the seeds of which may be sown close to the roots of *Centaurea dealbata*, and if they germinate successfully, the seedlings will attach themselves to the roots of the Centaurea.

P. folia'ta (leafy). ½. Red. Leaves reduced to scales. Asia Minor; Caucasus. 1880.

PHENAKOSPE'RMUM GUYANE'NSIS. See RAVENALA GUYANENSIS.

PHILADE'LPHUS. Syringa, or Mock Orange. (Athenian name for a shrub. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Deutzia.)

Hardy deciduous, white-flowered shrubs. Layers and suckers, and dividing the plant in spring; common soil; deep loam is best. Many of the species would present a beautiful appearance if grown as single dwarf specimen trees, with a clean stem.

P. acumina'tus (long-pointed). White. Origin unknown.
„ *brachy'botrys* (short-bunched). Large, white, fragrant. China. 1909.
„ *chine'nsis* (Chinese). See P. CORONARIUS SATSUMI.
„ *cordifo'lius* (heart-leaved). White. Origin uncertain.
„ *corona'rius* (garland). 8. May. S. Europe. 1596.
„ „ *dianthiflo'rus ple'nus* (double-Dianthus-flowered).
„ „ *flo're-ple'no* (double-flowered). 8. May. S. Europe.
„ „ *fo'liis arge'nteo-variega'tis* (variegated-leaved). 8. May. S. Europe.
„ „ *fo'liis au'reis* (golden-leaved). Leaves yellow.
„ „ *na'nus* (dwarf). 2. May.
„ „ *Satsu'mi* (Satsumi).
„ „ *tomento'sus* (felted). 3. June. Himalaya to China. 1822.
„ „ *vulga'ris* (common). 8. May.
„ *Coulte'ri* (Coulter's). White. Northern Mexico. 1888.
„ *Delava'yi* (Delavay's). White, fringed, often striped purple. Yunnan, China. 1903.
„ *Falcone'ri* (Falconer's). White. Origin unknown.
„ *floribu'ndus* (bundle-flowered). See P. GRANDIFLORUS FLORIBUNDUS.
„ *gordonia'nus* (Gordon). 10. July. N. Amer. 1839.
„ *grandiflo'rus* (large-flowered). 6. June. Carolina. 1811
„ „ *floribu'ndus* (free-flowering). 6. June. Southern United States.
„ „ *la'xus* (loose). 4. June. Southern United States. 1830.
„ *hirsu'tus* (hairy). 3. June. N. Amer. 1820.
„ *inodo'rus* (scentless). 4. June. Carolina. 1738.
„ *insi'gnis* (remarkable). White. Garden origin.
„ *latifo'lius* (broad-leaved). See P. GRANDIFLORUS.
„ *la'xus* (loose-*growing*). See P. GRANDIFLORUS LAXUS.
„ *Lemoi'nei* (Lemoine's). Hybrid. 1888.
„ *Lewi'sii* (Lewis's). 6. June. N. Amer. 1739.
„ „ *califo'rnicus* (Californian). California.
„ *Magdale'næ* (Magdalene's). Szechuen, China. 1904.
„ *mexica'nus* (Mexican). 2. June. Mexico. 1839.
„ *microphy'llus* (small-leaved). 2–3. Summer. Colorado. 1887.
„ *parviflo'rus* (small-flowered). White. China. 1870.
„ *pekine'nsis* (Pekin). White. China.
„ „ *brachy'botrys* (short-bunched). Flowers very small. Kiangsi, China. 1904.
„ *purpu'reus macula'tus* (purple-blotched). White, with a large purple blotch on each petal. Hybrid. 1903.
„ *rubricau'lis* (red-stemmed). Creamy-white. China. 1870.
P. Satsu'mi (Satsumi). 4–6. July. Japan, &c. 1851.
„ *Satsuma'nus* (Satsumanus). White. Japan.
„ „ *nikoe'nsis* (Niko). Leaves hairy on both sides. Japan. 1910.
„ *serica'nthus* (silky-flowered). Calyx and ovary covered with grey hairs. Central China. 1896.
„ *specio'sus* (showy). See P. GRANDIFLORUS.
„ *tomento'sus* (downy). See P. CORONARIUS TOMENTOSUS.
„ *trifio'rus* (three-flowered). See P. CORONARIUS.
„ *undula'tus* (wavy). Origin unknown.
„ *venu'stus* (lovely). Corolla less than 1 in. across. Eastern Thibet. 1906.
„ *verruco'sus* (warted). See P. CORONARIUS.
„ *Ze'yheri* (Zeyher's). See P. CORONARIUS.

PHILAGE'RIA. (Compounded from *Philesia* and *Lapageria*, between which it is a hybrid. Nat. ord. Liliaceæ.)

Evergreen upright shrub. Layers. Peat, with a little loam and sand.

P. Vei'tchii (Veitch's). Purple and warm rose. 1872.

PHILE'SIA. (From *philesios*, lovely. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Lapageria.)

This evergreen is probably hardy. Prune after it has bloomed early in the summer. Propagated by cuttings. Peat and loam in equal proportions; requires to be kept moist.

P. buxifo'lia (box-leaved). 3. Pink. June. Chili. 1853.

PHILIBE'RTIA. (Named after *J. C. Philibert*, a botanical author. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Pergularia.)

Stove, yellowish-white-flowered, evergreen twiners, from Buenos Ayres. Cuttings of firm side-shoots in sand, under a bell-glass, in May, and kept in a cold pit until struck; sandy loam and fibrous peat, well-drained. Winter temp., 40° to 45°; summer, 60° to 75°.

P. campanula'ta (bell-shaped). See SARCOSTEMMA CAMPANULATUM.
„ *gra'cilis* (slender). 6. June. 1836.
„ *grandiflo'ra* (large-flowered). See P. GRACILIS.
„ *vimina'lis* (twiggy). 6. White. W. Ind.; Guiana. 1820.

PHILLY'REA. (From *phullon*, a leaf; literally, a leafy plant, the flowers being inconspicuous. Nat. ord. *Olive-worts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Of all our hardy evergreens the Phillyrea is the best adapted for growing as dwarf standards. All white-flowered, and natives of South of Europe. Layers in autumn; cuttings under a hand-light; seeds, after being mixed with soil in the rot-heap; good, common garden-soil.

P. angustifo'lia (narrow-leaved). 8. May. 1597.
„ „ *brachia'ta* (forked). 8. May. 1597.
„ „ *rosmarinifo'lia* (rosemary-leaved). 8. May. 1597.
„ *deco'ra* (joyous). 2–4. Lazistan. 1885.
„ *ilicifo'lia* (holly-leaved). See P. LATIFOLIA ILICIFOLIA.
„ *læ'vis* (smooth-*leaved*). See P. LATIFOLIA.
„ *lanceola'ta* (spear-head-*leaved*). See P. ANGUSTIFOLIA.
„ *latifo'lia* (broad-leaved). 15. July. 1597.
„ „ *ilicifo'lia* (holly-leaved). June. 1597.
„ „ *rotundifo'lia* (round-leaved). Leaves short and broad. July.
„ *laurifo'lia* (laurel-leaved). See P. DECORA.
„ *ligustrifo'lia* (privet-leaved). See P. MEDIA.
„ *me'dia* (mediate). 15. May. 1597.
„ „ *buxifo'lia* (box-leaved). 15. May. 1797.
„ „ *oleæfo'lia* (olive-leaved). 15. June. 1597.
„ „ *pe'ndula* (pendulous). 15. June. 1597.
„ *obli'qua* (twisted-*leaved*). See P. LATIFOLIA.
„ *oleæfo'lia* (olive-leaved). See P. MEDIA OLEÆFOLIA.
„ *pe'ndula* (drooping). See P. MEDIA PENDULA.
„ *robu'sta* (robust). See LIGUSTRUM ROBUSTUM.
„ *spino'sa* (spiny). See P. LATIFOLIA ILICIFOLIA.
„ *vilmorinia'na* (Vilmorinian). See P. DECORA.
„ *virga'ta* (twiggy). See P. MEDIA.

PHILODE'NDRON. (From *phileo*, to love, and *dendron*, a tree; referring to habit of the plants growing on trees. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 3-*Triandria*. Allied to Caladium.)

Stove rambling evergreens. Division of the roots; cuttings of short, stubby side-shoots in sand, under a bell-glass, in peat; rich, sandy loam and fibrous pieces of peat. Winter temp., 55° to 60°; summer, 60° to 85°.

P. a'lbo-vagina'tum (white-sheathed). See P. LACERUM.
,, *amazo'nicum* (Amazonian). See P. LACINIOSUM.
,, *ambi'guum* (doubtful). See P. OCHROSTEMON.
,, *andrea'num* (Andrean). Leaves 2–3 ft. long. Colombia. 1886.
,, *arbore'scens* (tree-like). See MONTRICHARDIA ACULEATA.
,, *aspera'tum* (rough). Brazil.
,, *augusti'num* (Augustinan). Trop. Amer.
,, *bipennifo'lium* (twice-feather-nerved). See P. PANDURÆFORME.
,, *bipinnati'fidum* (twice-cut). Spathe reddish-brown, green. Brazil.
,, *brevilamina'tum* (short-limbed). Spathe brownish-purple and pale green. Brazil. 1860.
,, *calophy'llum* (beautiful-leaved). Spathe cream outside, crimson inside. Brazil. 1871.
,, *cannæfo'lium* (Canna-leaved). Spathe green and creamy. Brazil. 1831.
,, *Carde'ri* (Carder's). See P. VERRUCOSUM.
,, *crassine'rvium* (thick-ribbed). 20. Green, white. December. Brazil. 1835.
,, *crini'tum* (shortly-bristly). See P. SQUAMIFERUM.
,, *cuspida'tum* (cuspidate). See P. SCANDENS.
,, *dague'nse* (Daguan). See P. VERRUCOSUM.
,, *devansaya'num* (Devansayan). Leaves blood-red when young. Stems red. Upper Peru. 1895.
,, *dilacera'tum* (twice-torn). See RAPHIDOPHORA DECURSIVA.
,, *dispa'rile* (unequal). Yellow-green, cream. Brazil. 1860.
,, *dolo'sum* (deceitful). Brazil.
,, *Duvivie'ri* (Duvivier's). Leaves deeply lobed. Brazil. 1908.
,, *Eichle'ri* (Eichler's). A stately plant. Brazil. 1899.
,, *e'legans* (elegant). Leaves pinnatifid. 1881.
,, *elonga'tum* (elongated). Brazil.
,, *erube'scens* (reddish). Purple, scarlet, cream. Colombia.
,, *exi'mium* (choice). Brazil.
,, *fragranti'ssimum* (most fragrant). 4. Red, white. March. Demerara. 1834.
,, *gigante'um* (gigantic). Red. Trop. Amer. 1857.
,, *Glazio'vii* (Glaziou's). Yellow, crimson. Brazil. 1885.
,, *glorio'sum* (glorious). Leaves with white veins. Colombia. 1876.
,, *grandifo'lium* (large-leaved). 6. White. March. Caracas. 1803.
,, *hasta'tum* (halbert-leaved). Brazil.
,, *hedera'ceum* (ivy-leaved). Purple. June. S. Amer. 1793.
,, *holtonia'num* (Holtonian). See P. TRIPARTITUM.
,, *Hoo'keri* (Hooker's). Guiana.
,, *Ilsema'nii* (Ilseman's). Leaves marbled with white and tinted rose-pink. Brazil. 1908.
,, *I'mbe* (Imbe). Green, white, crimson. Brazil.
,, *imperia'le* (imperial). Green, cream. Bahia. 1860.
,, ,, *lauchea'num* (Lauchean). Leaves heavily mottled with grey. 1897.
,, *karstenia'num* (Karstenian). Venezuela.
,, *la'cerum* (torn). 4. White. W. Ind. 1822.
,, *lacinia'tum* (deeply-cut). See P. LACINIOSUM.
,, *lacinio'sum* (deeply-cut). Spathe greenish outside, purple inside. Brazil. 1824.
,, *latifo'lium* (broad-leaved). Venezuela.
,, *Linde'ni* (Linden's). See P. VERRUCOSUM.
,, *longilamina'tum* (long-limbed). Green and cream. Brazil. 1860.
,, *Ma'mei* (Mame's). Leaves beautifully variegated with white. Ecuador. 1883.
,, *Martine'ti* (Martinet's). Leaves purplish beneath, 1895.
,, *melanochry'sum* (black-yellow). Leaves blackish grey-green. Colombia. 1873.
,, *Meliono'ni* (Melionon's). Spathe reddish outside, yellow inside. Trop. Amer. 1874.
,, *mi'cans* (glittering). Colombia.
,, *no'bile* (noble). Spathe rosy-crimson, white, with rose spots. S. Amer. 1885.
,, *nota'bile* (notable). Leaves 3 ft. long. 1893.
,, *Ochroste'mon* (yellow-stamen). Green, whitish. Brazil. 1860.
,, *orna'tum* (adorned). Brazil.
,, *oxyca'rdium* (sharply-heart-shaped). See P. SCANDENS.
,, *panduræfo'rme* (fiddle-shaped). Brazil.
,, *Pea'rcei* (Pearce's). Leaves satiny green. Peru. 1869.
,, *peda'tum* (pedate). See P. LACINIOSUM.

P. pertu'sum (perforated). See MONSTERA DELICIOSA.
,, *pinnati'fidum* (pinnately-cut). 4. White. Venezuela. 1817.
,, ,, *ru'bro-puncta'tum* (red-spotted). 3. Spathe white, with red spots. Brazil. 1868.
,, *quercifo'lium* (oak-leaved). See P. LACINIOSUM.
,, *recurvifo'lium* (recurved-leaved). Spathe green outside, scarlet inside. Brazil. 1860.
,, *robu'stum* (robust). Leaves emerald green. 1896.
,, *Rœ'zlii* (Rœzl's). Colombia. 1872.
,, *ru'bens* (reddish). Spathe pale green outside, purple-red inside. Venezuela. 1873.
,, *ru'bro-puncta'tum* (red-spotted). See P. PINNATIFIDUM RUBRO-PUNCTATUM.
,, *sagittifo'lium* (arrow-leaved). Mexico.
,, *sangui'neum* (blood-red). Spathe green. Mexico. 1869.
,, *sca'ndens* (climbing). Trop. Amer.
,, *Sello'um* (Selloum). Spathe green, whitish inside. Brazil. 1869.
,, *sellowia'num* (Sellowian). See P. IMBE.
,, *se'rpens* (creeping). Flesh, greenish-yellow, crimson, cream. Colombia. 1877.
,, *Si'msii* (Sims's). Spathe crimson and white. Guiana. 1825.
,, *Sodi'roi* (Sodiro's). Leaf-stalks violet, spotted with white. Colombia. 1883.
,, *specio'sum* (showy). Spathe purplish-green, red inside. Brazil.
,, *specta'bile* (showy). Colombia. 1869.
,, *squami'ferum* (scale-bearing). Brazil.
,, *triparti'tum* (three-parted). 3. White. Caracas. 1816.
,, *triu'mphans* (triumphant). Leaves twice as large as those of *P. verrucosum*. 1898.
,, *verruco'sum* (warty). Leaves barred with maroon. Colombia. 1866.
,, *Walli'sii* (Wallis's). Gardens.
,, *Wendla'ndii* (Wendland's). Central Amer.
,, *Willia'msii* (Williams's). 5–10. Spathe green; spadix white. Bahia. 1871.

PHILO'GYNE. See NARCISSUS.

PHILOPO'DIUM RI'GIDUM. See MUEHLENBECKIA ADPRESSA.

PHILOTHE'CA. (From *philos*, smooth, and *theke*, a sheath; smooth tube of stamens. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Crowea.)

Greenhouse evergreen shrub. Cuttings of short young shoots, a little firm at the base, in sand, under a bell-glass, and placed in a cold frame in May; sandy loam and fibrous peat. Winter temp., 40° to 45°.

P. austra'lis (southern). 2. Pale red. April. N. S. Wales. 1822.

PHI'LYDRUM. (From *phileo*, to love, and *hudor*, water. Nat. ord. *Waterworts* [Philydraceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Greenhouse biennial. Seeds in spring, in a warm place, and moved to a colder when up; sandy loam and peat; does best in the greenhouse.

P. glabe'rrimum (smoothest). See HELMHOLTZIA GLABERRIMA.
,, *lanugino'sum* (woolly). 3. Yellow. June. China. 1801.

PHINÆ'A. (A name constructed from *Niphæa*, to which the genus is allied. Nat. ord. Gesneraceæ.)

Stove herbs. Seeds; divisions of the plant in spring. Fibrous loam, peat, and sand.

P. a'lbo-linea'ta (white-lined). ½. White. September. Central Amer. 1844.
,, *reticula'ta* (netted). Leaves netted with silvery veins. Central Amer.
,, *ru'bida* (reddish). See NIPHÆA RUBIDA.

PHLEBO'DIUM. (From *phlebs*, a vein. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Polypodium.)

Stove Ferns. See FERNS.

P. areola'tum (areolate). See POLYPODIUM AUREUM AREOLATUM.
,, *au'reum* (golden). See POLYPODIUM AUREUM.
,, *decuma'num* (tall). See POLYPODIUM DECUMANUM.

P. dictyoca'llis (beautifully-netted). See POLYPODIUM DECUMANUM.
„ *e'legans* (elegant). See POLYPODIUM ELEGANS.
„ *elonga'tum* (lengthened). Brown. May. W. Ind. 1843.
„ *lycopodioi'des* (club-moss-like). See POLYPODIUM LYCOPODIOIDES.
„ *Ma'yii* (May's). See POLYPODIUM AUREUM MAYII.
„ *ni'tidum* (shining). See POLYPODIUM LUCIDUM.
„ *percu'ssum* (struck). See POLYPODIUM PERCUSSUM.
„ *pulvina'tum* (cushioned). See POLYPODIUM AUREUM PULVINATUM.
„ *sporadoca'rpum* (spore-fruited). See POLYPODIUM AUREUM AREOLATUM.
„ *squamulo'sum* (scaly). See POLYPODIUM SQUAMATUM.

PHLOGACA'NTHUS. (From *phlox*, a flame, and *Akanthus*, the type of this Nat. ord. of *Acanthads* [Acanthaceæ], the flowers being flame-coloured. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Justicia.)
Stove evergreen shrubs. For culture, see JUSTICIA.

P. aspe'rulus (roughish). 1. Yellow. May. Himalaya. 1818.
„ *curviflo'rus* (curved-flowered). 6. Red, yellow. June. Sylhet. 1839.
„ *gutta'tus* (spotted). 1½. Yellow-spotted. April. Himalaya. 1828.
„ *thyrsiflo'rus* (thyrse-flowered). 8. Orange or scarlet. May. Himalaya and Burma. 1812.

PHLO'MIS. (From *phlomos*, a mullein; down used for wicks. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Leonotis.)
Perennials, seeds, divisions, and slips planted in spring and autumn; shrubs, by cuttings and slips, placed in the open air, in a shady place, or under a hand-light; shrubs requiring protection in winter, by cuttings under hand-lights, in summer; all good, mellow, well-drained soil.

HALF-HARDY HERBACEOUS, &c.

P. angustifo'lia (narrow-leaved). See P. AUREA.
„ *au'rea* (golden). Cream. July. Levant. 1596. Evergreen.
„ *bi'color* (two-coloured). See P. FLOCCOSA.
„ *crini'ta* (hair-*bracted*). 2. Pale brown. June. Spain. 1820.
„ *flocco'sa* (flocky). 2. Yellow. August. Egypt. 1714. Evergreen.
„ *Nisso'lii* (Nissole's). 2. Yellow. June. Levant. 1757.
„ *orienta'lis* (eastern). 3. Pale brown. July. S. Europe. 1820.

HARDY EVERGREEN SHRUBS.

P. ferrugi'nea (rusty). 2. Yellow, brown. June. Italy; Greece. 1823.
„ „ *cre'tica* (Cretan). 3. Yellow. June. Crete. 1820.
„ *frutico'sa* (shrubby). 3. Yellow. June. Spain. 1596. "Jerusalem Sage."
„ *ita'lica* (Italian). 2. Purple. July. Italy. 1661.
„ *lana'ta* (woolly). 1½. Yellow. June. Candia. 1696.
„ *Lychni'tis* (Lychnitis). 2. Yellow, brown. July. S. Europe. 1658.
„ *purpu'rea* (purple). 2. Purple. July. Spain and Portugal. 1661.
„ *visco'sa* (clammy). Yellow. June. Levant.

HARDY HERBACEOUS.

P. agra'ria (field). Purplish. July. Siberia. 1830.
„ *alpi'na* (alpine). 1. Purple. July. Siberia. 1802.
„ *anisodo'nta* (unequal-toothed). Persia.
„ *armeni'aca* (Armenian). 1. Yellow. July. Armenia. 1834.
„ *bracteo'sa* (large-bracted). Purple. May. Himalaya. 1838.
„ *cashmiria'na* (Cashmir). 2. Pale lilac. July. Cashmere. 1844.
„ *chrysophy'lla* (golden-leaved). Syria.
„ *He'rba-ve'nti* (wind-herb). 2. Red. August. S. Europe. 1596.
„ *lacinia'ta* (jagged-*leaved*). See EREMOSTACHYS LACINIATA.
„ *lamiifo'lia* (Lamium-leaved). See P. BRACTEOSA.
P. lunarifo'lia (honesty-leaved). 3. Yellow. June. Levant. 1818.
„ „ *russellia'na* (Russellian). See P. VISCOSA.
„ *prate'nsis* (meadow). Siberia.
„ *pu'ngens* (stinging). See P. HERBA-VENTI.
„ *russellia'na* (Russellian). See P. VISCOSA.
„ *sa'mia* (Samian). 3. Purple. N. Africa. 1714.
„ *seti'gera* (bristle-bearing). Himalaya.
„ *si'mplex* (simple). See P. BRACTEOSA.
„ *tubero'sa* (tuberous). 4. Purple. August. Siberia. 1759.
„ *umbro'sa* (shady). China.
„ *visco'sa* (clammy). 3. Brownish-purple. June. Syria. 1821.

PHLO'X. (From *phlox*, flame; brilliancy of the flowers. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Herbaceous perennials, natives of North America, except where otherwise mentioned. Divisions, and cuttings under a hand-light, in a shady place, in summer; sandy loam and leaf-mould; the low trailing ones are beautiful on knolls and rock-works. *Drummo'ndii* by seed sown in the middle of March, in gentle heat.

HALF-HARDY.

P. arista'ta (awned). See P. SUBULATA.
„ *florida'na* (Florida). 1. Rose. April. 1834.
„ *specio'sa* (showy). 1. Flesh. N.W. Amer. 1826.

HARDY.

P. acumina'ta (pointed-*leaved*). See P. PANICULATA.
„ *acutifo'lia* (acute-leaved). 4. Purple. August. 1825.
„ *adsu'rgens* (rising). Rose, long-tubed. North-Western Amer. 1888.
„ *amœ'na* (lovely). ½. Bright purple. May, June. 1809.
„ *canade'nsis* (Canadian). See P. DIVARICATA.
„ *ca'ndida* (white). See P. MACULATA CANDIDA.
„ *ca'rnea* (fleshy). See P. GLABERRIMA CARNEA.
„ *caroli'na* (Carolina). See P. OVATA CAROLINA.
„ *corda'ta* (heart-*leaved*). See P. PANICULATA.
„ *corymbo'sa* (corymbose). See P. PANICULATA.
„ *crassifo'lia* (thick-leaved). See P. REPTANS CRASSIFOLIA.
„ *cuspida'ta* (short-pointed). See P. PILOSA.
„ *decussa'ta* (decussate). See P. PANICULATA.
„ *di'sticha* (two-rowed). 5. Red. August. 1826.
„ *divarica'ta* (spreading). 1. Light blue. March. 1746.
„ „ *canade'nsis* (Canadian).
„ „ *Lapha'mii* (Lapham's). Deep blue. 1905.
„ *Dougla'sii* (Douglas's). ¼. Purple. North-Western Amer.
„ *Drummo'ndii* (Drummond's). 1. Purple. July. Texas. 1835. Annual.
„ „ *cuspida'ta* (short-pointed). Corolla lobes three-toothed. Annual.
„ „ *fimbria'ta* (fringed). Corolla lobes shortly three-toothed. Annual.
„ „ *flo're-ple'no* (double-flowered). Flowers double. 1886.
„ *ela'ta* (tall). 6. Lilac. September. 1828.
„ *exce'lsa* (tall). 4. Purple. August. 1824.
„ *frondo'sa* (leafy). See P. SUBULATA FRONDOSA.
„ *glabe'rrima* (smoothest). 3. Red. July. 1725.
„ „ *ca'rnea* (flesh). 1. Pink. August. 1816.
„ *glutino'sa* (clammy). See P. DIVARICATA.
„ *interme'dia* (intermediate). 2. Purple. July.
„ *involucra'ta* (involucred). 1. Lilac. June. 1830.
„ *læ'ta* (charming). 3½. White. August.
„ *latifo'lia* (broad-leaved). See P. OVATA.
„ *linearifo'lia* (linear-leaved). 1. Flesh. July. North-Western Amer. 1826.
„ *longiflo'ra* (long-flowered). See P. MACULATA CANDIDA.
„ *macula'ta* (spotted-*stalked*). 4. Purple. July. 1740. "Wild Sweet William."
„ „ *ca'ndida* (white). 2. White. July. 1766.
„ „ *corymbo'sa* (corymbose). 2. Purple. July.
„ „ *penduliflo'ra* (drooping-flowered). 2. Purple. July to October. 1823.
„ „ *tardiflo'ra* (late-flowering). 2. White. September. 1825.
„ „ *variega'ta* (variegated). 1–2. White. July. 1766.
„ *na'na* (dwarf). ½–¾. Red, white, or yellow. Texas. 1888.

P. ni'tida (shining). See P. GLABERRIMA.
,, *niva'lis* (snowy). See P. SUBULATA NIVALIS.
,, *odora'ta* (scented). Lilac. August.
,, *ova'ta* (egg-*leaved*). 1½. Purple. June. 1759.
,, ,, *caroli'na* (Carolina). 1. Pale purple. August. Carolina. 1728.
,, ,, *listonia'na* (Lady Liston's). 1. Purple. July. 1816.
,, *panicula'ta* (panicled). 3. Pink. August. 1732.
,, ,, *a'lba* (white). 3. White. August. 1813.
,, *pendulifio'ra* (drooping). See P. MACULATA PENDULIFLORA.
,, *pilo'sa* (hairy-*leaved*). 1. Purple. May. 1759.
,, ,, *amœ'na* (pleasing). See P. AMŒNA.
,, *procu'mbens* (lying-down). Flesh. May. Hybrid (?). 1827.
,, *pyramida'lis* (pyramidal). See P. MACULATA and varieties.
,, *re'ptans* (creeping). ½. Blue, purple. July. 1800.
,, ,, *crassifo'lia* (thick-leaved). 3. Purple. July. 1825.
,, *revolu'ta* (revolute). See P. GLABERRIMA.
,, *sca'bra* (rough). See P. PANICULATA.
,, *seta'cea* (bristly). See P. SUBULATA GRANDIFLORA.
,, *Sickma'nni* (Sickmann's). See P. PANICULATA.
,, *Stella'ria* (Stellaria). ½–¾. Light blue. Southern Illinois. 1888.
,, ,, *lilaci'na* (lilac). Lilac.
,, *stoloni'fera* (stolon-bearing). See P. REPTANS.
,, *suave'olens* (sweet-scented). See P. MACULATA CANDIDA.
,, *subula'ta* (awl-leaved). ½. Dark purple. May. 1786. "Moss Pink."
,, ,, *atropurpu'rea* (dark purple). Dark purple. Plant trailing.
,, ,, *cærule'scens* (bluish). ½. Bluish. 1902.
,, ,, *frondo'sa* (leafy). ½. Rose. Plant dense in habit.
,, ,, *grandiflo'ra* (large-flowered). Dark purple. Plant trailing.
,, ,, *latifo'lia* (broad-leaved). See P. PROCUMBENS.
,, ,, *Nelso'ni* (Nelson's). ½. White, with five violet spots. Plant compact.
,, ,, *niva'lis* (snowy). ½. Pure white. Plant compact.
,, ,, *seta'cea* (bristly). ½. Rosy-purple. Plant trailing.
,, *suffrutico'sa* (shrubby). 1½. Dark purple. August. 1790.
,, *tardiflo'ra* (late-flowered). See P. MACULATA TARDIFLORA.
,, *triflo'ra* (three-flowered). See P. OVATA.
,, *undula'ta* (waved-*leaved*). See P. PANICULATA.
,, *virgi'nica* (Virginian). 1. Purple. July. Virginia. 1812.

PHŒ'BE. (From *Phœbe*, the mythical moon-goddess. Nat. ord. Lauraceæ.)
Stove evergreen trees. Cuttings in sand, in a propagating case, with bottom-heat. Fibrous loam, a little peat, and sand.
P. antilla'na (Antilles). 15. White, yellow. W. Ind. 1824.
,, *monta'na* (mountain). 10. White, green. W. Ind. 1810.

PHŒNICOPHO'RIUM SEHELLA'RUM. See STEVENSONIA GRANDIFOLIA.

PHŒ'NIX. Date Palm. (The Greek name of the tree. Nat. ord. *Palms* [Palmaceæ]. Linn. 22-*Diœcia*, 3-*Triandria*.)
Dactyli'fera requires a greenhouse, but all the others a stove. Seeds in a hotbed, in spring, or when procurable; rich, rather stiff loam, or good, fibrous loam, with a fourth part of old cow-dung.
P. acau'lis (stemless). 6. White, green. E. Ind. 1816.
,, *andamane'nsis* (Andaman). Andaman Islands.
,, *canarie'nsis* (Canary). Canary Islands. The hardiest species. 1869.
,, *cycadifo'lia* (Cycas-leaved). See P. DACTYLIFERA CYCADIFOLIA.
,, *dactyli'fera* (date-bearing). 49. White, green. Levant. 1597. "Date Palm."
,, ,, *cycadifo'lia* (Cycas-leaved). Trunk 2 ft. thick. Athens. 1879.
,, *farini'fera* (mealy). 28. White, green. Deccan. 1800.
,, *hancea'na* (Hancean). See P. HUMILIS HANCEANA.
,, *hu'milis* (low). 3–4. India and China.
P. hu'milis hancea'na (Hancean). China.
,, ,, *Lourei'rii* (Loureir's).
,, ,, *ousleya'na* (Ousleyan). India.
,, ,, *peduncula'ta* (long-stalked).
,, ,, *Rœbeli'ni* (Rœbelin's). 2–4. A slender, graceful palm. Siam. 1889.
,, *hy'brida* (hybrid). Garden hybrid.
,, *Ju'bæ* (Juba's). See P. CANARIENSIS.
,, *leone'nsis* (Sierra Leone). See P. RECLINATA.
,, *melanoca'rpa* (black-fruited). Fruits black, edible. Garden origin.
,, *Menie'ri* (Villa Menier). A palm growing at Villa Menier, Cannes. 1906.
,, *ousleya'na* (Ousleyan). See P. HUMILIS OUSLEYANA.
,, *paludo'sa* (marsh). 20. India; Cochin-China. 1820.
,, *peduncula'ta* (long-stalked). See P. HUMILIS PEDUNCULATA.
,, *pu'mila* (dwarf). Country unknown. 1871.
,, *pusi'lla* (puny). See P. HUMILIS LOUREIRII.
,, *pygmæ'a* (pigmy). 6. Mauritius. 1823.
,, *reclina'ta* (leaning). 10. White, green. S.E. Africa. 1792.
,, *Rœbe'lini* (Rœbelin's). See P. HUMILIS RŒBELINI.
,, *rupi'cola* (rock-loving). Himalaya. 1873.
,, ,, *fo'liis arge'nteo-variega'tis* (silver-variegated-leaved). Leaves variegated with white. 1887.
,, *spino'sa* (spiny). W. Trop. Africa.
,, *sylve'stris* (wood). 14. Green. May. India. 1763.
,, ,, *e'xilis* (feeble). A slender variety.
,, *te'nuis* (slender). See P. CANARIENSIS.
,, *zanzibare'nsis* (Zanzibar). See P. RECLINATA.
,, *zeyla'nica* (Cingalese). Ceylon.

PHOLIDOCA'RPUS. (From *pholis*, *pholidos*, the scale of a serpent, and *karpos*, a fruit; in allusion to the overlapping scales of the fruit. Nat. ord. Palmaceæ.)
Stove palm. Seeds. Fibrous loam, peat, and sand.
P. I'hur (Ihur). Malaya.

PHOLIDO'TA. Rattle-snake Orchid. (From *pholis*, a scale, and *ous*, *otos*, an ear; flowers arranged like an ear of wheat, with scaly bracts, as the tail of that snake. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cœlogyne.)
Stove orchids. Division of the plant; in a pot. See ORCHIDS.
P. articula'ta (jointed). White, yellow. April. India. 1837.
,, *assa'mica* (Assam). Pale yellow. Assam. 1890.
,, *chine'nsis* (Chinese). ½. Whitish. May. China. 1844.
,, *clypea'ta* (shield). Borneo. 1847.
,, *conchoi'dea* (shell-like). Yellow. February. Manilla. 1840.
,, *imbrica'ta* (overlapping). 1. Pale yellow, with violet spot. India. 1824.
,, *Luga'rdii* (Lugard's). White, shell-like. Western Burma. 1893.
,, *obova'ta* (obversely-egg-shaped). Burma.
,, *pa'llida* (pale). See P. IMBRICATA.
,, *re'pens* (creeping). Flesh-pink, small. India. 1891.
,, *ru'bra* (red). Pale red. April. Himalaya. 1828.
,, *undula'ta* (waved-*leaved*). See P. RUBRA.
,, *ventrico'sa* (swollen). 1–1½. White. Java. 1889.

PHO'RBIA CEPETO'RUM. The Onion Fly. See ANTHOMY'IA CEPA'RUM.

PHO'RMIUM. Flax Lily, or New Zealand Flax. (From *phormos*, a basket; one of the uses made of the fibre. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Hardy herbaceous perennial. Divisions of the root; rich, mellow loam.
P. alpi'num (alpine). New Caledonia. 1890.
,, *Cole'nsoi* (Colenso's). See P. COOKIANUM.
,, *cookia'num* (Cookian). 3–6. Yellow. July, August. New Zealand. 1868.
,, ,, *variega'ta* (variegated). Leaves variegated with creamy-white. 1878.
,, *fla'ccidum* (feeble). New Caledonia. 1890.
,, *forsteria'num* (Forsterian). See P. COOKIANUM.
,, *Hoo'keri* (Hooker's). Yellow, greenish; filaments red. New Zealand. 1888.
,, *Hurstho'nsii* (Hursthons's). New Caledonia. 1890.
,, *robu'stum* (robust). New Caledonia. 1890.

P. te'nax (tough). 6. Green, white. August. New Zealand. 1798.
,, ,, *atropurpu'reum* (dark-purple). Leaves rich dark purple.
,, ,, *atropurpu'reum na'num* (dwarf). Dwarf, dark purple-leaved variety. 1908.
,, ,, *ni'gro-pi'ctum* (black-painted). Leaves edged with maroon-purple.
,, ,, *Powerscou'rtii* (Viscount Powerscourt's). Hardier and flowers more freely. 1907.
,, ,, *purpu'reum* (purple). Leaves purple.
,, ,, *variega'tum* (variegated). 6. Leaves striped with yellow and white. New Zealand.
,, ,, *Vei'tchii* (Veitch's). Leaves short, narrow, banded with creamy-white.

PHOTI'NIA. (From *photeinos*, shining; appearance of the leaves. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*. Allied to Eriobotrya.)

Half-hardy white-flowered evergreens. Seeds when procurable, treated as the haws of the Hawthorn; generally by budding on the Hawthorn as a stock; rather tender for the open air north of London, but deserve a wall, owing to their beautiful foliage; and where, also, when established, they would generally flower freely.

P. arbutifo'lia (Arbutus-leaved). See HETEROMELES ARBUTIFOLIA.
,, *benthamia'na* (Benthamian). White. China.
,, *du'bia* (doubtful). See ERIOBOTRYA BENGALENSIS.
,, *elli'ptica* (elliptic). See ERIOBOTRYA ELLIPTICA.
,, *integrifo'lia* (entire-leaved). 10. Nepaul. 1820.
,, *notonia'na* (Notonian). India and Java. Greenhouse.
,, *ova'ta* (egg-shaped). Gardens.
,, *serrula'ta* (saw-edge-*leaved*). 10. May. China and Japan. 1804.
,, ,, *rotundifo'lia* (round-leaved). Leaves short and broad.
,, *varia'bilis* (variable). China and Japan.

PHRAGMI'TES. (From the Greek, *phragmites*, anything used for making a hedge or fence. Nat. ord. Gramineæ.)

A strong-growing reed or marsh grass, with purple or violet plumes of flowers, suitable for the margins of ponds and ornamental water. Divisions; seeds. Wet soil.

P. commu'nis (common). 6–10. Purple or violet. July, August. Temperate and cold parts of the whole world, including Britain. "Spire Reed."

PHRY'MA. (Derivation not obvious. Nat. ord. Verbenaceæ.)

Hardy perennial herb. Division; seeds. Ordinary soil.

P. leptosta'chya (slender-spiked). 2–3. Purple. Asia: Himalaya; N. Amer. 1802.

PHRY'NIUM. (From *phrunos*, a toad; because inhabiting marshes. Nat. ord. *Marants* [Marantaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Canna.)

Stove herbaceous perennials; yellow-flowered, where not otherwise specified. Seeds in a hotbed in spring, or division of the roots as fresh growth commences; rich loam and a little peat. Winter temp., 50° to 55°; summer, 60° to 85°.

P. capita'tum (headed). 5. White, purple. July. E. Ind. 1807.
,, *colora'tum* (coloured). See CALATHEA COLORATA.
,, *como'sum* (tufted). See CALATHEA COMOSA.
,, *Daniе'llii* (Daniell's). See THAUMATOCOCCUS DANIELLII.
,, *de'nsum* (dense). Brazil. 1865.
,, *exi'mium* (choice). See CALATHEA PROPINQUA.
,, *flave'scens* (yellowish). See CALATHEA FLAVESCENS.
,, *grandifo'rum* (large-flowered). See CALATHEA FLAVESCENS.
,, *Griffi'thii* (Griffith's). Malacca.
,, *Lubbe'rsii* (Lubbers's). See MYROSMA LUBBERSII.
,, *mi'cans* (glittering). See CALATHEA MICANS.
,, *Micholi'tzii* (Micholitz's) Leaves with broad white stripes, and claret-red midrib. New Guinea. 1903.
,, *Myro'sma* (myrrh-scented). See MYROSMA CANNÆFOLIUM.
,, *obli'quum* (twisted). 1½. June. E. Ind. 1824.
,, *Parke'ri* (Parker's). See ISCHNOSIPHON PARKERI.
,, *parvifo'rum* (small-flowered). 4. July. E. Ind. 1820.
P. sangui'neum (blood-coloured). See STROMANTHE SANGUINEA.
,, *seto'sum* (bristly). See MYROSMA SETOSUM.
,, *spica'tum* (spiked). 1. July. E. Ind. 1825.
,, *unilatera'le* (one-sided). See MYROSMA MADAGASCARIENSE.
,, *Va'n-de'n-He'ckei* (Van-den-Hecke's). See CALATHEA VANDENHECKEI.
,, *va'rians* (varying). See CALATHEA VARIANS.
,, *variega'tum* (variegated). See MARANTA ARUNDINACEA VARIEGATA.
,, *villo'sum* (shaggy). See CALATHEA VILLOSA.

PHUO'PSIS. (From *Phu*, valerian, and *opsis*, like; the flowers resemble those of some species of Valerian. Nat. ord. Rubiaceæ.)

Hardy, perennial herb. Divisions in spring. Ordinary soil.

P. stylo'sa (long-styled). 1. Purple or pink. July. Caucasus. "Crosswort."

PHYCE'LLA. (A diminutive of *phucos*, Red Alkanet; alluding to the colour of the flowers. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Hippeastrum.)

P. bifo'ra (two-flowered). See HIPPEASTRUM BICOLOR.
,, *brevi'tuba* (short-tubed). See HIPPEASTRUM BICOLOR.
,, *chlora'cra* (yellow-green). See PHÆDRANASSA CHLORACEA.
,, *coru'sca* (glittering). See HIPPEASTRUM BICOLOR.
,, *cyrtanthoi'des* (Cyrtanthus-like). See HIPPEASTRUM BICOLOR.
,, *glau'ca* (milky-green). See HIPPEASTRUM BICOLOR.
,, *herbertia'na* (Herbert's). See HIPPEASTRUM HERBERTIANUM.
,, *i'gnea* (fiery). See HIPPEASTRUM BICOLOR.
,, *obtu'sa* (blunt). See PHÆDRANASSA CHLORACEA.

PHYGE'LIUS. (From *phuge*, evasion, and *helios*, the sun; because believed to love shade in its native country. Nat. ord. Scrophulariaceæ.)

An evergreen shrubby plant, grown as a herbaceous perennial. It is hardy enough to live at the foot of a wall, without other protection, in the far north, and flowers freely, if the leafy stems are not cut down. In cold districts they should be protected with a few evergreen boughs. Seeds; cuttings under a hand-light in summer, and divisions in spring. Light, well-drained soil.

P. cape'nsis (Cape). 2–3. Scarlet. July to September. S. Africa. 1855. "Cape Figwort."

PHY'LICA. (From *phullikos*, leafy; abundance of evergreen leaves. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreens, from South Africa, and all white-flowered, unless otherwise mentioned. Cuttings of young shoots in sand, under a glass, in spring, and kept cool and shaded from sunshine until they have struck; sandy, fibrous peat, with nodules of freestone and charcoal. Winter temp., 40° to 45°.

P. bi'color (two-coloured). 2. June. 1817.
,, *buxifo'lia* (box-leaved). 2–10. June to August. 1759.
,, *capita'ta* (headed). 2–6. June. 1800.
,, ,, *lanceola'ta* (lance-shaped). Grey, white, or yellowish. 1800.
,, *corda'ta* (heart-shaped) of Linnæus. See P. BUXIFOLIA.
,, *cyli'ndrica* (cylindrical). 2. Yellow, green. June.
,, *dioi'ca* (dicœcious). 2–3. July. 1817.
,, *ericoi'des* (heath-like). 3. June. 1731.
,, *exce'lsa* (lofty). 2–4. Floral leaves tawny or yellow-green.
,, ,, *papillo'sa* (nippled). Leaves nippled, slightly hairy.
,, *globo'sa* (globose). See STAAVIA GLOBOSA.
,, *imbrica'ta* (imbricated). See BRUNIA RACEMOSA.
,, *myrtifo'lia* (myrtle-leaved). See P. PANICULATA.
,, *ni'tida* (shining). November. 1774.
,, ,, *erio'phora* (woolly). 3. November. 1774.
,, *oleæfo'lia* (olive-leaved). 2. Flowers in loose racemes. March to October.
,, *panicula'ta* (panicled). 2–10. Flowers in panicled racemes. 1816.
,, *papillo'sa* (nippled). See P. EXCELSA PAPILLOSA.
,, *pi'nea* (pine-like). November. 1774.
,, *pinifo'lia* (pine-leaved). See BRUNIA PINIFOLIA.

P. plumo'sa (feathered). 2. April. 1759.
,, ,, *squarro'sa* (spreading). Floral leaves often golden.
,, *pube'scens* (downy) of Aiton. See P. CAPITATA LANCEOLATA.
,, *pube'scens* (downy) of Loddiges. See P. PLUMOSA SQUARROSA.
,, *purpu'rea* (purple). 2–3. Calyx rusty or purple on the inside. Autumn. 1827.
,, *rosmarinifo'lia* (rosemary-leaved). 3. 1815.
,, *ru'bra* (red). 2–2½. Branches red. December. 1827.
,, *spica'ta* (spiked). 1–2. Blooms perennially.
,, *spica'ta* (spiked) of Loddiges. See P. OLEÆFOLIA.
,, *squarro'sa* (spreading). See P. PLUMOSA SQUARROSA.
,, *stipula'ris* (stipuled-leaved). 2–3. March to July or August. 1786.
,, *thymifo'lia* (thyme-leaved). 2–3. June. Pacific Islands. 1824.

PHYLLA'GATHIS. (From *phullon*, a leaf, and *agathos*, quite divine; in reference to the beauty of the leaves. Nat. ord. Melastomaceæ.)

Stove, short-stemmed, shrubby herbs, with large, thick orbicular leaves. Cuttings in sand in a close case with bottom-heat. Fibrous loam, peat, and sand.

P. gymna'ntha (naked-flowered). 1. Green. Borneo. 1884.
,, *hirsu'ta* (hairy). 1. Pink. Leaves round, green. Borneo. 1894.
,, *rotundifo'lia* (round-leaved). 1–2. Pink. July. Leaves bronzy purple above, red beneath. Sumatra.

PHYLLA'NTHUS. (From *phullon*, a leaf, and *anthos*, a flower; flowers produced on the edges of the leaf-like branches. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

Annuals and biennials, by seed in a hotbed, in spring, and then flowered in stove and greenhouse during the summer. Shrubby species, by cuttings of the hard shoots in sandy soil, in heat; sandy loam and fibrous peat, with a little broken bricks, charcoal, and dried cow-dung. Winter temp., 50° to 55°; summer, 60° to 85°.

ANNUALS AND BIENNIALS.

P. caroline'nsis (Carolinian). ¼. July. N. Amer. 1803. Hardy.
,, *gra'cilis* (slender). 1. Green, yellow. August. Java. 1818. Biennial.
,, *Niru'ri* (Niruri). ½. Green. July. Tropics. 1692.
,, *obova'tus* (reversed-egg-*leaved*). See P. CAROLINENSIS.
,, *urina'ria* (urinary). ½. Green, yellow. August. Tropics of both worlds. 1819.

STOVE EVERGREEN SHRUBS.

P. angustifo'lius (narrow-leaved). 1–2. Red. July. W. Ind. 1789.
,, *Arbu'scula* (little-tree). See P. SPECIOSUS.
,, *atropurpu'reus* (dark-purple). 3. Leaves dark purple. Stems purplish. Comoro Isles. 1876.
,, *calyci'nus* (large-calyxed). Australia.
,, *Ca'sticum* (Casticum). Mascarene Islands.
,, *cera'mica* (Ceramic). See EXOCARPUS CERAMICUS.
,, *Chantrie'ri* (Chantrier's). 2–3. Red, pale yellow. Cochin-China. 1882.
,, *di'stichus* (two-ranked). 20–25. Green. Trop. Asia. 1796.
,, *elonga'tus* (elongated). See P. ANGUSTIFOLIUS.
,, *E'mblica* (Emblica). 12. Pale yellow. July. Trop. Asia. 1768.
,, *epiphylla'nthus* (flowers-on-leaf). 4–6. Red. July. Cuba. 1699.
,, *falca'tus* (sickle-shaped). See P. EPIPHYLLANTHUS.
,, *fraxinifo'lius* (ash-leaved). 4. Green. August. E. Ind. 1819.
,, *glauce'scens* (glaucus). See P. PULCHER.
,, *gomphoca'rpus* (Gomphus-fruited). Perak.
,, *grandifo'lius* (large-leaved). 5. S. Amer. 1771.
,, *juglandifo'lius* (walnut-*leaved*). See P. GRANDIFOLIUS.
,, *Kirgane'lia* (Kirganelia). See P. CASTICUM.
,, *lanceola'tus* (spear-head-*leaved*). 3. Green, yellow. Isle of Bourbon. 1822.
,, *lathyroi'des* (Lathyrus-like). Mexico.
,, *latifo'lius* (broad-leaved). Mexico.
,, *linea'ris* (linear). 1–1½. White. August. Jamaica. 1819.
,, *lu'cens* (shining). See ANDRACHNE FRUTICOSA.
P. mimosoi'des (Mimosa-like). 10. Green. August. Caribbees. 1817.
,, *monta'nus* (mountain). 1–2. Reddish. August. Jamaica. 1819.
,, *nivo'sus* (snowy). 3. Green. Leaves variegated with white. Pacific Isles. 1873.
,, ,, *ro'seo-pi'ctus* (rosy-painted). 3. Leaves variegated with crimson and white. 1877.
,, *nu'tans* (nodding). 1½. Green, yellow. August. Jamaica. 1820.
,, *pallidifo'lius* (pale-leaved). See P. PULCHER.
,, *polyphy'llus* (many-leaved). 3. Green. August. E. Ind. 1805.
,, *pu'lcher* (beautiful). 1–2. Green, reddish. Malaya. 1864.
,, *racemo'sus* (racemed). See P. POLYPHYLLUS.
,, *ramiflo'rus* (branch-flowered). See SECURINEGA RAMIFLORA.
,, *reticula'tus* (netted). 3. Red. August. Tropics, Old World.
,, *salviæfo'lius* (Salvia-leaved). Males greenish; females tinted red. Colombia. 1883.
,, *sca'ndens* (climbing). 10. Green, yellow. August. E. Ind. 1822. Climber.
,, *seemannia'nus* (Seemannian). 2–3. Whitish, inconspicuous. New Hebrides. 1879.
,, *specio'sus* (showy). 1–2. Whitish. August, September. Jamaica. 1783.
,, *turbina'tus* (top-shaped). See ANDRACHNE FRUTICOSA.
,, *verruco'sus* (warty). S. Africa.

PHYLLA'RTHRON. (From *phullon*, a leaf, and *arthros*, a joint; leaflets as if jointed to the footstalks. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Stove evergreen shrubs. Cuttings of stubby side-shoots, or pieces of the ripe young wood, in sand, under a bell-glass, in bottom-heat; sandy loam and fibrous peat, and a little leaf-mould and charcoal. Winter temp., 50° to 55°; summer, 60° to 90°.

P. bojeria'num (Bojerian). 3. Rose. July. Madagascar. 1844.
,, *comore'nse* (Comoran). 2–4. Comoro Islands.
,, *noronhia'num* (Noronhian). 2–4. Madagascar.

PHY'LLIS. (From *Phyllis*, the daughter of Scithon, a king of Thrace. Nat. ord. Rubiaceæ.)

A greenhouse, subshrubby plant. Cuttings in sand, under a hand-light. Loam, peat, or leaf-mould, and sand.

P. No'bla (Nobla). 1–2. White. Canary Islands. 1699.
,, ,, *pauciflo'ra* (few-flowered). Flowers fewer in a truss.

PHYLLOCA'CTUS. (From *phullon*, a leaf, and *Cactus*; in allusion to the flattened, leaf-like stems. Nat. ord. Cactaceæ.)

Dry, warm greenhouse plants, requiring plenty of sunshine when making their growth. Cuttings, allowed to dry for a few days before insertion in sand. Fibrous loam, peat, some finely-broken bricks, and sand.

P. Ackerma'nni (Ackermann's). 2. Scarlet. June to August. Mexico. 1829.
,, ,, *ma'jor* (larger). Scarlet. June to August.
,, *angu'liger* (angle-bearing). 2½. White, dusky. Autumn. Mexico. 1851.
,, *bifo'rmis* (two-formed). 2–2½. Pink. Honduras. 1839.
,, *caulorrhi'zus* (stem-rooting). White, greenish. Country unknown. 1851.
,, *Coope'ri* (Cooper's). 2. Large yellowish-white. Hybrid. 1883.
,, *crena'tus* (scolloped). 2. Pale cream. May. Honduras. 1839.
,, ,, *cocci'neus* (scarlet). Scarlet.
,, *Darra'hii* (Darrah's). 3. Yellow, white. Mexico. 1907.
,, *gra'ndis* (grand). Honduras. 1847.
,, *Hoo'keri* (Hooker's). 2–3. White. June. Brazil.
,, *la'tifrons* (broad-leaved). White. August. Mexico.
,, *phyllanthoi'des* (Phyllanthus-like). 2–3. Rose, white. June. Mexico. 1810.
,, *Phylla'nthus* (Phyllanthus). 2–2½. White. June. Trop. Amer. 1810.
,, *Purpu'si* (Purpus's). 3. Carmine, purple, rose, white, or yellowish-white. Mexico. 1907.

PHYLLO'CALYX EDU'LIS. See EUGENIA SELLOI.

PHYLLO'CLADUS. (From *phullon*, a leaf, and *klados*, a branch; branch-like leafleted leaves. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*. Allied to Podocarpus.)

Greenhouse cone-bearing trees, from Tasmania, except where otherwise stated. Cuttings of the ripe shoots in sand, under a glass, in spring, and no artificial bottom-heat until the cuttings swell at their base; strong loam. At Belfast, *rhomboida'lis* (Celery-topped, or Adventure Bay Pine) bears the winter without protection; *trichomanoi'des* would be equally hardy in the south of Ireland and south-west of England. Winter temp., 40° to 48°; summer, 60° to 75°.

P. glau'ca (sea-green). Yellow. New Zealand. 1853. Shrub.
,, *hypophy'lla* (under-leaf). 10–20. Borneo. Tree.
,, *rhomboida'lis* (diamond-*leaved*). 40. 1825. "Adventure Bay Pine."
,, *trichomanoi'des* (maiden-hair-like). 60. Yellow. July. New Zealand. 1840.

PHYLLO'DOCE CÆRU'LEA. See BRYANTHUS TAXIFOLIUS.

PHYLLO'DOCE EMPETRIFO'RMIS. See BRYANTHUS EMPETRIFORMIS.

PHYLLO'DOCE TAXIFO'LIA. See BRYANTHUS TAXIFOLIUS.

PHYLLO'MA ALOIFLO'RUM. See LOMATOPHYLLUM BORBONICUM.

PHYLLO'STACHYS. (From *phullon*, a leaf, and *stachus*, a spike; the flowers are in leafy spikes. Nat. ord. Gramineæ.)

Hardy bamboos, which are woody grasses. Seeds when obtainable; suckers in May. Good heavy loam, in situations sheltered from the wind in winter.

P. au'rea (golden). 5–10. Stems yellow. Japan.
,, *bambusoi'des* (Bambusa-like). 10–12. Japan.
,, *fastuo'sa* (proud). 4. Japan.
,, *flexuo'sa* (flexuous). 3–4. N. China.
,, *fu'lva* (tawny). 4–6. Stems yellow. Japan. 1898.
,, *Heno'nis* (Henon's). 8–12. Japan.
,, *mi'tis* (mild). 10–15. Japan.
,, ,, *heterocy'cla* (variously-coiled). Japan. "Tortoise-shell Bamboo."
,, *ni'gra* (black). 5–8, rarely 25. Stems black. Japan. 1894.
,, ,, *borya'na* (Boryan). 5–10. Leaves larger. Japan.
,, ,, *puncta'ta* (spotted). 5–8. Stems spotted with yellow on black. Japan. 1894.
,, *Quilioi'* (Quilio's). 5–10. Japan. 1894.
,, ,, *Castillo'nis* (Castillon). 5–10. Japan. 1886.
,, ,, *marlia'cea* (Marliacan). 4–6. Japan.
,, *ruscifo'lia* (Ruscus-leaved). 2½. Japan. 1894.
,, *sulphu'rea* (sulphur). 3–4. Japan.
,, *viola'scens* (violet). 3. Japan (?).
,, *vi'ridi-glauce'scens* (greenish-glaucous). 10–15. China. 1894.

PHYLLO'TA. (From *phullon*, a leaf, and *ous*, *otos*, an ear; shape of leaves. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Aotus.)

Greenhouse evergreen, yellow-flowered shrub. Cuttings of young shoots getting firm (the little stubby side-shoots are best), in spring and summer, in sand, under a bell-glass; fibrous, sandy peat, and a few nodules of fibrous loam, to keep the plants stubby. Winter temp., 40° to 48°.

P. a'spera (rough), *P. como'sa* (tufted), and *P. squarro'sa* (spreading). See P. PHYLICOIDES.
,, *phylicoi'des* (Phylica-like). 2. Yellow. May. Australia. 1822.

PHYLLOTÆ'NIUM LINDE'NI. See XANTHOSOMA LINDENI.

PHYLLO'XERA VASTA'TRIX. See GRAPE PHYLLOXERA or VINE LOUSE.

PHYMATA'NTHUS ELA'TUS. See PELARGONIUM ELA'TUM.

PHYMATA'NTHUS TRI'COLOR. See PELARGONIUM VIOLARIUM.

PHYMATO'DES. (From *phuma*, a swelling or tumour, and *eidos*, like; the leaf base is thickened. Nat. ord. Filices. Now referred to Polypodium.)

P. bi'frons (two-leaved). See POLYPODIUM BIFRONS.
,, *Billardie'ri* (Billardière's). See POLYPODIUM BILLARDIERI.
,, *excava'ta* (excavated). See POLYPODIUM LINEARE.
,, *gemina'ta* (twin). See POLYPODIUM GEMINATUM.
,, *leiorhi'za* (smooth-rooted). See POLYPODIUM LEIORHIZON.
,, *longifo'lia* (long-leaved). See POLYPODIUM LONGIFOLIUM.
,, *lo'ngipes* (long-stalked). Garden variety of *Polypodium Phymatodes*.
,, *longi'ssima* (longest). See POLYPODIUM LONGISSIMUM.
,, *nigre'scens* (blackening). See POLYPODIUM NIGRESCENS.
,, *nu'da* (naked). See POLYPODIUM LINEARE.
,, *pelti'dea* (scaly). Garden variety of *Polypodium Phymatodes*.
,, *pustula'ta* (blistered). See POLYPODIUM PUSTULATUM.
,, *sinuo'sa* (wavy). See POLYPODIUM SINUOSUM.
,, *termina'lis* (terminal). Garden variety of *Polypodium Phymatodes*.
,, *vulga'ris* (common). See POLYPODIUM PHYMATODES.

PHY'SALIS. (From *phusa*, a bladder; in allusion to the inflated calyx. Nat. ord. Solanaceæ.)

Hardy or tender perennial herbs, or shrubby in the case of *P. peruviana*. Seeds; divisions of the hardy species and cuttings of the shrub. Well-drained, rich soil.

P. Alkeke'ngi (Alkekengi). 1½–2. White. July, August. Europe. 1548. "Winter Cherry."
,, *Bunya'rdi* (Bunyard's). Hybrid between *P. Alkekengi* and *P. Francheti*. 1905.
,, *chenopodifo'lia* (Chenopodium-leaved). 1–2. White. Peru.
,, *daturæfo'lia* (Datura-leaved). See NICANDRA PHYSALOIDES.
,, *edu'lis* (edible). See P. PERUVIANA EDULIS.
,, *Franche'ti* (Franchet's). 1½–2. White. Fruit yellow; much the largest calyx. Japan. 1894.
,, *peruvia'na* (Peruvian). 3–8. Whitish; anthers violet. Fruit pale purple. Tropics. 1772.
,, ,, *edu'lis* (edible). 2–6. Yellow. Fruit yellow. 1773. "Cape Gooseberry."
,, *philade'lphica* (Philadelphian). 1–2. White. N. Amer.
,, *prostra'ta* (prostrate).
,, *schraderia'na* (Schraderian).
,, *somni'fera* (sleep-bringing). See WITHANIA SOMNIFERA.
,, *viola'cea* (violet). Yellow, with five purple spots. Fruit violet. Mexico. 1882.
,, *visco'sa* (clammy). 1–2. White. Trop. Amer.

PHYSA'RIA. (From *phusa*, a bladder; in reference to the short, inflated, laterally compressed seed-pods. Nat. ord. Cruciferæ. Allied to Vesicaria.)

Hardy, dwarf perennial herb. Seeds; divisions in spring; cuttings in sand in a cold frame during summer. Light, well-drained soil.

P. didymoca'rpa (pair-fruited). ¼. Bright yellow. N.W. Amer. 1906.

PHYSIA'NTHUS A'LBENS. See ARAUJIA SERICIFERA.

PHYSIA'NTHUS AURI'COMUS. See ARAUJIA GRANDIFLORA.

PHYSIC NUT. *Ja'tropha.*

PHYSI'DIUM CORNI'GERA. See ANGELONIA CORNIGERA.

PHYSI'DIUM GARDNE'RI. See ANGELONIA GARDNERI.

PHYSOCHLAI'NA. (From *phusa*, a bladder, and *chlaina*, an outer garment; referring to the swollen calyx of some species. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy herbaceous herbs. Common garden-soil. Increased by root division in autumn or early spring.

P. grandiflo'ra (large-flowered). See P. PRÆALTA.
,, *orienta'lis* (oriental). 1–1½. Bluish-purple. March. Orient. 1821.

P. physaloi'des (Physalis-like). See SCOPOLIA PHYSALOIDES.
„ *præa'lta* (rather-tall). 1½. Green. May. Himalaya. 1850.

PHYSO'PTYCHIS GNAPHALO'DES. See VESICARIA GNAPHALODES.

PHYSOSI'PHON. (From *phusa*, a bladder, and *siphon*, a tube; on account of the inflated tube of the lip. Nat. ord. Orchidaceæ.)
Epiphytical stove orchids. Divisions at the commencement of growth. Fibre of peat, sphagnum, broken pots, and charcoal.
P. asaroi'des (Asarum-like). ½. Green-spotted, purple, dark purple inside. S. Brazil. 1907.
„ *guatemale'nsis* (Guatemala). ½. Small yellow and purple. Guatemala. 1891.
„ *Li'ndleyi* (Lindley's). ½. Green, with red sepals. Mexico. 1893.
„ *Loddige'sii* (Loddiges's). Yellow-green, reddish-orange. March. Mexico. 1828.
„ *Moo'rei* (Moore's). Country unknown.
„ *punctula'tus* (finely-dotted). Green-yellow, purple. Colombia. 1870.

PHYSOSPE'RMUM. (From *phusa*, a bladder, and *sperma*, a seed; in allusion to the loose outer coat of the young fruit. Nat. ord. Umbelliferæ.)
Hardy perennial herb with finely-divided radical leaves. Seeds; divisions in spring. Ordinary soil.
P. commuta'tum (changed). 1–2. White. July. Europe (Cornwall). "Bladder Seed."
„ *cornubie'nse* (Cornish). See P. COMMUTATUM.

PHYSOSTE'GIA. (From *phusa*, a bladder, and *stege*, a covering; formation of the calyx. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Melittis.)
Hardy herbaceous perennials. Seeds in a little heat, early, and then most of the plants when turned out in May will bloom the same season; divisions of the plants in spring; and cuttings, or young shoots, under a hand-light, in sandy soil, in summer; sandy loam and a little leaf-mould.
P. corda'ta (heart-*leaved*). Purple. July. N. Amer. 1824.
„ *denticula'ta* (toothed-*leaved*). See P. VIRGINIANA DENTICULATA.
„ *imbrica'ta* (imbricated-*flowered*). See P. VIRGINIANA.
„ *interme'dia* (intermediate). 2–3. July to September. N.W. Amer.
„ *specio'sa* (showy). See P. VIRGINIANA SPECIOSA.
„ *trunca'ta* (blunt-*calyxed*). See BRAZORIA SCUTELLARIOIDES.
„ *variega'ta* (variegated). See P. VIRGINIANA.
„ *virginia'na* (Virginian). 1½. Red. August. N. Amer. 1683.
„ „ *a'lba* (white). 3. White. August.
„ „ *denticula'ta* (finely-toothed). Striped. August. Carolina. 1787.
„ „ *specio'sa* (showy). Pink. July. 1822.

PHYSOSTE'LMA. (From *phusa*, a bladder, and *stelma*, a waistcoat; in allusion to the form of the flower.)
Stove woody climber. Cuttings in sand in a close case, with bottom-heat. Loam, peat, and sand.
P. campanula'tum (bell-shaped). See P. WALLICHII.
„ *Walli'chii* (Wallich's). Green, yellow. Singapore. 1845.

PHYSOSTI'GMA. (From *phusa*, a bladder, and *stigma*; in reference to the bladdery hood of the stigma.)
Stove herbaceous climber. Cuttings in sand in a close case, with bottom heat. Fibrous loam, peat, and sand.
P. veneno'sum (poisonous). Pale purple. Trop. Africa. "Ordeal Bean of Old Calabar."

PHYSU'RUS. (From *phusa*, a bladder, and *oura*, a tail. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Anæctochilus.)
P. pictus rivals the far-famed *Anæctochilus* in the richness of its foliage. Stove orchids, in pots. Division in spring. See ORCHIDS.
P. arge'nteus (silvery-*leaved*). ½. White. June. Ceylon.
„ *chine'nsis* (Chinese). ½. Flowers small. Kwantung, China. 1896.
P. deco'rus (becoming). Dirty white. Sumatra. 1873.
„ *fimbrilla'ris* (finely-fringed). Yellow, white. Brazil.
„ *lobbia'nus* (Lobb's). ½. Java. 1847.
„ *macula'tus* (blotched). Leaves spotted with white. Ecuador. 1862.
„ *no'bilis* (noble). Leaves with silvery nerves. Brazil. 1873.
„ *Ortgie'sii* (Ortgies's). White. Colombia. 1873.
„ *pi'ctus* (painted). ½. White. June. Brazil. 1844.
„ „ *holargy'reus* (wholly silvery). Leaves silvery.
„ *Pre'slei* (Presley's). Yellow. February. Peru.
„ *querceti'colus* (oak-dwelling). N. Amer.
„ *rarifio'rus* (few-flowered). Yellow. March. Caracas.

PHYTARRHI'ZA A'NCEPS. See TILLANDSIA ANCEPS.

PHYTE'LEPHAS. (From *phuton*, a plant, and *elephas*, the elephant, or ivory; in allusion to the ivory-like character of the seeds, which are made into buttons, drawer knobs, &c. Nat. ord. Palmaceæ.)
Stove Palms. Seeds. Fibrous loam, peat, and sand.
P. macroca'rpa (large-fruited). 18. Colombia. 1846. "Ivory-nut Palm."
„ *microca'rpa* (small-fruited). 10. Peru.

PHYTEU'MA. Rampion. (An ancient name of a plant. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Campanula.)
Hardy herbaceous perennials and alpines, with two exceptions. Seeds and divisions in spring; common, light garden-soil. Pretty little things for rockworks and the front of borders.
P. amplexicau'le (stem-clasping). 4. Blue. July. Asia Minor. 1823.
„ *austri'acum* (Austrian). See P. ORBICULARE AUSTRIACUM.
„ *Balbi'sii* (Balbis's). Europe.
„ *betonicifo'lium* (betony-leaved). See P. MICHELII.
„ *campanuloi'des* (Campanula-like). 1. Blue. July. Caucasus. 1804.
„ „ *sibthorpia'num* (Sibthorpian). See P. SIBTHORPIANUM.
„ *cane'scens* (hoary). 2. Lilac. July. Hungary. 1804.
„ *Care'stiæ* (Caresta's). See P. HUMILE.
„ *Charme'lii* (Charmeli's). See P. SCHEUCHZERI CHARMELII.
„ *como'sum* (tufted). ½. Blue. June. Austria. 1752. Biennial.
„ *confu'sum* (confused). See P. ORBICULARE FISTULOSUM.
„ *corda'tum* (heart-shaped). See P. ORBICULARE.
„ *cordifo'lia* (heart-leaved). See P. ORBICULARE.
„ *cornicula'tum* (little-horned). See P. SCHEUCHZERI.
„ *glacia'le* (glacial). See P. SIEBERI.
„ *globulariifo'lium* (Globularia-leaved). See P. PAUCIFLORUM GLOBULARIÆFOLIUM.
„ *gra'cile* (slender). ½. Pale blue. Asia Minor. 1900.
„ *Halle'ri* (Haller's). ½. Violet. May. South of France. 1822. "Horned Rampion."
„ *hemisphæ'ricum* (half-globed). 1. Blue. July. Switzerland. 1752.
„ *hi'spidum* (bristly). 1. Blue. June. Switzerland. 1825.
„ *hu'mile* (humble). ½. Blue. June. Switzerland. 1825.
„ *inæqua'tum* (levelled). See P. ORBICULARE.
„ *lanceola'tum* (spear-head-*leaved*). ½. White. June. Armenia. 1826.
„ *limoniifo'lium* (Limonium-leaved). Switzerland. 1832. Evergreen.
„ *lobelioi'des* (Lobelia-like). ½. Pale blue. Asia Minor. 1900.
„ *Michelii* (Micheli's). ½. Red. June. Switzerland. 1822.
„ *na'num* (dwarf). See P. PAUCIFLORUM.
„ *ni'grum* (black). ½. Red. July. Bohemia. 1820.
„ *orbicula're* (round-*headed*). 1. Violet. July. England.
„ „ *austri'acum* (Austrian). Austria.
„ „ *deci'piens* (deceiving). Blue. July. Switzerland. 1819.
„ „ *fistulo'sum* (hollow). S. Europe.
„ „ *gigante'um* (gigantic). Blue. July. France. 1817.
„ *pauciflo'rum* (few-flowered). ½. Blue. May. Switzerland. 1823.
„ „ *globulariæfo'lium* (Globularia-leaved). ½. Blue. June. 1820.
„ *pulche'llum* (pretty). Asia Minor. 1836.

P. sali'gnum (willow-leaved). See P. CANESCENS.
„ *Scheuchze'ri* (Scheuchzer's). ½. Blue. May. Switzerland. 1813.
„ „ *Charme'lii* (Charmel's). 1. Blue. June. Pyrenees. 1823.
„ *scorzonerifo'lium* (Scorzonera-leaved). See P. MICHELII.
„ *serra'tum* (saw-edged). Corsica.
„ *sibi'ricum* (Siberian). 1. Blue. July. Siberia. 1817.
„ *sibthorpia'num* (Sibthorpian). 1. Blue. July. Greece. 1804.
„ *Siebe'ri* (Sieber's). 1. Blue. June. Pyrenees. 1826.
„ *spica'tum* (spiked). 2. Blue. May. Europe (England). 1597. "Spiked Rampion."
„ *stri'ctum* (upright). See P. LIMONIIFOLIUM.
„ *tetrame'ricum* (four-parted). See P. SPICATUM.
„ *transsilva'nicum* (Transsilvanian). See P. HEMISPHERICUM.
„ *urticifo'lium* (nettle-leaved). See P. HALLERI.
„ *virga'tum* (twiggy). See P. LIMONIIFO'LIUM.

PHYTOLA'CCA. (From *phuton*, a plant, and *lacca*, lac; the crimson colour of the fruit. Nat. ord. *Phytolaccads* [Phytolacaceæ]. Linn. 10-*Decandria*, 5-*Decagynia*.)

There are many tender species, but the following hardy herbaceous ones are all that are deserving of notice. Seeds and divisions in spring; light, sandy soil and leaf-mould.

P. acino'sa (grape-like). N. India. 1844. "Indian Poke."
„ *abyssi'nica* (Abyssinian). 1–2. Trop. Africa. Greenhouse.
„ *bogote'nsis* (Bogota). White, green. Colombia.
„ *deca'ndra* (ten-stamened). 5. White, green. August. Florida. 1768. "Virginian Poke."
„ „ *a'lbo-variega'ta* (white-variegated). Leaves variegated. 1887.
„ *dioi'ca* (diœcious). S. Amer. Greenhouse.
„ *escule'nta* (esculent). See P. ACINOSA.
„ *icosa'ndra* (twenty-stamened). 3. Green, purple. July. India.
„ *octa'ndra* (eight-stamened). 2–3. White, green. July. Japan.
„ *purpura'scens* (purplish). See P. ICOSANDRA.
„ *vulga'ris* (common). See P. DECANDRA.

PHYTOMY'ZA I'LICIS. See HOLLY-LEAF FLY.

PHYTOMY'ZA NIGRICO'RNIS. The Chrysanthemum Leaf-miner.

PHYTO'PHTHORA INFE'STANS. See POTATO DISEASE.

PIARA'NTHUS. (From *piar*, fatness, and *anthos*, a flower; the flowers being succulent, as in Stapelia. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Greenhouse evergreens, from South Africa. Cuttings, dried some days at their base before inserting them in sandy loam; sandy loam, lime-rubbish, leaf-mould, and a little dried cow-dung. Winter temp., 48° to 55°; summer, 60° to 90°; dry in winter.

P. a'ridus (dry). ½. Pale yellow. August. 1795.
„ *deco'rus* (graceful). ½. Yellow-striped. March. 1795.
„ *gemina'tus* (twin). Orange-yellow, deep red. June to September. S. Africa. 1795.
„ *gussonea'nus* (Gussone's). See BOUCEROSIA EUROPÆA.
„ *incarna'tus* (flesh-coloured). See BOUCEROSIA INCARNATA.
„ *mammilla'ris* (nippled). See BOUCEROSIA MAMMILLARIS.
„ *parvifo'rus* (small-flowered). ½. Yellow. August. 1795.
„ *pu'llus* (dark). See BOUCEROSIA MAMMILLARIS.
„ *puncta'tus* (dotted). ½. Dark purple. August. 1795.
„ *serrula'tus* (saw-edged). ½. Purple. July. 1805.
„ *Sprenge'ri* (Sprenger's). See CARALLUMA SPRENGERI.

PI'CEA. Spruce Firs. (From *pix*, *picis*, pitch; in allusion to the resin which pervades the wood, leaves, and cones. Nat. ord. Coniferæ.)

Hardy, evergreen trees allied to Abies, and both were formerly included under Pinus, though all are readily distinguishable from one another. Chiefly by seeds; varieties by cuttings, layers, inarching, and grafting. Deep rich loam, or even peaty soil, with a good supply of moisture rather than dry soils. Lowland and sheltered situations, rather than exposure, are favourable to the growth of fine trees and the production of timber.

P. ajane'nsis (Ajona). 80. Japan, and Amoor. 1861.
„ „ *microspe'rma* (small-seeded). Seeds small. Japan. 1861.
„ *a'lba* (white). 30–40. N.E. Amer. and British Columbia. 1700. "White Spruce."
„ „ *au'rea* (golden). Leaves yellow.
„ „ *cæru'lea* (blue). Leaves bluish or glaucous.
„ „ *cæru'lea Henderso'ni* (Henderson's blue).
„ „ *na'na* (dwarf). A low bush.
„ *albertia'na* (Albertian). See TSUGA MERTENSIANA.
„ *alcockia'na* (Alcockian). 120. Japan. 1861.
„ *alpe'stris* (alpine). See P. EXCELSA ALPESTRIS.
„ *bi'color* (two-coloured). Japan.
„ *breweria'na* (Brewerian). 70–90. N. California. 1886. "Weeping Spruce."
„ *canade'nsis* (Canadian). See TSUGA CANADENSIS.
„ *commu'nis* (common). See P. EXCELSA.
„ *complana'ta* (flattened). 100. Leaves flattened. W. China. 1906.
„ *co'ncolor* (one-coloured). See ABIES CONCOLOR.
„ *Engelma'nni* (Engelman's). 80–100. British Columbia, Oregon to Arizona. 1864.
„ „ *candidi'ssima* (whitest). A deeper blue than P. ENGELMANNI GLAUCA.
„ „ *glau'ca* (sea-green). Leaves sea-green. "Engelmann's Blue Spruce."
„ *eremi'ta* (low). See P. EXCELSA EREMITA.
„ *ericoi'des* (heath-like). A variety of doubtful origin.
„ *exce'lsa* (lofty). 150. May. Mountains of northern and central Europe. 1548. "Common Spruce," "Norway Spruce," "Burgundy Pitch-tree."
„ „ *acro'coma* (apex-tufted). Cones with a tuft of short, hard leaves at the apex. 1909.
„ „ *alpe'stris* (alpine). Swiss mountains. 1887.
„ „ *Apo'llinis* (Apollo's).
„ „ *argе'nteo-spi'ca* (silvery-spiked). Points of young shoots silvery.
„ „ *attenua'ta* (attenuated). Habit very slender.
„ „ *au'rea* (golden). Leaves tipped with yellow.
„ „ *brevifo'lia* (short-leaved). Leaves very short.
„ „ *capita'ta* (headed). Tree forming a globular mass, with headed masses of leaves. 1889.
„ „ *clanbrasilia'na* (Clanbrasilian). 1–4. "Lord Clanbrasil's Spruce."
„ „ *clanbrasilia'na e'legans* (elegant). 2–6. "Knight's Dwarf Spruce."
„ „ *cupre'ssina* (Cypress-like). Erect habit like a Cypress. 1907.
„ „ *e'legans* (elegant). "Knight's Dwarf Spruce."
„ „ *eremi'ta* (low). Bark red. Branches short, thick.
„ „ *finedone'nsis* (Finedon). Shoots pale yellow, changing to bronze and green. "Finedon Spruce."
„ „ *gregorya'na* (Gregorian). Dwarf, dense bush. "Gregory's Dwarf Spruce."
„ „ *horizonta'lis* (horizontal). Branches horizontal.
„ „ *inve'rta* (inverted). 50–80. Branches drooping, snake-like.
„ „ *leiocla'da* (smooth-branched). Branches glabrous.
„ „ *Maxwe'lli* (Maxwell's). "Maxwell's Dwarf Spruce."
„ „ *monstro'sa* (monstrous). Branches long and very little branched, snake-like.
„ „ *mucrona'ta* (short-pointed). 180. Oregon. "Spike leaved Spruce."
„ „ *muta'bilis* (changeable). Garden variety. 1888.
„ „ *na'na* (dwarf). See P. EXCELSA PYGMÆA.
„ „ *parvifo'rmis* (small-formed). A very small variety.
„ „ *pu'mila* (low). Very low and spreading.
„ „ *pygmæ'a* (pigmy). 1. Of upright growth, but very dwarf.
„ „ *pygmæ'a glau'ca* (sea-green). "Blue Pigmy Spruce."
„ „ *pyramida'lis* (pyramidal). "Pyramidal Spruce."
„ „ *refle'xa* (reflexed). Branches pendulous. 1890.
„ „ *stri'cta* (upright). "Upright Clanbrasil Spruce."
„ „ *tenuifo'lia* (slender-leaved). Leaves very slender.
„ „ *variega'ta* (variegated). Leaves with yellow variegation.
„ „ *virga'ta* (twiggy). See P. EXCELSA MONSTROSA.
„ *Gle'hni* (Glehn's). A low tree. Island of Sachalin. 1880.
„ *hondoe'nsis* (Hondoan). Japan.
„ *jezoe'nsis* (Jezoan). See P. AJANENSIS MICROSPERMA.
„ *Maximowi'czii* (Maximowicz's). Japan. 1880.
„ *Menzie'sii* (Menzies'). See P. SITCHENSIS.
„ *minia'ta* (red-barked). See P. EXCELSA EREMITA.

P. monti'gena (mountain-begot). 60. W. China. 1906.
„ *Mori'nda* (Morinda). 60–120. Himalaya. 1818. A noble spruce.
„ *morindoi'des* (Morinda-like). Branches spreading; branchlets drooping. E. Asia (?). 1903.
„ *Neovei'tchii* (new-Veitch's). 25. Central China. 1903.
„ *ni'gra* (black). 50–80. N.E. Amer. 1700. "Black Spruce."
„ „ *au'reo-margina'ta* (golden-edged).
„ „ *Doume'ttii* (Doumett's).
„ „ *pu'mila* (dwarf).
„ *obova'ta* (reverse-egg-shaped). N.E. Europe and N. Asia.
„ „ *japo'nica* (Japanese). Japan. 1868.
„ „ *schrenkia'na* (Schrenkian). 60. "Schrenk's Spruce." Altai Mountains.
„ „ *schrenkia'na globo'sa* (globose). 6. Plant globose. 1908.
„ *Omo'rica* (Omorica). Leaves flat. Servia and Bosnia. 1884. "Servian Spruce."
„ *orienta'lis* (oriental). 25–30. Mountains of Taurus and Caucasus. 1825. "Oriental Spruce."
„ „ *au'rea* (golden). Leaves yellow.
„ „ *na'na* (dwarf). Pyramidal. 1891.
„ „ *nu'tans* (nodding). Branches drooping gracefully. 1905.
„ „ *pygmæ'a* (pigmy). Very dwarf.
„ „ *semivirga'ta* (half-twiggy). Branches slightly branched. 1910.
„ *parrya'na* (Parryan). See P. PUNGENS.
„ *poli'ta* (polished). 40–50. Mountains of Japan.
„ *pu'ngens* (prickly). 80. Utah and California.
„ „ *arge'ntea* (silvery). See P. PUNGENS GLAUCA.
„ „ *au'rea* (golden). Leaves constantly golden-yellow. 1905.
„ „ *flave'scens* (yellowish). Leaves whitish-yellow where exposed. 1905.
„ „ *glau'ca* (sea-green). Blue-green. "Blue Spruce."
„ „ *glau'ca pe'ndula* (pendulous). 1901. "Weeping Blue Spruce."
„ „ *kosteria'na* (Kosterian).
„ *ru'bra* (red). 40–50. N. Amer. 1755.
„ „ *a'rctica* (arctic). A low northern form.
„ „ *monstro'sa* (monstrous).
„ „ *viola'cea* (violet). Bluish.
„ *schrenkia'na* (Schrenkian). See P. OBOVATA SCHRENKIANA.
„ *sitche'nsis* (Sitka). 60–80. N.W. Amer. 1831. "Sitka Spruce."
„ *smithia'na* (Smithian). See P. MORINDA.
„ *Tsu'ga* (Tsuga). See TSUGA SIEBOLDI.
„ *Wilso'ni* (Wilson's). Cones 2 in. long. Central China. 1903.

PICK-AXE should have a handle 3½ feet long, made of ash; and the points or edges of the head should be of well-steeled iron. There are three varieties: (1) The pick with two points, for loosening hard surfaces. (2) The pick-axe, for cutting through roots of trees when felling. (3) The mattock, with one pointed and one flat edge, for loosening surfaces and grubbing up roots.

PICOTEE. See CARNATION and PINK.

PICRÆ'NA. (From *pikros*, bitter; the wood and leaves are very bitter. Nat. ord. Simarubaceæ.)
Evergreen stove tree. Cuttings in sand with bottom-heat. Fibrous loam, a little peat, and sand.
P. exce'lsa (lofty). White. W. Ind. "Jamaica Quassia."

PICRI'DIUM. (From *Picris*, and *eidos*, like; the plants resemble species of Picris. Nat. ord. Compositæ.)
Hardy border perennial. Seeds; divisions in spring. Ordinary soil.
P. tingita'num (Tangiers). 1–2. Yellow. July. Mediterranean regions. 1882.

PI'CRIS. (From *pikros*, bitter; the plants have a bitter taste. Nat. ord. Compositæ.)
Hardy perennial herb. Divisions. Ordinary garden soil.
P. sprengeria'na (Sprengerian). 2. Yellow. July. S. Europe; Asia Minor. 1824.

PICRORHI'ZA. (From *pikros*, sour, or bitter, and *rhiza*, a root; the root being bitter and used medicinally in India. Nat. ord. Scrophulariaceæ.)
Hardy perennial herb. Seeds, divisions or cuttings in summer. Ordinary soil.
P. Kurro'a (Kurroa). ½. Green. July, August. Himalaya. 1879.
„ *lindleya'na* (Lindleyan). See P. KURROA.

PICTE'TIA. (Named after *A. Pictet*, a physician. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Hedysarum.)
Stove evergreen, yellow-flowered shrub, from the West Indies. Cuttings of half-ripened shoots in sand, under a glass, in bottom-heat; peat and loam. Winter temp., 50° to 55°; summer, 60° to 90°.
P. arista'ta (awned). 4. June. 1816.
„ *squama'ta* (scaled). See ORMOCARPUM SENNOIDES.

PIERA'RDIA DU'LCIS. See BACCAUREA DULCIS.

PI'ERIS. (From *Pieria*, a district of Macedonia, the supposed abode of the Muses. Nat. ord. Ericaceæ.)
Hardy and greenhouse evergreen shrubs of great beauty. Seeds; layers in autumn. A peaty soil is best, but many will grow if leaf-mould and sand are used freely.
P. floribu'nda (free-flowering). 2–6. White. May. Virginia to Georgia. 1812.
„ *formo'sa* (beautiful). 3–6. White. Himalaya; China. 1881. Greenhouse.
„ *japo'nica* (Japanese). 1–3. White. March to June. Japan. 1806.
„ „ *eleganti'ssima* (very-elegant). See P. JAPONICA VARIEGATA.
„ „ *variega'ta* (variegated). Leaves bordered with white. 1887.
„ *maria'na* (Maryland). 2. White. June. N. Amer. 1763. "Stagger-bush."
„ „ *oblo'nga* (oblong). 2. White. June. N. Amer. 1736.
„ „ *ova'lis* (oval). 2. White. June. N. Amer. 1736.
„ *ni'tida* (shining). 2–6. White, pink, red, or purple. March to May. N. Amer. 1765.
„ *ovalifo'lia* (oval-leaved). 20–40. White or flesh. May, June. Himalaya. 1825.
„ „ *densiflo'ra* (dense-flowered). White. Assam. 1879.
„ *phillyreæfo'lia* (Phillyrea-leaved). 1–2. White. January to March. W. Florida. 1842. Greenhouse.

PI'ERIS CRATÆ'GI. Hawthorn, or Black-veined Butterfly. Is white, with black ribs or veins on the wings. It is very much like *Pieris brassicæ*. The caterpillar is dirty yellow, hairy, black-headed, and a brown stripe down its sides. The caterpillars moult several times, and they are usually found on the apple-tree, where both the yellow eggs and caterpillars may be found in June. The caterpillars draw two or three leaves together with a web. These should be sedulously sought for and destroyed.

PIGAFE'TTA. (Commemorative of *A. Pigafetta*, an Italian. Nat. ord. Palmaceæ.)
A stove Palm. Seeds. Fibrous loam, peat, and sand, with moist atmosphere.
P. ela'ta (tall). 30–40. Leaves like Cocos. Celebes.

PIGEON BERRY. *Phytola'cca deca'ndra.*

PIGEON PEA. *Caja'nus i'ndicus.*

PIG NUT. *Ca'rya porci'na.*

PI'LEA. (From *pilos*, a hat or cap; in allusion to the hood on the larger segment of the perianth of some of the species. Nat. ord. Urticaceæ.)
Stove herbs with very small leaves, often resembling mosses. Seeds; cuttings in sand under a bell-glass or divisions. Fibrous loam, leaf-mould, or peat, and sand.
P. crassifo'lia (thick-leaved). Green. China.
„ *gra'ndis* (great). Green. Jamaica.
„ *microphy'lla* (small-leaved). See P. MUSCOSA.
„ *musco'sa* (mossy). ½. Green. Summer. Trop. Amer. 1793. "Artillery Plant."
„ *pube'scens* (downy). 1. Green. Summer. Brazil.
„ *reticula'ta* (netted). 1. Green. Summer. Jamaica.
„ *robu'sta* (robust). Green. Mexico. "Stingless Nettle."
„ *sprucea'na* (Sprucean). Green. Peru and Venezuela.

PILEA'NTHUS. (From *pilos*, a cap, and *anthos*, a flower. Nat. ord. *Fringe-Myrtles* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Calythrix.)

Greenhouse evergreen shrub. Cuttings of short young shoots in sand, under a glass, in May, and placed in a shady place in a cold pit; sandy loam and a little peat. Winter temp., 38° to 48°.

P. Lima'cis (Limax-like). 2. April. White. Australia. 1824.

PILEWORT. *Ranu'nculus Fica'ria.*

PILOCA'RPUS. (From *pilos*, a cap, and *karpos*, a fruit; the shape of the fruit suggesting the name. Nat. ord. Rutaceæ.)

Stove evergreen shrubs. Cuttings of mature shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

P. Jabora'ndi (Jaborandi). Purple. Pernambuco.
„ *pennatifo'lius* (pinnate-leaved). 4–6. Purple or red-purple. Brazil. 1852.
„ *pinnati'fidus* (pinnately-cut). See P. PENNATIFOLIUS.

PILOCE'REUS. (From *pilos*, felt, and *Cereus*; in allusion to the long bristly or woolly-looking hairs with which the species are furnished. Nat. ord. Cactaceæ. Now referred to Cereus.)

P. Bruenno'wii (Bruennow's). See CEREUS BRUENNOWII.
„ *cærule'scens* (bluish). See CEREUS CÆRULESCENS.
„ *celsia'nus* (Celsian). See CEREUS (PILOCEREUS) CELSIANUS.
„ *chrysoma'llus* (yellow-haired). See CEREUS CHRYSOMALLUS.
„ *Colu'mna* (Columna). See CEREUS COLUMNA-TRAJANI.
„ *Curti'sii* (Curtis's). See CEREUS (PILOCEREUS) CURTISII.
„ *Dantwi'tzii* (Dantwitz's). See CEREUS (PILOCEREUS) DANTWITZII.
„ *Engelma'nni* (Engelmann's). See CEREUS GIGANTEUS.
„ *Forste'rii* (Forster's). See P. HOULLETII.
„ *fossula'tus* (furrowed). Bolivia. 1855.
„ *Hoppenste'dti* (Hoppenstedt's). See CEREUS (PILOCEREUS) HOPPENSTEDTI.
„ *Houlle'tii* (Houllet's). Violet-purple. Mexico. 1861.
„ *juba'tus* (maned). See CEREUS (PILOCEREUS) COMETES.
„ *marschalleckia'nus* (Marschalleckian). Mexico. 1898.
„ *ni'ger* (black). See CEREUS NIGER.
„ *polylo'phus* (many-crested). See CEREUS POLYLOPHUS.
„ *Robi'ni* (Robin's). Cuba. 1864.
„ *scopa'rius* (broom). New Mexico. 1853.
„ *seni'lis* (old). See CEREUS (PILOCEREUS) SENILIS.
„ *Strau'sii* (Straus's). 3½. Stem covered with pure white, silky hairs. Bolivia. 1907.
„ *Vello'zii* (Velloz's). See CEREUS FLUMINENSIS.
„ *Willia'msii* (Williams's). See CEREUS (PILOCEREUS) SENILIS.

PILO'GYNE PUNCTA'TA. See MELOTHRIA PUNCTATA.

PILULA'RIA. (From *pilula*, a little ball or globule. Nat. ord. Marsileaceæ.)

A small plant of botanical interest for the bog-garden, but of no beauty. Divisions in spring.

P. globuli'fera (small-globe-bearing). ½. Fruit brown. June to August. Europe (Britain). "Pillwort."

PILU'MNA FRA'GRANS. See TRICHOPILIA FRAGRANS.

PILU'MNA LA'XA. See TRICHOPILIA LAXA.

PILU'MNA NO'BILIS. See TRICHOPILIA FRAGRANS NOBILIS.

PIMELEA. (From *pimele*, fat; referring to the viscid matter on the leaves of some species. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from Australia. Seeds sown in a gentle hotbed, in spring; cuttings of young shoots in sand, under a bell-glass; sandy, fibrous peat, with a third of fibrous loam, and pieces of charcoal, freestone, and broken pots, to keep the soil open, in addition to good drainage. Winter temp., 40° to 48°.

P. affi'nis (related). See P. ROSEA AFFINIS.
„ *crini'ta* (hairy). See P. IMBRICATA.
„ *decussa'ta* (cross-branched). See P. FERRUGINEA.
„ *diosmæfo'lia* (Diosma-leaved). See P. FERRUGINEA.
„ *drupa'cea* (drupe-like). 2–4. White, blush. May. "Victorian Bird Cherry."
„ *e'legans* (elegant). See P. LIGUSTRINA.
„ *ferrugi'nea* (rusty). 1–2. Rose or red. June. 1824.
„ *filamento'sa* (thready). See P. LINIFOLIA.
„ *g au'ca* (sea-green). 2. White. June. 1825.
P. Gni'dia (Gnidia). 2–8. Red. June to August. New Zealand.
„ *graciliflo'ra* (slender-*calyxed*). See P. SYLVESTRIS.
„ *Henderso'ni* (Henderson's). See P. ROSEA.
„ *hirsu'ta* (hairy). 2–3. Australia.
„ *hi'spida* (bristly-*flowered*). 2. Blush. May. 1830.
„ *hu'milis* (low). See P. GLAUCA.
„ *hyperi'cina* (Hypericum-like). See P. LIGUSTRINA.
„ *imbrica'ta* (overlapping). 1. White. June. 1839.
„ *inca'na* (hoary). See P. NIVEA.
„ *interme'dia* (intermediate). See P. GLAUCA.
„ *lana'ta* (woolly). See P. SERICEA.
„ *ligustri'na* (privet-like). 4–6. White. June. 1823.
„ *linifo'lia* (flax-leaved). 2. White. May. 1793.
„ *linoi'des* (flax-like). See P. LINIFOLIA.
„ *longiflo'ra* (long-flowered). 4. White. June. 1831.
„ *macroce'phala* (large-headed). See P. SUAVEOLENS.
„ *na'na* (dwarf). See P. IMBRICATA.
„ *neypergia'na* (Neypergian). See P. PREISSII.
„ *ni'vea* (snowy-*herbaged*). 6. White. Tasmania. 1833.
„ *ovalifo'lia* (oval-leaved). See P. HIRSUTA.
„ *paludo'sa* (marsh). See P. LINIFOLIA.
„ *pauciflo'ra* (few-flowered). 5–8. White. June. 1812.
„ *Prei'ssii* (Preiss's). 2–3. May. 1846.
„ *ro'sea* (rosy). 2. Red. June. 1800.
„ „ *affi'nis* (related). White. May.
„ *seri'cea* (silky). 2–3. June. 1834.
„ *specta'bilis* (showy). 3. White, pink. May. 1840.
„ *spica'ta* (spiked). 2. White. June. 1824.
„ *suave'olens* (sweet-smelling). 2–3. Yellow, fragrant. May. 1848.
„ *sylve'stris* (wood). 2. Blush. June. 1830.
„ *Verschaffe'ltii* (Verschaffelt's). See P. SPECTABILIS.

PIME'NTA. Allspice-tree. (From *pimento*, the Spanish name. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Myrtus.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, and in a brisk bottom-heat, in spring; rich, sandy, fibrous loam. Winter temp., 50° to 60°; summer, 60° to 85°.

P. a'cris (bitter). 20–35. White, pale red. June to August. W. Ind. 1759. "Wild Clove."
„ *officina'lis* (shop). 30. White. June to August. W. Ind. 1723. "Allspice."
„ *vulga'ris* (common). See P. OFFICINALIS.

PIMENTO BUSH. See PIMENTA OFFICINALIS.

PIMPERNEL. *Anaga'llis.*

PIMPINE'LLA. (Considered to be an alteration of bipinnula, twice pinnate, because the leaves are twice cut. Nat. ord. Umbelliferæ.)

Hardy, perennial herbs, the most important of which is *P. Ani'sum*, the Aniseed of commerce. Seeds; divisions. Ordinary soil.

P. Ani'sum (Anisum). 1–2. White. Greece and Egypt.
„ *ma'gna ro'sea* (large-rosy). 2–3½. Rose-pink. July, August. Europe (England).
„ *peregri'na* (foreign). 3. S. Europe; Asia Minor.

PINA'NGA. (The Malayan name. Nat. ord. Palmaceæ.)

Stove Palms. Seeds. Fibrous loam, peat, and sand, with a moist atmosphere.

P. corona'ta (crowned). 10–20. Celebes. 1848.
„ *deco'ra* (becoming). Leaves dark red, changing to clouded green. Borneo. 1886.
„ *Dickso'ni* (Dickson's). India.
„ *di'sticha* (two-ranked). 6. White. Malaya. 1814.
„ *globo'sa* (globular). See CALYPTROCALYX SPICATUS.
„ *gra'cilis* (graceful). India.
„ *Ku'hlii* (Kuhl's). Malaya. 1873.
„ *latise'cta* (broadly-cut). 10–15. Sumatra.
„ *le'pida* (comely). Young leaves brownish-red. E. Ind. 1888.
„ *macula'ta* (blotched). Leaves bright green, blotched with dark green. Philippines. 1863.
„ *malaia'na* (Malayan). 6–12. Malaya.
„ *Micholi'tzii* (Micholitz's). 6. Young leaves tinted with purple, blotched with yellow. Sumatra. 1908.
„ *parado'xa* (paradoxical). Malaya.
„ *pa'tula* (spreading). 5–9. Leaves 4–5 ft. long. Sumatra.
„ *sanderia'na* (Sanderian). Leaves glossy, mottled green. Indian Archipelago. 1885.

P. specta'bilis (showy). Leaves mottled, silvery beneath. E. Ind. 1886.

„ *ternate'nsis* (Ternate). Leaves 12 ft. long. Ternate Island.

„ *Vei'tchii* (Veitch's). Leaves blotched with blackish-green. Borneo. 1880.

PINASTER. *Pi'nus Pina'ster.*

PINASTER BEETLE. *Bostrichus.*

PINCENECTI'TIA GLAU'CA and **P. TUBERCULA'TA.** See NOLINA RECURVATA.

PINCHING is a term applied to crushing, between the finger and thumb, the leading bud of a shoot, so as to prevent its increasing in length, and to force more sap to the other buds.

PI'NCKNEYA. (Named after *Mr. Pinckney*, an American botanist. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Bouvardia.)

Half-hardy evergreen tree. Seeds; and cuttings of ripened shoots under a hand-light, in sandy peat. It hardly deserves the greenhouse, and is rather tender for exposure, but would probably flourish against a south wall in a shallow border of loam and peat.

P. pu'bens (downy). 20. Red. June. Georgia. 1786.

PINE. See PINUS.

PINE-APPLES. *Ana'nas sati'vus.*

Varieties.—Queen: a free grower and an excellent fruiter; fit for the earliest summer fruit, and excellent during September and October. *Ripley Queen:* a very fine fruit, and by many preferred to the first. *St. Vincent*, or *Green Olive:* an excellent winter fruit. *Black Jamaica:* the best winter pine; it is too often confounded with the Montserrat. *Black Antigua:* a noble pyramidal fruit, with large pips; should be cut a little before it is quite ripe. *Brown Sugar-loaf:* large and showy, with a very juicy flesh; it is said by some to swell tolerably well in winter. *White Providence:* one of the largest and noblest of pines; flavour rather inferior. *Trinidad:* large and of pyramidal shape; flavour not first-rate. *Enville:* noble-looking fruit; flavour second-rate. *Smooth-leaved Cayenne:* barrel-shaped, dark orange-yellow, rich and highly flavoured, 6 lb. to 9 lb.; one of the best for winter and spring; leaves nearly spineless.

Culture.—This usually commences in February. Have the upper 30 inches of the pit in which the pots are to be plunged filled with fresh tan. *Re-pot* your plants, using any turfy soil, even from a road-side, well chopped to pieces *when dry*, but by no means riddled. Nevertheless, it is very good practice to have a richer and mellower compost in a more decomposed state on the potting bench, such as the surface of an old cucumber-bed, chopped when dry, dung, rotten leaves, and loam all together (but most of the loam), and then passed through a very coarse riddle, afterwards adding one-sixth of charred sticks, or rubbish, such as will pass readily through a riddle of an inch mesh.

Use pots which would require but one more shift: the size of the pot for the final shift will determine this; and pots of about 13 inches diameter will be sufficiently large for any beginner to fruit in. In potting, first place three or four large crocks in such a way as that at least three bold apertures be formed, both for the escape of water and the admission of gaseous matter from below. Over this strew broken crocks and charcoal lumps, large as horse-beans, until the large crocks at the bottom are just concealed. Then strew a layer of the turfy lumps, out of which the loose soil has been ejected by shaking in a riddle. This done, the ball may at once be inserted, first suffering such crocks as are loose to dislodge themselves from the old ball. Next, throw in another layer of the turfy lumps all round the ball, and on these strew a couple of inches of the mixed compost in a mellow state; then, with a blunt stick, give the whole a slight pressure all round the ball, add another layer of the turfy lumps, strewing a little of the compost over them; again press with the stick; and now place a final coating of the compost, nearly 2 inches in depth, all over, and level with the rim of the pot. Let there be no tapping or thumping the bottom of the pot on the bench. If the balls of the pines about to be shifted are dry, water them, at least three days before they are to be shifted, with tepid manure-water, in order to allow the moisture to equalise itself, and the surplus to pass away. Thus there will be no occasion for any root-watering for nearly a month after shifting. The plants may be plunged immediately they are shifted; but let them by no means be more than half their depth in the tan. If any disrooting has become really necessary, and the sun shines bright, a little canvas shading will be a benefit for a couple of hours each day; not, however, to obstruct light, but rather to prevent the too rapid dispersion of atmospheric moisture.

Stove.—For the construction of this, see HOTHOUSE and PIT.

Table of Temperature as to Artificial Heat only.

	Day.	Night.	Rise in Sunshine.
January	64 deg.	60 deg.	6 deg.
February	66 „	60 „	6 „
March	70 „	62 „	6 „
April	74 „	64 „	8 „
May	76 „	65 „	10 „
June	78 „	66 „	10 „
July	80 „	68 „	10 „
August	80 „	68 „	10 „
September	76 „	63 „	10 „
October	73 „	62 „	8 „
November	70 „	62 „	8 „
December	64 „	60 „	6 „

Tables of this kind must not be allowed to guide the thermometer entirely. A good cultivator will take notice of the condition of his plants, and shape his course accordingly. If they appear "drawn," he should at once lower his night heat, as also that on dull days.

For *bottom-heat*, by adding 5° to every one of the above artificial day temperatures, we shall be as correct as by any tedious detail. Thus July and August should have a bottom-heat of 85°, which ought never to be exceeded in pine culture. If bottom-heat is supplied by a tank or pipes heated by hot water, the directions about renewing the tan are not needed.

Monthly Culture.—The plants being all plunged in the new pit, trial sticks must be put in, and a bottom-heat thermometer by all means employed. The bottom-heat here given is meant to apply to the heat at the bottom of the pot. Whilst practitioners are driven to capricious fermenting materials as a source of bottom-heat, an excess of heat will sometimes become necessary *inside the bed*, in order to provide somewhat against sudden declines. Let, then, the operator secure the bottom-heat as per table at the bottom of the pot, and all will be right.

If the heat rises above the desired point, let water be instantly employed as a cooler between the pots; and if this does not immediately check it sufficiently, let the pots forthwith be rocked to and fro in the bed, until a fair cavity is obtained between the tan and the pot side; and when the heat has declined to the desired pitch the cavity may be filled up again.

Let atmospheric moisture be liberally employed, especially from three o'clock in the afternoon until eight or nine the next morning. A slight syringing may be applied on every afternoon about closing time, taking care that at this time (*February*) it is dispersed on the following morning by a liberal heat and a free ventilation. Air must be given daily, if only for an hour; during all moderate weather a little may be given at 8 A.M.; increased, if necessary, about 11 A.M.; and taken entirely away about 3 P.M.

March.—The sun will now be gaining much power, and the amount of transpiration from the foliage will be much increased; let, therefore, a corresponding increase take place in the amount of atmospheric moisture. Shading may be employed for a couple of hours or so in the middle of very sunny days with some benefit. Syringing the surface of the tan is an excellent plan. If the wind is very cutting, be very cautious in the admission of air; the front sashes may be kept closed, and, if sunny, the shade applied, merely letting a little of the surplus heat escape at back.

April.—In proportion to rapidity of growth must be the admission of air. With a little freedom in growth, accompanied by a free transpiration, the plants will begin to require occasional waterings; indeed, the Queen section will have required it before March was out. With regard to such as the Black Jamaica, the case is widely different; it is astonishing how long these pines

will not only subsist but thrive without water. Queens, Envilles, Providences, &c., will require it thrice to their once, especially the Queens.

May.—Atmospheric moisture must continue to increase with increasing heat and light. The syringe may now be plied two or three times a week, always choosing bright afternoons for its application. The closing up, or reducing the air, must now be deferred until four o'clock P.M., and the giving of air must take place proportionately sooner; indeed, such ought to be in April. If the pines are vigorous, and plenty of atmospheric moisture can be commanded, discontinue shading at the end of April or beginning of May, unless the roof be of an exceedingly bright character, and the squares of glass very large. Rather let atmospheric moisture more abound, accompanied by a freer ventilation still.

June.—If the pines have done well, their pots will be filled with fine roots by the end of June, and shifting into the fruiting-pots will become necessary. We will, however, pass on to the next month.

July.—At whatever period the last shifting occurs, the same routine of potting may be observed. We have nothing new to say, except that as the size of the pot increases, so may in proportion the size of the lumps of turf, &c. The plunging medium, if necessary, may be renewed; but much caution must be exercised at this period, when the solar heat produces so much excitement. However, we advise that a foot or so of new tan be trenched into the bottom of the bed, and a little mixed with surface tan, and this merely to promote durability through the ensuing winter. Watch *daily* their bottom-heat thermometer. As before observed, if the plants require a watering, let it be three days before the operation of shifting.

August.—After the plants have been shifted a fortnight or so, they will again require the water-pot. Until the plants are beginning to root in the new soil, however, they may be kept moist enough by copious syringings, damping also the surface of the tan daily. All that is further necessary is a most liberal ventilation from eight A.M. until past four P.M., applying all the atmospheric moisture possible the moment the house is closed, and syringing just previous to closing.

September.—The August advice will do perfectly well for this month, except that ventilation may even be more liberal still, when the weather is fine, to put a check on too rampant growth; for, in order to have fine "shows," the tissue of the plant must become highly solidified.

October.—The light will now begin to decrease considerably, and both artificial heat and atmospheric moisture must give way in a proportionate degree. Still, however, persist in permitting a considerable increase of heat when the weather is bright. We need hardly say, beware of burning at the root. The advice applies to every month alike; but it requires a double amount of watchfulness for three weeks after disturbing the fermenting material.

November.—In proportion to the dulness of this month, the heat and moisture must decline. The tan-bed will require some renewal in the early part of this month, in order to go well through the winter; and if the tan is mellow, or somewhat dry, let it be well watered with tepid water, and then stirred deeply with a pointed stake, as deep as the stake can go. The whole may then be cased over up to, and rather above, the rim of the pot, provided the bottom-heat has declined sufficiently to bear it. This renewal must be watched, and water applied to the tan if necessary.

December and *January* require a very similar course of practice; much fire-heat will at times be necessary, and all possible means must be taken to counteract dryness in the atmosphere. Syringing can seldom be permitted in these two months, but sprinklings on the surface of the tan, and once a week it may be stirred up with a stake. Besides this, the floor may be kept moist, evaporating pans kept in continual requisition, and even the walks sprinkled, if necessary. If the weather become unusually severe, rather give up five degrees on the thermometer than continue a roasting fire for several days. In emergencies of this kind, the pines will take no harm at 55°; but not a degree below this should be permitted.

February.—The temperature will now begin to rise again slightly; growth recommences, and repotting succession pines, and the renewal of bottom-heat is needed, this brings us to the point from which we commenced.

Insects.—See ACARUS and COCCUS.

PINE-BUD MOTH and **PINE-SHOOT MOTH.** See RETINIA.

PINE'LLIA. (A commemorative name. Nat. ord. Araceæ.)

A hardy tuberous, perennial herb allied to Arisarum and Arisæma. Divisions or offsets at the commencement of growth. Well-drained soil.

P. tuberi'fera (tuber-bearing). 1–2. Purple. July. Japan. 1774.

PINGUI'CULA. Butterwort. (From *pinguis*, fat; the greasiness of the leaves. Nat. ord. *Butterworts* [Lentibulariaceæ]. Linn. *2-Diandria*, *1-Monogynia*.)

Seeds and divisions; chiefly requiring marshy, boggy soil. North American species are the most tender, requiring the treatment generally given to alpines, with the addition of keeping water in the saucer below the pot in which they are grown.

P. alpi'na (alpine). ¼. White, shaded with lemon. June. Europe (Scotland).
„ *bakeria'na* (Bakerian). See P. CAUDATA.
„ *cauda'ta* (tailed). ¼. Bright carmine. August, September. Mexico. 1881.
„ „ *supe'rba* (superb). ¼. Rosy-carmine, with white eye. 1903.
„ *ede'ntula* (toothless). See P. LUTEA.
„ *flave'scens* (yellowish). See P. ALPINA.
„ *Flo's-mulio'nis* (mule-keeper's flower). See P. CAUDATA.
„ *grandiflo'ra* (large-flowered). ¼. Blue. April. Europe (Ireland).
„ *gypsi'cola* (gypsum-loving). Dark to light red-violet. Summer. Mexico. 1911.
„ *Gypso'phila* (Gypsophila). See P. VULGARIS.
„ *hirtiflo'ra* (hairy-flowered). Lilac and pale yellow. S. Europe. 1884.
„ *lusita'nica* (Portuguese). ¼. Lilac; throat yellow. June to October. W. Europe (England).
„ *lu'tea* (yellow). ¼. Yellow. June. Carolina. 1816.
„ *orchidioi'des* (Orchis-like). See P. CAUDATA.
„ *Ro'sei* (Rose's). ¼. Violet-purple. August, September. Mexico. 1908.
„ *vallisneriæfo'lia* (Vallisneria-leaved). ¼. Lilac-purple. June to September. Spain. 1878.
„ *vulga'ris* (common). ¼. Violet. May. Europe, Siberia (Britain). "Bog Violet."
„ „ *grandiflo'ra* (large-flowered). See P. GRANDIFLORA.

PINK. So little do the Pink, Picotee, and Carnation differ in their botanical characteristics, that they are all (by some writers) considered varieties of the Clove Pink (*Dia'nthus Caryophy'llus*). Some think that the Red Pinks only are derived from this, but that the Pheasant's-eye Pinks are the offspring of the Feathered Pink (*Dia'nthus pluma'rius*). As florists' flowers they are very distinct. The *Carnation* marks in flakes, or ribbons, of colour, from centre to edge, and through the edge; and the more dense these ribbons, or stripes, or flakes of colour are, and the more distinct the white ground between them, the better, and the more equally divided, as to quantity, they are, the better. As the petals are broader as they approach the outer edge, so also are, or should be, both the colour and the white. They are divided into classes, called *Bizarres* and *Flakes*; the former having two colours of stripe besides the white, the latter only one colour. These Bizarres and Flakes are subdivided, there being purple flakes, rose flakes, and scarlet flakes; and among the bizarres, scarlet bizarres, which have scarlet stripes, and a second colour, which is considered better for a rich contrast of black, and approaches to it; then purple bizarres, which have purple stripes, with a light pink, or rose, or some other colour, forming a contrast. The *Picotee* has the colour only on the edge, and broad or narrow, as the case may be, but ramifying towards the centre; any mark or spirt of colour that does not touch the edge is a blemish. Some, therefore, are only marked round the edge very distinctly, but as narrow as possible; others have a sort of feathering, narrow or deep, as the case may be, but feathering inwards from the edge; the outer edge solid, and the inner edge rough, or feathery. The *Pink* is distinct from both these. The lacing, as it were, of

a Pink is rough outside and inside, with a portion of white outside the lacing, as if a band of colour had been laid on; besides this, there is colour at the base of every petal, and, perhaps, one-third of the distance along the petal, so that it forms an eye, or centre, of colour, which is peculiar to itself, and which never occurs in the Carnation or Picotee. A Pink, without its lacing all round each petal, and its narrow strip of white outside it, would be worthless as a show-flower. The more distinct this lacing is, the better; it should look like an even piece of embroidery, just fairly within the outer edge of the white.

The Pink may be propagated and cultivated in every respect similarly to the *Carnation*. *Pipings* of it are best made at the end of May, or early in June.

Growing in Beds.—By the middle of August Pinks are all gone out of flower, except perpetual-flowering, decorative varieties. The old plants are of little use to the florist, as they seldom produce the second year first-rate bloom; but for ornamenting the border they are valuable. Remove them out of the bed; trim off all dead flower-stems; and plant them in the borders of the garden rather deeper than they have been before. They will make fresh roots higher up the stems, and form close compact bushes, producing the next season abundance of flowers. If it is intended to grow Pinks again in the same bed, *the soil* ought to be taken out a foot deep, and renewed with fresh loam and very rotten stable-dung, in the proportion of three of the first to one of the latter, turning it over frequently to thoroughly mix and sweeten it. This should be done by the third week of August. Raise the bed 6 inches above the soil around, and form it like a low-ridged roof. The compost should be at least a foot deep. Plant in rows, the first week in September, and 12 inches apart each way. Sheltering in winter, frequent stirring of the soil in spring, and mulching with short, well-decayed stable manure early in June, are the chief points of after-culture. See CARNATION for other points requiring attention.

PIN PILLAR. *Opu'ntia curassa'vica.*

PINNATE. A leaf is pinnate when several leaflets grow from the sides of one foot-stalk, as in the Pea, Acacia, Rose, &c.

PINNATIFID is when a leaf is cut across from the edge towards the centre nerve into several oblong parallel segments, as in Ipomopsis, Gilia, &c.

PI'NUS. Pine-tree. (A name from Theophrastus. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

Hardy evergreen trees and shrubs. Chiefly by seeds; scarce ones by cuttings, layers, inarching, and grafting; deep, rich loam yields the quickest and finest timber for bulk; a more mountainous situation, where the soil is neither so rich nor so deep, is supposed to yield the most lasting timber.

P. albicau'lis (white-stemmed). N.W. Amer. 1863.
,, *apulce'nsis* (Apulcan). 40–50. Mexico. 1839. Half-hardy.
,, *ara'bica* (Arabian). See P. HALEPENSIS.
,, *arista'ta* (bearded). See P. BALFOURIANA ARISTATA.
,, *arizo'nica* (Arizona). Arizona. 1875.
,, *Arma'ndi* (Armand's). 40–50. Leaves in tufts of five. China. 1903.
,, *austra'lis* (southern). See P. PALUSTRIS.
,, *austri'aca* (Austrian). See P. LARICIO NIGRICANS.
,, *Ayacahui'te* (Ayacahuite). 100–120. Mexico. 1840. "Hickory Pine."
,, *balfouria'na* (Balfourian). 50. California. 1852. "Fox-tail" or "Hickory Pine."
,, ,, *arista'ta* (bearded). 40. California. 1863.
,, *banksia'na* (Banksian). 20. May. North-Eastern United States. 1785.
,, *benthamia'na* (Benthamian). A form of *P. ponderosa*.
,, *Bolande'ri* (Bolander's). See P. CONTORTA.
,, *Boursie'ri* (Boursier's). See P. CONTORTA.
,, *Bru'tia* (Brutia). See P. PYRENAICA.
,, *bungea'na* (Bungean). 40–80. N. China. 1846. "Lace Bark Pine."
,, *Buonapa'rtea* (Buonapartean). See P. AYACAHUITE.
,, *califo'rnica* (Californian). See P. INSIGNIS.
,, *carpa'tica* (Carpathian). See P. EXCELSA.
,, *canarie'nsis* (Canary). 40. Canaries. 1815. "Canary Pine." Half-hardy.
P. Ce'mbra (Cembra). 25–30. May. Mountains of Central Europe. 1746. "Swiss Stone Pine."
,, ,, *au'rea* (golden). Leaves yellow.
,, ,, *compa'cta* (compact). Compact and conical. 1909.
,, ,, *pu'mila* (dwarf). 4. Siberia.
,, ,, *sibi'rica* (Siberian). Siberia.
,, *cembroi'des* (Cembra-like). 20–30. Arizona. 1845.
,, *Chihuahua'na* (Chihuahuana). 46–50. North-Western Amer.
,, *conto'rta* (twisted). 20–30. N.W. Amer. 1831.
,, ,, *murraya'na* (Murrayan). 50–100. Californian valleys.
,, *Coulte'ri* (Coulter's). 60–120. California. 1832.
,, *cube'nsis* (Cuban). S. United States; Central Amer.; Bahamas.
,, *defle'xa* (deflexed). See P. JEFFREYI DEFLEXA.
,, *densiflo'ra* (dense-flowered). 30–50. Japan.
,, ,, *argе'nteo-variega'ta*. Variegated with silver.
,, ,, *au'reo-variega'ta* (golden-variegated). Variegated with yellow.
,, *devonia'na* (Duke of Devonshire's). See P. MONTEZUMÆ.
,, *Do'n-Pe'dri* (Don-Peter's). See P. AYACAHUITE.
,, *echina'ta* (prickly). 40. May. N. Amer. 1739.
,, *edu'lis* (edible). New Mexico. Seeds edible.
,, *Ehrenbe'rgii* (Ehrenberg's). See P. HARTWEGII.
,, *elda'rica* (Eldarian). 50. Desert of Eldar, Transcaucasia. 1903.
,, *excе'lsa* (lofty). 50–150. Temperate Himalaya. 1827. "Bhotan Pine."
,, ,, *zebri'na* (zebra-striped). Leaves with white transverse bands. 1889.
,, *filifo'lia* (thread-leaved). 40–60. Guatemala. 1839. Half-hardy.
,, *finlaysonia'na* (Finlaysonian). See P. MERKUSII.
,, *fle'xilis* (flexuous). 50. N.W. Amer. to Texas. 1851. "White Pine."
,, ,, *albicau'lis* (white-stemmed). See P. ALBICAULIS.
,, ,, *a'lbo-variega'ta* (white-variegated). Many of the leaves white. 1910.
,, *fremontia'na* (Fremontian). See P. MONOPHYLLA.
,, *gerardia'na* (Gerardian). 40–50. North-Western Himalayas, Afghanistan.
,, *gordonia'na* (Gordonian). See P. MONTEZUMÆ.
,, *Grenvi'llеæ* (Lady Grenville's). See P. MONTEZUMÆ.
,, *halepe'nsis* (Aleppo). 40–50. June. Mediterranean region. 1683. "Jerusalem Pine."
,, ,, *conglomera'ta* (crowded). Cones crowded. 1869.
,, ,, *mari'tima* (maritime). 40. May. South of Greece.
,, ,, *proli'fera* (proliferous).
,, *Hartwe'gii* (Hartweg's). 40. Mexico. 1839.
,, *i'nops* (poor). 20–30. N.E. United States. 1789. "New Jersey" or "Scrub Pine."
,, *insi'gnis* (remarkable). 60–100. California. 1833. "Monterey Pine."
,, *insula'ris* (insular). Philippines.
,, *Jeffre'yi* (Jeffrey's). 50–150. California.
,, ,, *defle'xa* (deflexed). Branches deflexed.
,, *karama'na* (Caramanan). See P. LARICIO PALLASIANA.
,, *koraie'nsis* (Corean). 25–35. Corea and Japan. 1861.
,, ,, *variega'ta* (variegated). 1887.
,, *lambertia'na* (Lambertian). 100–300. California and Oregon. 1827. "Sugar Pine."
,, ,, *brevifo'lia* (short-leaved).
,, *Lari'cio* (larch-like). 80–150. S. Europe; Levant. 1814. "Corsican Pine."
,, ,, *au'reo-variega'ta* (golden-variegated).
,, ,, *austri'aca* (Austrian). See P. LARICIO NIGRICANS.
,, ,, *Mose'ri* (Moser's). Dwarf. Leaves golden-yellow in winter. 1900.
,, ,, *na'na au'rea* (dwarf-golden).
,, ,, *ni'gricans* (blackish). 50–100. Austria. 1835. "Austrian Pine," "Black Pine."
,, ,, *pallasia'na* (Pallasian). 70–80. May. Crimea; Asia Minor. 1790.
,, ,, *pi'ndica* (Pindus). 70–80. Leaves short, pale green. Pindus Mountains, Greece. 1902.
,, ,, *prostra'ta* (prostrate). Habit prostrate. 1903.
,, ,, *pygmæ'a* (pigmy). Very dwarf, with leaves clustered at the ends of branches.
,, ,, *tenuifo'lia* (thin-leaved). Leaves long and slender. S.W. Europe.
,, *latifo'lia* (broad-leaved). Leaves very long. Santa Rita Mountains, Arizona. 1889.
,, *latisqua'ma* (broad-scaled). Mexico. 1882.

P. leiophy'lla (smooth-leaved). 80. Mexico. 1800.
„ *lindleya'na* (Lindleyan). See P. MONTEZUMÆ.
„ *llavea'na* (Llavean). See P. CEMBROIDES.
„ *longifo'lia* (long-leaved). 60–100. Leaves very long. Himalaya. 1801. Half-hardy.
„ *loudonia'na* (Loudonian). See P. AYACAHUITE.
„ *macroca'rpa* (large-fruited). See P. COULTERI.
„ *macrophy'lla* (long-leaved). See P. MONTEZUMÆ.
„ *mari'tima* (maritime). See P. PINA'STER.
„ *massonia'na* (Massonian). 60–85. Japan. 1825.
„ *Merku'sii* (Merkus's). 100. Sumatra.
„ *mi'tis* (soft). 20–50. May. Eastern United States. 1739. "Yellow Pine."
„ *monophy'lla* (one-leaved). 5–25. Sierra Nevada, Utah. 1847.
„ *monta'na* (mountain). 5–15. Mountains of Central and Southern Europe. 1779.
„ „ *au'reo-variega'ta* (golden-variegated). Some leaves are golden-yellow. 1906.
„ „ *Fische'ri* (Fischer's).
„ „ *gra'cilis* (graceful). Leaves only 1–1½ in. long. 1906.
„ „ *Mu'ghus* (Mughus). 5–15. May. Austria. 1779.
„ „ *Mu'ghus na'na* (dwarf). 2–3. "Knee Pine."
„ „ *Pumi'lio* (Pumilio). 12–20. May. Europe.
„ „ *Pumi'lio variega'ta* (variegated). Leaves variegated.
„ „ *uncina'ta* (hooked). 10–20. Pyrenees.
„ *Montezu'mæ* (Montezuma's). 40–50. Mexico. 1839. Hardy in the south and west.
„ *monti'cola* (mountain-dwelling). 50–100. Vancouver's Island; California. 1831.
„ *Mu'ghus* (Mughus). See P. MONTANA MUGHUS.
„ *murica'ta* (warted). 40–50. California. 1846.
„ *murraya'na* (Murrayan). See P. CONTORTA MURRAYANA.
„ *occidenta'lis* (western). 80. W. Ind. Greenhouse.
„ *ooca'rpa* (egg-fruited). 40. Mexico and Guatemala. 1839. Half-hardy.
„ *oocarpoi'des* (oocarpa-like). See P. OOCARPA.
„ *oriza'bæ* (Mount Orizaba). See P. PSEUDO-STROBUS.
„ *osteospe'rma* (bony-seeded). See P. CEMBROIDES.
„ *pallasia'na* (Pallasian). See P. LARICIO PALLASIANA.
„ *palu'stris* (marsh). 70. S. United States. 1730. "True Pitch Pine."
„ *parrya'na* (Parryan). S. California.
„ *parvifl'ora* (small-flowered). 20–40. Japan. 1846.
„ *pa'tula* (spreading). 60–70. Mexico. 1826. Half-hardy.
„ „ *macroca'rpa* (large-fruited). Cones large. Mexico. "Pinus del Doctor."
„ „ *stri'cta* (upright).
„ *pe'rsica* (Persian). See P. HALEPENSIS.
„ *Peu'ke* (Peuke). Macedonia.
„ *Pina'ster* (Pinaster). 60–80. Mediterranean region. 1596. "Cluster Pine."
„ „ *Hamilto'ni* (Hamilton's). Nice. 1825. "Lord Aberdeen's Pine."
„ „ *mi'nor* (lesser). 60. May. France.
„ „ *variega'ta* (variegated). Leaves green and yellow. May.
„ *Pi'nea* (Pine). 50–60. Mediterranean region. 1548. "Stone Pine," "Umbrella Pine."
„ „ *cre'tica* (Cretan). May. Crete.
„ „ *fra'gilis* (fragile). 60. Thin-shelled. May. S. Europe.
„ *pondero'sa* (heavy-wooded). 50–150. British Columbia to Texas. 1828.
„ „ *Jeffre'yi* (Jeffrey's). See P. JEFFREYI.
„ „ *scopulo'rum* (rock). Rocky Mountains. 1888.
„ *Pseu'do-stro'bus* (false-Strobus). 70. Mexico. 1839. Half-hardy.
„ *Pumi'lio* (Pumilio). See P. MONTANA PUMILIO.
„ *pu'ngens* (prickly). 40. May. E. Central United States. 1804. "Table Mountain Pine."
„ *pyrena'ica* (Pyrenean). 50–80. May. S. Europe; Levant. 1834. "Calabrian Pine."
„ *radia'ta* (rayed). See P. INSIGNIS.
„ *refle'xa* (reflexed). N.W. Amer. 1881.
„ *resino'sa* (resinous). 80. N. Eastern Amer. 1756. "Canadian Red Pine."
„ *ri'gida* (rigid). 40–80. May. Eastern United States. 1759.
„ *ru'dis* (rude). See P. HARTWEGII.
„ *russellia'na* (Duke of Bedford's). See P. MONTEZUMÆ.
„ *sabinia'na* (Sabinian). 80–120. California. 1832.
„ *sero'tina* (late). 40. N. Carolina to Florida. 1713.
P. sinclairia'na (Sinclairian). See P. PONDEROSA.
„ *sine'nsis* (Chinese). See P. MASSONIANA.
„ *strobifo'rmis* (cone-shaped). See P. AYACAHUITE.
„ *Stro'bus* (Strobus). 120–200. April. Canada; N. Eastern Amer. 1705. "Weymouth Pine."
„ „ *a'lba* (white). 100. May.
„ „ *brevifo'lia* (short-leaved). 100. April.
„ „ *fastigia'ta* (upright).
„ „ *na'na* (dwarf). Dwarf, bushy.
„ „ *prostra'ta* (prostrate). Branches lying on the ground.
„ *sylve'stris* (wood). 60–190. May. Northern Europe (Scotland), Asia. "Scotch Pine," "Deal Wood," "Scotch Fir," "Wild Pine."
„ „ *alta'ica* (Altaian). 50. Habit pyramidal. Altai Mountains.
„ „ *argе'ntea* (silvery). Leaves and cones silvery.
„ „ *au'rea* (golden). Leaves golden.
„ „ *columna'ris compa'cta* (columnar-compact). Of flame-like outline. 1889.
„ „ *fastigia'ta* (upright). Branches erect, columnar.
„ „ *globo'sa* (globular). A round bush.
„ „ *latifo'lia* (broad-leaved). Leaves broader, longer, more glaucous.
„ „ *monophy'lla* (one-leaved). The two leaves are attached but separable.
„ „ *na'na* (dwarf). A low bush.
„ „ *variega'ta* (variegated). Leaves variegated with straw colour.
„ *Ta'da* (Tæda). 80. May. S. Eastern United States. 1713. "Torch or Loblolly Pine."
„ *Teoco'te* (Teocote). 100. Mexico. 1826. "Twisted Pine."
„ *tenuifo'lia* (slender-leaved). 80. Guatemala.
„ *Thunbe'rgii* (Thunberg's). Japan.
„ „ *au'rea* (golden).
„ „ *variega'ta* (variegated).
„ *torreya'na* (Torreyan). Southern California. 1860. "Soledad Pine."
„ *tubercula'ta* (warted). 40–100. Oregon. 1847.
„ *varia'bilis* (variable). See P. ECHINATA.
„ *wincesteria'na* (Marquis of Winchester's). See P. MONTEZUMÆ.

The above are the true Pines, with leaves in clusters of two, three, four, and five. The following species have long been separated into distinct genera, here indicated by the names placed at the head of each list, and to be found under those names in the dictionary.

Abies. SILVER FIRS.

P. ama'bilis.
„ *aroma'tica.*
„ *balsa'mea.*
„ *bractea'ta.*
„ *cephalo'nica.*
„ *co'ncolor.*
„ *falca'ta.*
„ *fi'rma.*
„ *Fra'seri.*
„ „ *na'na.*
„ *gra'ndis.*
„ *homo'lepis.*
P. lasioca'rpa.
„ *microphy'lla.*
„ *no'bilis.*
„ *nordmannia'na.*
„ *numi'dica.*
„ *pi'chta.* See ABIES SIBIRICA.
„ *Pi'ndrow.*
„ *Pinsa'po.*
„ *religio'sa.*
„ *webbia'na*

Larix. LARCHES.

P. Gmeli'ni. See LARIX DAVURICA.
„ *griffithia'na.* See LARIX GRIFFITHII.
„ *kamtscha'tica.* See LARIX DAVURICA.
„ *La'rix.* See LARIX EUROPÆA.
„ „ *pe'ndula.* See LARIX EUROPÆA PENDULA.
„ *Ledebou'rii.* See LARIX EUROPÆA SIBIRICA.
„ *lepto'lepis.*
„ *microca'rpa.* See LARIX PENDULA.
„ *pe'ndula.*
„ *sibi'rica.* See LARIX EUROPÆA SIBIRICA.

Picea. SPRUCES.

P. ajane'nsis.
„ *a'lba.*
„ „ *na'na.*
„ *excе'lsa,* and varieties.
„ *jezoe'nsis.* See PICEA AJANENSIS MICROSPERMA.
„ *Khu'trow.* See PICEA MORINDA.
„ *Menzie'sii.* See PICEA SITCHENSIS.
„ *Mori'nda.*
„ *mucrona'ta.* See PICEA EXCELSA MUCRONATA.

P. ni'gra.
„ *obova'ta.*
„ *orienta'lis.*
„ *Pi'cea* and varieties. See PICEA EXCELSA.
„ *poli'ta.*
„ *ru'bra.*
„ „ *a'rctica.*
„ „ *viola'cea.*
„ *schrenkia'na.* See PICEA OBOVATA SCHRENKIANA.
„ *sitche'nsis.*

Pseudotsuga. DOUGLAS FIR.

P. Dougla'sii.

Sequoia. REDWOOD CEDAR.

P. trigo'na. See SEQUOIA RAFINESQUEI.

Tsuga. HEMLOCK SPRUCES.

P. brunonia'na.
„ *canade'nsis.*
„ *heterophy'lla.* See TSUGA MERTENSIANA.
„ *mertensia'na.*
„ *Tsu'ga.* See TSUGA SIEBOLDI.
„ „ *na'na.* See TSUGA SIEBOLDI NANA.

PIONA'NDRA FRA'GRANS. See CYPHOMANDRA FRAGRANS.

PIO'NEA FORFICA'LIS. The Garden Pebble Moth. In certain seasons and districts this may appear in large numbers amongst Cabbages, Turnips, and Horse-radish, in June and July, and again in September and October. The moth is 1 inch to 1¼ inch in expanse, and the fore-wing is whitish-yellow, tinted with pale brown. The caterpillar is yellowish-green, with a line of darker spots on either side. Cabbages may be hand-picked, but Turnips and Horse-radish may be syringed with water and dusted with hellebore powder.

PIO'PHILA A'PII. The Celery-stem Fly. The fly is as large as the Celery Fly, of a shining black and covered with golden-grey hairs. The maggot is yellowish-white and penetrates the root-stock or stem and eats its way up the leaf-stalks, giving them a rusty-red colour and detracting from the value of the celery. This is done during winter and spring. Plants found to be infested, when dug up, should be burnt immediately to destroy the maggots, not thrown on the rubbish-heap.

PIP, in floriculture, is a single corolla or flower, where several grow upon a common stem, as in the Polyanthus and Auricula. The pips thus growing together are described as a *Truss*.

PI'PER. Pepper. (From *pepto*, to digest; referring to the stimulating power. Nat. ord. *Pepperworts* [Piperaceæ]. Linn. 2-*Diandria*, 3-*Triandria*.)

Stove evergreens. Cuttings of half-ripened wood under a bell-glass, in sandy soil, in heat; also by suckers from the bottom of the plant. Winter temp., 50° to 60°; summer, 60° to 80°. The genus contains the Pepper-plant and the Betle, of which the leaf is chewed in India as much as tobacco is in the West.

P. acumina'tum (long-pointed). See PEPEROMIA OBLIQUA.
„ *adu'ncum* (hooked). Trop. Amer.
„ *angustifo'lium* (narrow-leaved). Peru. "Matico."
„ *argyrophy'llum* (silvery-leaved). Leaves silvery. Ceylon.
„ *Be'tle* (Betle). 6. E. Ind. 1804.
„ *bornee'nse* (Bornean). 1. Leaves dark green, with faint silvery bands. Borneo. 1882.
„ *Bredeme'yeri* (Bredemeyer's). S. Amer.
„ *Carpu'nya* (Carpunya). Peru.
„ *celtidifo'lium* (Celtis-leaved). See P. ADUNCUM.
„ *Cha'ba* (Chaba). India and Malaya. "Long Pepper."
„ *corcovade'nse* (Corcovadan). Brazil.
„ *coria'ceum* (leathery). See PEPEROMIA CORIACEA.
„ *Cube'ba* (Cubeba). Malaya. 1887. "Cubebs."
„ *decu'rrens* (running-down). Leaves purple beneath. Costa Rica. 1876.
„ *dilata'tum* (dilated). S. Amer.
„ *di'scolor* (two-coloured). See PEPEROMIA DISCOLOR.
„ *exce'lsum* (lofty). Australia and Pacific Islands.
„ „ *au'reo-pi'ctum* (golden-painted). Leaves with a large, pale yellow blotch. New Zealand.
„ *Futokadsu'ra* (Futokadsura). Pale green. Japan. 1869.
„ *genicula'tum* (kneed) of gardens. See P. UNGUICULATUM.
P. genicula'tum (*swollen*-jointed) of Swartz. 2. Jamaica. 1823.
„ *gla'brum* (smooth). 10. Campeachy. 1768.
„ *glauce'scens* (milky-green). See P. UNGUICULATUM.
„ *inca'num* (hoary). See PEPEROMIA INCANA.
„ *laurifo'lium* (laurel-leaved). 10. July. Mexico. 1768.
„ *lo'ngum* (long). 6. June. E. Ind. 1788.
„ „ *sarmento'sum* (trailing).
„ *macrophy'llum* (large-leaved). See P. GENICULATUM.
„ *maculo'sum* (blotched). See PEPEROMIA MACULOSA.
„ *meta'llicum* (metallic). Leaves round, metallic-green. Borneo. 1882.
„ *methy'sticum* (intoxicating). Pacific Islands. "Kava Root."
„ *ni'grum* (black). 6. E. Ind. 1790. "Black" or "Common Pepper."
„ *ni'tidum* (shining). Trop. Amer.
„ *obli'quum* (oblique). Peru.
„ „ *exi'mium* (choice). Trop. S. Amer.
„ *officina'rum* (shop). See P. CUBEBA.
„ *orna'tum* (adorned). Leaves bright green, with pink spots. Celebes. 1884.
„ *ova'tum* (egg-shaped). Trinidad.
„ *papantle'nse* (Papantlan). Mexico.
„ *peepuloi'des* (Peepul-like). See P. CHABA.
„ *pellu'cidum* (pellucid). See PEPEROMIA PELLUCIDA.
„ *porphyrophy'llum* (purple-leaved). Young leaves dark purple-green. Malaya. 1883.
„ *pulche'llum* (pretty). See PEPEROMIA PULCHELLA.
„ *rubronodo'sum* (red-jointed). Leaves frosted with silver-grey. Nodes red. Colombia. 1877.
„ *rubroveno'sum* (red-veined). Leaves mottled with rose along the veins. 1887.
„ *sarmento'sum* (trailing). See P. LONGUM SARMENTOSUM.
„ *tiliæfo'lium* (Tilia-leaved). Mexico.
„ *tomento'sum* (downy). 14. August. Mexico. 1768.
„ *trioi'cum* (trioecious). See P. NIGRUM.
„ *tubercula'tum* (pimpled). 6. S. Amer. 1816.
„ *umbella'tum* (umbelled). 3. June. Tropics. 1748.
„ *unguicula'tum* (clawed). 3. Peru. 1822.
„ *Veit'chii* (Veitch's). Gardens.

PIPERIDGE. The Barberry.

PIPES for heating horticultural structures are preferably made of cast iron, painted black. Earthenware has been recommended for the purpose; but they are so much more liable to breakage and leakage, as to outweigh any original saving in the cost. For draining, earthen pipes with a bore an inch in diameter are the best.

TABLE of the quantity of pipe, 4 inches diameter, which will heat 1000 cubic feet of air per minute, any required number of degrees; the temperature of the pipe being 200° Fahrenheit.

Temp. of External Air.	Temperature at which the Room is required to be Kept.									
Fahr. Scale.	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
10°	126	150	174	200	229	259	292	328	367	409
12	119	142	166	192	220	251	283	318	357	399
14	112	135	159	184	212	242	274	309	347	388
16	105	127	151	176	204	233	265	300	337	378
18	98	120	143	168	195	225	256	290	328	368
20	91	112	135	160	187	216	247	281	318	358
22	83	105	128	152	179	207	238	271	308	347
24	76	97	120	144	170	199	229	262	298	337
26	69	90	112	136	162	190	220	253	288	327
28	61	82	104	128	154	181	211	243	279	317
30	54	75	97	120	145	173	202	234	269	307
32	47	67	89	112	137	164	193	225	259	296
34	40	60	81	104	129	155	184	215	249	286
36	32	52	73	96	120	147	175	206	239	276
38	25	45	66	88	112	138	166	196	230	266
40	18	37	58	80	104	129	157	187	220	255
42	10	30	50	72	95	121	148	178	210	245
44	3	22	42	64	87	112	139	168	200	235
46		15	34	56	79	103	130	159	190	225
48		7	27	48	70	95	121	150	181	214
50			19	40	62	86	112	140	171	204
52			11	32	54	77	103	131	161	194

Freezing-point.

To ascertain by the above table the quantity of pipe which will heat 1000 cubic feet of air per minute, find, in the first column, the temperature corresponding to that of the external air, and in one of the other columns find the temperature of the room; then, in this latter column, and on the line which corresponds with the external temperature, the required number of feet of pipe will be found.

PIPEWORT. *Eriocau'lon.*

PIPING, a mode of propagating the *Carnation*, *Picotee*, and *Pink*, is only another word for a cutting. Some persons pull off the pipings from the plant, and stick them in without more ado, but this is a slovenly way; besides, in pulling off the pipings, the main stem of the plant is materially injured, and often destroyed. The more correct way is, with a sharp knife, to cut off the side-shoot close to the stem, without injuring it, leaving a sufficient number of shoots to preserve the health of the plant. Take off one kind at once, making the proper number or tally at the same time; then dress the pipings by cutting off the lower leaves, leaving about four at the top. These four leaves should not be mutilated or shortened, as they are the organs to send down sap to form the roots. Put the pipings in pots filled with light earth, and a covering of sand upon it. Place them in a frame with a little bottom-heat, watering gently when dry, and shading from the sun until they are rooted. See CARNATION.

PIPTADE'NIA. (From *pipto*, to fall, and *aden*, a gland; the glands of the anthers fall. Nat. ord. Leguminosæ.)

Stove shrubs. Seeds; cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould or peat, with a little sand.

P. chryso'stachys (golden-spiked). Madagascar.
,, *fœ'tida* (fetid). 20. Pink. Mexico. 1816.
,, *guiane'nsis* (Guiana). See STRYPHNODENDRON GUIANENSE.
,, *latifo'lia* (broad-leaved). 4. Brazil. 1820.
,, *macroca'rpa* (large-fruited). 10. Brazil. 1820.
,, *peregri'na* (foreign). 10. Brazil. 1826.

PIPTA'NTHUS. (From *pipto*, to fall, and *anthos*, a flower; short duration of the flowers. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Anagyris.)

Hardy deciduous shrub. Seeds, which ripen freely; cuttings of ripe shoots under a hand-light; layers; cuttings, also, of roots; rich, sandy loam; should have the protection of a wall in exposed, cold places, far north of London.

P. nepale'nsis (Nepaulese). 10. Yellow. May. Temperate Himalaya. 1821. "Himalayan Laburnum."
,, ,, *au'reus* (golden). Bright yellow. 1879.
,, *tomento'sus* (felted). Yellow. Plant with silky felt. Yunnan, China. 1887.

PIPTO'SPATHA. (From *pipto*, to fall, and *spathe*, a spathe or sheath; the upper part or blade of the spathe falls away like a cap, after a time. Nat. ord. Araceæ.)

A dwarf, tufted perennial herb for the stove. Seeds; divisions in spring. Fibrous loam, lumpy peat, leaf-mould not too much decayed, and sand, with a warm, moist atmosphere when growing.

P. insi'gnis (remarkable). ½. Spathe white, with rosy apex. N. Borneo. 1879.
,, *Ridle'yi* (Ridley's). ½. Spathe green, with pink lines and dots. Leaves mottled with yellow. Malaya.

PIPTU'RUS. (From *pipto*, to fall, and *oura*, a tail; the long stigma is deciduous. Nat. ord. Urticaceæ.)

A stove tree, with ornamental foliage. Cuttings of half-mature shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

P. arge'nteus (silvery). Green. Leaves with silvery markings above, white beneath. Malaya, Pacific Islands, Australia. 1904.

PIQUE'RIA. (Named after *A. Piqueria*, a Spanish botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous perennial. Seeds, but chiefly division in spring; common soil.

P. latifo'lia (broad-leaved). See AGERATUM CONYZOIDES.
,, *trine'rvia* (three-nerved). 2. White. July. Mexico. 1798.

PIRIQUE'TA. (Apparently a native name. Nat. ord. Turneraceæ. They are included under Turnera by the *Genera Plantarum*, but not in the *Index Kewensis*.)

Stove shrubs or subshrubs. Cuttings in sand, in a propagating case. Fibrous loam, leaf-mould, and sand.

P. betonicæfo'lia (Betonica-leaved). See P. VILLOSA.
,, *cistoi'des* (Cistus-like) of Linnæus. See P. VILLOSA.
,, *fu'lva* (tawny). Tawny or dusky yellow. N. Amer.
,, *racemo'sa* (racemed). 2. July. Yellow. Brazil. 1789.
,, *villo'sa* (shaggy). ½. July. Yellow. Guiana. 1774.

PIRONNEA'VA. See ÆCHMEA.

PISCI'DIA. Jamaica Dogwood. (From *piscis*, a fish, and *cædo*, to kill; the leaves, twigs, and bark are used to stupefy fish. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Andira.)

Stove evergreen, white-flowered trees. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy, fibrous loam. Winter temp., 48° to 60°; summer, 60° to 85°.

P. carthagine'nsis (Carthagena). See P. ERYTHRINA.
,, *Erythri'na* (red). 25. Trop. Amer. 1690.
,, *longifo'lia* (long-leaved). 20–30. Mexico.
,, *toxica'ria* (poisonous). See P. ERYTHRINA.

PISO'NIA. (Commemorative of *Willem Piso*, a Dutch physician at Amsterdam. Nat. ord. Nyctaginaceæ.)

Stove or greenhouse shrubs. Cuttings in sand, with bottom-heat for the stove species, and a bell-glass for the greenhouse ones. Fibrous loam, peat, and sand.

P. aculea'ta (prickly). 6–10. Green. March. Tropics everywhere. 1806. "W. Indian Cockspur."
,, *brunonia'na* (Brownian). 40–48. Green. Tahiti and Marquesas Islands. 1907.
,, *gra'ndis* (grand). 6–10. Green. Australia and Pacific Islands. 1806. Greenhouse.
,, *ine'rmis* (unarmed). 8–10. Green. March. Trop. Amer.
,, *obtusa'ta* (blunt). 3–4. Green. April. W. Ind. 1824.

PISTA'CIA. Pistachia-tree. (Altered from its Arabic name, *Foustag*. Nat. ord. *Terebinths* [Anacardiaceæ]. Linn. 22-*Diœcia*, 5-*Pentandria*. Allied to Schinus.)

P. alla'ntica and *Lenti'scus* yield the useful resin called mastich. Seed nuts; layers and cuttings; rich, deep, sandy loam. Those from Barbary and the South of Europe require the protection of a greenhouse or a cold pit in winter; and even the hardiest kinds, though they have stood out at Fulham and the Horticultural Society's Gardens, will generally do best against a wall, when north of London, unless the place is both sheltered from the cold and exposed to the sun.

EVERGREEN TREES.

P. Lenti'scus (Lentiscus). 15. May. S. Europe. 1654. "Mastich-tree."
,, ,, *angustifo'lia* (narrow-leaved). 10. May. S. Europe. 1667.
,, ,, *Chi'a* (Chian). May. Scio.

DECIDUOUS TREES.

P. america'na (American). W. Ind. This is probably *Simaruba glauca*.
,, *alla'ntica* (Atlantic). 12. Barbary. 1790.
,, *chine'nsis* (Chinese). 80. Fruits red, changing to blue. Central China. 1910.
,, *mu'tica* (beardless). Eastern Mediterranean region. 1844.
,, *Terebi'nthus* (turpentine-tree). 20. June. S. Europe. 1656.
,, ,, *sphæroca'rpa* (round-fruited). May. Evergreen.
,, *ve'ra* (true). 20. May. Syria. 1770.
,, ,, *narbone'nsis* (Narbonne). 20. April. Marbonne. 1752.
,, ,, *trifo'lia* (three-leafleted). 20. May. Syria.

PI'STIA. (From *pistillum*, the female organ; signifying the appearance of the spathe inflorescence. Nat. ord. Duckweeds [Pistiaceæ]. Linn. 22-*Diœcia*, 1-*Monandria*.)

Beautiful stove aquatic. Seeds and divisions; rich, strong loam; a tub or tank in the plant-stove or aquarium.

P. Stratio'tes (Stratiotes). ½. Greenish. Jamaica. 1843. " Water Soldier," " Water Lettuce."
„ „ *spathula'ta* (spathulate). Leaves spathulate, velvety green. S.E. United States, Trop. Amer. 1904.

PISTORI'NIA. (Derivation not explained. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 10-*Decandria*, 5-*Decagynia*. United to Cotyledon.)
P. hispa'nica (Spanish). See COTYLEDON HISPANICA.

PI'SUM. The Pea. (From *pis*, the Celtic name. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)
Perennials, seeds and divisions; annuals, seeds sown according to the time the produce is wanted; rich, deep soil, where they will neither suffer from damp nor drought. See PEA.

HARDY HERBACEOUS.

P. america'num (American). See LATHYRUS MAGELLANICUS.
„ *formo'sum* (beautiful). ¾. Purple. June. Caucasus; Persia. 1818.
„ *mari'timum* (sea). See LATHYRUS MARITIMUS.

HARDY ANNUALS.

P. arve'nse (field). 3. Red. S. Europe.
„ „ *quadra'tum* (squared). 1–2. Purple. Leaves and stipules serrated. Palestine. 1905.
„ *ela'tius* (taller). 3–5. Purple and white. June to August. Mediterranean region. 1820.
„ *ela'tum* (tall). See P. ELATIUS.
„ *Joma'rdi* (Jomardi's). 3. White. Egypt. 1820.
„ *sati'vum* (*common*-cultivated). 3. White. S. Europe. " Garden Pea."
„ „ *hu'mile* (humble). 1. White.
„ „ *macroca'rpum* (large-podded). 4. White.
„ „ *quadra'tum* (squared). 3. White.
„ „ *sacchara'tum* (sugared). 4. White.
„ „ *theba'icum* (Theban). 3. 1825.
„ „ *umbella'tum* (umbelled). 4. Purple.

PIT *in the Stove* is the excavation, or brick inclosure, in which is the tan, or other material for plunging the pots; and *for Forcing*, it is a structure having a glass roof, and differing from a hotbed and frame only in being large, and with sides fixed to the soil. (See HOTBED and MELON for examples of various kinds of Pit.) *A Cold Pit* is one where no artificial heat is used, the protection the plants receive being given solely by coverings. During summer and spring, these pits, when not covered, are still a great protection to plants by their walls. Either a Melon or Cucumber Pit unheated, or an inclosure made with turf walls, and covered with the glass lights of a hotbed frame, answer admirably as cold pits.

PITCAI'RNIA. (Named after *Dr. Pitcairn*. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Tillandsia.)
Stove herbaceous perennials. Division, and by suckers in spring, or when they can best be obtained; sandy, fibrous peat, and good, mellow loam. Winter temp., 50° to 55°; summer, 60° to 85°.
P. a'lbiflos (white-flowered). 3. White. September. Brazil. 1824.
„ *albucæfo'lia* (Albuca-leaved). Red. W. Ind. 1837.
„ *a'lta* (tall). 5–6. Red. W. Ind.
„ *Altenstei'nii* (Altenstein's). 1½. White; bracts red. May. Venezuela. 1836.
„ „ *gigante'a* (gigantic). 5. White. February. 1845.
„ *andrea'na* (Andrean). 1. Orange, yellow. June to August. Venezuela and Colombia. 1872.
„ *angustifo'lia* (narrow-leaved). 2. Scarlet. Santa Cruz. 1777.
„ *aphelandræfo'ra* (Aphelandra-flowered). Vermilion. Brazil. 1870.
„ *arcua'ta* (arched). Yellow; bracts brownish-red and carmine. Colombia. 1876.
„ *atroru'bens* (dark-red). 2–3. White. Panama. 1850.
„ *austra'lis* (southern). Brazil. 1856.
„ *bractea'ta* (*large-red*-bracted). 2. Scarlet. April. W. Ind. 1797.
„ „ *commuta'ta* (changed). 1½. Scarlet. Trop. Amer. 1868.
P. bractea'ta sulphu'rea (sulphur). 2. Yellow. August. W. Ind. 1797.
„ *bromeliæfo'lia* (pine-apple-leaved). 2 Scarlet. June. Jamaica. 1781.
„ „ *acumina'ta* (long-pointed). Scarlet.
„ *cæru'lea* (sky-blue). 3. Blue. June. Chili. 1826. Greenhouse.
„ *ce'rnua* (drooping). See P. HETEROPHYLLA.
„ *chile'nsis* (Chili). See PUYA CHILENSIS.
„ *cinnabari'na* (cinnabar). Red. July. Brazil. 1851.
„ *coarcta'ta* (pressed-together). See PUYA CHILENSIS.
„ *commuta'ta* (changed). See P. BRACTEATA COMMUTATA.
„ *coralli'na* (coral-red). Red. Colombia. 1875.
„ *corcovade'nsis* (Corcovadan). 3–4. Red. Brazil. 1884.
„ *Decai'snei* (Decaisne's). See P. FULGENS.
„ *echina'ta* (echinated-*flowered*). Cream. Colombia. January. 1852.
„ *ela'ta* (tall). Mexico.
„ *exce'lsa* (lofty). See P. PULVERULENTA.
„ *exsca'pa* (stemless). See P. HETEROPHYLLA.
„ *ferrugi'nea* (rusty). 2–3. Pale yellow. Peru.
„ *fla'mmea* (flame-*coloured*). 2. Flame. November. Rio Janeiro. 1825.
„ *flave'scens* (yellow). See P. XANTHOCALYX.
„ *flocco'sa* (woolly). 2–3. Blue. Venezuela. 1847.
„ *fu'lgens* (shining). Crimson. Guadeloupe. 1851.
„ *funckea'na* (Funckean). Yellow, white. S. Amer. 1851.
„ *furfura'cea* (scurfy). See P. LATIFOLIA.
„ *graminifo'lia* (grass-leaved). See P. INTEGRIFOLIA.
„ *heterophy'lla* (various-leaved). 1½. Scarlet. May to July. Mexico. 1838.
„ *hu'milis* (low). 1. Scarlet. July. S. Amer. 1820.
„ *imbrica'ta* (overlapping). Yellow. Mexico. 1868.
„ *integrifo'lia* (entire-leaved). 2. Red. August. W. Ind. 1800.
„ *interme'dia* (intermediate). See P. LATIFOLIA.
„ *iridifo'ra* (Iris-flowered). 2. Scarlet. July. S. Amer. 1820.
„ *Jackso'ni* (Jackson's). 2–2½. Scarlet. Guatemala. 1850.
„ *jalisca'na* (Jaliscan). Scarlet; bracts and calyx deep rose. Mexico. 1888.
„ *karwinskia'na* (Karwinskian). 2. Red or crimson. June. Mexico.
„ *latifo'lia* (broad-leaved). 2. Scarlet. August. W. Ind. 1785.
„ *Lehma'nni* (Lehmann's). 3. Deep red. S. Amer.
„ *leiole'mma* (smooth-scaled). See P. MUSCOSA.
„ *lepido'ta* (scaly). See P. ANDREANA.
„ *longifo'lia* (long-leaved). See P. PULVERULENTA.
„ *lu'tea* (yellow). 3. Yellow. 1853.
„ *macroca'lyx* (large-calyxed). See P. FUNCKEANA.
„ *maidifo'lia* (Mays-leaved). 2–3. Greenish-white, yellow-red. May. S. Amer. 1848.
„ *megasta'chya* (great-spiked). 3. Pink, blue. Peru. 1873.
„ *michelia'na* (Michelian). 2. Scarlet-red. Mexico. 1901.
„ *montalbe'nsis* (Mount-Alban). 2–2½. Red. Mexico.
„ *morelia'na* (Morelian). See P. AUSTRALIS.
„ *moritzia'na* (Moritzian). 1½. Red, yellow. Venezuela. 1874.
„ *Morre'nii* (Morren's). See P. HETEROPHYLLA.
„ *musco'sa* (mossy). Red. December. Brazil. 1838.
„ *ni'gra* (black). 1. Red, dark purple. Ecuador. 1870.
„ *nubi'gena* (cloud-begotten). 2–3. Red. Venezuela. 1852.
„ *odora'ta* (sweet-scented). See P. ALBIFLOS.
„ *Olfe'rsii* (Olfers's). See P. FLAMMEA.
„ *Palme'ri* (Palmer's). 1. Light red. Mexico. 1888.
„ *panicula'ta* (panicled). See P. PULVERULENTA.
„ *petiola'ta* (long-stalked). 2–3. Greenish-white. Guatemala. 1856.
„ *Phili'ppii* (Philipp's). Chili.
„ *platyphy'lla* (broad-leaved). See P. BROMELIÆFOLIA.
„ *pulverule'nta* (powdery). ½–1. Scarlet. December. Peru. 1852.
„ *pu'ngens* (prickly). Scarlet, yellow. S. Amer. 1863.
„ *puni'cea* (red). Bright red. July. Mexico. 1857.
„ *recurva'ta* (recurved). 1–2. White. May, June. Brazil. 1839.
„ *ri'ngens* (gaping). See P. KARWINSKIANA.
„ *Rœ'zlii* (Rœzl's). 2. Scarlet-red; stem bright red. Peru. 1885.

P. rubigino'sa (rusty). French Guiana.
„ *Ski'nneri* (Skinner's). See P. ALTA.
„ *spatha'cea* (large-spathed). 1½–2. Dull blue; calyx and bracts rose. Argentina. 1904.
„ *speciosi'ssima* (very-showy). See P. UNDULATA.
„ *sple'ndens* (splendent). 2. Shining-red. Central Amer. 1851.
„ *stami'nea* (*long*-stamened). 2. Scarlet. January. S. Amer. 1823.
„ *suave'olens* (sweet-scented). 2. Yellow. July. Brazil. 1824.
„ *sulphu'rea* (sulphur-*flowered*). See P. BRACTEATA SULPHUREA.
„ *tabulæfo'rmis* (table-formed). Orange. Mexico. 1862. Leaves prostrate.
„ *undula'ta* (wavy). Scarlet. July. Brazil. 1843.
„ *undulatifo'lia* (waved-leaved). See P. ALTENSTEINII.
„ „ *gigante'a* (gigantic). See P. ALTENSTEINII GIGANTEA.
„ *viola'cea* (violet). 6. Deep violet; anthers yellow. Mexico (?). 1833.
„ *vire'scens* (greenish). 2. Yellow-green. March. Peru. 1857.
„ *warscewiczia'na* (Warscewiczian). 2. Red. Peru.
„ *Wendla'ndi* (Wendland's). 2–3. Sulphur. Chili. 1852.
„ *xanthoca'lyx* (yellow-calyxed). 2. Pale yellow. June. Brazil. 1877.
„ *zeifo'lia* (Zea-leaved). See P. MAIDIFOLIA.

PITCHER-LEAF. *Nepe'nthes phylla'mphora.*

PITCHER-PLANTS. *Nepenthes, Sarracenia, Darlingtonia, Heliamphora,* and *Cephalotus.*

PITCH-TREE, BURGUNDY. *Pi'cea exce'lsa.*

PITHECOCTE'NIUM. Monkey's Comb. (From *pithekos,* the ape, and *kteis, ktenos,* a comb. Nat. ord. Bignoniaceæ.)

Stove, woody climbers. Seeds; cuttings of young side-shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

P. Auble'tii (Aublet's). 20. Purple. Trop. Amer. 1804.
„ *buccinato'rium* (trumpeters'). See BIGNONIA BUCCINATORIA.
„ *Caroli'næ* (Lady Caroline's). 10. White, yellow. May. Trop. Amer. 1842.
„ *clemati'deum* (Clematis-like). White; throat yellow. Argentina. 1890.
„ *cynanchoi'des* (Cynanchum-like). Brazil.

PITHECOLO'BIUM. (From *pithekos,* the ape, and *lobos,* the lower part or lobe of the ear; literally, Monkey's earring. Nat. ord. Leguminosæ.)

Stove trees, more or less evergreen. Cuttings of mature shoots in summer, in sand, and placed in a close case with bottom-heat. Fibrous loam, peat, and sand. Winter temp., 50° to 55°; summer, 60° to 85°.

P. brevifo'lium (short-leaved). N.W. Amer. Greenhouse.
„ *Clypea'ria* (shield-like). Trop. Asia.
„ *du'lce* (sweet). 20. Pink. Trop. Amer. 1800.
„ *filicifo'lium* (fern-leaved). Mexico and Jamaica.
„ *latifo'lium* (broad-leaved). 10. Purple. May. Trop. Amer. 1768.
„ *loba'tum* (lobed). White. Burma; Malaya. 1828.
„ *mexica'num* (Mexican). Mexico.
„ *pruino'sum* (frosted). White. Australia. 1869.
„ *Sa'man* (Saman). 60. Trop. Amer. 1826. "Rain Tree."
„ *umbella'tum* (umbelled). 12. E. Ind.; Malaya. 1818.
„ *U'nguis-ca'ti* (cat's-claw). 20. Pink. Trop. Amer. 1817.

PITTO'SPORUM. (From *pitte,* to tar or pitch, and *sporos,* seed; seeds covered with resinous pulp. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.*)

Greenhouse, evergreen shrubs. Cuttings of shoots in sand, under a bell-glass, in April, and kept in a close frame, without bottom-heat; sandy, fibrous loam and a few nodules of fibrous peat. Winter temp., 38° to 48°; summer, 60° to 75°. *Tobi'ra* and *undula'tum* have delightfully scented flowers, and both have stood against walls, in the climate of London, with a little protection.

P. allicioi'des (Illicium-like). Greenish-yellow. Japan. 1905.
„ *Anderso'nii* (Anderson's). 4. Yellow. May. Australia. 1820.
„ *angustifo'lium* (narrow-leaved). See P. PHILLYRÆOIDES.
„ *bi'color* (two-coloured). 3. Chocolate. Tasmania. 1842.
„ *bracteola'tum* (small-bracted). Norfolk Island. 1837.
„ *Bucha'nani* (Buchanan's). New Zealand.
„ *cape'nse* (Cape). See P. VIRIDIFLORUM.
„ *Cole'nsoi* (Colenso's). See P. TENUIFOLIUM.
„ *coria'ceum* (leathery-*leaved*). 8. Blue. May. Madeira. 1783.
„ *cornifo'lium* (Cornus-leaved). 3. Brown. May. New Zealand. 1827.
„ *crassifo'lium* (thick-leaved). 5–10. Brownish-purple. New Zealand. 1872.
„ *Ende'ri* (Ender's). Blackish-purple. Australia. 1868.
„ *erioca'rpum* (woolly-fruited). Yellowish. Yunnan, China. 1900.
„ *eriolo'ma* (woolly-fringed). Lord Howe's Island.
„ *eugenioi'des* (Eugenia-like). New Zealand.
„ „ *variega'tum* (variegated). Leaves bordered with white. New Zealand. 1882.
„ *ferrugi'neum* (rusty-*leaved*). 6. Yellow. March. Malaya; Australia. 1787.
„ *fla'vum* (yellow-*flowered*). See HYMENOSPORUM FLAVUM.
„ *fu'lvum* (tawny-*leaved*). See P. REVOLUTUM.
„ *glabra'tum* (smooth). 1½. Bright yellow. May. Hong-Kong. 1845.
„ *heterophy'llum* (various-leaved).
„ *hi'rtum* (hairy-*branched*). See P. REVOLUTUM.
„ *huttonia'num* (Huttonian). New Zealand.
„ *ligustrifo'lium* (privet-leaved). See P. PHILLYRÆOIDES.
„ *macrocar'pum* (large-fruited). See P. CRASSIFOLIUM.
„ *mauritia'num* (Mauritius). See P. SENACIA.
„ *Ma'yii* (May's). 3. 1845.
„ *ni'gricans* (blackening). See P. TENUIFOLIUM.
„ *oleæfo'lium* (olive-leaved). See P. PHILLYRÆOIDES.
„ *phillyræoi'des* (Phillyrea-leaved). 2–6. Yellow. June to September. Australia. 1823.
„ *Ra'lphii* (Ralph's). New Zealand.
„ *revolu'tum* (curled-back-*leaved*). 6. Yellow. March. Australia. 1795.
„ *rhombifo'lium* (diamond-leaved). Australia.
„ *rhytidoca'rpum* (wrinkled-fruited). White. Fiji Islands. 1887.
„ *ri'gidum* (rigid). New Zealand.
„ *Sena'cia* (Senacia). 8. Yellow. May. Mascarene Islands. 1825.
„ *tenuifo'lium* (thin-leaved). 4. May. New Zealand.
„ *Tobi'ra* (Tobira). 12. White. May. Japan. 1804.
„ „ *variega'tum* (variegated). Leaves edged with cream.
„ *tomento'sum* (woolly-*leaved*). See P. REVOLUTUM.
„ *undula'tum* (waved-*leaved*). 10. White, green. April. N.S. Wales. 1789.
„ „ *variega'tum* (variegated-*leaved*). 5. White, yellow. April. Gardens.
„ *viridiflo'rum* (green-flowered). Green. May. S. Africa. 1820.

PLA'CEA. (A commemorative name. Nat. ord. Amaryllidaceæ.)

Greenhouse bulbs, allied to Narcissus. Offsets; seeds. Fibrous loam, leaf-mould, a little dried cow manure and sand.

P. A'rzæ (Arza's). 1½. Pale yellow, striped claret-purple. Chili.
„ *grandiflo'ra* (large-flowered). 1½. White, striped red. Valparaiso. 1867.
„ *lu'tea* (yellow). 1. Bright yellow, veined with purple. Chili.
„ *orna'ta* (adorned). ¾. White, striped red-purple. Chili. 1840.

PLADE'RA DECUSSA'TA. See CANSCORA DECUSSATA.

PLAGIA'NTHUS. (From *plagios,* oblique, and *anthos,* a flower; the petals are oblique. Nat. ord. Malvaceæ. Allied to Malvastrum.)

Hardy or greenhouse deciduous shrubs. Cuttings of half-ripe wood in sand, under a hand-light. Well-drained soil in the open or against walls.

P. betuli'nus (birch-like). 12–40. White. New Zealand. 1870. " Ribbon-Tree."
„ *Dampie'ri* (Dampier's). See P. SIDOIDES.
„ *divarica'tus* (spreading). 6–10. White. June. New Zealand. 1820.
„ *Lampe'nii* (Lampen's). 5–8. Pale yellow. Winter. Tasmania. 1833.
„ *Lya'llii* (Lyall's). 10–20. White. New Zealand. 1871.
„ *pulche'llus* (pretty). 4. White. April. Australia.
„ *sidoi'des* (Sida-like). 5–8 White. September. Tasmania. 1834.

PLAGIOLI'RION. (From *plagios*, oblique, and *leirion*, the white lily; in reference to the colour of the flowers, and their oblique limb. Nat. ord. Amaryllidaceæ. Allied to Eucharis and Calliphruria.)
Stove bulb. Offsets. Fibrous loam, leaf-mould, some well-decayed cow manure and sand.
P. Horsma'nni (Horsman's). ½–¾. White; tube green. July. Colombia. 1883.

PLAGIOLO'BIUM. (From *plagios*, transverse, and *lobos*, a pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Now referred to Hovea.)
P. chorizemæfo'lium (Chorizema-leaved). See HOVEA CHORIZEMÆFOLIA.
„ *ilicifo'lium* (holly-leaved). See HOVEA CHORIZEMÆFOLIA.

PLAGIOSPE'RMUM SINE'NSE. See PRINSEPIA SINENSIS.

PLA'GIUS GRANDIFLO'RUS. See CHRYSANTHEMUM GRANDE.

PLA'NERA. (Named after *J. Planer*, a German botanist. Nat. ord. *Nettleworts* [Urticaceæ]. Linn. 4-*Tetrandria*, 3-*Tetragynia*. Allied to the Elm.)
Hardy deciduous trees. Layers, and grafting on the elm; common, rich loam.
P. acumina'ta (long-pointed). See ZELKOVA ACUMINATA.
„ *aqua'tica* (aquatic). 12. Brown. April. N. Amer. 1816.
„ *carpinifo'lia* (hornbeam-leaved). See ZELKOVA CRENATA.
„ *Gmeli'ni* (Gmelin's). See P. AQUATICA.
„ *japo'nica* (Japanese). See ZELKOVA ACUMINATA.
„ *parvifo'lia* (small-leaved). See ULMUS PARVIFOLIA.
„ *Richa'rdi* (Richard's). See ZELKOVA CRENATA.

PLANE-TREE. *Pla'tanus.*

PLANE-TREE, SCOTCH. *A'cer Pseu'do-pla'tanus.*

PLANER-TREE. *Pla'nera aqua'tica.*

PLANK PLANT. *Bossia'a scolopen'dria.*

PLANTA'GO. (From the old Latin name, *Plantago*, from its flat, spreading leaf. Nat. ord. Plantaginaceæ.)
Hardy perennial herbs. Seeds; sometimes by divisions or cuttings. Ordinary soil. *P. lanceola'ta*, *P. ma'jor*, and *P. me'dia* are very troublesome in lawns, on account of their broad leaves. Spudding them out is the most certain remedy.
P. aqua'tica (aquatic). See ALISMA PLANTAGO.
„ *brasilie'nsis* (Brazilian). See P. CORIACEA.
„ *coria'cea* (leathery). 1. Creamy-white. Summer. Brazil. 1823. Greenhouse.
„ *lanceola'ta margina'ta* (edged-lance-shaped). Leaves bordered with white. France. 1889.
„ *macrophy'lla purpu'rea* (large-leaved-purple). See P. MAJOR PURPUREA.
„ *ma'jor purpu'rea* (larger-leaved). Leaves purple. Britain. 1878.
„ „ *variega'ta* (variegated). Leaves variegated. Hampshire. 1904.
„ *ma'xima* (largest). 1½–2. Cream. May, June. Siberia. 1908.
„ *unifio'ra* (one-flowered). Leaves cut, variegated. New Zealand. 1899.

PLANTAIN. Applied to the common species of *Planta'go*, but in the tropics to *Mu'sa sapie'ntum paradisi'aca.*

PLA'NTIA. (Named by Dr. Herbert after *Mr. Plant*, nurseryman at Cheadle, in commemoration of his success in cross-breeding. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Hexaglottis. *P. fla'va* (yellow). See HEXAGLOTTIS LONGIFOLIA.

PLANTING. The end of October is the best time in the whole year to plant all kinds of trees and bushes which cast their leaves in winter, whether fruit-bearing or ornamental; but all the evergreen American plants, as the *Rhodode'ndron*, may be planted in October, as well as in April, May, and June, or September—the right months for getting in most evergreens. For directions as to planting *Fruit-trees*, the reader is referred to the article STATIONS; but much of the following directions relative to planting ornamental trees and shrubs is generally applicable. Wherever they are to be placed, if the soil is at all dry at the bottom, no matter how poor it may be, it should be stirred or trenched 3 feet deep. In the case of single plants, where a pit or hole only is required, the narrowest diameter ought to be 4 feet, and if the bottom soil is poor, it should be removed, and some good added instead; but loose soil of this description will subside in time, and if the plants are tied to stakes, as many need be to keep them firm the first year or two, the sinking of the soil from under the roots may cause them to strain, or otherwise injure them, by cracking and letting in the dry winds to them. Another evil is, that when trees thus planted sink down gradually, additional soil is placed over the roots to make the surface level, and this is equivalent to planting too deep in the first instance, and deep planting is always to be avoided. Therefore the loose or new soil beneath the roots ought to be gently pressed down, and the pit filled up to near the surface of the ground, or to within 3 or 4 inches of it, so that, when the tree or bush is planted, the surface of the pit will appear a little mound, several inches above the surrounding surface. Plant fruit-trees shallow and on hard bottoms, to prevent their getting too luxuriant; but in gardening for ornamental plants, the more healthy and vigorous we can grow them the more ornamental they will be, unless, indeed, they are rather tender for our climate. In that case shallow planting on a solid or unloosed bottom suits them best, as they cannot grow too strong, and the wood will therefore ripen better. The shrub being taken up with long, bare roots, and a host of small fibres, and a considerable ball of soil attached close up to the bole or bottom of the plant, place this ball in the middle of the prepared pit, and fill in the loose soil under the strong roots, so that they may lie in their natural position; and in doing it, if the small fibres are pressed down too much, loosen them back again, and fill in any cavities under the bole or main roots. When the roots, great and small, each of them branching out in straight lines, are as regular as they can be placed, some of the lower ones will be out of sight, but the majority are still in view. Over those put a little better soil, thus: take a spadeful, and throw it past the stem of the plant on the roots on the opposite side to you, so that the soil runs along in the same direction as the roots. If you throw it on the roots next to you, it will run against their direction and turn back their small points, which would be nearly as bad as the old way of shaking the plant up and down at this stage. When all the roots are covered an inch or two, the watering-pot must come, with a large rose to it, and you must water all over the surface heartily, even if it is a rainy day. This watering is to do the business of the old shaking—settle the finer particles of the soil about the roots. The rest of the soil, to the depth of 4 or 5 inches, may be thrown on anyhow, if the lumps are broken small, so that the surface is pretty smooth, and formed into a shallow basin to hold the future waterings. A stout stake, or stakes, according to the size of the plant, should be driven down before the earth is put over the roots, to keep the plant from wind-waving. When large, bushy evergreens are to be removed, their branches must be tied up towards the stem by passing a rope or strong cord round them before commencing at the roots.

PLASHING is a mode of repairing or modifying a hedge by bending down a portion of the shoots, cutting them half through near the ground to render them more pliable, and twisting them among the upright stems, so as to render the whole more effective as a fence, and, at the

same time, preserve all the branches alive. For this purpose, the branches to be plashed, or bent down, must not be cut more than half through, in order that a sufficient portion of sap may rise up from the root to keep alive the upper part of the branches. Where hedges are properly formed and kept, they can very seldom require to be thus maimed.

PLASTER OF PARIS. See GYPSUM.

PLATANTHE'RA. (From *platus*, broad, and *anthera*, an anther. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Habenaria.)

P. cilia'ris (hair-fringed). See HABENARIA CILIARIS.
„ *crista'ta* (crested). See HABENARIA CRISTATA.
„ *dilata'ta* (spread). See HABENARIA DILATATA.
„ *fimbria'ta* (fringed). See HABENARIA LACERA.
„ *herbi'ola* (small-herb). See HABENARIA HERBIOLA.
„ *holope'tala* (all-petaled). See HABENARIA BLEPHARIGLOTTIS.
„ *Hoo'keri* (Hooker's). See HABENARIA HOOKERIANA.
„ *hyperbo'rea* (northern). See HABENARIA HYPERBOREA.
„ *inci'sa* (cut). Pale yellow. See HABENARIA INCISA.
„ *psycho'des* (butterfly-like). See HABENARIA LACERA.
„ *Susa'nnæ* (Susanna). See HABENARIA SUSANNÆ.

PLA'TANUS. Plane-tree. (From *platus*, broad; the wide-spreading head of the trees. Nat. ord. *Planes* [Platanaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

Hardy deciduous trees, flowering in April. Seeds in the autumn, and preserved until spring; cuttings, also, in spring and autumn, but chiefly and most quickly by layers in autumn and spring; deep, mellow loam.

P. acerifo'lia (Acer-leaved). 70–80. Orient. "London Plane."
„ „ *fo'liis arge'nteis* (silvery-leaved). Leaves variegated with silvery-white. 1887.
„ *cunea'ta* (wedge-shaped). 15–25. Orient. 1739.
„ *occidenta'lis* (western). 70. N. Amer. 1636. "Button Wood."
„ „ *au'rea variega'ta* (golden-variegated-*leaved*). 70. 1846.
„ „ *heterophy'lla* (various-leaved). Amer. 1842.
„ „ *integrifo'lia* (entire-leaved). 70. 1845.
„ *orienta'lis* (eastern). 50. Levant. 1548. "Oriental Plane."
„ „ *acerifo'lia* (maple-leaved). See P. ACERIFOLIA.
„ „ *cunea'ta* (wedge-*leaved*). See P. CUNEATA.
„ „ *hispa'nica* (Spanish). 70. Spain.
„ „ *lacinia'ta* (cut-*leaved*). 70. 1845.
„ „ *monstro'sa* (monstrous). 70. 1845.

PLATYCA'RPHA. (From *platus*, broad, and *karphos*, dried straw; in allusion to the dry-looking scales surrounding the flower-head. Nat. ord. Compositæ.)

Half-hardy or greenhouse perennial herbs. Seeds; divisions in spring. Fibrous loam, leaf-mould, and sand.

P. glomera'ta (clustered). ½. Blue or violet. August. S. Africa. 1824.

PLATYCA'RPUM. (From *platus*, broad, and *karpos*, a fruit; the two halves of the fruit being broad and flattened. Nat. ord. Rubiaceæ.)

Stove tree. Cuttings of half mature wood in sand, in a close case, with bottom-heat. Loam, peat, or leaf-mould, and sand.

P. orinoce'nse (Orinoco). 20. Light rose. March. Venezuela. 1813.

PLATYCA'RYA. (From *platus*, broad, and *karuon*, a nut; in allusion to the bracts covering the fruits. Nat. ord. Juglandaceæ.)

A small tree, hardy in the more favoured parts of the south and west of England, and in Ireland. Nuts. Ordinary soil.

P. strobila'cea (cone-like). Yellow-green. August. Japan and N. China. 1844.

PLATYCE'RIUM. (From *platus*, broad, and *keras*, a horn; form of the fertile fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.]

Stove Ferns. See FERNS.

P. æthio'picum (Ethiopian). 1–2. Brown. Trop. Africa. 1822.
„ *alcico'rne* (elk's-horn). ½. Brown. August. N.S. Wales. 1808.
„ „ *Cordre'yi* (Cordrey's).
P. alcico'rne dive'rgens (diverging).
„ „ *Hi'llii* (Hill's). 1½. Queensland. 1878.
„ „ *ma'jus* (larger). Polynesia. 1870.
„ „ *Ma'yii* (May's). Arching fronds more drooping, more deeply cut. 1904.
„ *angole'nse* (Angolan). Fertile frond broad cuneate, undivided. Angola. 1898.
„ *bifo'rme* (two-shaped). 4. Brown. April. Philippines; Malaya. 1842.
„ *Ghelli'nckii* (Ghellinck's). 1882.
„ *gra'nde* (grand). Brown. July. Moreton Bay. 1828.
„ *Hi'llii* (Hill's). See P. ALCICORNE HILLII.
„ *Stemma'ria* (Stemmaria). See P. ÆTHIOPICUM.
„ *Va'ssei* (Vasse's). Barren fronds not laciniate; fertile fronds regularly forked. Mozambique. 1910.
„ *Vei'tchii* (Veitch's). Fronds erect, leathery, dark green. 1896.
„ *Walli'chii* (Wallich's). Barren frond deeply lobed; fertile in pairs, pendent. Malaya. 1860.
„ *Willi'nckii* (Willinck's). Java. 1875.

PLATYCHI'LUM CELSIA'NUM. See HOVEA CELSI.

PLATYCLI'NIS. (From *platus*, broad, and *klinis*, diminutive of *kline*, a bed; in reference to the broad axis of the spike on which the flowers are seated. Nat. ord. Orchidaceæ.)

Stove epiphytical Orchids, of considerable interest, but not very showy. Divisions at the commencement of growth. The fibre of peat, sphagnum, bits of charcoal and plenty of crocks.

P. abbrevia'ta (shortened). Green, white, yellow. Java. 1844.
„ *arachni'tes* (spider). Philippines.
„ *ba'rbifrons* (bearded-front). Whitish-green, fringed with warts in front. Sumatra. 1902.
„ *cobbia'na* (Cobbian). 1. Pale yellow, orange. Philippines. 1880.
„ *cucumeri'na* (cucumber-like). Pale green. Philippines. 1885.
„ *filifo'rmis* (thread-formed). 1. Pale greenish-yellow. Philippines. 1836.
„ *gluma'cea* (large-glumed). 1. White, fragrant. Philippines.
„ „ *va'lida* (strong). A much stronger plant. 1909.
„ *latifo'lia* (broad-leaved). Philippines.
„ *longifo'lia* (long-leaved). Trop. Asia.
„ *ru'fa* (reddish). 1. Reddish-brown. 1898.
„ *unca'ta* (hooked). Philippines.

PLATYCO'DON. (From *platus*, broad, and *kodon*, a bell; form of flower. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy herbaceous perennials. Seeds and divisions in spring, and cuttings of young shoots in summer, under a hand-light; sandy, mellow loam.

P. autumna'le (autumnal). See P. GRANDIFLORUM.
„ *chine'nse* (Chinese). See P. GRANDIFLORUM.
„ *grandiflo'rum* (large-flowered). 1. Blue. June. China and Japan. 1782. "Chinese Bellflower."
„ „ *a'lbum* (white). 1. White. June. North of China. 1845.
„ „ *a'lbum semiple'num* (semi-double-white). 1. White. June. China. 1845.
„ „ *Marie'sii* (Maries's). ½. Flowers larger. 1881.
„ *sine'nsis* (Chinese). See P. GRANDIFLORUM.

PLATYCRA'TER. (From *platus*, broad, and *krater*, a bowl; in reference to enlarged calyx of the sterile flowers. Nat. ord. Saxifragraceæ.)

A dwarf, hardy shrub allied to Philadelphus. Cuttings in sand, under a hand-light in summer. Ordinary soil.

P. argu'ta (acute). 1–2. Creamy-white. Japan.

PLATYLEPIS. (From *platus*, broad, and *lepis*, a scale; in allusion to the broad, overlapping bracts of the spike. Nat. ord. Orchidaceæ.)

Greenhouse terrestrial orchids, with creeping rhizomes and ascending leafy stems. Divisions. Fibrous loam, fibrous peat, leaf-mould, and sand.

P. austra'lis (southern). ½–1. Green, with the upper half of the lip white. Natal. 1906.
„ *densiflo'ra* (dense-flowered). ½–1. Green, white, with narrow segments. Mascarene Islands. 1906.
„ *glandulo'sa* (glandular). S. Africa.

PLATYLO'BIUM. Flat Pea. (From *platus*, broad, and *lobos*, a pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Hovea.)

Greenhouse evergreens, from Australia, and orange-flowered, except where otherwise mentioned. Seeds in spring, in a slight hotbed, after placing them several hours in water, at a temperature of 130°; also by cuttings of the half-ripened short shoots in sand, under a bell-glass, in April; fibrous, sandy peat chiefly, with a very little fibrous loam, charcoal, and broken potsherds, with pots extra well drained. Stagnant water, especially in winter, destroys them. Winter temp., 40° to 48°.

P. formo'sum (beautiful). 4. July. 1790.
„ *lanceola'tum* (lance-shaped). See BOSSIÆA HETEROPHYLLA.
„ *microphy'llum* (small-leaved). See BOSSIÆA MICROPHYLLA.
„ *murraya'num* (Murray's). See P. TRIANGULARE.
„ *obtusa'ngulum* (obtuse-angled). 1. Yellow, red. May. 1832.
„ *ova'tum* (egg-*leaved*). See BOSSIÆA HETEROPHYLLA.
„ *parviflo'rum* (small-flowered). See P. FORMOSUM.
„ *scolope'ndrium* (centipede-like). See BOSSIÆA SCOLOPENDRIA.
„ *triangula're* (triangular) of Sims. See P. OBTUSANGULUM.
„ *triangula're* (triangular-*leaved*) of R. Brown. 4 Yellow, red. July. 1805.

PLATYLO'MA. (From *platus*, broad, and *loma*, an edge. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Pellæa.)

P. andromedæfo'lia (Andromeda-*leaved*). See PELLÆA ANDROMEDÆFOLIA.
„ *a'tro-purpu'rea* (dark purple). See PELLÆA ATROPURPUREA.
„ *Bro'wnii* (Brown's). May. Australia.
„ *calome'lanos* (beautiful-dark). See PELLÆA CALOMELANOS.
„ *corda'ta* (heart-shaped). See PELLÆA CORDATA.
„ *falca'ta* (sickle-shaped). See PELLÆA FALCATA.
„ *flexuo'sa* (zigzag). See PELLÆA CORDATA FLEXUOSA.
„ *grandifo'lia* (large-leaved). See PTERIS GRANDIFOLIA.
„ *rotundifo'lia* (round-leaved). See PELLÆA ROTUNDIFOLIA.
„ *sagitta'ta* (arrow-shaped). See PELLÆA CORDATA SAGITTATA.
„ *ternifo'lia* (three-leafleted). See PELLÆA TERNIFOLIA.

PLATYLO'PHUS. (From *platus*, broad, and *lophos*, a crest; seed-pod compressed so as to seem winged. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Allied to Weinmannia.)

Greenhouse evergreen tree. Cuttings of ripe shoots in sand, under a glass, in April or May; loam and peat. Winter temp., 40° to 45°.

P. trifolia'tus (three-leafleted). White. June. S. Africa. 1820. "White Ash."

PLATYO'SPRION. (From *platus*, broad, and *osprion*, pulse; in allusion to the broad pods. Nat. ord. Leguminosæ.)

A hardy tree, closely similar to *Sophora japonica*, but very different in fruit. Seeds; grafting and layers. Ordinary soil.

P. platyca'rpum (broad-fruited). White. Japan. 1896.

PLATYPE'TALUM PURPURA'SCENS. See BRAYA ALPINA PURPURASCENS.

PLATY'STACHYS. See TILLANDSIA.

PLATYSTE'MMA. (From *platus*, broad, and *stemma*, a crown; in allusion to the broad, flat flower, which is solitary. Nat. ord. Gesneraceæ.)

Perennial, slender, greenhouse or half-hardy herb. Seeds; and leaf cuttings. Fibrous loam, leaf-mould, and sand.

P. violoï'des (Viola-like). ¼. Violet. Himalaya.

PLATYSTE'MON. (From *platus*, broad, and *stemon*, a stamen. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Hardy, yellow-flowered annual. Seeds in April; common, rich, light soil.

P. califo'rnicus (Californian). 1. August. California. 1833. "Californian Poppy."
„ *leioca'rpus* (smooth-fruited). See P. CALIFORNICUS.

PLATYSTI'GMA. (From *platus*, broad, and *stigma*, the female organ. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Platystemon.)

Half-hardy herbaceous perennial. Seeds and divisions in spring; common, light soil; requires a little protection in winter.

P. linea're (narrow-*leaved*). ½. Yellow. California. 1833.

PLATYTHE'CA. (From *platus*, broad, and *theke*, a case; the anthers are broad. Nat. ord. Tremandraceæ.)

Greenhouse shrub of slender habit. Cuttings of young side-shoots in sand, under a bell-glass, wiped dry every morning to prevent damping. Fibrous peat, a little loam, some lumps of charcoal, and sand.

P. galioï'des (Galium-like). 1–1½. Blue. June. Australia. 1845.

PLEASURE-GROUND is a collective name for that combination of parterres, lawns, shrubberies, waters, arbours, &c., which are noticed individually in these pages. One observation may be applied to all—let congruity preside over the whole. It is a great fault to have any one of those portions of the pleasure-ground in excess; and let the whole be proportioned to the residence. It is quite as objectionable to be overgardened as to be over-housed.

PLECTOCE'PHALUS. See CENTAUREA.

PLECTOCO'MIA. (From *plektos*, plaited, and *kome*, the terminal tuft of leaves; probably the leaves are used for making ropes. Nat. ord. Palmaceæ.)

Stove palms. Seeds. Fibrous loam, one-third peat and sand. Winter temp., 50° to 60°; summer, 60° to 80°.

P. Anderso'ni (Anderson's). India. 1874.
„ *assa'mica* (Assamese). 80. Assam. 1841.
„ *crini'ta* (bristly). Leaf-stalks covered with white spines. 1896.
„ *elonga'ta* (elongated). Java; Sumatra; Penang.
„ *Griffi'thii* (Griffith's). Malacca.
„ *himalaya'na* (Himalayan). Himalaya. 1878.
„ *specta'bilis* (showy). Country unknown.

PLECTO'GYNE. See ASPIDISTRA.

PLECTRA'NTHUS. (From *plektron*, a cock's spur, and *anthos*, a flower. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Herbaceous, by seeds and divisions; shrubs, at times by seeds, but chiefly by cuttings in sand, under a bell-glass; rich, sandy soil will suit them all. Temperature that of the greenhouse and stove. There are many more species beside the following:

P. a'lbo-cæru'leus (white-blue). 3–5. White and bluish. British Central Africa. 1899. Greenhouse.
„ *a'sper* (rough). See COLEUS BARBATUS.
„ *austra'lis* (southern). See P. PARVIFLORUS.
„ *barba'tus* (bearded). See COLEUS BARBATUS.
„ *coleoï'des* (Coleus-like). 1–2. Lilac. India. 1865.
„ *chiradzule'nsis* (Chiradzulan). 3. Light blue. Winter. British Central Africa. 1904. Greenhouse.
„ *como'sus* (tufted). See COLEUS BARBATUS.
„ *Coppi'ni* (Coppin's). Tubers eaten in the Soudan. Trop. Africa. 1900. Stove.
„ *cra'ssus* (thick). 3. Purple-blue. British Central Africa. 1904. Greenhouse.
„ *cylindra'ceus* (cylindrical). Lilac. Abyssinia. 1894. Greenhouse.
„ *fœ'tidus* (stinking). 3–5. Bright blue. E. Australia. 1877. Greenhouse.
„ *Forska'læi* (Forskahl's). See COLEUS BARBATUS.
„ *frutico'sus* (shrubby). 4. Blue. July. S. Africa. 1774.
„ *glaucoca'lyx* (sea-green-calyxed). Amurland.
„ *hadie'nsis* (Hadian). ½. Lilac-purple, spotted. Abyssinia. 1894. Greenhouse.
„ *herba'ceus* (herbaceous). Lilac. Abyssinia. 1894. Greenhouse.
„ *inca'nus* (hoary). 3. Blue. July. India. 1822. Greenhouse herbaceous.
„ *infle'xus* (inflexed). Japan.
„ *Maho'ni* (MacMahon's). 3. Violet-blue. British Central Africa. 1902. Greenhouse.

P. marrubioi'des (Marrubium-like). Small white. Abyssinia. 1894. Greenhouse.
„ *parvifio'rus* (small-flowered). 2–3. Pale purple. Summer. Australia.
„ *purpura'tus* (purple). Natal.
„ *rubicu'ndus* (red). See ORTHOSIPHON RUBICUNDUS.
„ *rugo'sus* (wrinkled). Himalaya.
„ *sacca'tus* (pouched). 3–4. Large pale blue. Natal. 1902. Greenhouse. Largest-flowered.
„ *Schweinfu'rthi* (Schweinfurth's). Small, blue. Arabia. 1894.
„ *scutellarioi'des* (Scutellaria-like). See COLEUS BLUMEI.
„ *terna'tus* (three-leafleted). ¾. Purple. August. Madagascar. 1821. Stove herbaceous. "Opime Plant."
„ *ternifo'lius* (three-leaved). 2. Blue. August. Nepaul. 1820. Greenhouse herbaceous.
„ *visco'sus* (clammy). See OCIMUM VISCOSUM.

PLECTRI'TIS. (From *plektron*, a cock's spur; the flower being swollen in front. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Valerianella.)
P. brachyste'mon (short-stamened). See VALERIANELLA CONGESTA.
„ *conge'sta* (crowded-*flowered*). See VALERIANELLA CONGESTA.
„ „ *mi'nor* (smaller-*flowered*). See VALERIANELLA CONGESTA MINOR.
„ *samolifo'lia* (Samolus-leaved). See VALERIANELLA SAMOLIFOLIA.

PLECTRO'NIA. (From *plektron*, a cock's spur; the tree armed with large spines. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Chiococca.)
Greenhouse evergreen trees. Cuttings in sand, under a bell-glass, in May, and placed in a cold frame; sandy peat and fibrous loam. Winter temp., 40° to 48°.
P. corymbo'sa (corymbed). See P. VENTOSA.
„ *spino'sa* (spiny). 10–10. White. S. Africa.
„ *vento'sa* (windy). 20. White, green. S. Africa. 1816.

PLEIOCA'RPA. (From *pleios*, full, and *karpos*, a fruit; the flowers are remarkable in having five, instead of two, carpels. Nat. ord. Apocynaceæ.)
Stove evergreen shrub. Cuttings of short side-shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
P. mu'tica (snipped). 5. Pure white. W. Trop. Africa. 1910.

PLEIO'NE. See CŒLOGYNE.

PLEOCNE'MIA. See NEPHRODIUM.

PLEOPE'LTIS. (From *pleos*, full, and *pelte*, a shield; referring to the covering of the spore or seed-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Referred to Polypodium.)
P. a'lbido-squama'ta (white-scaled). See POLYPODIUM ALBO-SQUAMATUM.
„ *elonga'ta* (elongated). Yellow. May. S. Amer. 1843.
„ *ensifo'lia* (sword-leaved). See POLYPODIUM LANCEOLATUM.
„ *fo'ssa* (dug-out). See POLYPODIUM FOSSUM.
„ *hasta'ta* (halbert-shaped). See POLYPODIUM HASTATUM.
„ *incurva'ta* (incurved). See POLYPODIUM INCURVATUM.
„ *lanceola'tum* (spear-headed). See POLYPODIUM LANCEOLATUM.
„ *latifo'lia* (broad-leaved). See POLYPODIUM LATIFOLIUM.
„ *nu'da* (naked). See POLYPODIUM LINEARE.
„ *percu'ssa* (stricken). See POLYPODIUM PERCUSSUM.
„ *pi'cta* (painted). See POLYPODIUM PICTUM.
„ *salicifo'lium* (willow-leaved). See POLYPODIUM LYCOPODIOIDES SALICIFOLIUM.
„ *Sci'pias* (Scipias). See POLYPODIUM XIPHIAS.
„ *se'rpens* (creeping). See POLYPODIUM SWARTZII.
„ *Xi'phias* (Xiphias). See POLYPODIUM XIPHIAS.

PLERA'NDRA. (From *pleres*, full, and *aner*, a man; the stamens are numerous, in two or more series. Nat. ord. Araliaceæ.)
Stove trees, with digitate, compound, evergreen leaves. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

P. Græ'flei (Græff's). Apparently a misprint for *P. Grayi*.
„ *Gra'yi* (Gray's). Green. Leaflets 8–10. Fiji. 1887.
„ *vitie'nsis* (Fijian). Green. Fiji. 1887.

PLERO'MA. (From *pleroma*, fullness; the cells of the seed-vessel. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Tibouchina.)
P. barbi'gerum (beard-bearing). See TIBOUCHINA BARBIGERA.
„ *benthamia'num* (Bentham's). See TIBOUCHINA BENTHAMIANA.
„ *ca'ndidum* (white). Pure white. S. Australia. 1905.
„ *e'legans* (elegant). See TIBOUCHINA ELEGANS.
„ *exappendicula'tum* (unappendaged). See TIBOUCHINA MOLLIS.
„ *gaudichaudia'num* (Gaudichaudian). See TIBOUCHINA GAUDICHAUDIANA.
„ *gaya'num* (Gayan). White, yellow. October, November. Peru. 1874.
„ *glandulo'sum* (glandular). ¾. White. March. Guiana. 1824.
„ *glomera'tum* (clustered). 1. Pink. July. W. Ind. 1818.
„ *granulo'sum* (granular). See TIBOUCHINA GRANULOSA.
„ *heteroma'llum* (variable haired). See TIBOUCHINA HETEROMALLA.
„ *holoseri'ceum* (wholly-silky). See TIBOUCHINA HOLOSERICEA.
„ *kunthia'num* (Kunth's). See TIBOUCHINA BENTHAMIANA.
„ *la'xum* (loose). Violet. Peru. 1867. Greenhouse.
„ *macra'nthum* (large-flowered). See TIBOUCHINA SEMIDECANDRA.
„ *marmora'tum* (marbled). Bluish-purple. Leaves blotched with cream. 1884.
„ *sarmento'sum* (twiggy). See P. LAXUM.
„ *semideca'ndrum* (half-ten-anthered). See TIBOUCHINA SEMIDECANDRA.
„ „ *floribu'ndum* (free-flowering). See TIBOUCHINA SEMIDECANDRA FLORIBUNDUM.
„ *strigo'sum* (strigose). See TIBOUCHINA ORNATA.
„ *villo'sum* (shaggy). See MELASTOMA VILLOSUM.
„ *vimi'neum* (twiggy). See TIBOUCHINA VIMINEA.

PLEURA'NDRA. (From *pleuron*, a side, and *aner*, an anther; the stamens arranged on one side of the pistil, giving the centre of the flower a one-sided appearance. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 2-*Digynia*. Now referred to Hibbertia.)
P. acicula'ris (needle-shaped). See HIBBERTIA ACICULARIS.
„ *bractea'ta* (large-bracted). See HIBBERTIA BRACTEATA.
„ *calyci'na* (large-calyxed). See HIBBERTIA STRICTA.
„ *Cneo'rum* (Cneorum). See HIBBERTIA NITIDA.
„ *ericæfo'lia* (heath-leaved). See HIBBERTIA STRICTA.
„ *ni'tida* (shining). See HIBBERTIA NITIDA.
„ *sca'bra* (rough). See HIBBERTIA BILLARDIERI.
„ *stri'cta* (erect). See HIBBERTIA STRICTA.

PLEURI'DIUM. (From *pleuron*, a side, and *eidos*, aspect; in reference to the lateral position of the spore cases. Nat. ord. Filices or Ferns. See Polypodium.)
P. crassifo'lium (thick-leaved). See POLYPODIUM CRASSIFOLIUM.
„ *juglandifo'lium* (walnut-leaved). See POLYPODIUM JUGLANDIFOLIUM.
„ *palma'tum* (hand-shaped). See POLYPODIUM PALMATUM.
„ *rupe'stre* (rock). See POLYPODIUM RUPESTRE.
„ *venu'stum* (lovely). See POLYPODIUM HIMALAYENSE.

PLEUROGRA'MMA LINEA'RIS. See MONOGRAMME GRAMINEA.

PLEURO'GYNA. (From *pleuron*, a side, and *gune*, the female organ; this issuing from the side of the seed-vessel. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Gentian.)
Hardy annual. Seeds in April; chalky loam, and a small portion of peat.
P. carinthi'aca (Carinthian). ¾. Blue. August. Europe; Northern Asia. 1827.
„ *rota'ta* (wheel-shaped-*flowered*). See P. CARINTHIACA.

PLEUROPE'TALUM. (From *pleuron*, a rib, and *petalon*, a petal; in allusion to the numerous ribs of the petals. Nat. ord. Portulaceæ.)

A stove half-shrubby plant. Cuttings in sand, with bottom-heat. Fibrous loam, a little peat, and plenty of sand.

P. costarice'nse (Costa Rican). Green to scarlet. Berries bright crimson. Trop. Amer. 1883.

PLEUROSPE'RMUM. (From *pleuron*, a rib, and *sperma*, a seed; the fruits are strongly ribbed. Nat. ord. Umbelliferæ.)

Hardy perennial or biennial herbs. Seeds; divisions. Ordinary soil.

P. angelicoi'des (Angelica-like). Himalaya.
„ *austri'acum* (Austrian). 3. White. June to September. Europe. 1597.
„ *Bruno'nis* (Brown's). Himalaya.
„ *denta'tum* (toothed). Himalaya.
„ *Gola'ka* (Golaka). Europe.
„ *pu'lchrum* (beautiful). Afghanistan.

PLEUROTHA'LLIS. (From *pleuron*, a side, and *thallo*, to bloom. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Stove orchids, not possessing much beauty, but are interesting, curious little plants. They thrive best upon blocks of wood, with a small portion of moss tied to the block. The best form of block is a round one, with the top cut sloping at an angle of 45°, the plant to be fixed on the sloping part. These blocks can then be placed on the lower end, which should be cut horizontally, to allow them to stand firmly in that position. They are also grown in small pots and pans.

P. aphtho'sa (wingless). Yellow. January. Mexico. 1839.
„ *apicula'ta* (finely-pointed). ½. Pale yellow. Venezuela. 1908.
„ *atropurpu'rea* (dark-purple). See CRYPTOPHORANTHUS ATROPURPUREUS.
„ *attenua'ta* (drawn-out). 1/12. Light green, purple; lip greenish-white. 1909.
„ *auriculi'gera* (auricle-bearing).
„ *autrania'na* (Autranian). Light yellow, spotted and striped with purple-brown. 1895.
„ *a'viceps* (bird's-head). See MASDEVALLIA AVICEPS.
„ *barberia'na* (Barberian). Light ochre, blotched purple; petals whitish. S. Amer. 1881.
„ *barbosa'na* (Barbosan). ½. Yellow. Brazil. 1906.
„ *bicarina'ta* (two-keeled). Brazil. 1839.
„ *bilamella'ta* (two-plated). Bright red. Mexico. 1870.
„ *Birchena'llii* (Birchenall's). ½. Reddish-purple, light green, greenish-white. Colombia. 1909.
„ *Bowma'nni* (Bowman's). Brazil. 1869.
„ *cardiocre'pis* (heart-slippered). August. 1891.
„ *cilia'ta* (eye-lashed). ½. Yellow. Guiana. 1837.
„ *circumple'xa* (bound-round). Green. February. Mexico. 1837.
„ *cocci'nea* (scarlet). See RODRIGUEZIA SECUNDA.
„ *cogniauxia'na* (Cogniauxian). Pale, covered with purple lines and spots. Colombia. 1907.
„ *conve'rgens* (converging). White, fragrant. Brazil. 1899.
„ *crini'fera* (hair-bearing). 1/12. Light green, brown, red-purple; lip whitish. Brazil. 1910.
„ *cuneifo'lia* (wedge-leaved). 1/12. Pale yellow, carmine-red, reddish-brown. Brazil. 1910.
„ *discoi'dea* (discoid). ½. Yellow. September. Trinidad. 1880.
„ *du'bia* (doubtful). ½. Yellow; lip orange. Mexico. 1907.
„ *e'legans* (elegant). Violet. New Grenada. 1842.
„ *flexuo'sa* (zigzag). Purple. September. Peru. 1842.
„ *floripe'cten* (flower-comb). Yellow, purple. Colombia. 1867.
„ *fra'gilis* (brittle). Orange, yellow. May. Rio Janeiro. 1839.
„ *fu'lgens* (shining). Scarlet. Costa Rica. 1875.
„ *ge'lida* (cold). Yellowish. May. Jamaica. 1841.
„ *geniculа'ta* (kneed). Pale yellow. Peru.
„ *glanduli'gera* (gland-bearing). Brazil. 1836.
„ *gra'cilis* (graceful). Brazil.
„ „ *Bino'ti* (Binot's). Lateral sepals wholly united. Brazil. 1906.
„ *grandiflo'ra* (large-flowered). Peru. 1842.
„ *Gro'byi* (Groby's). ½. Yellow, spotted with crimson. Brazil and Guiana. 1834.
„ *Hartwe'gii* (Hartweg's). See P. GENICULATA.
„ *hemirho'da* (half-red). White, red. Colombia. 1852.
P. imme'rsa (immersed). Colombia.
„ *infla'ta* (inflated). ½. Whitish, solitary. Colombia. 1894.
„ *insi'gnis* (remarkable). ½. Whitish-green, striped purple; lip blackish-purple. Venezuela. 1887.
„ *johanne'nsis* (Johannan). Brazil.
„ *Krænzli'ni* (Krænzlin's). Purple and silvery-white. 1894.
„ *lancea'na* (Lancean). ½. Yellow, marked with crimson. Guiana. 1831.
„ *lateri'tia* (brick-red). Brick-red. Costa Rica. 1872.
„ *leptotifo'lia* (Leptotes-leaved). Brazil.
„ *Li'ngua* (tongue-*leaved*). Purple. August. Brazil. 1842.
„ *liparau'ges* (brilliantly-shining). Light reddish-ochre. Brazil. 1885.
„ *longi'ssima* (longest). Greenish. Mexico.
„ *lepanthifo'rmis* (Lepanthes-formed). See P. VILLOSA.
„ *lu'teola* (yellowish-*flowered*). See P. FRAGILIS.
„ *macroble'pharis* (long-eye-lashed). White, blackish. Peru. 1875.
„ *macula'ta* (blotched). ½. White and purple. Brazil. 1893.
„ *malacha'ntha* (soft-flowered). Brazil.
„ *margina'ta* (margined). Purple. April. Guatemala. 1836.
„ *monophy'lla* (one-leaved). White. Guiana.
„ *muscoi'dea* (moss-like). Pale yellow. June. Brazil. 1837.
„ *mutabi'nda* (much-changing). Winter. Brazil.
„ *oblongifo'lia* (oblong-leaved). Red. Cuba. 1836.
„ *obova'ta* (reversed-egg-*leaved*). Pale yellow. May. Peru. 1834.
„ *occu'lta* (hidden-*flowered*). Brown. January. Brazil. 1837.
„ *ochrea'ta* (reddish-yellow). Red, yellow. September. Brazil. 1839.
„ *octomeroi'des* (Octomeria-like). Autumn. Mexico. 1836.
„ *ophioce'phala* (snake's-head). See RESTREPIA OPHIOCEPHALA.
„ *orbicula'ris* (orbicular). Guiana. 1842.
„ *orna'ta* (adorned). Yellow, with purple markings. April. Trop. Amer.
„ *pachyglo'ssa* (thick-tongued). Purple. March. Mexico. 1837.
„ *panduri'fera* (fiddle-formed). Yellow. Brazil. 1842.
„ *pa'radipes* (pard-footed). Yellow-brown. Brazil. 1868.
„ *pa'rva* (small). ½. Yellow. Brazil. 1895.
„ *pectina'ta* (comb-like). Green, purple. July. Brazil. 1837.
„ *peduncula'ta* (long-stalked). Green. December. Venezuela. 1852.
„ *pergra'cilis* (very-graceful). ½. Yellowish, with purple lines. British Honduras. 1893.
„ *pernambuce'nsis* (Pernambucan). Green and purple. Brazil. 1894.
„ *pi'cta* (painted). ½. Bright yellow and red. Demerara. 1887.
„ *plantagi'nea* (plantain-like). Peru. 1842.
„ *platyra'chis* (broad-rachised). 1. Yellow. Costa Rica. 1884.
„ *platy'stachys* (broad-spiked). Green, dotted with purple. Brazil. 1888.
„ *plumo'sa* (feathery-*petaled*). Green, purple. Costa Rica. 1840.
„ *polyli'ria* (many-ridged). Greenish-white. Costa Rica. 1871.
„ *proli'fera* (proliferous). ½. Purple, rose. Autumn. Brazil. 1826.
„ *pube'rula* (finely-downy). Green, dull yellow, fragrant. 1893.
„ *pulche'lla* (neat). Purple. Colombia.
„ *puncta'ta* (dotted) of Ker-Gawler. See NOTYLIA PUNCTATA.
„ *puncta'ta* (dotted) of Lindley. Yellow, purple. April. Brazil. 1842.
„ *punctula'ta* (finely-dotted). ½. Light yellow, spotted purple-brown. Colombia. 1888.
„ *pyrso'des* (torch-like). Orange, solitary. Central Amer. 1876.
„ *recu'rva* (curled-back-*spiked*). Purple. January. Brazil. 1841.
„ *regelia'na* (Regelian). Ochreous, reddish, whitish, purple. Minas Geraes. 1886.

P. Raymo'ndi (Raymond's). Purple. Venezuela. 1863.
„ *restrepioi'des* (Restrepia-like). Purple, green. Peru. 1836.
„ *rhombipe'tala* (diamond-petaled). Green and purple. British Guiana. 1893.
„ *Rœ'zlii* (Rœzl's). ½. Purple-brown. Colombia. 1888.
„ *ro'seo-puncta'ta* (rosy-dotted). White, rose. August. Venezuela.
„ *rotundifo'lia* (round-leaved). 1/12. Yellow and purple. Jamaica. 1895.
„ *ru'bens* (reddening). Reddish. June. Brazil.
„ *ru'fa* (reddish). ½. Brown-red; lip purple. Mexico. 1898.
„ *ruscifo'lia* (Ruscus-leaved). Trop. Amer. 1798.
„ *saundersia'na* (Saundersian). Pale brown. Brazil. 1866.
„ *saurocе'phala* (Saurus-headed). Yellow-green. Brazil. 1829.
„ *Sca'pha* (skiff). White, brownish-purple. July. 1874.
„ *Scla'rea* (Sclarea). Red, orange. Colombia. 1876.
„ *semipellu'cida* (half-pellucid). April. Venezuela.
„ *seria'ta* (rowed). Yellow, green. May. Brazil. 1842.
„ *sertularioi'des* (Sertularia-like). White. Jamaica.
„ *sica'ria* (dagger-shaped). Green, yellow. May. Trop. Amer. 1841.
„ *smithia'na* (Smith's). Green, purple. May. Rio Janeiro. 1842.
„ *spectrili'nguis* (spectre-lipped). 1/3. Straw, purple-mauve; lip olive-brown. 1883.
„ *stenope'tala* (narrow-petaled). Brown, yellow. July. Trop. Amer. 1837.
„ *strupifo'lia* (strap-leaved). Purple, white. Year. Brazil. 1837.
„ *subulifo'lia* (awl-leaved). ½. Yellow, with purple lines. Brazil. 1908.
„ *tenui'ssima* (most-slender). Mexico.
„ *te'res* (round-*stemmed*). Cinnamon. August. Brazil. 1842.
„ *teretifo'lia* (round-leaved). ½. Brown, fleshy. Brazil. 1892.
„ *testæfo'lia* (brick-leaved). 1. W. Ind.; Venezuela. 1881.
„ *tigri'na* (tiger-spotted). Yellow, purple. August. Mexico. 1838.
„ *tribuloi'des* (caltrop-like). ½. Brick-red. W. Ind. 1887.
„ *tricarina'ta* (three-keeled). Orange. Peru.
„ *tridenta'ta* (three-toothed). Venezuela. 1840.
„ *unistria'ta* (one-lined). ½. Whitish, with purple lines. 1893.
„ *velaticau'lis* (supernumerary-stemmed). August. Venezuela.
„ *vela'tipes* (supernumerary-stalked). May. Venezuela.
„ *veno'sa* (veiny). ½-½. Greenish, with dusky brown lines. Trop. Amer. 1906.
„ *villo'sa* (shaggy). Purple. May. Mexico. 1838.
„ *vitta'ta* (branded). Purple. April. Mexico. 1837.
„ *wendlandia'na* (Wendlandian). November. Country doubtful.

PLO'CAMA. (From *plokamos*, curled hair. Nat. ord. Rubiaceæ.)
Greenhouse shrub of drooping habit. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.
P. pe'ndula (drooping). 2. White. Canaries. 1772.

PLOCOGLO'TTIS. (From *plokos*, braided or plaited, and *glossa*, a tongue; the lip is folded. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Divisions at the commencement of growth. Fibre of peat, sphagnum, bits of charcoal and crocks.
P. acumina'ta (long-pointed). Malaya.
„ *java'nica* (Javanese). Malaya.
„ *Lo'wii* (Low's). Pale yellow, brown. Borneo. 1865.

PLOCOSTE'MMA. (From *plokos*, braided or curled, and *stemma*, a crown. Nat. ord. Asclepiadaceæ. Now referred to Hoya.)
P. lasia'nthum (woolly-flowered). See HOYA LASIANTHA.

PLOUGHMAN'S SPIKENARD. *Ba'ccharis.*

PLU'CHEA. (Commemorative of *N. A. Pluche*, author of *Spectacle de la Nature*. Nat. ord. Compositæ.)
Greenhouse shrubs, with one exception. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.
P. ca'spica (Caspian). 2-3. Purple. August. Caspian Sea. Hardy herb.
„ *Diosco'ridis* (Dioscoridis's). 4. White. September. Trop. Africa.
„ *i'ndica* (Indian). 3. White. October. Trop. Asia and Australia. 1819.
„ *subdecu'rrens* (slightly-decurrent). 6. Purple. August. Mexico. 1823.

PLUM. *Pru'nus commu'nis* or *insiti'tia.*
Superior Kinds.—(1) Smith's Early Orleans; (2) Greengage; (3) Brandy Gage; (4) Washington; (5) White Magnum Bonum; (6) Impératrice; (7) Victoria, Denniston's Superb; (8) Coe's Golden Drop; (9) Early Prolific; (10) Ickworth Impératrice; (11) Coe's Late Red; (12) Pond's Seedling; (13) Reine Claude-Violette; (14) Kirke's; (15) Diamond; (16) Jefferson. Of these, Nos. 1, 3, and 9 are remarkable for their earliness as table fruit. Nos. 6, 7, 8, 10, 11, 13, 14, 16, for lateness as table fruit. Nos. 4, 7, 12, 15, are adapted for the kitchen.
Propagation: by Grafting.—The grafting of the Plum is performed in precisely the same manner as the Pear or the Apple, and at a similar period. The Brussels stock is principally used by our nurserymen; but for such gross sorts as the Washington, the Magnum Bonum, &c., it is a question whether the Muscle stock would not be fitter. We need not enlarge here on the process, which will be found in detail under the head GRAFTING.
Budding.—The same may be said of this process. See BUDDING.
Seed.—This is resorted to in order to procure new varieties; and to accomplish this, of course, seed from choice varieties is obtained. The mode of sowing, rearing, &c., will be found detailed in the articles PEACH and PEAR.
Culture during the Growing Period.—As with the Peach, the Nectarine, Pear, &c., so with the Plum. The first proceeding of the season is disbudding. About the beginning of May the trees burst forth into a great amount of spray, and much of this will be ill-placed; and, indeed, if well-placed, much too crowded. We are, of course, speaking of wall or espalier trees, for there the most attention is requisite. A progressive disbudding is best, the first consisting in merely removing the fore-right and back shoots, unless, as observed with regard to the other stone fruits, vacant spaces occur, when an ill-placed shoot is better than none. Shortly after this period, if the trees be strong, gross shoots or robbers will show themselves, which, when about 6 inches long, should have the points pinched off. In a few weeks more, another disbudding will be expedient, and by this time shoots of a proper character for final reservation may be determined on. The latter may be carefully tied or trained as soon as convenient, and every shoot of a doubtful character, in the thinning out, may have the point pinched off. The rest of the proceedings, indeed, are so similar to the *Peach*, that it is scarcely necessary to repeat them.
Culture during the Rest Period.—The trees will require some pruning, and this consists principally in thinning out, and reducing the snags or stumps of shoots pinched back in the summer previous. Our practice is to tie down on the old wood, or otherwise train in, as much of the short-jointed wood as possible, without cramming it too thick; for most of this wood will become studded with blossom-spurs in the succeeding summer. All that is not needed may be cut clear away, as in the Pear; and all useless stumps also. Where wood is wanting to furnish blanks, some of the leading shoots may be shortened back a little; and, indeed, any points may be shortened which appear spongy and immature. The trees may now be carefully trained or nailed in, and, if necessary, receive any dressing requisite for the insects.
Diseases and Insects.—See PEACH.

PLUKENE'TIA. (A commemorative name. Nat. ord. Euphorbiaceæ.)
Stove, evergreen twiner. Cuttings in sand in bottom-heat. Fibrous loam, peat, charcoal nodules, and sand.
P. volu'bilis (twining). Green. W. Ind.

PLUMBA'GO. Leadwort. (From *plumbum*, lead, or a disease of the eye so called, to which a species of *Plumba'go* was applied. Nat. ord. *Leadworts* [Plumbaginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Division of hardy herbaceous perennials, and also seeds and cuttings; cuttings of the tender kinds; the side, stubby shoots do best, but shoots at almost every age and size will strike freely in sand, under a bell-glass, in summer, and either kept cool, or with a little bottom-heat, according to the species. The tender species require the greenhouse or the stove. Sandy loam, and a little fibrous peat and dried leaf-mould.

GREENHOUSE EVERGREENS.

P. cæru'lea (sky-blue). 2. Blue. June to September. Peru. 1826. Annual.
„ *cape'nsis* (Cape). 1½. Blue. November. S. Africa. 1818.
„ „ *a'lba* (white). White. 1886.
„ *tri'stis* (dark-*flowered*). 1½. Brown. May. S. Africa. 1792.

STOVE EVERGREENS.

P. ju'ncea (rush-like). Madagascar.
„ *mexica'na* (Mexican). See P. SCANDENS.
„ *occidenta'lis* (western). See P. SCANDENS.
„ *pulche'lla* (pretty). 3. Violet. June to September. Mexico.
„ *rhombifo'lia* (diamond-leaved). See P. CÆRULEA.
„ *rhomboi'dea* (diamond-shaped) of Hooker. See P. CÆRULEA.
„ *rhomboi'dea* (diamond-shaped) of Loddiges. See P. PULCHELLA.
„ *ro'sea* (rosy). 1½. Red. May. India. 1777.
„ „ *supe'rba* (superb). Colour richer, brighter. 1863.
„ *sca'ndens* (climbing). 3. White. July. Trop. Amer. 1699. Climber.
„ *seyla'nica* (Cingalese). 2. White. June. Tropics of Old World. 1731.

HARDY HERBACEOUS.

P. europæ'a (European). 3. Blue. September. S. Europe. 1596.
„ *Larpe'ntæ* (Lady Larpent's). See CERATOSTIGMA PLUMBAGINOIDES.
„ *micra'ntha* (small-flowered). 1½–2. White. July. Siberia. 1829.

PLUM, CHERRY. *Pru'nus cerasi'fera.*

PLUM, GINGERBREAD. See PARINARIUM MACROPHYLLUM.

PLUMIE'RIA. (Named after *Plumier*, a celebrated French botanist. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cerbera.)

Stove evergreen trees and shrubs. Cuttings of ripe shoots in spring, in sand, under a hand-light, and in bottom-heat; sandy loam and a little fibrous peat. Winter temp., 50° to 55°, and rather dry; summer, 60° to 85°, with moist roots and atmosphere.

P. acumina'ta (pointed-*leaved*). See P. ACUTIFOLIA.
„ *acutifo'lia* (acute-leaved). 20. Red, yellow. July. Mexico. 1790.
„ *a'lba* (white). White. W. Ind.
„ *bi'color* (two-coloured). 25. White, yellow. August. S. Amer. 1815.
„ *blandfordia'na* (Blandford's). 10. July. S. Amer. 1825.
„ *hypoleu'ca* (white-beneath). See P. ALBA.
„ *incarna'ta* (flesh-coloured). 20. Flesh. July. Peru. 1820.
„ *Jameso'ni* (Jameson's). 4. Yellow and pink. Eucador. July.
„ *Ke'rrii* (Ker's). See P. TRICOLOR.
„ *lambertia'na* (Lambert's). 10. White. July. Mexico. 1819.
„ *leuca'ntha* (white-flowered). 10. White. July. S. Amer. 1825.
„ *lu'tea* (yellow). 10–18. Yellow, suffused blush. June. Peru. 1869.
„ *mexica'na* (Mexican). See P. LAMBERTIANA.
„ *macrophy'lla* (large-leaved). 10. White. July. S. Amer. 1825.
„ *Mille'ri* (Miller's). See P. INCARNATA.
„ *northia'na* (North's). 7. July. S. Amer. 1820.
„ *obtu'sa* (blunt-*leaved*). 10. White. July. W. Ind. 1733.
„ *parvifo'lia* (small-leaved). White. July. W. Ind. 1813.
P. pu'dica (chaste-*flowered*). 5. Yellow. July. W. Ind.
„ *purpu'rea* (purple). 20. Purple. July. Peru. 1820.
„ *ru'bra* (red). 15. Red. July. Trop. Amer. 1690.
„ *tri'color* (three-coloured). 15. Yellow. August. Peru. 1815.
„ *tubercula'ta* (warted-*stemmed*). 6. White. August. St. Domingo. 1812.

PNEUMONA'NTHE. See GENTIANA.

PO'A. Meadow Grass. (From *poa*, the Greek for grass, herbage. Nat. ord. Gramineæ.)

A large genus of grasses, forming a large component of pastures, meadows, and lawns. *P. trivialis* is the most abundant in the parks and gardens of towns. Seeds; divisions. Ordinary soil.

P. abyssi'nica (Abyssinian). Abyssinia. Stove.
„ *flabella'ta* (fan-shaped). Tufted. Magellanic region.
„ *palu'stris* (marsh). See LEERSIA ORYZOIDES.
„ *trivia'lis* (common). 1–1½. Green. June. Northern Temperate regions (Britain).
„ „ *a'lbo-vitta'ta* (white-striped). 1. Leaves striped with pure white. Britain. 1868.

PODACHÆ'NIUM. (From *pous*, *podos*, a foot, *a*, not, and *chaino*, I open; the achenes or fruits are stalked. Nat. ord. Compositæ.)

A tall stove shrub. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

P. andi'num (Andes). Rays white; disc yellow. Colombia. 1892.

PODALY'RIA. (A classical name. *Podalirius* was the son of Æsculapius. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Baptisia.)

Greenhouse evergreen shrubs, from South Africa. The following, with a few exceptions, are purple-flowered. Seeds in a hotbed, in spring; cuttings of stubby side-shoots in sand, under a bell-glass, in April or May; sandy loam and fibrous peat, well-drained. Winter temp., 40° to 48°.

P. a'lba (white). See BAPTISIA LEUCANTHA.
„ *arge'ntea* (silvery). 6. White, red. April. 1789.
„ *bifo'ra* (two-flowered) of Sims. See P. ARGENTEA.
„ *buxifo'lia* (box-leaved). 2. Blue. June. 1790.
„ *calyptra'ta* (covered). 3–5. Light purple. June to September. 1792.
„ *glau'ca* (milky-green). 6. June. 1810.
„ *myrtillifo'lia* (myrtle-leaved). 6. June. 1795.
„ *oleæfo'lia* (olive-leaved). 4. May. 1804.
„ *seri'cea* (silky). 6. June. 1778.
„ *styracifo'lia* (Styrax-leaved). See P. CALYPTRATA.
„ *tincto'ria* (dyer's). See BAPTISIA TINCTORIA.

PODA'NTHES GEMINA'TA. See PIARANTHUS GEMINATUS.

PODA'NTHES IRRORA'TA. See STAPELIA IRRORATA.

PODA'NTHES PU'LCHRA. See STAPELIA RORIFLUA.

PODA'NTHES VERRUCO'SA. See STAPELIA VERRUCOSA.

PODA'NTHUM GRA'CILE. See PHYTEUMA GRACILE.

PODA'NTHUM LOBELIOIDES. See PHYTEUMA LOBELIOIDES.

PODA'NTHUS. (From *pous*, *podos*, a stalk, and *anthos*, a flower; the flowers are stalked. Nat. ord. Compositæ.)

Dwarf greenhouse shrubs. Cuttings in sandy soil under a hand-light. Fibrous loam, leaf-mould, and sand.

P. gra'tus (pleasing). See P. OVATIFOLIUS.
„ *Miti'qui* (Mitique's). 2–3. Yellow. Chili. 1824.
„ *ovatifo'lius* (egg-shaped-leaved). 2. Yellow. Brazil; Chili. 1825.

PODOCA'RPUS. (From *pous*, *podos*, a foot, and *karpos*, a fruit; long footstalks. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*. Allied to the Yew.)

Evergreen cone-bearers. Cuttings of ripe shoots in sand, under a bell-glass; loam and peat. Winter temp., 40° to 48°. *Macrophy'lla*, *latifo'lia*, *spinulo'sa*, and *nuci'fera* have stood some time against walls in the climate of London. They are all good things for a winter garden.

P. alpi'na (alpine). Tasmania.
„ *ama'ra* (bitter). Java.
„ *andi'na* (Andian). See P. CHILINA.
„ *anta'rctica* (antarctic). See P. CURVIFOLIA.
„ *argolæ'nia* (silver-banded). China.
„ *Bidwi'lli* (Bidwill's). See P. TOTARA.
„ *canaliculæ'ta* (channelled). Origin doubtful.
„ *chili'na* (Chilian). 40. Chili.
„ *chine'nsis* (Chinese). See P. MACROPHYLLA.
„ *coria'cea* (leathery). 50. W. Ind. and Colombia. 1818.
„ *cupre'ssina* (Cypress-like). Burma; Malaya.
„ *curvifo'lia* (curved-leaved). Country doubtful.
„ *dacrydioi'des* (Dacrydium-like). New Zealand.
„ *ela'ta* (tall). Australia.
„ *elonga'ta* (elongated). E. Africa, &c.
„ *endlicheria'na* (Endlicherian). See P. NERIIFOLIA.
„ *ensifo'lia* (sword-leaved). See P. ELATA.
„ *ferrugi'nea* (rusty-coloured). 40. New Zealand.
„ *japo'nica* (Japanese). Japan.
„ *koraia'na* (Corean). See CEPHALOTAXUS PEDUNCULATA FASTIGIATA.
„ *latifo'lia* (broad-leaved). 200. March. India. 1828.
„ *macrophy'lla* (large-leaved). 40. July. Japan. 1804.
„ *Nagei'a* (Nageia). 40. Japan.
„ „ *rotundifo'lia* (round-leaved).
„ *neriifo'lia* (Nerium-leaved). Himalaya.
„ *nubi'gena* (cloud-begotten). Chili. 1851.
„ *nuci'fera* (nut-bearing). See TORREYA NUCIFERA.
„ *pectina'ta* (comb-like). Foliage silvery. New Caledonia. 1892.
„ *purdiea'na* (Purdiean). 80–100. Jamaica. "Yacca-wood."
„ *salicifo'lia* (willow-leaved). Colombia.
„ *spinulo'sa* (rather-spiny). 20. Australia. 1820. "Illawarra Pine."
„ *sua'vis* (oleander-leaved). 6½. Scarlet. New Zealand.
„ *taxifo'lia* (yew-leaved). See PRUMNOPITYS TAXIFOLIA.
„ *Tota'ra* (Totara). 80. New Zealand. "Totara Pine."
„ „ *variega'ta* (variegated). Leaves striped with white.
„ *vitie'nsis* (Fijian). 10–50. Shrub or tree. Branches drooping. Fiji. 1886.
„ *Ya'cca* (Yacca) of G. Don in Loudon. See P. CORIACEA.
„ *Ya'cca* (Yacca) of G. Don in Sweet's Hort. Brit. See PRUMNOPITYS TAXIFOLIA.

PODOCHI'LUS. (From *pous*, *podos*, a foot, and *cheilos*, a lip; the lip is jointed with the foot of the column. Nat. ord. Orchidaceæ. Allied to Notylia.)
Stove epiphytical orchids, with slender, leafy stems. Divisions at the commencement of growth. Sphagnum, fibre of peat, charcoal, and crocks.
P. longicalcara'tus (long-spurred). 2. White and purple. Borneo and Philippines. 1894.

PODOCY'TISUS CARAMA'NICUS. See LABURNUM CARAMANICUM.

PODOLA'SIA. (From *pous*, *podos*, a foot, and *Lasia*; there is a long stalk to the spadix. Nat. ord. Araceæ.)
A stove perennial. Divisions or offsets. Lumpy fibrous peat, a little loam, some charcoal nodules, and sand.
P. stipita'ta (stalked). 1. Spathe brownish-red; spadix cream changing to brown. Borneo. 1882.

PODO'LEPIS. (From *pous*, a foot, and *lepis*, a scale; flower-stalks scaly. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Helichrysum.)
P. gra'cilis is a half-hardy herbaceous perennial; the rest are hardy annuals. Seeds in a little heat, in spring; division in spring, as growth commences; sandy loam, and a little leaf-mould or peat; the protection of a cold pit in winter. There are several species besides the following:
P. acumina'ta (long-pointed). 1–1½. Yellow. July to September. Australia.
„ *arista'ta* (bearded). 1. Bright yellow, pink. July to September. Australia.
„ *chrysa'ntha* (golden-flowered). See P. ARISTATA.
„ *gra'cilis* (slender). 3. Pink. August. N.S. Wales. 1826.
„ *Lesso'nii* (Lesson's). 1½. Yellow. Australia. 1862.

PODOLO'BIUM. (From *pous*, a foot, and *lobos*, a pod; the seed-pod on a foot-stalk within the calyx. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Oxylobium.)
P. berberifo'lium (barberry-leaved). See OXYLOBIUM BERBERIFOLIUM.
„ *heterophy'llum* (various-leaved). See OXYLOBIUM HETEROPHYLLUM.
„ *sca'ndens* (climbing). See OXYLOBIUM SCANDENS.
„ *staurophy'llum* (cross-leaved). See OXYLOBIUM STAUROPHYLLUM.
„ *triloba'tum* (three-lobed). See OXYLOBIUM TRILOBATUM.

PODOPHY'LLUM. Duck's-foot. (Contracted from *anapodophy'llum*, or duck's-foot-leaved. Nat. ord. *Barberryworts* [Berberidaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Jeffersonia.)
Hardy herbaceous perennials. Division at the root; moist, marshy peat, and a shady situation.
P. diphy'llum (two-leaved). See JEFFERSONIA BINATA.
„ *Emo'di* (Mt. Emodus). May. Himalaya. 1845. "Himalaya May Apple."
„ *hexa'ndrum* (six-anthered). See P. EMODI.
„ *monta'num* (mountain). See P. PELTATUM.
„ *pelta'tum* (shield-*leaved*). ½. White. May. N. Amer. 1664. "May Apple."
„ *pleia'nthum* (full-flowered). 1–2. Rich purple; berry purple. China. 1889.
„ *versi'pelle* (turning-livid). 2–3. Deep crimson. Central China. 1907.

PODO'PTERUS. (From *pous*, a foot, and *pteris*, a feather; the mode of growth. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)
Greenhouse evergreen. Cuttings of half-ripened shoots under a glass, in sandy loam, in April; sandy, fibrous loam, and a little peat. Winter temp., 40° to 48°.
P. merica'nus (Mexican). 2. July. Mexico. 1825.

PODO'RIA SENEGALE'NSIS. See BOSCIA SENEGALENSIS.

PODOSPE'RMA CHRYSA'NTHUM. See PODOTHECA CHRYSANTHA.

PODOSPE'RMA GNAPHALIOI'DES. See PODOTHECA GNAPHALIOIDES.

PODOSPE'RMUM. (From *pous*, a foot, and *sperma*, a seed. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Scorzonera.)
P. angustifo'lium (narrow-leaved). See SCORZONERA ANGUSTIFOLIA.
„ *calcitrapifo'lium* (caltrop-leaved). See SCORZONERA CALCITRAPIFOLIA.
„ *ca'num* (hoary). See SCORZONERA JACQUINIANA.
„ *coronopifo'lium* (Coronopus-leaved). See SCORZONERA CORONOPIFOLIA.
„ *interme'dium* (intermediate). See SCORZONERA INTERMEDIA.
„ *lacinia'tum* (jagged-leaved). See SCORZONERA LACINIATA.
„ *octangula're* (eight-angled). See SCORZONERA JACQUINIANA.
„ *pu'milum* (dwarf). See SCORZONERA PUMILA
„ *resedifo'lium* (Reseda-leaved). See SCORZONERA LACINIATA.
„ *taraxacifo'lium* (dandelion-leaved). See SCORZONERA TARAXACIFOLIA.

PODOSTI'GMA. (From *pous*, *podos*, a foot, and *stigma*; the stigma is stalked. Nat. ord. Asclepiadaceæ.)
Hardy or half-hardy perennial herb, with tuberous roots. Cuttings in sand in a cold frame during summer. Loam, leaf-mould, and sand, protected in a cold frame during winter.
P. pube'scens (downy). ½–1. Orange. July, August. N. Amer. 1824.

PODOTHE'CA. (From *pous*, *podos*, a foot, and *theke*, a seed case; the achene or seed-case is shortly stalked. Nat. ord. Compositæ.)
Greenhouse annuals, but may be raised from seed, in gentle heat and planted out in May. Ordinary soil.

P. chrysa'ntha (golden-flowered). 1. Golden-yellow. June, July. Western Australia. 1898.
„ *gnaphalioi'des* (Gnaphalium-like). 1–1½. Yellow. June, July. Australia. 1841.

PŒCILO'PTERIS CRISPA'TULA. See ACROSTICHUM VIRENS CRISPATULUM.

PŒCILO'PTERIS FLAGELLI'FERA. See ACROSTICHUM FLAGELLIFERUM.

PŒCILO'PTERIS PUNCTULA'TA. See ACROSTICHUM PUNCTULATUM.

PŒCILO'PTERIS SCA'NDENS. See ACROSTICHUM SCANDENS.

POET'S CASSIA. *Osy'ris.*

POET'S NARCISSUS. *Narci'ssus poe'ticus.*

POGO'GYNE. (From *pogon*, a beard, and *gune*, the female organ; fringe on the style. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Melissa.)

Hardy annuals. Seeds at the beginning of April in the open garden. Ordinary soil.

P. Dougla'sii (Douglas's). 1. Purple, violet. California. 1871.
„ „ *multiflo'ra* (many-flowered). 1. Pale lilac. July, August. California. 1836.
„ *multiflo'ra* (many-flowered). See P. DOUGLASII MULTIFLORA.
„ *nudiu'scula* (nearly smooth). ¾–1. Bright blue. California. 1887.

POGO'NIA. (From *pogon*, a beard; in allusion to the two to four raised, thickened lines on the lip. Nat. ord. Orchidaceæ. Allied to Arethusa.)

Stove and greenhouse ground orchids, with a tuberous rhizome. Divisions at the commencement of growth. Fibrous peat, a little loam, with some nodules of charcoal and sand. Water liberally when making their growth.

P. barklya'na (Barklyan). 2. Green; lip finely netted. Mascarene Isles. 1885.
„ *di'scolor* (two-coloured). ½. Green; lip white. Java. 1859.
„ *F'ordii* (Ford's). ¾. Yellow-ochre; lip rose. April. Hong-Kong. 1883. Greenhouse.
„ *gammiea'na* (Gammiean). ½. Pale lilac. N. India. 1847.
„ *ophioglossoi'des* (Ophioglossum-like). 1. Rosy. June. N. Amer. 1816. Greenhouse.
„ *pe'ndula* (drooping). ½. Pink. July. N. Amer. 1824.
„ *plica'ta* (plaited). 1. Pale green, tinted with pink. July. India. 1806. Stove.
„ *pulche'lla* (pretty). See P. FORDII.
„ *puncta'ta* (spotted). Java.
„ *ro'sea* (rosy). 3–4. Pale green, rosy-lilac. August. Panama. 1844.
„ *specio'sa* (showy). 4. Purple. Brazil. 1894.

POGO'NOPUS. (From *pogon*, a beard, and *pous*, a foot or stalk; the foot of the stamens is set in a beard of hairs. Nat. ord. Rubiaceæ.)

Stove shrub. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, one-third peat and sand.

P. caracase'nsis (Caracas). Bright pink. June to September. Venezuela. 1855.

POGOSTE'MON. (From *pogon*, a beard, and *stemon*, a thread or stamen; the stamens have long beards. Nat. ord. Labiatæ.)

Low-growing stove subshrubs. Cuttings of mature wood in sand, in bottom-heat, and kept close till rooted.

P. Patchou'li yields Patchouli, an essential oil.

P. Patchou'li (Patchouli). 1–2. White, purple. June. India. 1848. "Patchouli."
„ „ *sua'vis* (sweet).
„ *plectranthoi'des* (Plectranthus-like). 2. White. July. India.

POINCIA'NA. Flower Fence. (Named after *Poinci*, once governor of the Antilles. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Cæsalpinia.)

Stove evergreen shrubs. Seeds in a brisk bottom-heat, in spring; cuttings of stubby young shoots in sand, under a bell-glass, in heat; rich, sandy, fibrous loam. Winter temp., 50° to 60°; summer, 60° to 90°.

P. ela'ta (tall). 15. Yellow. Trop. Africa. 1778.
„ *Gillie'sii* (Gillies's). See CÆSALPINIA GILLIESII.
„ *insi'gnis* (noble). See CÆSALPINIA INSIGNIS.
„ *pulche'rrima* (very fair). See CÆSALPINIA PULCHERRIMA.
„ *re'gia* (royal). Crimson. Madagascar. 1828.
„ *Ta'ra* (Tara). See CÆSALPINIA TINCTORIA.

POINSE'TTIA. (Named after its discoverer, *M. Poinsette*. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 1-*Monandria*. Now referred to Euphorbia.)

P. pulche'rrima (fairest). See EUPHORBIA PULCHERRIMA.
„ „ *a'lbida* (white-*bracted*). See EUPHORBIA PULCHERRIMA ALBIDA.

POINTING-IN is mixing manure with the top inch or two of the soil by means of the point of a spade or fork. This is done when roots, which ought not to be disturbed, are near the surface.

POIRE'TIA. (Commemorative of *J. L. M. Poiret*, a French botanist. Nat. ord. Leguminosæ.)

Stove perennial herbs or undershrubs. Cuttings in sand, in a warm, close case. Fibrous loam, one-third peat and sand.

P. puncta'ta (spotted). Yellow. Brazil.
„ *sca'ndens* (climbing). 6. Yellow. March. Mexico. 1823.

POISON-BULB. *Brunsvi'gia cora'nica* and *toxica'ria*, and *Cri'num asia'ticum.*

POISON-NUT. *Stry'chnos Nu'x-vo'mica.*

POISON-OAK. *Rhu's Toxicode'ndron.*

POISON-SUMACH, or **POISON-WOOD.** *Rhu's venena'ta.*

POISONOUS PLANTS. Gardeners should be much more careful than they usually are in handling the plants they cultivate, for many of them have deadly qualities. M. Neumann, chief gardener of the Paris Jardin des Plantes, says that pruning-knives and hands washed in a tank after they have been employed upon some of the exotics will destroy the fish it contains. *Hippo'mane Mancine'lla*, the *Manchineel*, the *Tanghin*, *Sa'pium Lau'roce'rasus*, and *Comocla'dia dentata*, are equally deleterious to man. Gardeners who have merely rubbed the leaves of the latter between their fingers have had swollen bodies and temporary blindness. Wounds from pruning-knives smeared with the juices of such plants are like those from poisoned arrows.

POISONS. Soils containing obnoxious ingredients are certain introducers of disease and premature death. An excess of oxide of iron, as when the roots of the apple and pear get into an irony-red gravelly subsoil, always causes canker. In the neighbourhood of copper-smelting furnaces, not only are cattle subjected to swollen joints and other unusual diseases, causing decrepitude and death, but the plants also around are subject to sudden visitations, to irregular growths, and to unwarned destruction; and a crop once vigorous will suddenly wither as if swept over by a blast. There is no doubt of this arising from the salts of copper, which impregnate the soil irregularly, as the winds may have borne them sublimed from the furnaces, and the experiments of Sennebier have shown that of all salts those of copper are the most fatal to plants. That they can be poisoned, and by many of those substances, narcotic as well as corrosive, which are fatal to animals, has been shown by the experiments of M. F. Marcet and others.

The metallic poisons being absorbed are conveyed to the different parts of the plant, and alter or destroy its tissue. The vegetable poisons, such as opium, strychnia, prussic acid, belladonna, alcohol, and oxalic acid, which act fatally upon the nervous system of animals, also cause the death of plants.

The poisonous substance is absorbed into the plant's system, and proves injurious when merely applied to its branches or stem, almost as much as if placed in contact with the roots. Ulcerations and canker are exasperated if lime be put upon the wounds, and when Dr. Hales made a Golden Rennet Apple absorb a quart of camphorated spirits of wine through one of its branches, one-half of the tree was destroyed.

POITÆ'A. (Commemorative of *M. Poiteau*, a French botanist. Nat. ord. Leguminosæ.)

Stove shrub with pinnate leaves. Cuttings of half-ripe shoots in sand in a close, warm case. Sandy loam and leaf-mould.

P. galegoi'des (Galega-like). 1. Pale purple. June. St. Domingo. 1826.

POI'VREA. (Named after *N. Poivre*, a Frenchman. Nat. ord. *Myrobolans* [Combretaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Combretum.)

Stove evergreen climbers. Cuttings of short, stubby side-shoots, as fresh growth commences, in spring, in sand, under a bell-glass, and with a little bottom-heat; sandy loam and fibrous peat, with pieces of charcoal. Winter temp., 55° to 60°; summer, 60° to 85°.

P. Afze'lii (Afzelius's). See COMBRETUM GRANDIFLORUM.
„ *barba'ta* (bearded-*petaled*). See COMBRETUM BARBATUM.
„ *cocci'nea* (scarlet). See COMBRETUM COCCINEUM.
„ *como'sa* (tufted). See COMBRETUM COMOSUM.
„ *deca'ndra* (ten-stamened). See COMBRETUM DECANDRUM.
„ *grandiflo'ra* (large-flowered). See COMBRETUM GRANDIFLORUM.
„ *interme'dia* (intermediate). See COMBRETUM COMOSUM.
„ *macrophy'lla* (large-leaved). See COMBRETUM LATIFOLIUM.
„ *pilo'sa* (thinly-hairy). See COMBRETUM COMOSUM.

POKE WEED. *Phytola'cca.*

POLANI'SIA. (From *polus*, many, and *anisos*, unequal; many stamens of unequal lengths. Nat. ord. *Capparids* [Capparidaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Referred to Cleome.)

P. Chelido'nii (Chelidonium-like). See CLEOME CHELIDONII.
„ *dodeca'ndra* (twelve-anthered). See CLEOME BURMANNI.
„ *grave'olens* (strong-smelling). See CLEOME GRAVEOLENS.
„ *trachyspe'rma* (rough-seeded). 1½. Yellowish-white. N. Amer. 1903.
„ *uniglandulo'sa* (single-glanded). See CLEOME UNIGLANDULOSA.
„ *visco'sa* (clammy). See CLEOME VISCOSA.
„ „ *icosa'ndra* (twenty-anthered). See CLEOME VISCOSA ICOSANDRA.

POLEMO'NIUM. Greek Valerian. Jacob's Ladder. (From *polemos*, war; according to Pliny, a dispute about its discovery led to warfare. Nat. ord. *Phloxworts* [Polemoniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy herbaceous perennials. Seeds; but generally division of the plant; common garden soil.

P. acutiflo'rum (acute-flowered). See P. CÆRULEUM ACUTIFLORUM.
„ *borea'le* (northern). Siberia.
„ *cæru'leum* (blue). 2. Blue. June. North temperate regions (Britain).
„ „ *acutiflo'rum* (acute-flowered). Blue.
„ „ *a'lbum* (white). 2. White. June. Britain.
„ „ *campanula'tum* (bell-shaped). Lilac-blue, bell-shaped. Northern Europe. 1892.
„ „ *disse'ctum* (dissected). See P. SIBIRICUM.
„ „ *foliosi'ssimum* (leafiest). See P. FOLIOSISSIMUM.
„ „ *grandiflo'rum* (large-flowered). Brown. June. India. Biennial.
„ „ *himalaya'num* (Himalayan). Lilac-blue, much larger. Himalaya. 1887.
„ „ *macula'tum* (spotted). 2. Striped. June. Britain.
„ „ *pili'ferum* (hairy). Blue. June. N. Amer.
„ „ *variega'tum* (variegated-*leaved*). 1. White. June. Britain.
„ „ *villo'sum* (shaggy). Pale blue. August. Siberia. 1826.
„ *ca'rneum* (flesh). 1–3. Salmon or flesh, changing to purple. California. 1858.
„ *confe'rtum* (crowded). ½. Rich blue. North-western Amer. 1885.
„ „ *melli'tum* (honey-coloured). ½. Pale honey-white. Rocky Mountains. 1900.
„ *fla'vum* (yellow). 1½–2. Pale yellow. New Mexico.
„ *foliosi'ssimum* (leafiest). New Mexico, Colorado, &c.
„ *gra'cile* (slender). 1½. Blue. June. Dahuria. 1818.
„ *hu'mile* (lowly). Blue. August. N. Amer. 1826.
„ „ *pulche'llum* (pretty). 1. Blue. June, July. N. Amer. 1827.
P. hu'mile (lowly) of Lindley. See P. HUMILE PULCHELLUM.
„ *la'cteum* (milky-*flowered*). See P. SIBIRICUM.
„ *mexica'num* (Mexican). 1. Blue. April. Mexico. 1817.
„ *moscha'tum* (musky). See P. HUMILE.
„ *pauciflo'rum* (few-flowered). 1–1½. Yellow, tinted red. Mexico. 1889.
„ *pulche'llum* (pretty). See P. HUMILE PULCHELLUM.
„ „ *macra'nthum* (large-flowered). See P. HUMILE.
„ *pulche'rrimum* (prettiest). See P. HUMILE PULCHELLUM.
„ *re'ptans* (creeping). ½. Lilac, blue. April. N. Amer. 1758.
„ „ *ma'jus* (larger). 1. Dark blue. April.
„ *Richardso'ni* (Richardson's). See P. HUMILE.
„ *sibi'ricum* (Siberian). 2. White. June. Siberia. 1800.
„ *villo'sum* (shaggy). See P. CÆRULEUM VILLOSUM.
„ *visco'sum* (clammy). North-western Amer.
„ *vulga're* (common). See P. CÆRULEUM.

POLIA'NTHES. Tuberose. (From *polis*, a city, and *anthos*, a flower; referring to its general use in city decoration. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6 *Hexandria*, 1-*Monogynia*.)

Greenhouse tubers. Offset tubers; old tubers are generally obtained from Italy every year, and are planted in rich, sandy loam; and when growth has fairly commenced, they get the advantage of a slight hotbed to forward them (but the tuber, and not the top, should be kept warm), before getting them ready for rooms or greenhouses.

P. gra'cilis (slender). See P. TUBEROSA GRACILIS.
„ *tubero'sa* (tuberous). 3. White. August. Mexico. 1629.
„ „ *flo're-ple'no* (double-flowered). 3. White. August.
„ „ *gra'cilis* (slender). 3. Pale yellow. August. Brazil. 1822.

POLIOTHY'RSIS. (From *polios*, hoary, and *thursos*, a thyrse or branching inflorescence; in allusion to the colour of the inflorescence. Nat. ord. Bixaceæ. Allied to Idesia.)

A hardy, deciduous tree. Seeds in a gentle heat; cuttings of half-ripe shoots in sand, under a bell-glass, with gentle heat.

P. sine'nsis (Chinese). 20–70. Yellow-white or grey. Central China. 1906.

PO'LIUM or **GERMANDER.** See TEUCRIUM.

POLLEN. A complete flower is made up of four sets of floral organs: (1) The sepals or calyx outside; (2) followed by the petals or corolla; (3) by the stamens bearing anthers at their apex, or consisting of anthers without stalks or filaments; and (4) by the ovary bearing a stigma which may be stalked or not, and containing one or more ovules or unfertilised seeds. The third set, consisting of stamens, constitutes the male organs. The anthers produce the powdery or dust-like granules, known as pollen. When magnified the pollen grains are seen to be of some definite shape, according to the species of plant. The anthers are four-celled or, in some cases, two-celled in their early stages, but become two or one-celled at maturity by the bursting of the partition of two neighbouring cells. The pollen is produced in these cells by the repeated division of the tissue in the centre, and the cells that immediately give rise to the pollen are known as the pollen mother-cells and divide into four grains mostly separate, but in heaths, whortleberries, and some others, the four remain joined in a mass. In Asclepiads and orchids the pollen remains united in large masses. In most natural orders the grains all become separate, resembling powder to the naked eye. The most common pollen grain is elliptic or boat-shaped, with three furrows, and one or two of these furrows may be visible, but when only one is in view the pollen resembles a grain of rice. Other pollens are spherical, hemispherical, oblong, triangular, or variously modified. The surface may be smooth, granular, spiny, finely or strongly netted, or otherwise beautifully marked. It may be dry, and even winged in Conifers, in the case of pollen carried by the wind, or more or less viscid or clammy when intended to be carried by insects or other animals. It may be colourless, or most frequently of some shade of yellow, from

the palest shade to deep orange. Occasionally it is shaded with purple, blue, violet, or green in different genera and families.

PO'LLIA. (Commemorative of *Van der Poll*, a Dutchman. Nat. ord. Commelinaceæ.)

Stove perennial trailing herb. Seeds; divisions and cuttings in sand in a close case. Loam, leaf-mould, and sand.

P. condensa'ta (condensed). Trop. Africa.
„ „ *variega'ta* (variegated). Leaves variegated with yellowish-white. Trop. Africa. 1908.
„ *crispa'ta* (crisped). Blue. Australia. 1822.

POLLINATION. The term is applied to the placing of the pollen on the stigma of the same or a different flower from that whence it was taken. The wind, birds, and other animals—insects chiefly—do this in a state of nature, effecting self or cross-pollination. It is done by man, with the object of securing certain results. When the pollen is applied to the stigma of the same flower or one on the same plant, it is termed self-pollination; but if transferred to the stigma of another variety it is termed cross-pollination, and is done with the object of getting new and improved varieties. Hybrids are obtained by cross-pollinating two different species. Pollination is distinct from fertilisation; the latter is only accomplished when the pollen tube reaches the germinal vesicle, and forms a union with it.

POLY. See POLIUM.

POLYA'CHYRUS. (From *polus*, many, and *achuron*, chaff. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Half-hardy herbaceous perennials. Division and cuttings of the young shoots, in spring, in sandy soil; the protection of a cold frame, or some analogous place, in winter.

P. Pœppi'gii (Pœppig's). Blue. June. Chili. 1830.

POLYA'LTHIA. (From *polus*, much, and *altheeis*, healing; literally, all-healing, from its supposed medicinal qualities. Nat. ord. Anonaceæ.)

Stove evergreen shrubs or small trees. Cuttings of half-mature shoots in sand, placed in a close case with bottom-heat. Fibrous loam, a little peat, and sand.

P. cerasoi'des (Cerasus-like). 5–60. Green. India. 1820.
„ *Kori'nti* (Korint's). 2–30. Green. India.
„ *longifo'lia* (long-leaved). 4. Purple. India. 1820.
„ *Sche'fferi* (Scheffer's). Java.
„ *simia'rum* (monkeys'). Brown. Himalaya; Burma. 1823.
„ *subero'sa* (corky). 3–30. White. India. 1820.

POLYA'NTHUS. This is a variety, but a very permanent one, of the common Primrose (*Pri'mula vulga'ris*). There are many varieties, and their excellence as florists' flowers may be determined by the following rules:

The Pip of a Laced Polyanthus.—1. This should be perfectly flat and round, slightly scolloped on the edge, and three-quarters of an inch in diameter.

2. It should be divided in (five or) six places, apparently forming (five or) six flower-leaves, each indented in the centre to make it a kind of heart-shaped end; but the indentations must not reach the yellow eye.

3. The *indenture* in the centre of the apparent flower-leaves should be exactly the same depth as the indenture formed by the join of these flower-leaves, so that it should not be known, by the form of the flower, which is the actual division and which is the indenture; in other words, which is the side and which the centre of the flower-leaf; and all the indentures should be as slight as possible, to preserve the character.

4. The flower should be divided thus: the *yellow tube* in the centre being measured, the *yellow eye*, round the tube, should be the same width as its diameter; and the *ground colour* of the flower should be the same width; or draw with the compasses, opened to a sixteenth of an inch apart, a circle for the tube or centre, open them to three-sixteenths, and draw another circle for the eye, then open them further to five-sixteenths, and draw a third circle for the ground or dark colour. Beyond these circles there is a *yellow lacing*, which should reach round every flower-leaf, to the yellow eye, and down the centre of every petal to the eye, and so much like the edging that the flower should appear to have (ten or) twelve similar petals. The ends of these (ten or) twelve should be blunted, and rounded like so many semicircles, so that the outline of the circle should be interrupted as little as possible.

5. *The tube* (one-fifth the width of the whole flower) should be nearly filled up with the six anthers, which are technically called the thrum (have an elevated edge, rendering it *trumpet-eyed*), and the flower should not exhibit the pistil.

6. *The edging* round and down the centre of the petals formed by the divisions should be of even width all the way, and uniformly of the same shade of sulphur, lemon, or yellow as the eye, and there must not be two shades of yellow in the eye.

7. *The ground colour* may be just what anybody likes best, but clear, well-defined, perfectly smooth at the edges inside next the eye, so as to form a circle, and outside, next the lacing. A black or a crimson ground, being scarce, is desirable; but the quality of the colour as to clearness, rather than the colour itself, constitutes the property.

The Plant.—1. *The stem* should be strong, straight, elastic, and from four to six inches in length.

2. *The footstalks* of the flower should be of such length as to bring all the flowers well together.

3. *The truss* should rise from the centre of the foliage, comprise seven or more flowers, and be neatly arranged to be seen all at once.

4. *The foliage* should be dark green, short, broad, thick, and cover the pot well; but erect and clustering round, though lower than the truss.

The Pair, or Collection.—*The pair*, or pan of more, should comprise flowers of different and distinct colours, either the ground colour or the yellow of each being sufficiently different from the rest to be well distinguished. The whole should be so near of a height as to range the heads of bloom well together. The great fault of the Polyanthus now, even among the best sorts, is that the divisions between the petals are so wide as to make the flower look starry, whereas there should be no more gap where the division is than is in the indentation of the petal itself.—*Glenny's Properties of Flowers, &c.*

Culture.—The Polyanthus may be cultivated exactly as the Auricula.

POLYBO'TRYA. (From *polus*, many, and *botrus*, a bunch; the appearance of the fertile or seed-bearing frond. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Acrostichum.)

P. acumina'ta (pointed-*leaved*). See ACROSTICHUM ACUMINATUM.
„ *apiifo'lia* (parsely-leaved). See ACROSTICHUM APIIFOLIUM.
„ *appendicula'ta* (appendaged). See ACROSTICHUM APPENDICULATUM.
„ *articula'ta* (jointed). See ACROSTICHUM ARTICULATUM.
„ *cervi'na* (hart's-tongue). See ACROSTICHUM CERVINUM.
„ *corcovade'nsis* (Corcovado). See ACROSTICHUM CERVINUM CORCOVADENSE.
„ *inci'sa* (cut-*leaved*). July. W. Ind.
„ *interme'dia* (intermediate). April. Isle of Luzon.
„ *lechleria'na* (Lechlerian). See ACROSTICHUM LECHLERIANUM.
„ *osmunda'cea* (Osmunda-like). See ACROSTICHUM OSMUNDACEUM.
„ *serrula'ta* (saw-edged). July. Isle of Luzon.
„ *specio'sa* (showy). July. W. Ind.
„ *vivi'para* (viviparous). ½. June. W. Ind. 1823.

POLYCALY'MMA STUA'RTII. See MYRIOCEPHALUS STUARTII.

POLYCARE'NA. (From *polus*, many, and *karenon*, a head; in reference to the numerous heads or clusters of flowers. Nat. ord. Scrophulariaceæ. Allied to Zaluzianskya.)

Half-hardy annuals with numerous clusters of flowers. Seeds in a gentle heat, and planted out in May. Ordinary soil.

P. cape'nsis (Cape). 1. White. June. S. Africa. 1788.

POLYCA'RPA MAXIMOWI'CZII. See IDESIA POLYCARPA.

POLYCARPÆ'A. (From *polus*, many, and *karpos*, a fruit; the seed-vessels are numerous. Nat. ord. Caryophyllaceæ. Allied to Polycarpon.)

Hardy or half-hardy perennials. Seeds; divisions and cuttings. Ordinary soil, with frame protection in winter.

P. arista'ta (bearded). ½. White. May, June. Canaries. 1780.
„ *gnaphalo'des* (Gnaphalium-like). See P. MICROPHYLLA.
„ *latifo'lia* (broad-leaved). ½. White. May, June. Canaries. 1810.
„ *memphi'tica* (Memphis). See POLYCARPON LŒFLINGIÆ.
„ *microphy'lla* (small-leaved). ½. White. June. Canaries. 1818.

POLYCA'RPON. (From *polus*, many, and *karpos*, a fruit; alluding to the numerous small fruits. Nat. ord. Caryophyllaceæ.)
Half-hardy annual. Seeds in heat, and the seedlings planted out in May. Ordinary soil.
P. Lœfli'ngiæ (Madame Lœfling's). ½. White. July. Tropics of the Old World. 1828.

POLYCHI'LOS CO'RNU-CE'RVI. See PHALÆNOPSIS CORNU-CERVI.

POLYCY'CNIS. (From *polus*, many, and *kuknos*, a swan; in allusion to the numerous swan-like flowers in a raceme. Nat. ord. Orchidaceæ. Allied to Cycnoches.)
Stove epiphytical orchids. Divisions at the commencement of growth. Fibre of peat, sphagnum, some nodules of charcoal, crocks, and a little sand.
P. barba'ta (bearded). White, rosy. Colombia.
„ *Charleswo'rthii* (Charlesworth's). Yellow, marked with red, brown. British Guiana? 1907.
„ *gratio'sa* (pleasing). Light brown, spotted with purple. Costa Rica. 1871.
„ *Lehma'nni* (Lehmann's). Light brown, spotted with purple. Colombia. 1894.
„ *le'pida* (charming). Light brown, cream, spotted with purple. Colombia. 1870.
„ *muscifera* (fly-bearing). Light brown. February. Colombia. 1849.
„ *vitta'ta* (striped). Yellow, banded with chocolate. Guiana. 1841.

POLY'GALA. Milkwort. (From *polus*, much, and *gala*, milk; supposed to increase the milk of cows. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 17-*Diadelphia*, 3-*Octandria*.)
Annuals, by seed in a peaty border; herbaceous perennials, seeds and divisions in similar soil, or sandy loam and leaf-mould; hardy shrubs and under-shrubs, as *Chamæbu'xus*, by cuttings and suckers, and which species, in particular, likes a little chalk with the peat and leaf-mould; tender shrubs, by cuttings of the side-shoots, when 2½ inches long, taken off close to the stem, and inserted in sand, under a bell-glass; for all these, peat three parts, and loam one part. Many of them, from their beauty and comparative hardiness, should be tried against sheltering walls, such as *latifo'lia, myrtifo'lia, grandiflo'ra, specio'sa*, &c.

HARDY ANNUALS.

P. fastigia'ta (peaked). ½. Red. June. N. Amer. 1824.
„ *monspeli'aca* (Montpelier). ½. Blue. June. Mediterranean.
„ *purpu'rea* (purple). See P. SANGUINEA.
„ *sangui'nea* (blood-red). Purple. June. N. Amer. 1739.
„ *umbella'ta* (umbelled). See P. BRACTEOLATA.

HARDY HERBACEOUS.

P. a'lba (white). White. June. Louisiana. 1827.
„ *alpe'stris* (alpine). See P. AMARA.
„ *ama'ra* (bitter). ½. Blue. June. Europe (Britain). 1775.
„ *austri'aca* (Austrian). See P. AMARA.
„ *calca'rea* (chalky). ½. Blue, rose, purple, or white. May, June. Europe (Britain).
„ *Chamæbu'xus* (bastard box). ½. Yellow. May. Austria. 1658. Evergreen.
„ *purpu'rea* (purple). ½. Deep purple. May. 1878.
„ „ *ro'sea* (rosy). ½. Rose. May.
„ *como'sa* (tufted). ½. Blue. May. Europe.
„ *cymo'sa* (cymose). ½. Lilac, yellow. June. N. Amer. 1824.
„ *graminifo'lia* (grass-leaved). See P. CYMOSA.
„ *ma'jor* (larger). 1. Red. July. Austria. 1739.
„ *pauciflo'ra* (few-flowered). See P. PAUCIFOLIA.
„ *paucifo'lia* (few-leaved). ½. Purple. June to August. N. Amer. 1812.
P. poly'gama (polygamous). ½. Pale red. June. N. Amer. 1828.
„ *ro'sea* (rosy). ½. Rose. May. Mediterranean region.
„ *rube'lla* (reddish). See P. POLYGAMA.
„ *Se'nega* (Senega). 1. May, June. N. Amer.
„ *Vayre'dæ* (Mrs. Vayreda's). ½. Purplish. Spain. 1905. Hardy or half-hardy.
„ *vulga'ris* (common). ½–½. Blue, purple, rose, pink, or white. June to September. Europe (Britain).

GREENHOUSE EVERGREENS.

P. alopecuroi'des (fox-tail-like). See MURALTIA ALOPECUROIDES.
„ *apope'tala* (turned-away-petaled). Yellow, purple, changing to purple. California. 1900.
„ *arilla'ta* (arillate). India and Malaya.
„ *attenua'ta* (thin). See P. OPPOSITIFOLIA.
„ *borboniæfo'lia* (Borbonia-leaved). See P. OPPOSITIFOLIA.
„ *brachy'poda* (short-stalked). Country unknown.
„ *bracteola'ta* (small-bracted). 6. Purple. July. S. Africa. 1713.
„ *Burma'nni* (Burmann's). 3. Purple. June. S. Africa. 1800.
„ *cordifo'lia* (heart-leaved). See P. OPPOSITIFOLIA.
„ *dalmaisia'na* (Dalmaisian). See P. MYRTIFOLIA GRANDIFLORA.
„ *filifo'rmis* (thread-formed). See MURALTIA FILIFORMIS.
„ *Galpi'nii* (Galpin's). 3–5. Rosy lilac. Swaziland.
„ *Garci'nii* (Garcin's) 3. Purple. July. S. Africa.
„ *genistoi'des* (broom-like). See P. VIRGATA.
„ *gra'cilis* (slender). Blue. May. New Zealand.
„ *grandiflo'ra* (large-flowered). See P. MYRTIFOLIA GRANDIFLORA.
„ *grandifo'lia* (large-leaved). 1. White. April, May. Brazil.
„ *Heiste'ria* (Heisteria). See MURALTIA HEISTERIA.
„ *hilaria'na* (Hilarian). See P. GRANDIFOLIA.
„ *hu'milis* (low). See MURALTIA HUMILIS.
„ *interme'dia* (intermediate). See P. PEDUNCULARIS.
„ *lanceola'ta* (spear-head-*leaved*). 3. Purple. July. S. Africa. 1820.
„ *latifo'lia* (broad-leaved). See P. OPPOSITIFOLIA.
„ *ligula'ris* (strap-*leaved*). See P. MYRTIFOLIA.
„ *liliifo'lia* (lily-leaved). 4. Purple. July. S. Africa. 1823.
„ *micra'ntha* (small-flowered). See MURALTIA FILIFORMIS.
„ *mi'xta* (mixed). See MURALTIA MIXTA.
„ *myrtifo'lia* (myrtle-leaved). 3. Purple. July. Cape of Good Hope. 1707.
„ „ *grandiflo'ra* (large-flowered). 4. Purple. July. S. Africa. 1818.
„ *nummula'ria* (moneywort-*leaved*). See P. OPPOSITIFOLIA.
„ *oppositifo'lia* (opposite-leaved). 2. Purple. June. S. Africa. 1790.
„ „ *ma'jor* (larger). 3. Purple. July. S. Africa.
„ *peduncula'ris* (long-stalked). 3. Purple. June. S. Africa.
„ *pinifo'lia* (pine-leaved). 3. Purple. July. S. Africa. 1823.
„ *si'mplex* (simple-*stemmed*). See P. VIRGATA.
„ *specio'sa* (showy). See P. VIRGATA.
„ *spino'sa* (spiny). See MUNDTIA SPINOSA.
„ *stipula'cea* (large-stipuled). See MURALTIA STIPULACEA.
„ *teretifo'lia* (cylindrical-leaved). 3. Purple. August. S. Africa. 1791.
„ *tetrago'na* (four-angled). See P. OPPOSITIFOLIA.
„ *vimi'nea* (twiggy). See MUNDTIA SPINOSA ANGUSTIFOLIA.
„ *virga'ta* (twiggy). 3–6. Purple. July. S. Africa. 1814.

POLYGONA'TUM. Solomon's Seal. (From *polus*, many, and *gonu*, a joint, or knee; numerous joints of the stem. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Convallaria.)
Hardy, white-flowered, herbaceous perennials. Seeds and divisions in spring; rich, light soil. *Leptophy'llum* and *oppositifo'lium* require protection in winter.
P. angustifo'lium (narrow-leaved). See P. BIFLORUM.
„ *bifo'rum* (two-flowered). 1–2. Greenish-white. May. N. Amer. 1824.

P. bractea'tum (bracted). See P. MULTIFLORUM.
„ *canalicula'tum* (channelled). See P. LATIFOLIUM COMMUTATUM.
„ *cili'cicum* (Cilician). See P. POLYANTHEMUM.
„ *cirrhifo'lium* (tendril-leaved). See P. SIBIRICUM.
„ *gigante'um* (gigantic). See P. LATIFOLIUM COMMUTATUM.
„ *hi'rtum* (hairy). See P. LATIFOLIUM.
„ *japo'nicum* (Japanese). 1–2. White, pale green. May. Japan.
„ *latifo'lium* (broad-leaved). 3. May. Europe, &c. 1802.
„ „ *commuta'tum* (changed). 2–3. June. N. Amer. 1812.
„ „ *Maximowi'czii* (Maximowicz's). Island of Sachalin.
„ *leptophy'llum* (fine-leaved). See P. VERTICILLATUM.
„ *macrophy'llum* (large-leaved). See P. VERTICILLATUM.
„ *multiflo'rum* (many-flowered). 2. June. Europe (Britain). "David's Harp."
„ „ *moseria'num* (Moserian). Leaves variegated. 1897.
„ „ *stria'tum* (striped). Leaves striped with white.
„ *officina'le* (shop). 1–1½. White. June. Europe (Britain), &c. "Common Solomon's Seal."
„ „ *flo're ple'no* (double-flowered). 2. June. England.
„ „ *macra'nthum* (large-flowered). 1–1½. Flowers larger. Japan.
„ *oppositifo'lium* (opposite-leaved) 1. April. Nepaul. 1822.
„ „ *a'lbo-vitta'tum* (white-striped). Leaves with white bands. Japan. 1862.
„ *orienta'le* (oriental). See P. POLYANTHEMUM.
„ *polya'nthemum* (many-flowered). 1. May. Caucasus. 1826.
„ *pube'scens* (downy). See P. BIFLORUM.
„ *puncta'tum* (dotted). 1½. April. Himalaya.
„ *ro'seum* (rosy). 1½–2. Pink. Siberia.
„ *sibi'ricum* (Siberian). 2. White. Siberia, &c.
„ *Thunbe'rgii* (Thunberg's). See P. LATIFOLIUM.
„ *verticilla'tum* (whorled-*leaved*). 1. May. Europe (Britain).
„ *vulga're* (common). See P. OFFICINALE and varieties.

POLYGONE'LLA. (The diminutive of *Polygonum*, Nat. ord. Polygonaceæ.)

Hardy deciduous shrub. Layers in spring and autumn. Ordinary soil with a little peat.

P. parvifo'lia (small-leaved). 2. Pink. July. N. Amer. 1810.

POLY'GONUM. Knot Grass. (From *polus*, many, and *gonu*, a knee; numerous joints of the stem. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 8-*Octandria*, 3-*Trigynia*.)

Annuals, seeds in the open border, in March and April; herbaceous perennials, also by seeds, as for annuals, and division of the roots; tender annuals require the assistance of a hotbed before transplanting in May; greenhouse shrubs, by cuttings in sandy soil, under a glass, and grown in fibrous loam, with a little peat; several of them, such as *adpre'ssum*, which sends out very long shoots, should be tried against a wall. The fruit of several, such as *tata'ricum* and *Fagopy'rum*, are used for tarts.

GREENHOUSE EVERGREENS AND HERBACEOUS.

P. adpre'ssum (compressed). See MUEHLENBECKIA ADPRESSA.
„ *Bruno'nis* (Brown's). See P. AFFINE.
„ *deci'piens* (deceiving). 2. Red. July. N. Holland. 1822. Herbaceous.
„ *capita'tum* (headed). ¼. Pink. Summer. Himalaya.
„ *deci'piens* (deceiving). 2. Red. July. N. Holland. 1822. Herbaceous.
„ *gra'cile* (slender). 1. Red. July. N. Holland. 1822. Herbaceous.
„ *herniarioi'des* (Herniaria-like). See P. PLEBEIUM.
„ *inju'cu'ndum* (unpleasant). See MUELENBECKIA CHILENSIS.
„ *platycla'dum* (flat-branched). See MUELENBECKIA PLATYCLADA.
„ *plebei'um* (plebeian). ½. July. Old World, tropical and temperate. 1827.
„ *re'pens* (creeping). See P. CAPITATUM.
„ *tincto'rium* (dyer's). 2. Red. July. China. 1776. Biennial.
„ *tomento'sum* (felted). 3–4. Pink. Tropics of Old World. 1875.

HARDY HERBACEOUS.

P. affi'ne (kindred). ¼. Red. June. Nepaul. 1822.
„ *ala'tum* (winged). Tropical and subtropical Asia and Africa.
„ *alpi'num* (alpine). 2. White. July. Switzerland. 1816.
„ „ *polymo'rphum* (many-formed).
„ „ *songa'ricum* (Soongarian).
„ *ambi'guum* (doubtful). See P. AMPLEXICAULE.
„ *amphi'bium* (amphibious). 1. Pink. July. Britain. Aquatic.
„ „ *hirsu'tum* (hairy). 1. Red. July. Britain.
„ *amplexicau'le* (stem-clasping). 2. Red. July. Himalaya. 1837.
„ „ *oxyphy'llum* (sharp-leaved). 2–3. White. July. Himalaya.
„ *angustifo'lium* (narrow-leaved). See P. LAXMANNI.
„ *Aube'rti* (Aubert's). 7–10. Greenish or rosy. Western China. 1906. Twiner.
„ *auricula'tum* (eared). See P. CHINENSE.
„ *baldschua'nicum* (Baldschuanian). 10–30. White to deep pink. July to September. Bokhara. 1888. Twiner.
„ *barba'tum* (bearded). 2. White. July. China. 1819. Trailer.
„ *Bisto'rta* (Bistorta). 1½–2. Pink to rose. June to August. Northern regions (Britain). "Bistort."
„ *bulbi'ferum* (bulb-bearing). See P. VIVIPARUM.
„ *chine'nse* (Chinese). 3–4. White. October. China, &c.
„ „ *fo'liis pi'ctis* (painted-leaved). Leaves with a V-shaped white blotch. China.
„ *cilino'de* (hairy-jointed). N. Amer.
„ *cocci'neum* (scarlet). See P. AMPHIBIUM.
„ *compa'ctum* (compact). 2. White. July to September. Japan. 1870.
„ *cri'spulum* (crisped). See ATRAPHAXIS BUXIFOLIA.
„ *cuspida'tum* (short-pointed). 5–10. White. July to September. Japan. 1825.
„ „ *compa'ctum* (compact). See P. COMPACTUM.
„ *cymo'sum* (cymose). See P. CHINENSE.
„ *divarica'tum* (spreading). 2–3. White. August. Siberia.
„ *Do'nii* (Don's). See P. FLACCIDUM.
„ *e'legans* (elegant). See P. PLEBEIUM.
„ *elli'pticum* (oval-*leaved*). See P. BISTORTA.
„ *filifo'rme* (thread-formed). 1–2. White. Japan.
„ „ *variega'tum* (variegated). Leaves blotched with yellow. Japan. 1865.
„ *fla'ccidum* (feeble). India, &c.
„ *frute'scens* (shrubby). See ATRAPHAXIS LANCEOLATA.
„ *glau'cum* (milky-green). See P. MARITIMUM.
„ *graci'llimum* (very-graceful). See P. SPHÆROSTACHYUM.
„ *lana'tum* (woolly). See P. LANIGERUM.
„ *lani'gerum* (wool-bearing). 3–10. Carnation-red. Tropics of Old World. 1890.
„ *Laxma'nni* (Laxmann's). 1. White. June. Dahuria. 1800.
„ *macrophy'llum* (large-leaved). See P. SPHÆROSTACHYUM.
„ *mari'timum* (maritime). 1. North temperate regions.
„ *Maximowi'czii* (Maximowicz's). Japan.
„ *mo'lle* (soft). 2–3. White. July, August. Himalaya. 1882.
„ *multiflo'rum* (many-flowered). 8–12. White. September. Japan; China. 1881. Twiner.
„ *petiola'tum* (long-stalked). See P. AMPLEXICAULE.
„ *polysta'chyum* (many-spiked). 3. White. August, September. Himalaya.
„ *Posu'mbu* (Posumbu). ½. Rose. Eastern Asia. 1902.
„ *ramosi'ssimum* (much-branched). White. N. Amer.
„ *ru'de* (rough). Himalaya.
„ *sachaline'nse* (Sachalin). 5–10. White. Island of Sachalin, &c. 1869.
„ *sali'gnum* (willow-leaved). See P. DIVARICATUM.
„ *sca'ndens* (climbing). Leaves claret-coloured beneath. 1900. Twiner.
„ *seri'ceum* (silky). ½. White. July. Siberia. 1820.
„ *seto'sum* (bristly). 1. White. July. Asia Minor. 1817.
„ *Siebo'ldii* (Siebold's). See P. CUSPIDATUM.
„ *Spæ'thii* (Spæth's). 10–12. Carmine-red. Schantung, China. 1900.

P. specta'bile (showy). 3–5. Leaves marbled with green, white, and red. A form of *P. sachalinense* (?). 1903.
„ *sphærosta'chyum* (spherical-spiked). ½–¾. Blood-red. Himalaya. 1889.
„ *Thunbe'rgii* (Thunberg's). Japan.
„ *vacciniifo'lium* (whortleberry-leaved). Pink. July. Himalaya. 1845. Trailing evergreen.
„ *virginia'num* (Virginian). 3. White. August. N. Amer. 1640.
„ *vivi'parum* (viviparous). ½. Pink. August. Northern Arctic regions (Britain). "Alpine Bistort."
„ *volca'nicum* (volcanic). See MUELENBECKIA VULCANICA.
„ *Weyri'chii* (Weyrich's). Island of Sachalin.

HARDY ANNUALS.

P. alti'ssimum (tallest). See P. ORIENTALE.
„ *arena'rium* (sand). 1. Purple. June. Hungary. 1807. Trailer.
„ *emargina'tum* (notched). See FAGOPYRUM CYMOSUM.
„ *Fagopy'rum* (buckwheat). See FAGOPYRUM ESCULENTUM.
„ *floribu'ndum* (bundle-flowered). 2. Red. July. Siberia. 1818.
„ *hydropiperoi'des* (Hydropiper-like). 1. Red. July. N. Amer. 1800. Aquatic.
„ *mi'te* (mild. *Water-pepper*). See P. HYDROPIPEROIDES.
„ *orienta'le* (eastern). 6. Red. August. Tropics of Old World. 1707. "Garden Persicary."
„ „ *a'lbum* (white). 4. White. August. E. Ind. 1781.
„ „ *variega'tum* (variegated). Leaves variegated. 1892.
„ *pennsylva'nicum* (Pennsylvanian). 1. Red. July. N. Amer. 1800.
„ *persicarioi'des* (Persicaria-like). 1½. Pink. July. Mexico. 1816.
„ *pilo'sum* (thinly-hairy). See P. ORIENTALE.
„ *salsugi'neum* (briny). 1. Pink. June. Caucasus. 1817. Aquatic.
„ *senegale'nse* (Senegal). 1½. Red. July. Guinea. 1825. Aquatic.
„ *tata'ricum* (Tartarian). See FAGOPYRUM TATARICUM.

POLY'MNIA. (Polyhymnia was one of the Muses who presided over singing and rhetoric. Nat. ord. Compositæ. Allied to Silphium.)

Greenhouse and hardy herbs or shrubs. Seeds; divisions in spring. *P. pyramidalis* does best raised from seed in heat and planted out at the end of May. Fibrous loam, leaf-mould, some well-decayed manure, and sand.

P. canade'nsis (Canadian). 3–6. Light yellow. July. N. Amer. 1768.
„ *edu'lis* (edible). 3–4. Yellow. S. Amer. Cultivated for the edible tubers.
„ *gra'ndis* (great). See MONTANOA BIPINNATIFIDA.
„ *heracleifo'lia* (Heracleum-leaved). See MONTANOA BIPINNATIFIDA.
„ *pyramida'lis* (pyramidal). 6–10. Yellow; disc brown. Colombia. 1867.
„ *Uveda'lia* (Uvedalia). 5–10. Yellow. September. N. Amer. 1699.

POLYPO'DIUM. Polypody. (From *polus*, many, and *pous, podos*, a foot; numerous feetlike divisions of the creeping stems. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Brown-spored Ferns. See FERNS.

HARDY.

P. alpe'stre (alpine). ½. July. Europe (Scotland). 1820.
„ „ *fle'xile* (flexuous). 1. July. Scotland.
„ *calca'reum* (spur-branched). See P. DRYOPTERIS ROBERTIANUM.
„ *conne'ctile* (connected). 1. June. Canada. 1823.
„ *Dryo'pteris* (Dryopteris). 1. July. North temperate zone (Britain). "Oak Fern."
„ „ *robertia'num* (Robertian). ½. Blade of frond erect. England.
„ *hexagono'pterum* (six-angled-winged). 1. July. N. Amer. 1811.
„ *Phego'pteris* (sun-fern). ½. June. Britain. "Beech Fern."
P. virginia'num (Virginian). 1. July. N. Amer.
„ *vulga're* (common). 1. July. Europe (Britain). "Common Polypody."
„ „ *bi'fido-crista'tum* (bifid-crested). Fronds forked and crested.
„ „ *bi'fidum* (bifid). Fronds forked.
„ „ *ca'mbricum* (Welsh). 1. July. Britain.
„ „ *cornubie'nse* (Cornish). 1. July. Cornwall. 1871.
„ „ *cornubie'nse eleganti'ssimum* (very-elegant). Fronds much and finely divided.
„ „ *cornubie'nse Fowle'ri* (Fowler's). Fronds permanently much divided. 1882.
„ „ *crena'tum* (notched). Pinnæ notched on the margin.
„ „ *cri'spum* (crisped). Pinnæ crisped.
„ „ *crista'tum* (crested). Fronds branched, crested, horned, and clustered. 1882.
„ „ *divisi'lobum* (deeply-cut). Frond much divided.
„ „ *multi'fido-crista'tum* (much-cut-crested). Much lobed and crested.
„ „ *omnila'cerum* (all-cut). Pinnæ all deeply cut and barren.
„ „ *pulche'rrimum* (fairest). Pinnæ broad, deeply serrated.
„ „ *ramo'sum* (branched). Frond branched.
„ „ *semila'cerum* (half-cut). Lower pinnæ lobed, barren; upper ones not cut, but fertile.
„ „ *suprasori'ferum* (bearing sori above). Sori marginal on the upper face.
„ „ *trichomanoi'des* (Trichomanes-like). Frond deeply and finely cut.

STOVE.

P. acrostichoi'des (Acrostichum-like). 2. Ceylon to New Hebrides and Queensland.
„ *adna'scens* (attached). 1. Trop. Asia. 1824.
„ „ *læ'vis* (smooth).
„ „ *va'rium* (varying). 1½. Larger. July. Malacca. 1845.
„ *adna'tum* (attached). 2–3. S. Amer.
„ *a'lbicans* (whitening). 1–2. July. Java.
„ *a'lbo-punctati'ssimum* (white-much-dotted). See P. CRASSIFOLIUM ALBOPUNCTATISSIMUM.
„ *albosquama'tum* (white-scaled). 2. Malaya. 1864.
„ *amæ'num* (lovely). 1½–3. N. India; Formosa.
„ *amphoste'mon* (double-sorus). See P. ANGUSTIFOLIUM AMPHOSTEMON.
„ *andro'gynum* (male-and-female). 2–5. Trop. Amer. Possibly the correct name for *P. tetragonum*.
„ *angusta'tum* (narrowed). 1–2. N. India and N.S. Wales. Greenhouse.
„ *angustifo'lium* (narrow-leaved). ½. May. Trop. Amer. 1815.
„ „ *amphoste'mon* (double-sorus). The broadest form. Sori in four rows.
„ „ *ensifo'lium* (sword-leaved). Frond very narrow. Sori in one row.
„ *appendicula'tum* (appendaged). 2½–3. E. Himalaya to Penang.
„ *areola'tum* (areolated). See P. AUREUM AREOLATUM.
„ *argu'tum* (acute). See P. SUBAURICULATUM.
„ *aspe'rulum* (roughish). August. Philippines. 1842.
„ *asplenifo'lium* (spleenwort-leaved). 2. July. Martinique. 1790.
„ *aspleniοi'des* (Asplenium-like). See P. REPTANS ASPLENIOIDES.
„ *attenua'tum* (thin). See P. BROWNII.
„ *au'reum* (golden). 3. March. Trop. Amer. 1742.
„ „ *areola'tum* (areolated). 1. Sori in one row. Brazil. 1824.
„ „ *denticula'tum* (finely-toothed). Fronds large, finely toothed. 1904.
„ „ *elonga'tum* (elongated). Fronds large, with very narrow segments. 1904.
„ „ *glau'cum* (sea-green). Frond of a deep sea-green.
„ „ *Ma'yii* (May's). Fronds undulate, serrate; veins purple. 1898.
„ „ *pulvina'tum* (cushioned). Frond green. Brazil. 1841.
„ „ *sporadoca'rpon* (scattered-fruited). Sori scattered in one series.
„ *auricula'tum* (eared). 2. July. Himalaya. 1824.
„ *bi'frons* (two-fronded). ½–¾. Fronds barren and fertile. Ecuador.
„ *Billardie'ri* (La Billardière's). 1. May. Van Diemen's Land. 1823.

P. biseria'le (two-serial). 3–5. Peru and Ecuador.
„ *biserra'tum* (twice-serrated).
„ *brasilie'nse* (Brazilian). Possibly the oldest name for *P. neriifolium*.
„ *Bro'wnii* (Brown's). ½–1½. Australia; New Caledonia, &c. 1823.
„ *califo'rnicum* (Californian). 1. California. 1888. Greenhouse.
„ *calva'tum* (bald). China.
„ *cameroonia'num* (Cameroon). 4–7. Cameroon Mountains.
„ *capitella'tum* (small-headed). See P. JUGLANDIFOLIUM.
„ *Cathari'næ* (St. Catherine's). See P. LORICEUM.
„ *cau'diceps* (tail-headed). Formosa. 1886.
„ *chnoo'des* (shavings-like). 1½–2½. W. Ind. and Venezuela.
„ *cilia'tum* (eye-lashed). See P. PILOSELLOIDES CILIATUM.
„ *clathra'tum* (lattice-like). Simla.
„ *colpo'des* (sinuous). See P. PLESIOSORUM.
„ *co'nfluens* (flowing-together). ½. Fertile and barren fronds different. E. Australia. 1820.
„ *conjuga'tum* (united). 3–4. Trop. Asia.
„ *conti'guum* (adjoining). See P. LONGIFOLIUM.
„ *coro'nans* (crowning). See P. CONJUGATUM.
„ *corymbi'ferum* (corymb-bearing). See P. LINGUA CORYMBIFERUM.
„ *costa'tum* (ribbed). Frond more shortly stalked than in *P. stigmosum*. Himalaya. 1824.
„ *crassifo'lium* (thick-leaved). 3. August. Trop. Amer.
„ „ *albopunctati'ssimum* (white-much-dotted). Much dotted with white. Brazil. 1840.
„ *crassine'rvium* (thick-nerved). See P. PLATYPHYLLUM.
„ *crena'tum* (scolloped). 1½. August. Jamaica. 1823.
„ *curva'tum* (curved). 1. August. Jamaica to Peru. 1823.
„ *cuspida'tum* (short-pointed). See P. PERSICÆFO'LIUM.
„ *decuma'num* (tall). 5. August. Brazil. 1818.
„ *decussa'tum* (decussate). 5–7. W. Ind. to Peru and Brazil.
„ *defle'xum* (bent-down). 2. July. Colombia. 1830.
„ *Dia'næ* (Diana's). See P. MOLLE.
„ *dictyoca'llis* (beautifully-netted). See P. DECUMANUM.
„ *diffo'rme* (two-formed). 4–5. Pinnæ often of two shapes. Malaya.
„ „ *macrophy'llum* (large-leaved). Frond 5 ft. long; pinnæ 9 in. long. 1898.
„ *dilata'tum* (dilated). 2½–4. N. India; Malaccas; Samoa.
„ *dissi'mile* (unlike). 2. July. Brazil. 1820.
„ *dissi'mile* (dissimilar) of Hooker. See P. CHNOODES.
„ *di'stans* (distant). 3–5. N. India to Ceylon and Java.
„ *dive'rgens* (spreading). See NEPHRODIUM EFFUSUM.
„ *diversifo'lium* (diverse-leaved). 2. Trop. Amer. 1817.
„ *dre'panum* (sickle). 1–2. Madeira, Greenhouse.
„ *effu'sum* (spreading). See NEPHRODIUM EFFUSUM.
„ *ela'sticum* (elastic). 1–1½. July. Trop. Amer. 1824.
„ *e'legans* (elegant). Frond pale green. 1903.
„ *ensifo'lium* (sword-leaved). See P. ANGUSTIFOLIUM ENSIFOLIUM.
„ *fi'lipes* (thread-stalked). See P. TENELLUM.
„ *flocculo'sum* (woolly). ½–1½. August. N. India. 1841.
„ *fo'ssum* (pitted). 1. Malaya. 1881.
„ *frate'rnum* (brotherly). 1½–2. Rhizome covered with rusty scales. Mexico.
„ *fraxinifo'lium* (ash-leaved). See P. DIVERSIFOLIUM.
„ *Gardne'ri* (Gardner's). 1–2. Ceylon.
„ *gemina'tum* (twin). ½–1. Near P. LYCOPODIOIDES. Brazil.
„ *Ghiesbre'ghtii* (Ghiesbreght's). 2–2½. S. Mexico.
„ *gla'brum* (smooth). ½–1. July. Australia. New Caledonia, &c.
„ *glaucophy'llum* (sea-green-leaved). ½–1½. W. Ind., Colombia, &c. 1874.
„ „ *glau'cum* (sea-green). Fronds glaucous.
„ „ *vi'ride* (green). Fronds green.
„ *glau'cum* (sea-green). 1½–2½. Philippines.
„ „ *crista'tum* (crested). Fronds crested. 1903.
„ „ *Ma'yii* (May's). Fronds plumose. 1903.
„ *gonato'des* (knotted). See P. PLESIOSORUM.
„ *gra'ndiceps* (large-headed). ½–¾. Formosa, Japan. 1885.
„ *gra'ndidens* (large-toothed). See P. PERSICÆFOLIUM GRANDIDENS.
P. grandifo'lium (large-leaved). See P. MEMBRANACEUM GRANDIFOLIUM.
„ *gri'seum* (grey). 1½–2½. Mexico and Guatemala.
„ *guatemale'nse* (Guatemalan). 2½. Trop. Amer.
„ *harpeo'des* (sickle-like). See P. LORICEUM LATIPES.
„ *hastæfo'lium* (halbert-leaved). 1–1½. W. Ind.
„ *hasta'tum* (halbert-shaped) of Fée. See P. TETRAGONUM.
„ *hemioniti'deum* (Hemionitis-like). 1. Trop. Asia.
„ *Henchma'nni* (Henchman's). See P. FRATERNUM.
„ *Hera'cleum* (Heracleum-like). 3–4. Trop. Asia.
„ *heteroca'rpum* (various-fruited). 1½–2. N. India; Ceylon, &c.
„ „ *Zippe'llii* (Zippell's). Sori smaller, scattered.
„ *heterophy'llum* (variable-leaved). ½. July. W. Ind. 1820.
„ *himalaye'nse* (Himalayan). 2–3. N. India.
„ *hirsu'tum* (hairy). Brazil.
„ *hymeno'des* (membrane-like). See P. SUPERFICIALE.
„ *inæqua'le* (unequal). See P. GUATEMALENSE.
„ *inca'num* (hoary). ½. August. S. Amer. 1811.
„ *inci'sum* (cut). 1. July. W. Ind. 1810.
„ *incurva'tum* (incurved). ½. Malaya.
„ *interme'dium* (intermediate). See P. CALIFORNICUM.
„ *iridifo'lium* (Iris-leaved). 1½. September.
„ *irioi'des* (Iris-like). 1–3. Tropical and subtropical Old World.
„ „ *ra'mo-crista'tum* (branched-crested). Fronds much divided towards the apex, crested. 1902.
„ *irregula're* (irregular). See P. DIFFORME.
„ *jamaice'nse* (Jamaica). 1½. June. Jamaica. 1820.
„ *juglandifo'lium* (walnut-leaved). 1½–2½. July. Himalaya. 1822.
„ „ *tenuicau'da* (slender-tailed). Fronds attenuated at the apex.
„ *karwinskia'num* (Karwinskian). See P. PLEBEIUM.
„ *Kni'ghtiæ* (Mrs. Knight's). Fronds long, narrow, arching. 1903.
„ *Krame'ri* (Kramer's). ½–¾. Japan. 1878. Greenhouse or nearly hardy.
„ *lachnopo'dium* (downy-footed). 4. June. Jamaica. 1843.
„ *la'chnopus* (woolly-footed). 1–1½. N. India.
„ *læviga'tum* (smooth). Trop. Amer.
„ *lanceola'tum* (spear-headed). 1. August. S. Amer. 1812.
„ *latifo'lium* (broad-leaved). See NEPHRODIUM LATIFOLIUM.
„ *la'tipes* (broad-stalked). See P. LORICEUM LATIPES.
„ *leiorhi'zon* (smooth-rooted). 4–6. Trop. Asia. 1844.
„ *lepido'pteris* (scale-winged). Trop. Amer.
„ „ *ru'fulum* (reddish). Scales of rhizome red-brown.
„ „ *sepu'lium* (buried). Lower pinnæ not reduced.
„ *lindleya'num* (Lindleyan). See P. PALMATUM ANGUSTATUM.
„ *linea're* (linear). ½. May. Japan. 1822.
„ *Li'ngua* (tongue). ½–1. Trop. Asia. 1817. Greenhouse.
„ „ *corymbi'ferum* (corymb-bearing). Fronds tasselled at the apex.
„ „ *Hetera'ctis* (Heteractis). Fronds wider. Himalaya.
„ *longifo'lium* (long-leaved). 3. July. Malaccas and Philippines. 1819.
„ *lo'ngipes* (long-footed). See P. PHYMATODES.
„ *longi'ssimum* (longest). 2–5½. N. India; Malaccas, &c.
„ *lori'ceum* (thong-like). 1½–2. Mexico and W. Ind. to Brazil.
„ „ *la'tipes* (broad-footed). Larger, less rigid.
„ „ *pinnati'fidum* (deeply-cut). Fronds cut into lobes.
„ „ *vaci'llans* (vacillating). Variable.
„ *lu'cidum* (shining). ½–1. Venezuela and Brazil. 1844.
„ *lycopodioi'des* (club-moss-like). ½. July. W. Ind. 1793.
„ „ *ma'ximum* (largest). A large form.
„ „ *owarie'nse* (Owarian). ¼. Fronds shorter. Trop. Africa.
„ „ *salicifo'lium* (willow-leaved). Fronds narrower; fertile and barren uniform. Brazil.
„ „ *squamulo'sum* (finely-scaly). Brazil.
„ *macroca'rpum* (large-fruited). ½–¾. Bolivia to Chili.
„ *ma'crodon* (large-toothed). 3–4. Philippines, Malaccas, &c. 1840.
„ *macro'pterum* (large-winged). 5–8. Brazil.
„ *macrou'rum* (long-tailed). 2–3. Australia. 1886.

P. madre'nse (Madran). ½–¾. Sierra Madre, N.W. Mexico.
„ *margine'llum* (small-margined). ½–¾. Fronds with a black edge. W. Ind. to Peru.
„ *Marte'nsii* (Martens's). ¾–1. Mexico.
„ *mega'lodus* (large-toothed). See P. TETRAGONUM MEGALODUS.
„ *membrana'ceum* (membranous). 1–3. N. India to Ceylon.
„ „ *grandifo'lium* (large-leaved). Larger; sori more copious.
„ *meniscifo'lium* (Meniscium-leaved). 2–3. July. Brazil. 1837.
„ *meyenia'num* (Meyenian). 2–3. Yellow. May. Philippines.
„ *mo'lle* (soft). 2–2½. St. Helena. 1876.
„ *morbillo'sum* (somewhat-sickly). See P. HERACLEUM.
„ *multilinea'tum* (many-lined). 5–6. N. India; Fiji.
„ *musæfo'lium* (Musa-leaved). 1–3. Malaya.
„ *myrioca'rpum* (myriad-fruited). See P. PELLUCIDUM MYRIOCARPUM.
„ *nerifo'lium* (Nerium-leaved). July. Brazil. 1837.
„ „ *crista'tum* (crested). 3–4. Pinnæ crested or tasselled. 1897.
„ *nigre'scens* (blackening). 3. Malaya, &c. 1857.
„ *ni'gripes* (black-stalked). 1–1½. Venezuela.
„ *ni'tidum* (shining) of J. Smith. See P. LYCOPODIOIDES.
„ *ni'tidum* (shining) of Fil. Exoticæ. See P. LUCIDUM.
„ *nummulariæfo'lium* (moneywort-leaved). ½–¾. N. India; Philippines, &c.
„ *nu'tans* (nodding). July. Malacca.
„ *obliqua'tum* (twisted). July. India; Philippines. 1841.
„ *oliva'ceum* (olive-like). 1. S. Amer.
„ *Oti'tes* (Otites). See P. TENUIFOLIUM.
„ *owarie'nse* (Owarian). See P. LYCOPODIOIDES OWARIENSE.
„ *oxy'lobum* (sharp-lobed). See P. TRIFIDUM.
„ *palma'tum* (hand-shaped). 1–2½. Malaccas and Philippines.
„ „ *angusta'tum* (narrowed). Fronds narrower.
„ *papillo'sum* (nipped). April. Philippines.
„ *Paradi'seæ* (Paradise). See P. PECTINATUM PARADISEÆ.
„ *pectina'tum* (comb-*leaved*). 1½. July. Trop. Amer. 1793.
„ „ *Paradi'seæ* (Paradise). 4. May. Brazil. 1841.
„ „ *plumo'sum* (plumose). Fronds plumose.
„ „ *Schkuh'rii* (Schkuhr's). 1. July. Frond smaller, with black veins. Brazil. 1824.
„ *pellu'cidum* (pellucid). 1–1½. Sandwich Isles.
„ „ *myrioca'rpum* (myriad-fruited). Pinnæ pinnatifid.
„ *pelti'deum* (scaly). See P. PHYMATODES.
„ *penni'gerum* (pinnæ-bearing). 1½–2. New Zealand. 1835. Greenhouse.
„ *percu'ssum* (pierced-through). 1. Yellow. Trop. Amer. 1841.
„ *persicæfo'lium* (peach-leaved). 3. Trop. Asia.
„ „ *gra'ndidens* (large-toothed). Pinnæ with large teeth. Java.
„ *Phyllitidis* (hart's-tongue). 2. July. Trop. Amer. 1793.
„ „ *brevifo'lium* (short-leaved). Fronds shorter.
„ „ *obscu'rum* (obscure).
„ *Phymato'des* (warted). ½. July. E. Ind. 1823.
„ „ *corymbo'sum* (corymbose). Fronds heavily crested. 1906.
„ „ *lo'ngipes* (long-stalked). Fronds with longer stalks.
„ „ *termina'le* (terminal). Apex longer.
„ *Pico'ti* (Picot's). 2–3. S. Amer. 1886. Greenhouse.
„ *pi'ctum* (painted). Polynesia. 1881.
„ *piloselloi'des* (mouse-ear-like). ½. August. Trop. Amer. 1793.
„ „ *cilia'tum* (eye-lashed). Fertile frond with sori projecting beyond the edges.
„ *plantagi'neum* (plantain-like). 1. July. W. Ind. 1817.
„ *platyphy'llum* (broad-leaved). 2–3½. Cuba to Brazil and Peru.
„ *plebei'um* (common). 1. Mexico.
„ *plecto'lepis* (twisted-scaled). 1½–3. Mexico and Guatemala.
„ *plesioso'rum* (contiguous-sorused). ¾–1½. Mexico to Venezuela.
„ „ *appendicula'tum* (appendaged). 1. Young fronds red-veined. Mexico. Greenhouse.

P. Plu'mula (feathered). See P. ELASTICUM.
„ *polya'nthum* (many-flowered). Brazil. 1824
„ *preslia'num* (Preslian). See P. NERIIFOLIUM.
„ *proli'ferum* (proliferous). 1. Tropics of Old World.
„ *propi'nquum* (related). 1½–4. N. India; Java, &c.
„ *pruina'tum* (frosted-*leaved*). 2. September. Jamaica. 1793.
„ *pulvina'tum* (cushioned). See P. AUREUM.
„ *puncta'tum* (dotted). 2–6. Colombia to Chili; New Zealand, &c.
„ „ *rugulo'sum* (finely-wrinkled). 3–6. Leaves less divided, harder. Australia. Greenhouse.
„ *pustula'tum* (pimpled). ½–1. New Zealand and Australia. 1820. Greenhouse.
„ *quercifo'lium* (oak-leaved). 1½. September. Trop. Asia. 1824.
„ *rece'dens* (receding). June. Isle of Luzon.
„ *refra'ctum* (broken). July. Brazil. 1837.
„ *Reinwa'rdtii* (Reinwardt's). See P. SUBAURICULATUM REINWARDTII.
„ *repa'ndum* (wavy-edged). 1½. August. Jamaica. 1820.
„ *re'pens* (creeping). 2. May. Trop. Amer. 1810.
„ „ *undula'tum* (wavy). Fronds wavy.
„ *re'ptans* (creeping). 1. Trop. Amer.
„ „ *asplenioi'des* (Asplenium-like). Fronds larger, more erect.
„ *rhodopleu'ron* (red-ribbed). See P. PLESIOSORUM APPENDICULATUM.
„ *rigi'dulum* (slightly-rigid). 3–4. N. Australia, &c.
„ *rostra'tum* (beaked). ½–¾. N. India.
„ *ru'bidum* (reddish). 1–1½. Philippines.
„ *rufe'scens* (reddish). 2–3. Java; Ceylon; Queensland, &c.
„ *ru'fulum* (slightly-reddish). See P. LEPIDOPTERIS RUFULUM.
„ *rugulo'sum* (slightly-wrinkled). See P. PUNCTATUM RUGULOSUM.
„ *rupe'stre* (rock). ½–¾. May. Java; Philippines; Australia. 1824. Greenhouse.
„ *salicifo'lium* (willow-leaved). See P. LYCOPODIOIDES SALICIFOLIUM.
„ *samare'nse* (Samaran). 1–2½. Samar. Philippines.
„ *sa'nctum* (holy). See NEPHRODIUM SANCTUM.
„ *sandvice'nse* (Sandwich). of Hooker and Arnold. 5–6. Sandwich and Society Isles.
„ *sandvice'nse* (Sandwich) of Hooker. See P. STEGNOGRAMMOIDES.
„ *Schkuh'rii* (Schkur's). See P. PECTINATUM SCHKUHRII.
„ *scolopendrioi'des* (Scolopendrium-like). See P. TRIFURCATUM.
„ *Scoule'ri* (Scouler's). ¾–1½. North-Western Amer. Greenhouse.
„ *sepu'ltum* (buried). See P. LEPIDOPTERIS SEPULTUM.
„ *se'rpens* (creeping). ½. Australia. 1816. Greenhouse.
„ *serræfo'rme* (saw-shaped). July. Philippines. 1841.
„ *serrula'tum* (finely-sawed). ¼–½. W. Ind. to Brazil, &c. 1823.
„ „ *myosuroi'des* (Myosurus-like). Fronds pinnatifid throughout. W. Ind. 1824.
„ *sertularioi'des* (Sertularia-like). April. Malacca.
„ *sieberia'num* (Sieberian). 2½–3½. Mauritius and Bourbon.
„ *si'mile* (similar). 2.
„ *si'mplex* (simple). See P. LINEARE.
„ *simplicifo'lium* (simple-leaved). ½–1½. Yellow. Philippines. 1840.
„ *sinuo'sum* (sinuous). ½–¾. Malaccas, Amboyna, &c. 1859.
„ *soro'rium* (sisterly). 1½–3. Cuba and Mexico to Peru.
„ *specta'bile* (showy). See NEPHRODIUM VILLOSUM SPECTABILE.
„ *Spe'ctrum* (image). ¾–1. Sandwich Isles; Sumatra.
„ *sphæroce'phalum* (sphere-headed) See P. ANGUSTATUM.
„ *sple'ndens* (shining). 1½–3. July. Philippines.
„ *sporadoca'rpum* (scattered-fruited). See P. AUREUM SPORADOCARPON.
„ *squama'tum* (scaly). 1–2. W. Ind. and Mexico to Peru. 1842.
„ *squamulo'sum* (finely-scaly). See P. LYCOPODIOIDES.
„ *stegnogrammoi'des* (Stegnogramme-like). 3½–5. Sandwich Isles.
„ *stigma'ticum* (stigmatic). ½–¾. Colombia. 1823.
„ *stigmo'sum* (stigma-like). 1. May. N. India; Malaya. 1823.

P. subauricula'tum (somewhat-auricled). 3–6. Trop. Asia, &c.
,, ,, *Reinwa'rdtii* (Reinwardt's). Edges of pinnæ notched, instead of toothed.
,, *subfalca'tum* (slightly-sickled). July. Malaya. 1839.
,, *subpetiola'tum* (short-stalked). 2. May. Mexico. 1845.
,, *subserra'tum* (somewhat-sawed). See P. SUBPETIOLATUM.
,, *superficia'le* (superficial). ¼–1½. N. India; Tsus-Sima, &c.
,, *surrucuche'nse* (Surrucuchan). 1½–3. W. Ind. to Ecuador.
,, *suspe'nsum* (suspended). 1½–2. Mexico to Brazil and Ecuador.
,, ,, *asplenifo'lium* (Asplenium-leaved). Larger, and covered with reddish hairs.
,, *Swa'rtzii* (Swartz's). ½–¾. May. W. Ind. and Cayenne. 1816.
,, *sylvi'colum* (wood-loving). Colombia. 1881.
,, *tænio'sum* (banded) of gardens. See P. ANGUSTIFOLIUM.
,, *tene'llum* (slender). 1½. Australia, &c. 1823. Greenhouse.
,, *tenuicau'da* (slender-tailed). See P. JUGLANDIFOLIUM TENUICAUDA.
,, *tenuifo'lium* (slender-leaved). ½–1½. W. Ind. and Colombia. 1834.
,, *termina'le* (terminal). See P. PHYMATODES TERMINALE.
,, *tetrago'num* (four-angled). June. Brazil. 1827.
,, ,, *mega'lodus* (large-toothed). Pinnæ much broader.
,, *thyssano'lepis* (scale-fringed). 1. Trop. Amer.
,, *tricho'des* (hair-like). July. Philippines. 1840.
,, *trichomanoi'des* (Trichomanes-like). 1. August. W. Ind. 1822.
,, *tricu'spe* (three-pointed). ½–1. Japan and Corea.
,, *tri'fidum* (three-cut). ½–1½. N. India to Ceylon.
,, *trifurca'tum* (three-forked). ½. July. W. Ind. 1820.
,, *triparti'tum* (three-parted). 1–2. Calabar. 1865.
,, *trique'trum* (triquetrous). ½–1½. Java.
,, *tubero'sum* (tuberose). 2. W. Ind.
,, *unidenta'tum* (one-toothed). 2–3. Sandwich Isles.
,, *vacciniifo'lium* (whortleberry-leaved). ½. September. Trop. Amer.
,, ,, *a'lbum* (white). Gardens.
,, *vaci'llans* (vacillating). See P. LORICEUM VACILLANS.
,, *veno'sum* (veiny). See P. STIGMATICUM.
,, *venu'stum* (lovely). See P. HIMALAYENSE.
,, *verruco'sum* (warted). 4½–6. Philippines and Malaccas.
,, *Willdeno'vii* (Willdenow's). ½–2. Mauritius and Bourbon.
,, *Xi'phias* (Xiphias). 1. Polynesia. 1881.
,, *Zippe'llii* (Zippell's). See P. HETEROCARPUM.

POLYPODY. *Polypo'dium.*

POLYPO'GON. Beard Grass. (From *polus*, many, and *pogon*, a beard. Nat. ord. Gramineæ.)
Hardy annual grasses of ornamental character. Seeds in April in any good garden soil.
P. littora'lis (shore). 1. Grey. July. Europe.
,, *mari'timus* (maritime). 1. Grey. July. S. Europe.
,, *monspelie'nsis* (Montpelier). 1. Grey. July. Temperate and tropical regions.

POLY'PORUS. A large genus of fungi or toadstools, growing on the ground in woods, under trees, upon wood, or very often upon decaying trees. They are thick, fleshy, and may resemble a mushroom in shape, or a bracket when growing upon the trunks of trees. They are brown or dark greenish-yellow, and the under-surface is full of small pores or holes, which are really fine, cylindrical tubes, bearing spores on their sides.

POLY'PTERIS. (From *polus*, many, and *pteris*, a feather; in allusion to the numerous small, feathery scales of the pappus. Nat. ord. Compositæ. Allied to Palafoxia and sometimes joined with it.)
Half-hardy, perennial herbs, that may be reared from seeds in a gentle heat, and planted out in May like half-hardy annuals or sown in the open in April. Well-drained soil.
P. callo'sa (beautiful). 1½. White. June. North-Western Amer. 1824.

P. hookeria'na (Hookerian). 1. Pale rosy-purple. July August. Texas; Mexico. 1865.
,, *integrifo'lia* (entire-leaved). 1. White. July, August. N. Amer. 1823.
,, *texa'na* (Texan). 1. Rose. July, August. Texas; Mexico.

POLY'SCIAS. (From *polus*, many, and *skias*, an umbel; the umbels of flowers are numerous. Nat. ord. Araliaceæ.)
Stove shrubs or small trees. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.
P. cutispo'ngia (skin-sponge). Madagascar.
,, *nodo'sa* (jointed). 40. White. March. Malaya. 1818.
,, *panicula'ta* (panicled). Mauritius. 1866. The correct name for the shrub known as *Terminalia elegans*.

POLY'SPORA. (From *polus*, many, and *spora*, seed; many-seeded capsules. Nat. ord. *Teaworts* [Ternströmiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Now referred to Gordonia.)
P. axilla'ris (axillary-*flowered*). See GORDONIA ANOMALA.

POLYSTA'CHYA. (From *polus*, many, and *stachus*, a spike; spikes numerous. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids with small, usually pretty flowers. Division when about to start into fresh growth. Small pots, pans, or baskets, three-parts filled with crocks, the rest sphagnum and a little peat fibre.
P. abbrevia'ta (shortened). Brazil. 1874.
,, *affi'nis* (related). Old gold, tinted with red. Madagascar. 1844 and 1896.
,, *appendicula'ta* (appendaged). Small yellow. Cameroons. 1903.
,, *bi'color* (two-coloured). ½–¾. Sepals purple; the rest white. Seychelles. 1906.
,, *bracteo'sa* (large-bracted). Yellow, brown. Trop. Africa. 1838.
,, *Bucha'nani* (Buchanan's). 1. Yellowish and faintly purple. E. Trop. Africa. 1893.
,, ,, *vi'ridis* (green). Emerald green; lip white. W. Trop. Africa. 1903.
,, *bulbophylloi'des* (Bulbophyllum-like). ½. White; lip with orange spot. W. Trop. Africa. 1891.
,, *campyloglo'ssa* (curved-lipped). ½–¾. Green, stained brown on column. British E. Africa. 1909.
,, *dendrobiiflo'ra* (Dendrobium-flowered). White, suffused pale rose, blood-red. German E. Africa. 1910.
,, *dixa'ntha* (two-yellow). Ochre; lip deep yellow, purple, orange. W. Trop. Africa. 1882.
,, *ensifo'lia* (sword-leaved). ½–¾. Tawny yellow. Trop. Africa. 1905.
,, *flexuo'sa* (flexuous). See EULOPHIA FLEXUOSA.
,, *galea'ta* (helmeted). See P. GRANDIFLORA.
,, *golunge'nsis* (Golungan). ½. Light yellow. Trop. Africa. 1910.
,, *grandiflo'ra* (large-flowered). Green, spotted red; lip greenish-white. W. Trop. Africa. 1837.
,, *haroldia'na* (Haroldian). ½. White, tinged with green. Trop. Africa. 1905.
,, *hypo'crita* (mimic). Light green, with brown spots; lip whitish. W. Trop. Africa. 1881.
,, *imbrica'ta* (overlapping). ½. Yellow and pink. E. Trop. Africa. 1893.
,, *Ki'rkii* (Kirk's). ½–¾. White; lip edged with purple. E. Trop. Africa. 1895.
,, *Laure'ntii* (Laurent's). White or cream-white. Congo. 1905. Trailer.
,, *lawrencea'na* (Lawrencean). Pale lilac and green. British Central Africa. 1893.
,, *laxiflo'ra* (lax-flowered). January. W. Trop. Africa.
,, *leone'nsis* (Sierra Leone). Light green; lip white. W. Trop. Africa. 1888.
,, *linea'ta* (lined). Green and lined with brown. Guatemala. 1869.
,, ,, *ela'tior* (taller). Taller. Mexico. 1869.
,, *lu'teola* (small yellow). Yellow-green. Trop. Amer. 1818.
,, *mystacidioi'des* (Mystacidium-like). 3½. Lurid purple and flesh. Congo. 1905.
,, *ottonia'na* (Ottonian). S. Africa. 1855.
,, *panicula'ta* (panicled). Coppery-yellow to reddish-orange. Trop. Africa. 1910.
,, *Polychæ'te* (many-long-haired). Trop. Africa. 1905.

P. pube'rula (finely-downy). Green. Trop. Africa. 1822.
„ *pube'scens* (downy). Yellow, red. May. S. Africa. 1838.
„ *purpu'rea* (purple). Purple. July, August. India.
„ *rufi'nula* (reddish). ½. Cinnamon-brown, greenish; lip yellowish, purple. Zanzibar. 1879.
„ *stri'cta* (erect). ½–¾. Greenish-yellow, with purple streaks. British E. Africa. 1909.
„ *usambare'nsis* (Usambar). White, purple. German E. Africa. 1898.
„ *villo'sa* (shaggy) of Rolfe. ½. Pale green; lip white. E. Trop. Africa. 1894.
„ *villo'sa* (shaggy) of Journal des Orchidées. See P. AFFINIS.
„ *Wi'ghtii* (Wight's). Ceylon.
„ *zambesi'aca* (Zambesian). ½. Yellow and brown. Zambesi. 1895.

POLY'STICHUM. (From *polus*, many, and *stichos*, a row; numerous rows of spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. A section of Aspidium.)

Stove, greenhouse, and hardy, yellow-spored Ferns. See FERNS.

P. acrostichoi'des (Achrostichum-like). 2. N. Amer. 1820. Hardy.
„ „ *gra'ndiceps* (large-headed). Fronds tasselled at the apex. N. Amer. 1882.
„ *acule'atum* (prickly). 2–4. Europe (Britain). Hardy.
„ „ *gra'ndiceps* (large-headed). Fronds tasselled at the apex.
„ *angula're* (angular). 2–4. Europe (Britain). A variety of *P. aculeatum*. Hardy.
„ „ *gra'ndiceps* (large-headed). Fronds tasselled at the apex.
„ „ *Ma'yæ* (Miss May's). 1. Devon. 1881.
„ „ *proli'ferum* (proliferous). Fronds bearing two rows of young plants.
„ *ano'malum* (anomalous). 3–4. Sori often on the upper face. Ceylon. 1856.
„ *arista'tum* (awned). 1. July. Norfolk Island.
„ *auricula'tum* (eared). July. E. Ind. 1793.
„ „ *le'ntum* (pliant). Pinnæ deeply cut. India. 1879.
„ *Brau'nii* (Braun's). Europe. Hardy.
„ *cape'nse* (Cape). June. Cape of Good Hope. 1823.
„ *conca'vum* (concave). See P. LASERPITIIFOLIUM.
„ *coniifo'lium* (hemlock-leaved). 1½. June. E. Ind. 1841.
„ *coria'ceum* (leathery). See P. CAPENSE.
„ *crena'tum* (notched). Colombia. Stove.
„ *denticula'tum* (toothed). July. Jamaica.
„ *discre'tum* (parted). May. Nepaul.
„ *dre'panum* (sickle-*fronded*). See POLYPODIUM DREPANUM.
„ *falcine'llum* (small-sickle). May. W. Ind.
„ *fle'xum* (bent). 3–4. Juan Fernandez. 1856.
„ *frondo'sum* (leafy). 2–3. Madeira; Zambesi; Natal.
„ *glandulo'sum* (glanded). June.
„ *hi'spidum* (bristly). July. New Zealand. 1845.
„ *laserpitiifo'lium* (Laserpitium-leaved). 1½–2. Japan. 1862.
„ *le'ntum* (pliant). See P. AURICULATUM LENTUM.
„ *lepidocau'lon* (scaly-stemmed). 1½–2. Japan and Tsus-Sima. 1875.
„ *loba'tum* (lobed). 1–1½. Europe (Britain). Hardy. A variety of *P. aculeatum*.
„ *Lonchi'tis* (Lonchitis). 1–1½. Europe (Britain). "Holly Fern." Hardy.
„ *mexica'num* (Mexican). 1½–2. Mexico. 1857. Greenhouse.
„ *mucrona'tum* (sharp-pointed). Jamaica. 1838.
„ *muni'tum* (armed). May. Jamaica. 1839.
„ *obtu'sum* (blunt). June. Isle of Luzon.
„ *ordina'tum* (orderly). 3–4. S. Amer. A variety of *P. aculeatum*. Stove.
„ *platyphy'llum* (broad-leaved). See POLYPODIUM PLATYPHYLLUM.
„ *polyble'pharum* (much-fringed). 2. Japan. 1883. Greenhouse or hardy.
„ *proli'ferum* (proliferous). July. Australia. 1842.
„ *pu'ngens* (stinging). May. Cape of Good Hope. 1823.
„ *rhomboi'deum* (diamond-*leaved*). April. E. Ind.
„ *seto'sum* (bristly). Japan. 1862. A variety of *P. aculeatum*. Greenhouse.
„ *specio'sum* (showy). July. Nepaul.
P. tria'ngulum (triangular). 1–1½. W. Ind.
„ *tri'pteron* (three-winged). 1–1½. Japan. 1881. Greenhouse or hardy.
„ *vesti'tum* (clothed). June. Van Diemen's Land. 1842. A variety of *P. aculeatum*. Greenhouse.
„ *vivi'parum* (viviparous). 1½–1½. Fronds proliferous at tip. W. Ind. 1880.

POLY'XENA. (*Polyxena*, a daughter of Priam. Nat. ord. Liliaceæ.)

Greenhouse bulbs. Offsets. Fibrous, mellow loam leaf-mould, and sand.

P. odora'ta (scented). ½. White. September, October. S. Africa. 1871.
„ *pygmæ'a* (pigmy). ½. Lilac to purple. May. S. Africa. 1790.

POMADE'RRIS. (From *poma*, a lid, and *derris*, a skin; the membranous covering of the seed-vessel. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse, Australian, evergreen shrubs; yellow-flowered, except where otherwise stated. Cuttings of half-ripened shoots cut to a joint, dried at the base, and inserted in sand, under a glass; peat and sandy loam. Winter temp., 38° to 45°. *P. elli'ptica*, with the exception of having creamy-like flowers, resembles the *Ceano'thus azu'reus*, and no doubt would prove almost as hardy against a wall.

P. acumina'ta (pointed-*leaved*). See P. ELLIPTICA.
„ *andromedæfo'lia* (Andromeda-leaved). See P. PHILLYRÆOIDES.
„ *ape'tala* (petal-less). 3–4. Pale green. June. 1803. "Victoria Hazel."
„ *a'spera* (rough). See P. APETALA.
„ *betuli'na* (birch-like). Light yellow.
„ *ca'ndicans* (whitish). See P. TAINUI.
„ *cine'rea* (grey). 3–4. June.
„ *di'scolor* (two-coloured). See P. ELLIPTICA.
„ *elli'ptica* (elliptic). 4–6. June. 1805.
„ *ericifo'lia* (heath-leaved). See P. PHYLICÆFOLIA.
„ *ferrugi'nea* (rusty). 6. April. 1810.
„ *globulo'sa* (globulose). See SPYRIDIUM GLOBULOSUM.
„ *lani'gera* (woolly). 3. April. 1806.
„ *ledifo'lia* (Ledum-leaved). 2. April. 1824.
„ *ligustri'na* (privet-like). White. June. 1826.
„ *phillyræoi'des* (Phillyrea-like). 5. June. 1824.
„ *phylicæfo'lia* (Phylica-leaved). 2–3. May. 1819.
„ *racemo'sa* (racemose). Yellow, in racemes.
„ „ *ora'ria* (maritime).
„ *Tai'nui* (Tainui). 2–3. New Zealand.
„ *vacciniifo'lia* (Vaccinium-leaved). Creamy-yellow. 1869.
„ *viridiru'fa* (greenish-brown). See P. FERRUGINEA.
„ *wendlandia'na* (Wendland's). See P. FERRUGINEA.

POMA'RIA. (Named after *Pomar*, a Spanish physician. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Cæsalpinia.)

P. glandulo'sa (glanded). See CÆSALPINIA BIJUGA.

PO'MAX. (From *poma*, a lid; the operculum, or covering of the seed-vessel. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Opercularia.)

Greenhouse evergreen. See OPERCULA'RIA.

P. hi'rta (hairy). See P. UMBELLATA.
„ *umbella'ta* (umbelled). 1. White, green. July. N. Holland. 1826.

POMEGRANATE. *Pu'nica.*

POMMERE'SCHEA. (A commemorative name. Nat. ord. Scitaminaceæ.)

A stove fine foliage plant. Divisions in spring. Fibrous loam, lumpy peat, some charcoal, and sand.

P. Lackne'ri (Lackner's). 2–3. Golden-yellow. Burma. 1895.

POMPION. *Cucu'rbita.*

PONCELE'TIA. (Named after *M. Poncelet*, author of a treatise on Wheat. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. See SPRENGELIA.)

P. sprengelioi'des (Sprengelia-like). See SPRENGELIA PONCELETIA.

PONDS are reservoirs of water dug out of the soil, and made retentive by puddling with clay their bottoms

and sides. Puddling is necessary in almost all instances, and the mode of proceeding is thus detailed by Mr. Marnock, in the *United Gardeners' Journal*. When the excavation is formed, or partially so, the bottom puddle near the outer edge is formed, and upon this is raised the upright or side puddle; and as this proceeds, the ordinary clay or earth is raised at the same time, by which means the upright puddle is retained in its place; and ultimately the sides, being formed in a sloping direction, admit of being covered with gravel or sand, and may be walked upon, or stakes may be driven to a considerable depth without reaching the puddle, or in any way injuring it. This can never be the case if the puddle, as is sometimes done, be laid upon the sloping side of the pond. The sides may slope rapidly, or the reverse. If the slope be considerable, sand or gravel, to give a clean appearance, will be more likely to be retained upon the facing; plants can be more easily fixed and cultivated; goldfish, also, find in these shallow, gravelly parts under the leaves of the plants suitable places to deposit their spawn, and without this they are seldom found to breed. Ponds made in this way may be of any convenient size, from a couple of yards upwards to as many acres on large estates. When a small pond of this kind is to be made, and the extent of the surface is determined upon and marked out, it will then be necessary to form a second or outer mark, indicating the space required for the wall or side puddle, and about 3 feet is the proper space to allow for this; the puddle requiring about 2 feet, and the facing which requires to be laid upon the puddle ought to be about a foot more, making together 3 feet. Ponds may be made very ornamental.

PONE'RA. (From *poneros*, wretched; in allusion to the unattractive character of some of the species. Nat. ord. Orchidaceæ.)

Stove epiphytical orchids. Division at the commencement of growth. Fibre of peat, sphagnum, and crocks in pots or pans.

P. amethysti'na (amethyst). White, purple. Guatemala. 1869.
,, *juncifo'lia* (rush-leaved). Mexico.
,, *Kiena'stii* (Kienast's). See SCAPHYGLOTTIS KIENASTII.
,, *pelli'ta* (skin-clad). Yellow, lined with purple; lip whitish, streaked with purple. 1880.
,, *proli'fera* (proliferous). W. Ind.
,, *stria'ta* (striped). 2. Green, lined with purple. Guatemala. 1842.

PONGA'MIA. (*Pongam*, its Malabar name. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Dalbergia.)

Stove evergreen shrubs and climbers, all but one white-flowered, and from the East Indies. For culture, see DALBE'RGIA.

P. gla'bra (smooth-*leaved*). 5. 1699.
,, *grandiflo'ra* (large-flowered). 6. 1818.
,, *margina'ta* (bordered). See DERRIS CUNEIFOLIA.
,, *Pisci'dia* (Piscidia-like). India. 1818.
,, *uligino'sa* (marsh). See DERRIS ULIGINOSA.

PONTEDE'RIA. (Named after *J. Pontedera*, professor of botany at Padua. Nat. ord. *Pontederiads* [Pontederiaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Blue-flowered aquatics. Divisions of the roots; rich, strong, loamy soil, in a tub of water or an aquarium.

HARDY AQUATICS.

P. angustifo'lia (narrow-leaved). See P. CORDATA ANGUSTIFOLIA.
,, *cæru'lea* (light blue). 2. July. N. Amer. 1830.
,, *corda'ta* (heart-*leaved*). 2. July. N. Amer. 1759. "Water Plantain of Jamaica."
,, ,, *angustifo'lia* (narrow-leaved). 2. July. N. Amer. 1806.
,, *lanceola'ta* (spear-head). See P. CORDATA ANGUSTIFOLIA.
,, *montevide'nsis* (Montevidean). 2. Blue. Closely related to, or a form of *P. cordata*. 1899.

STOVE AQUATICS.

P. azu'rea (sky-blue). See EICHORNEA AZUREA.
,, *cra'ssipes* (thick-leaf-stalked). See EICHORNIA SPECIOSA.
,, *dilata'ta* (spreading). See MONOCHORIA HASTÆFOLIA.

PONTHIE'VA. (Commemorative of *M. de Ponthieu*. Nat. ord. Orchidaceæ.)

Stove terrestrial orchids of considerable beauty. Fibrous loam, peat, and sand.

P. glandulo'sa (glandular). 1. Green and white. January. W. Ind. 1800.
,, *macula'ta* (blotched). 1. White, green, yellow, spotted with pale brown. March. Colombia. 1882.
,, *petiola'ta* (stalked). 1–1½. Cinnamon. W. Ind.

PO'NTIA or **PI'ERIS.** A genus of butterflies, of which the following one is most obnoxious to the gardener:

P. brassicæ (Large White Cabbage Butterfly). The wings are white; the upper with broad black tips; and the female has two black spots on the middle. The under side of the under wings is light yellow. Breadth, when expanded, 2 inches. It appears from May to October. The caterpillar is bluish-green, thinly haired, and sprinkled with black dots, having a yellow stripe on the back, and the same on the sides. These caterpillars are found, throughout the summer and autumn, on all the cabbage-worts, on horse-radish, radishes, mustard, and similar plants, as well as on water-cresses. The pupæ are yellowish-green, with black dots, with a point on the head, and five on the back. The best way to destroy them is picking off and killing the caterpillars, as well as the pupæ, as far as it is possible; the latter are found attached to adjacent trees, hedges, and walls. But care must be taken not to destroy those pupæ which have a brown appearance; because they are full of the larvæ of ichneumons, and other allied parasites, which are the great scourge of these caterpillars.

P. rapæ (Small Cabbage Butterfly). This butterfly resembles the foregoing, but is one-half smaller; and the black tinge at the points of the upper wings is fainter, and not visible on the outer edge. The time of appearance is the same as of the former. The caterpillar is of a dull green, with fine white minute hairs, a yellow stripe on the back, and yellow spots on the sides, on a pale ground. In some years it is very injurious to the cabbage and turnip plants; it also infests mignonette, which it strips entirely of its leaves. It is very difficult to be discovered, from its colour. The pupa is yellowish or greenish-grey, with three yellow stripes.—*Kollar*.

POPLAR. *Po'pulus.*

POPPY. *Papa'ver.*

POPPY, CALIFORNIAN. *Platysté'mon califo'rnicus* and *Ro'mneya Coul'teri.*

POPPY, CORN. *Papa'ver Rhœ'as.*

POPPY GALL FLY. *Au'lax rhœa'dis.*

POPPY, HORNED. *Glau'cium fla'vum.*

POPPY-MALLOW. *Calli'rhoë.*

POPPY, OPIUM. *Papa'ver somni'ferum.*

PO'PULUS. Poplar. (From *arbor-populi* of the Romans, or the tree of the public; the Turin poplar much planted in their cities. Nat. ord. *Willowworts* [Salicaceæ]. Linn. 22-*Diœcia*, 7-*Octandria*.)

Hardy deciduous trees. Seeds, which should be sown in moist soil, slightly covered, but shaded as soon as the seeds drop from the trees; by cuttings of the ripened shoots; also by layers and suckers; a deep, moist, loamy soil suits them the best; but they do not thrive well either in a very dry place, or in places where there is stagnant water.

P. a'lba (white. *Abele-tree*). 40–100. March. Europe (Britain), &c.
,, ,, *bollea'na* (Bollean). See P. ALBA PYRAMIDALIS.
,, ,, *fo'liis au'reis variega'tis* (golden-variegated-leaved). Leaves blotched with yellow.
,, ,, *globo'sa* (globose).
,, ,, *macrophy'lla* (large-leaved). Leaves larger.
,, ,, *ni'vea* (snowy). 40–90. March. Europe. 1835.
,, ,, *Pica'rti* (Picart's). See P. ALBA MACROPHYLLA.
,, ,, *pyramida'lis* (pyramidal). 40–80. March. Tiflis, Transcaucasia. 1879.
,, *angula'ta* (angular. *Carolina*). See P. MONILIFERA.
,, *angustifo'lia* (narrow-leaved). N. Amer.
,, *balsami'fera* (balsamic). 70. April. N. Amer. 1792. "Balsam Poplar."

P. balsamifera candicans (whitish). 30–70. March. N. Amer. "Broad-leaved Balsam Poplar."
„ „ *elongata* (elongated).
„ „ *foliis variegatis* (variegated-leaved). April.
„ „ *intermedia* (intermediate). April.
„ „ *latifolia* (broad-leaved). 40. April.
„ „ *suaveolens* (sweet-scented). See P. SUAVEOLENS.
„ „ *viminalis* (twiggy). See P. LAURIFOLIA.
„ *berolinensis* (Berlin). Origin doubtful.
„ *betulifolia* (birch-leaved). See P. NIGRA BETULÆFOLIA.
„ *canadensis* (Canadian). See P. DELTOIDEA.
„ „ *aurea* (golden). See P. DELTOIDEA AUREA.
„ *candicans* (whitish-*heart-leaved*). See P. BALSAMIFERA CANDICANS.
„ *canescens* (hoary). 40. March. England.
„ „ *acerifolia* (maple-leaved). See P. ALBA NIVEA.
„ „ *ægyptiaca* (Egyptian). Egypt.
„ „ *arembergica* (Aremberg). See P. ALBA NIVEA.
„ „ *belgica* (Belgian). See P. ALBA NIVEA.
„ „ *hybrida* (hybrid). 40. April. Caucasus. 1816.
„ „ *nivea* (snow-white). See P. ALBA NIVEA.
„ „ *pendula* (drooping-*branched*). Branches pendulous. Reintroduced. 1907.
„ *carrierea'na* (Carrierean). Leaves grey-green. Habit broadly pyramidal. 1909.
„ *certinensis* (Certinan). Garden origin.
„ *charkowiensis* (Charkowian). *P. nigra*×*P. nigra pyramidalis*. 1902.
„ *comesiana* (Comesian). 70. Leaves white-felted beneath. Italy. 1908.
„ *deltoidea* (deltoid). 50–120. March. N. Amer. "Cottonwood."
„ „ *aurea* (golden). Leaves clear yellow, tinted with red when young. 1876.
„ „ *erecta* (erect).
„ „ *Eugenei* (Eugene's). 40–80. Habit broadly pyramidal. 1887.
„ *dilatata* (broadened). See P. NIGRA PYRAMIDALIS.
„ *Eugenei* (Eugene's). See P. DELTOIDEA EUGENEI.
„ *euphratica* (Euphratian). Orient and Central Asia. 1881.
„ *fastigiata* (pyramidal). See P. NIGRA PYRAMIDALIS.
„ *Fremonti* (Fremont's). California, &c.
„ *græca* (Greek. *Athenian*). See P. TREMULOIDES.
„ *grandidentata* (large-toothed). 70. March. N. Amer. 1772.
„ „ *pendula* (drooping). 40. March. N. Amer. 1820.
„ *heterophylla* (various-leaved). 70. March. N. Amer. 1765. "Swamp Cottonwood."
„ *lasiocarpa* (woolly-fruited). 20–40. Leaves 10 in. long, red veined. Central China. 1903.
„ *laurifolia* (laurel-leaved). April. Altai region of Southern Siberia. 1772.
„ *longifolia* (long-leaved). See P. LAURIFOLIA.
„ *macrophylla* (large-leaved). See P. BALSAMIFERA CANDICANS.
„ *monilifera* (necklace-bearing). 70–100. April. N. Amer. 1760.
„ „ *lindleyana* (Lindleyan). See P. LAURIFOLIA.
„ „ *variegata* (variegated-*leaved*). May.
„ *moscovienensis* (Moscovian). Origin doubtful.
„ *nigra* (black). 30. March. Europe (Britain); N. Asia. "Black Poplar."
„ „ *betulæfolia* (birch-leaved). 30–60. March, April. Europe (England).
„ „ *Nolæstii* (Nolest's).
„ „ *pyramidalis* (pyramidal). 70–150. March. Italy. 1758. "Lombardy Poplar."
„ „ *pyramidalis gigantea* (gigantic). 70–150. March.
„ „ *salicifolia* (willow-leaved). April. Floetbeck. 1834.
„ „ *sinensis* (Chinese). China. 1867.
„ „ *viridis* (green-*leaved*). April. Britain.
„ „ *vistulensis* (Vistulan). Leaves rhomboidal, dark green. Europe. 1909.
„ *pekinensis* (Pekin). Leaves deltoid-ovate silvery. N. China. 1903.
„ *petrowskyana* (Petrowskyan). Garden origin.
„ *plantierensis* (Plantieran). Garden origin.
„ *pseudo-balsamifera* (bastard-balsamic). See P. BALSAMIFERA.
„ *rasumowskyana* (Rasumowskyan). Garden origin.
„ *Siebo'ldii* (Siebold's). Japan.
„ *Simonii* (Simon's). China. 1867.
„ *stienia'na* (Steinian). Garden hybrid. 1888.
P. suaveolens (sweet-smelling). 30–70. April. N.W. India to Japan, &c. 1825.
„ *subintegerrima* (nearly-entire). Leaves green above, white-felted beneath. Spain. 1908.
„ *thevestina* (Thevestine). 90. Leaves nearly triangular; petioles carmine. Morocco. 1907.
„ *tomentosa* (felted). See P. ALBA.
„ *tremula* (trembling. *Aspen*). 50. March. Europe (Britain); N. Africa; N. Asia. "Aspen."
„ „ *lævigata* (smooth). See P. MONILIFERA.
„ „ *pendula* (drooping). March. 1824.
„ „ *purpurea* (purple). Leaves purple.
„ „ *pyramidalis* (pyramidal). Habit slender, pyramidal. 1907.
„ „ *supina* (lying-down). See P. TREMULA PENDULA.
„ „ *villosa* (shaggy). Leaves downy. March. Europe (Britain).
„ *tremuloides* (*P. tremula*-like). 30–50. April. N. Amer. 1812. "American Aspen."
„ „ *pendula* (pendulous). 25. April. "Parasol de St. Julien."
„ *trepida* (trembling). See P. TREMULOIDES.
„ *trichocarpa* (hairy-fruited). 50–70. April. Western N. Amer. "Black Cottonwood."
„ *tristis* (sad). April. North-eastern Asia. 1843.
„ „ *elongata* (elongated).
„ *Viadri* (Viadr's). Origin doubtful. 1890. Allied to *P. nigra*.
„ *vistulensis* (Vistulan). See P. NIGRA VISTULENSIS.
„ *Wobstii* (Wobst's). Garden origin.

PORA'NA. (From *poreuo*, to travel; the twining stems extending far and wide. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Convolvulus.)
Stove evergreen, white-flowered twiners. Seeds in a hotbed, and side, stubby, short shoots in sandy soil, under a bell-glass, in heat; peat and loam. Winter temp., 50° to 55°; summer, 60° to 65°.
P. paniculata (panicled). 10. August to October. India and Malaya. 1823.
„ *racemosa* (racemose). 12. White. July, August. India; Burma. 1823.
„ *volubilis* (twining). 50. July. Burma and Malaya. 1820.

PORANTHE'RA. (From *poros*, a pore, or opening, and *anthera*, an anther, or pollen-bag; anthers opening by pores. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)
Greenhouse evergreen. Cuttings of firm side-shoots in sand, under a bell-glass, set in a close frame, and shaded in May; peat and sandy loam. Winter temp., 40° to 48°.
P. ericifolia (heath-leaved). 1. White. July. Australia. 1824.

PORLIE'RIA. (Named after *P. A. Porlier*, a Spaniard. Nat. ord. *Beancapers* [Zygophyllaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Guaicum.)
Stove evergreen shrub, with leaves which close before rain; hence called *hygrométrica*. Cuttings of firm shoots in spring, in sand, under a bell-glass, and in a brisk bottom-heat. Winter temp., 50° to 55°; summer, 60° to 80°.
P. hygrométrica (hygrometric). 6. Peru and Chili. 1820.

PO'RPAX OF LINDLEY. (From *porpax*, a button; shape of pseudo-bulbs. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Eria.)
P. reticulata (netted). See ERIA RETICULATA.

PO'RPAX OF SALISBURY. See ASPIDISTRA.

PORPHYRO'COMA. (From *porphura*, purple, and *kome*, a head of hair; flower-heads purple. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Aphelandra.)
Stove evergreen shrub. Cuttings of young shoots in sandy soil, in a hotbed; peat and loam. Winter temp., 50° to 60°; summer, 60° to 85°.
P. lanceolata (spear-head-*leaved*). 1. Violet. April. Brazil. 1845.

PO'RRUM COMMU'NE. See ALLIUM PORRUM, the Leek.

PO'RTEA. (Commemorative of *Marius Porte*, who discovered *P. kermesina*. Nat. ord. Bromeliaceæ.)

Stove evergreen herbs. Suckers. Fibrous loam, fibrous or lumpy peat, some nodules of charcoal, and sand.

P. kermesi'na (carmine). 1½. Blue; bracts rose. Trop. Amer. 1870.
„ *legrellia'na* (Legrellian). 1½. Bright red; petals reddish-purple. Brazil. 1875.
„ *tillandsioi'des* (Tillandsia-like). 1. Red. Trop. Amer. 1860.

PORTENSCHLA'GIA. (Commemorative of *F. v. Portenschlag-Ledemmeyer*, an Austrian botanist. Nat. ord. Umbelliferæ.)

Hardy perennial herb with much divided leaves, and whorled branches. Seeds; divisions. Ordinary soil.

P. austra'lis (southern). See ELÆODENDRON AUSTRALE.
„ *ramosi'ssima* (much-branched). Yellowish-white. Dalmatia. 1888.

PORTLA'NDIA. (Named after the *Duchess of Portland*. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings of rather firm shoots in sand, under a bell-glass, and in a brisk, sweet bottom-heat; sandy loam, peat, and a little leaf-mould. Winter temp., 45° to 60°; summer, 60° to 90°.

P. cocci'nea (scarlet). 5. Scarlet. Jamaica. 1812.
„ *grandiflo'ra* (large-flowered). 12. White. W. Ind. 1775.
„ *hexa'ndra* (six-anthered). See COUTAREA SPECIOSA.
„ *plata'ntha* (flat-flowered). White. July. Trop. Amer. 1849.

PORTUGAL LAUREL. *Pru'nus lusita'nica.*

PORTUGAL QUINCE. *Cydo'nia vulga'ris lusita'nica.*

PORTULA'CA. Purslane. (From *porto*, to carry, and *lac*, milk; milky juice. Nat. ord. *Purslanes* [Portulaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*. Allied to Talinum.)

Hardy annuals, by seeds in the open border, at the end of April; tender annuals, by seed in hotbed, in spring, and afterwards flowering them in the greenhouse, as they require a very sheltered, sunny spot to do much good in the open air; tuberous and shrubby greenhouse kinds, by cuttings and division of the roots; rich, sandy loam and peat, the loam being enriched with old leaf-mould or cow-dung.

GREENHOUSE TUBEROUS EVERGREENS.

P. Gillie'sii (Gillies'). ½. Red, pink. Chili. 1827.
„ *grandiflo'ra* (large-flowered). Yellow, purple. June. Brazil. 1827. "Sun Plant."
„ „ *lu'tea* (yellow). Yellow. June to August. Chili. 1827.
„ „ *Rege'lii* (Regel's). Pink, with dark eye. Chili. 1885.
„ *peruvia'na* (Peruvian). 2. Purple. May. Peru. 1820. Stove herbaceous.
„ *soma'lica* (Somaliland). ¾. Yellow. Somaliland. 1886. Stove.
„ *sple'ndens* (shining). Crimson, purple. May. Chili. 1839. Herbaceous perennial.
„ *suffrutico'sa* (subshrubby). ½. Pink. June. India. 1820.
„ *Thelluso'nii* (Thelluson's). 1. Scarlet. July. S. Europe. 1839.
„ „ *lu'tea* (yellow). 1. Yellow. June. 1847.
„ „ *sple'ndens* (shining). 1. Reddish-purple. June.

GREENHOUSE ANNUALS.

P. halimoi'des (Halimus-like). ½. Yellow. June. W. Ind. 1823.
„ *meridia'na* (noonday). See P. QUADRIFIDA.
„ *olera'cea* (pot-herb). ½. Yellow. June to August. Warm regions. 1582. "Common Purslane." Hardy.
„ „ *au'rea* (golden). 1. Deep yellow. June to August. S. Amer. 1652.
„ „ *parvifo'lia* (small-leaved). ½. Yellow. June. Jamaica. 1799.
„ *parvifo'lia* (small-leaved). See P. OLERACEA PARVIFOLIA.
„ *pilo'sa* (shaggy). ½. Pink. June. N. and S. Amer. 1690.
„ *pusi'lla* (weak). ¼ Yellow. June. Venezuela. 1824.
P. quadri'fida (four-cleft). ½. Yellow. May to August. Tropics of Old World. 1773.
„ *sati'va* (cultivated). See P. OLERACEA.

HALF-HARDY ANNUALS.

P. folio'sa (leafy). ½. Yellow. June. Trop. Africa. 1822.
„ *guinee'nsis* (Guinea). ½. Yellow. June. Guinea. 1823.
„ *involucra'ta* (involucrated). See P. SUFFRUTICOSA.
„ *mucrona'ta* (sharp-pointed). ½. Yellow. June. Brazil. 1822.
„ *racemo'sa* (racemose). See TALINUM TRIANGULARE.

POSOQUE'RIA. (*Posoqueri*, the Guianan name of *longiflora*. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Gardenia.)

Stove, white-flowered, evergreen shrubs. Cuttings of young shoots in sand, under a bell-glass, and in heat, in April or May; sandy loam, leaf-mould, and a little peat. Winter temp., 48° to 60°; summer, 60° to 85°.

P. dumeto'rum (thicket). See RANDIA DUMETORUM.
„ *formo'sa* (beautiful). 12–20. July. Venezuela. 1815. Fragrant.
„ *fra'grans* (fragrant). See RANDIA MALABARICA.
„ *fragranti'ssima* (most-fragrant). Brazil. 1870. Very fragrant.
„ *gra'cilis* (slender). 5. Guiana. 1825.
„ *latifo'lia* (broad-leaved). 5. September. Trop. Amer. 1826.
„ *longiflo'ra* (long-flowered). 5. Guiana. 1822.
„ *macrophy'lla* (large-leaved). See P. LATIFOLIA.
„ *ma'cropus* (large-footed). Brazil.
„ *multiflo'ra* (many-flowered). Brazil. 1866. Fragrant.
„ *revolu'ta* (revolute). See P. LATIFOLIA.
„ *specio'sa* (showy). Trop. Amer.
„ *versi'color* (changeable-coloured). Pinky-white to crimson. September. Cuba. 1839. Fragrant.

POTATO. *Sola'num tubero'sum.*

Soil.—A dry, friable, fresh, and moderately rich soil is the best for every variety of the potato.

The black-skinned and rough-red thrive better than any other in moist, strong, cold soils. If manure is absolutely necessary, whatever may be the one employed, it is better spread regularly over the surface previous to digging than put into the holes with the sets, or spread in the trench when they are so planted; but, if possible, avoid manuring. Leaf-mould, or very decayed stable-dung, is the best of all manures; sea-weed is a very beneficial addition to the soil; and so is salt. Coal-ashes and sea-sand are applied with great benefit to retentive soils. The situation must always be open.

Propagation.—It is propagated in general by the tubers, though the shoots arising from thence, and layers of the stalks, may be employed. New varieties are raised from seed.

Planting in the open ground is best done in October and November, and may thence be continued until the end of March. This last month is the latest in which any considerable plantation should be made. They will succeed if planted in May, or even June; yet it ought always to be kept in mind that the earliest planted, especially in dry soils, produce the finest, healthiest, and most abundant crops. It is convenient to plant early potatoes, even those that are sprouted for early crops, in April, on account of the danger from late frosts. In the north of Britain the main crops in the fields are planted during the second and third week of May. In some parts of Ireland heavy crops may be obtained by planting at the end of June, as a succession to some other early crop.

Sets.—The next point for consideration is the preparation of the sets. Some gardeners recommend the largest potatoes to be planted whole; others, that they be sliced into pieces containing two or three eyes; a third set, to cut the large tubers directly in half; a fourth, the employment of the shoots only, which are thrown out if potatoes are kept in a warm, damp situation; and a fifth, that merely the parings be employed. Cuttings of the stalks, 5 or 6 inches in length, or rooted suckers, will be productive if planted, during showery weather, in May or June; and during this last month, or early in July, the potato may be propagated by layers, which are formed by pegging down the young stalks when about 12 inches long, they being covered 3 inches thick

with mould at a joint. For the main crops, moderate-sized whole potatoes are the best.

To obtain early crops where tubers are rapidly formed, large sets must be employed. In these one or two eyes at most should be allowed to remain. If the sets are placed with their leading buds upwards, few and very strong early stems will be produced; but, if the position is reversed, many weak and later shoots will arise, and not only the earliness but the quality of the produce be depreciated. For the earliest crops there are, likewise, several modes of assisting the forward vegetation of the sets. These should be prepared by removing every eye but one or two; and being placed in a layer in a warm room, where air and light can be freely admitted, with a covering of straw, chaff, or sand, they soon emit shoots, which must be strengthened by exposure to the air and light as much as possible, by taking off the cover without injuring them. During cold weather, and at night, it must always be removed: the leaves soon become green and tolerably hardy. In early spring they are planted out, the leaves being left just above the surface, and a covering of litter afforded every night until the danger of frost is passed.

Planting.—Insert them with the dibble, in rows; for the early crops 12 inches apart each way, and for the main ones 18 inches; the sets 6 inches beneath the surface. The potato dibble is the best instrument that can be employed, the earth being afterwards raked or struck in with the spade, and the soil not trampled upon, but planted as sufficient is dug for receiving a row; for the looser the soil the less does frost penetrate, and the more readily does superfluous moisture escape.

The compartment may be laid out level and undivided if the soil is light; but if heavy soil is necessarily employed, it is best disposed in beds 6 or 8 feet wide. If the staple of the soil be good throughout, the alleys may be 2 feet wide, and dug deep, otherwise they must be made broader, and only one spit taken out, the earth removed being employed to raise the beds, which should be in four parallel ridges, and the sets inserted along their summits.

Hoeing.—As soon as the plants are well to be distinguished, they should be perfectly freed from weeds, and of the early crops the earth drawn round each plant, so as to form a cup as a shelter from the cold winds, which are their chief enemy at that season; but the main crops should not be earthed up, for earthing up diminishes the crop one-fourth. Throughout their growth they should be kept perfectly clear of weeds.

It is very injurious to mow off the tops of the plants. The foliage ought to be kept as uninjured as possible, unless, as sometimes occurs on fresh ground, the plants are of gigantic luxuriance, and even then the stems should be only moderately shortened. It is, however, of considerable advantage to remove the fruit-stalks and immature flowers as soon as they appear, unless the stems are very luxuriant. A potato-plant continues to form tubers until the flowers appear, after which it is employed in ripening those already formed.

The very earliest crops will be in production in June, or, perhaps, towards the end of May, and may thence be taken up as wanted until October, at the close of which month, or during November, they may be entirely dug up and stored. In storing, the best mode is to place them in layers, alternately with dry coal-ashes, earth, or sand, in a shed. The best instrument with which they can be dug up is a three-flat-pronged fork, each row being cleared regularly away. In modern times, 4–5 pronged steel forks are considered the best, because easier to work, and not so destructive to the tubers, when accidentally pierced by the more slender prongs.

The tubers should be sorted at the time of taking them up; for, as the largest keep the best, they alone should be stored, whilst the smaller ones are first made use of.

Potatoes should not be stored until perfectly dry, and must also be free from earth, refuse, and wounded tubers.

To raise Varieties.—A variety of the potato is generally considered to continue about fourteen years in perfection, after which period it gradually loses its good qualities, becoming of inferior flavour and unproductive; fresh varieties must, therefore, be occasionally raised from seed. The berries, or apples, of the old stock, having hung in a warm room throughout the winter, the seed must be obtained from them by washing away the pulp during February. The seed is then thoroughly dried and kept until April, when it is sown in drills about ½ inch deep, and 6 inches apart, in a rich, light soil. The plants are weeded, and earth drawn up to their stems, when an inch in height; and as soon as the height has increased to 3 inches, they are moved into a similar soil, in rows 16 inches apart each way. Being finally taken up in the course of October, they must be preserved until the following spring, to be then re-planted and treated as for store crops.

The tubers of every seedling should be kept separate, as scarcely two will be of a similar habit and quality, whilst many will be comparatively worthless, and but few of particular excellence. If the seed is obtained from a red potato that flowered in the neighbourhood of a white-tubered variety, the seedlings, in all probability, will in part resemble both their parents; but seldom or never does a seedling resemble exactly the original stock. At all events, only such should be preserved as are recommended by their superior earliness, size, flavour, or fertility.

The early varieties, if planted on little heaps of earth, with a stake in the middle, and when the plants are about 4 inches high, being secured to the stakes with shreds and nails, and the earth washed away from the bases of the stems by means of a strong current of water, so that the fibrous roots only enter the soil, will blossom and perfect seed.

Forcing.—The season of forcing is from the close of December to the middle of February, in a hotbed, and at the close of this last month on a warm border, with the temporary shelter of a frame. The hotbed is only required to produce a moderate heat. The earth should be 6 inches deep, and the sets planted in rows 6 or 8 inches apart, as the tubers are not required to be large. The temperature ought never to sink below 65°, nor rise above 80°.

The rank steam arising from fermenting dung is undoubtedly injurious to the roots of potatoes; and to obviate this they may be planted in narrow beds, and the dung applied in trenches on each side; or all the earth from an old cucumber or other hotbed being removed, and an inch in depth of fresh being added, put on the sets, and cover them with 4 inches of mould. At the end of five days the sides of the old dung may be cut away in an inward slanting direction, about 15 inches from the perpendicular, and strong linings of hot dung applied.

If the tubers are desired to be brought to maturity as speedily as possible, instead of being planted in the earth of the bed, each set should be placed in a pot about 6 inches in diameter, though the produce in pots is smaller. But young potatoes may be obtained in the winter, by the following plan, without forcing: Plant some late kinds, unsprouted, in a dry, rich border, in July, and again in August, in rows 2 feet apart. They will produce new potatoes in October, and in succession until April, if covered with leaves or straw to exclude frost. If old potatoes are placed in dry earth, in a shed during August, they will emit young tubers in December.

Preparation of Sets for Forcing.—They should be of the early varieties. To assist their forward vegetation, plant a single potato in each of the pots intended for forcing during January. Then place in the ground, and protect with litter from the frost. This renders them very excitable by heat; and, consequently, when plunged in a hotbed, they vegetate rapidly and generate tubers. The seed potatoes are equally assisted, and with less trouble, if placed in a cellar just in contact with each other; and as soon as the germs are 4 inches long, they are removed to the hotbed.

Management.—More than one stem should never be allowed, otherwise the tubers are small, and not more numerous.

Water must be given whenever the soil appears dry, and in quantity proportionate to the temperature of the air. Linings must be applied as the temperature declines, and air admitted as freely as the temperature of the atmosphere will allow. Coverings must be afforded with the same regard to temperature.

From six to seven weeks usually elapse between the time of planting and the fitness of the tubers for use.

POTATO or **COLORADO BEETLE.** *Doryophora decemlineata.*

POTATO DISEASE or **POTATO MURRAIN.** *Phyto'phthora infe'stans.* This disease first attacked, very gene-

rally, the crop of England late in the summer of 1845. July and August were unusually wet and cold, and early in August there were sharp morning frosts. Immediately after, the stems began to decay; but the weather continuing wet, instead of their decay being dry, and attended with the usual phenomena of their reduction to mere woody fibre, the putrefaction was moist, and the smell attendant upon it precisely that evolved during the decay of dead potato haulm partly under water. The stem decayed, whilst the fibres connecting the tubers with them were fresh and juicy.

The disease was first noticed between 1840 and 1842, at Boston, U.S.A., and in Norway and Denmark. By the time it created such alarm in the British Isles, it had established itself all over Western Europe, causing incalculable loss. Besides the Potato, it also attacks the Tomato, the British wild *Solanum Dulcamara* (Bitter Sweet), and several exotic species of Solanum in gardens. The nature of the disease was investigated in 1875 and 1876 by Worthington G. Smith. It is sometimes named *Peronospora infestans*, but it differs from a true Peronospora, by each branch of the fruiting stem ending in a conidium, or egg-shaped spore case, which is pushed on one side by the axis of the branch continuing to grow in a straight line, and producing other conidia, which are in turn pushed on one side. Being considered distinct for this reason it is now named *Phytophthora infestans*.

The disease usually breaks out some time in August, and is most virulent in wet seasons, which favour the germination of the spores upon the leaves, and their rapid growth afterwards. The first signs of the presence of the disease are small brownish patches on the leaves, which rapidly increase in size and number till the whole of the foliage becomes infested and turns black. The disease has really been making progress, previously, inside the leaf, till the fruiting branches emerge through the stomata, after which the spores are wafted far and wide by the wind. The fungus also travels down the stem, but takes longer to effect its destruction. Spores are also washed down through the soil, till they come in contact with the tubers, in which the fungus continues to grow even after they are lifted and stored. Indeed, the fungus remains in the tubers, and may be planted with them to continue the disease, if they are not observed to be diseased and discarded at the time of planting.

Various remedies have been proposed and acted upon, with greater or less success, but Potatoes enjoy greatest immunity, when the season is relatively dry from the end of July to the middle or end of September. Diseased stems and leaves should be burned, and diseased tubers similarly destroyed as preventive means. Wet, heavy soils and low-lying situations should be avoided, where possible, when planting. Protective moulding has been of some service in preventing the spores from getting washed down to the tubers. About the time the disease breaks out, the Potatoes should be earthed up on one side only, pushing the stems on one side, so that they will hang over the furrows instead of the ridges. About 4 inches of soil should be heaped over the top of the tubers. The most successful remedy is to spray the foliage with Bordeaux mixture on the first appearance of the disease and again about fourteen days later, to destroy the spores and prevent their germination on healthy foliage.

Fusarium Solani is considered by some authorities (particularly the German botanists, Reinke and Berthold) to be the cause of Dry Rot in Potatoes. The same botanists regard *Bacterium navicula* and *Baccillus amylobacter* to be the cause of Wet Rot in the tubers.

POTATO, or UNDERGROUND ONION. (*Allium Cepa proliferum.*) Produces a cluster of bulbs or offsets, in number from two to twelve, and even more, uniformly beneath the surface of the soil. From being first introduced to public notice in Scotland by Captain Burns, of Edinburgh, it is there also known as the *Burn Onion*.

Varieties.—There evidently appear to be two varieties of this vegetable, one of which bears bulbs on the summit of its stems, like the Tree Onion, and the other never throwing up flower-stems at all. One variety is much larger than the other, and this vegetates again as soon as ripe.

Both varieties are best propagated by offsets of the root of moderate size, for if those are employed which the one variety produces on the summit of its stems, they seldom do more than increase in size the first year, but are prolific the next; this also occurs if very small offsets of the root are employed.

Planting.—They may be planted during October or November, or as early in the spring as the season will allow, but not later than April. In the west of England, assisted by their genial climate, they plant on the shortest, and take up on the longest day. They are either to be inserted in drills, or by a blunt dibble, 8 inches apart each way, not buried entirely, but the top of the offset just level with the surface. Mr. Maher, gardener at Arundel Castle, merely places the sets on the surface, covering them with leaf-mould, rotten dung, or other light compost. The beds they are grown in are better, not more than 4 feet wide, for the convenience of cultivation.

The practice of earthing over them, when the stems have grown up, is unnatural; and by so doing the bulbs are blanched, and prevented ripening perfectly, on which their keeping so much depends. So far from following this plan, Mr. Wedgewood, of Betley, recommends the earth always to be cleared away down to the ring from whence the fibres spring, as soon as the leaves have attained their full size, and begin to be brown at the top, so that a kind of basin is formed round the bulb. As soon as they vegetate, they intimate the number of offsets that will be produced by showing a shoot for each.

They attain their full growth towards the end of July, and become completely ripe early in September; for immediate use, they may be taken up as they ripen, but for keeping, a little before they attain perfect maturity.

POTATO, SWEET or **SPANISH.** *Ipomœ'a Bata'tas.*

POTENTI'LLA. Cinquefoil. (From *potens*, powerful; supposed medicinal quality. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Trigynia.*)

Hardy herbaceous perennials. *P. ca'ndicans* requires protection in the winter; seeds and division of the plant in spring; shrubs, by cuttings of ripe wood in the autumn, or by cuttings in summer, under a hand-light; good, deep, sandy loam. All yellow-flowered, except where otherwise mentioned.

P. adsce'ndens (ascending). See P. INCLINATA.
,, *agrimonioi'des* (agrimony-like). See P. SERICEA.
,, *a'lba* (white). ½. White. May. Europe (Wales).
,, *alchemilloi'des* (Alchemilla-like). ½. White. July, August. Pyrenees.
,, *alpe'stris* (mountain). ½. Orange. July. Europe (Britain).
,, ,, *pyrena'ica* (Pyrenean) ½. Rich yellow. June to September. Pyrenees.
,, *ambi'gua* (doubtful. *Three-toothed Himalayan*). ½. Yellow. June. Himalaya. 1851.
,, *angustifo'lia* (narrow-leaved). See P. NIVEA.
,, *Anseri'na* (goose). ½. July. Temperate regions (Britain). "Silver weed."
,, *apenni'na* (Apennine). ½. White. May. Apennines. 1821.
,, *arachnoi'dea* (spider-web). See P. PENNSYLVANICA ARACHNOIDEA.
,, *arge'ntea* (silvery-*leaved*). 1. June. N. temperate regions (Britain). "Silvery Cinquefoil."
,, ,, *cala'bra* (Calabrian). ½. Yellow. July. Southern Italy. 1829.
,, ,, *tenui'loba* (slender-lobed). ½. Yellow. England.
,, *argu'ta* (acute). 1½–2. Pale yellow. July. N. Amer. 1826.
,, *argyrophy'lla* (silvery-leaved). 1–2. Yellow. Summer. Himalaya. 1840.
,, ,, *atrosangui'nea* (dark-blood-red). 1–2. Dark crimson. July. Himalaya. 1822.
,, ,, *leucochro'a* (white-surfaced). 1–1½. Yellow. July.
,, *astraca'nica* (Astracan). See P. RECTA.
,, *astragalifo'lia* (Astragalus-leaved). See P. BIFURCA.
,, *a'tro-sangui'nea* (dark-bloody). See P. ARGYROPHYLLA ATROSANGUINEA.
,, *au'rea* (golden). ½. Golden-yellow. April, May. Europe.
,, ,, *chrysocra'speda* (golden-thick-footed). ½. Golden-yellow.
,, *bi'color* (two-coloured). See P. NEPALENSIS.
,, *biflo'ra* (two-flowered). ½. June. Siberia. 1820.
,, *bifu'rca* (forked-*leaved*). ½. June. Siberia. 1773.
,, ,, *subseri'cea* (rather-silky). ½. June. Astracan. 1827.

P. bifurca'ta (two-forked). See P. BIFURCA.
,, *Bocco'ni* (Boccon's). See P. APENNINA.
,, *Bre'nnia* (Brennian). Tyrol. Natural hybrid.
,, *cala'bra* (Calabrian). See P. ARGENTEA CALABRA.
,, *calyci'na* (large-calyxed). See P. LIBANOTICA.
,, *canade'nsis* (Canadian). 1. June. N. Amer. 1800.
,, *ca'ndicans* (whitish-*leaved*). ½. May. S. Amer. 1820.
,, *cataclí'nes* (lying-down). See P. ARGYROPHYLLA LEUCOCHROA.
,, *caule'scens* (stemmed). 1. White. July. Austria. 1759.
,, *chine'nsis* (Chinese). China.
,, *chrysa'ntha* (golden-flowered). 1. Golden. June. Siberia. 1827.
,, *cine'rea* (grey). Europe.
,, *clusia'na* (Clusius's). ½. White, yellow. June. Austria. 1806.
,, *colli'na* (hill). 1. June. S. Europe. 1816.
,, *Co'marum* (Comarum). See P. PALUSTRIS.
,, *co'ncolor* (one-coloured). 1–1½. Deep yellow, with five orange blotches. Yunnan, China. 1908.
,, *confe'rta* (crowded-*flowered*). See P. PENNSYLVANICA.
,, *conge'sta* (crowded). 2. White. August. California. 1826.
,, *cro'cea* (saffron). See P. ALPESTRIS.
,, *davu'rica* (Davurian). 2. July, August. China, Siberia. 1824.
,, *dealba'ta* (whitened). 1. July. Altai.
,, *decu'mbens* (decumbent). See P. ARGENTEA.
,, *deserto'rum* (desert). 1. June. Altai. 1830.
,, *Detomma'sii* (Detommasian). ½–1. July. S. Europe. 1822.
,, *dichtlia'na* (Dichtlian). July. Europe.
,, *diffu'sa* (spreading). See P. NORVEGICA.
,, *effu'sa* (loose-flowered). 1. August. N. Amer. 1826.
,, *Ege'dii* (Eged's). See P. ANSERINA.
,, *erioca'rpa* (woolly-fruited). Himalaya.
,, *exalta'ta* (tall). See P. CHINENSIS.
,, *Fe'nzlii* (Fenzl's). Asia Minor.
,, *ferrugi'nea* (rusty). See P. ARGUTA.
,, *filipe'ndula* (dropwort-like). 1. June. Dahuria. 1823.
,, *flagella'ris* (rod). ½. June. Siberia. 1820.
,, *formo'sa* (beautiful). See P. NEPALENSIS.
,, *Fraga'ria* (strawberry). See P. FRAGARIASTRUM.
,, *Fragaria'strum* (false strawberry). ½. White. May. Europe (Britain).
,, *fragifo'rmis* (strawberry-formed). See P. GELIDA.
,, *Friedrichse'ni* (Friedrichsen's). Hybrid between *P. fruticosa* and *P. davurica*. 1897. Shrub.
,, *fri'gida* (frigid). Europe and N. Amer.
,, *frutico'sa* (shrubby). 3. July. North temperate regions (England). Shrub.
,, ,, *dahu'rica* (Dahurian). See P. DAVURICA.
,, ,, *gla'bra* (smooth). 2. White. Siberia.
,, ,, *mandshu'rica* (Manchurian). 1½–2. Branches spreading. Manchuria. 1910.
,, ,, *tenui'loba* (narrow-lobed). 1½. August. N. Amer. 1811.
,, ,, *vilmoriniа'na* (Vilmorinian). 3. Pale sulphur-yellow. Tibet. 1910.
,, *fu'lgens* (shining). ½. September. Himalaya.
,, *gariepe'nsis* (Gariep). See P. SUPINA.
,, *ge'lida* (icy-cold). 1. June. Europe and Northern Asia. 1800.
,, *gla'bra* (smooth). See P. FRUTICOSA GLABRA.
,, *glacia'lis* (glacial). See P. FRIGIDA.
,, *glandulo'sa* (glanded). 1. August. California. 1830.
,, ,, *inci'sa* (cut-*leaved*). 2. July. California. 1835.
,, *Gordo'ni* (Gordon's). N. Amer.
,, *gra'cilis* (slender). 1. July. N.W. Amer. 1826.
,, *grandiflo'ra* (large-flowered). 1. June. Siberia. 1640.
,, *Griffi'thii* (Griffith's). Himalaya.
,, *Guenthe'ri* (Guenther's). See P. COLLINA.
,, *hæma'tochrus* (blood-red-coloured). White. Summer. Mexico.
,, *heptaphy'lla* (seven-leaved). Europe; Orient.
,, ,, *corone'nsis* (Coronan).
,, *hippia'na* (Hippian). 1½. July. N. Amer. 1826.
,, *hirsu'ta* (hairy). See P. NORVEGICA.
,, *hi'rta* (hairy). 1. June to September. S. Europe, &c.
,, ,, *peda'ta* (pedate). 1. June to September. Europe. 1819.
,, *hopwoodia'na* (Hopwoodian). 1–1½. Straw-yellow to dark rose. June to August. Hybrid.

P. hy'brida (hybrid). ½. White. June. Germany. 1820.
,, *inclina'ta* (inclined). 1. June. Europe; N. Asia. 1806.
,, *insi'gnis* (showy). See P. ARGYROPHYLLA.
,, *interme'dia* (intermediate). See P. HEPTAPHYLLA.
,, *jacquemontia'na* (Jacquemontian). See P. ARGYROPHYLLA.
,, *kotschya'na* (Kotschyan). Kurdistan.
,, *ku'rdica* (Kurdican). Kurdistan.
,, *lacinio'sa* (deeply-cut). See P. RECTA LACINIOSA.
,, *lanugino'sa* (woolly). ½. Clear yellow. July, August. Caucasus. 1902. Shrubby.
,, *leschenaultia'na* (Leschenaultian). India.
,, *leucochro'a* (white-coloured) of Lindley. See P. VILLOSA.
,, *leucono'ta* (watery-white). Himalaya.
,, *libano'tica* (Lebanon). Syria.
,, *linearifo'loba* (narrow-lobed). See P. CANDICANS.
,, *Loddige'sii* (Loddiges'). See P. INCLINATA.
,, *lupinoi'des* (lupin-like). See P. NIVALIS.
,, *macra'ntha* (large-flowered). See P. NIVEA.
,, *macula'ta* (blotched). See P. ALPESTRIS.
,, *micra'ndra* (small-anthered). 1½. Dark yellow. Origin unknown. 1896.
,, *mi'nima* (smallest). ½. May, June. Europe. 1818.
,, *missou'rica* (Missouri). See P. PENNSYLVANICA.
,, *mo'llis* (soft). Servia.
,, *molli'ssima* (softest-*leaved*). 1½. July. Turkestan. 1832.
,, *monspelie'nsis* (Montpelier). See P. NORVEGICA.
,, *montenegri'na* (Montenegran). Montenegro.
,, *moonia'na* (Moonian). Himalaya; Ceylon.
,, *multi'fida* (many-cleft-*leaved*). ½. July. Siberia. 1759.
,, ,, *angustifo'lia* (narrow-leaved). ½. June. Siberia.
,, *nemora'lis* (grove). See P. FLAGELLARIS.
,, *nepale'nsis* (Nepaulese). 1½. Rosy-purple. June to August. Himalaya. 1822.
,, ,, *mi'nor* (smaller). ½–1. Rosy-purple.
,, ,, *na'na* (dwarf). See P. NEPALENSIS MINOR.
,, ,, *Willmo'ttiæ* (Miss Willmott's). ½. Brilliant magenta-rose. Colombia. 1904.
,, *nevade'nsis* (Nevadan). Spain.
,, *ni'tida* (shining). ½. White, red. June. Switzerland. 1816.
,, ,, *atroru'bens* (dark-red). Deep red.
,, *niva'lis* (snowy) of Lapeyrouse. ½. White. July, August. Pyrenees. 1739.
,, *niva'lis* (snowy) of Torrey. See GEUM ROSSII.
,, *ni'vea* (snowy-*leaved*). ½. July. Siberia. 1816.
,, ,, *macrophy'lla* (large-leaved). ½. June. N. Amer. 1827.
,, *norve'gica* (Norway). ½. April to July. North temperate and Arctic regions. 1680.
,, *ochrea'ta* (ochreous). See P. FRUTICOSA.
,, *opa'ca* (opaque). See P. VERNA.
,, *orega'na* (Oregon). See P. GLANDULOSA.
,, *palu'stris* (marsh). 1–2. Purple. June to August. Northern and Arctic regions (Britain). "Marsh Cinquefoil."
,, *parvifo'lia* (small-leaved). 1½. Yellow. Siberia. 1896. Shrub.
,, *pa'tula* (spreading). ½. June. Hungary. 1818.
,, *pectina'ta* (comb-*leaved*). See P. PENNYSLVANICA.
,, *peda'ta* (doubly-lobed). See P. HIRTA PEDATA.
,, *peduncula'ris* (long-stalked). Sikkim.
,, *pennsylva'nica* (Pennsylvanian). 1. July. N. Amer. 1725.
,, ,, *arachnoi'dea* (spider-web).
,, ,, *argu'ta* (acute). See P. ARGUTA.
,, *pigmæ'a* (pigmy). See P. RUPESTRIS PIGMÆA.
,, *pimpinelloi'des* (burnet-like). ½. May. Levant. 1758.
,, *procu'mbens* (procumbent) of Clairv. See P. SIBBALDI.
,, *procu'mbens* (procumbent) of Sibthorp. ½. May to September. Europe (Britain).
,, *pulche'rrima* (very fair). See P. HIPPIANA.
,, *pyrena'ica* (Pyrenean). See P. ALPESTRIS PYRENAICA.
,, *re'cta* (upright). 1. June. Europe, &c. 1648.
,, ,, *lacinia'ta* (deeply-cut). 1. Leaves deeply cut.
,, ,, *lacinio'sa* (deeply-cut). 1. June. Hungary. 1816.
,, ,, *macra'ntha* (large-flowered). Flowers larger.
,, ,, *palma'ta* (hand-shaped). Leaves five-lobed.
,, *re'ptans* (creeping). ½. May. Europe (Britain).

P. re'ptans flo're-ple'no (double-flowered). ½. July. Britain.
„ *„ variega'ta* (variegated-*leaved*). ½. July. Britain.
„ *retu'sa* (retuse). See P. TRIDENTATA.
„ *Richardso'nii* (Richardson's). 1. July. N. Amer. 1826.
„ *riva'lis* (river-bank). N. Amer.
„ *„ millegra'na* (thousand-seeded).
„ *rupe'stris* (rock). 1. White. June. Europe (Wales).
„ *„ pigmæ'a* (pigmy). ½. White. June, July.
„ *rupi'cola* (rock-loving). See P. RUPESTRIS.
„ *russellia'na* (Russellian). 1–1½. Scarlet. June to September. Hybrid.
„ *ruthe'nica* (Russian). See P. NORVEGICA.
„ *salisburge'nsis* (Salisburgan). See P. ALPESTRIS.
„ *salesovia'na* (Salesovian). 1–1½. Rose-purple. Himalaya; Central Asia.
„ *sanguisorbifo'lia* (Sanguisorba-leaved). Europe.
„ *sarmento'sa* (twiggy). See P. CANADENSIS.
„ *Saxi'fraga* (Saxifraga-like). ½. White. May, June. Europe.
„ *schrenkia'na* (Schrenkian). Central Asia.
„ *semilacinia'ta* (half-cut). Garden origin.
„ *seri'cea* (silky-*leaved*). ½. July. Siberia. 1780.
„ *Sibba'ldi* (Sibbald's). ½. July to September. Northern and southern regions (Scotland).
„ *sieversia'na* (Siever's). June. Nepaul. 1822.
„ *Smou'tii* (Smout's). 1. Yellow, with red eye. Hybrid. 1848.
„ *specio'sa* (showy). 1. June. Crete. 1821.
„ *sple'ndens* (shining) of Buch.-Ham. See P. FULGENS.
„ *sple'ndens* (shining) of Ram. 1. Pyrenees, &c.
„ *stipula'ris* (stipuled). 1. July. Siberia. 1727.
„ *subacau'lis* (nearly-stemless) of Jacquin. See P. CINEREA.
„ *subacau'lis* (nearly-stemless) of Scop. See P. NITIDA.
„ *subacau'lis* (nearly-stemless) of Linnæus. N. Asia.
„ *supi'na* (supine). 1. White. June. Temperate and tropical regions of Old World. 1837.
„ *sylve'stris* (wood). See P. TORMENTILLA.
„ *tanacetifo'lia* (tansy-leaved). Siberia.
„ *Thoma'sii* (Thomas's). See P. DETOMMASII.
„ *Thurbe'ri* (Thurber's). 1–2. N. Amer.
„ *To'nguei* (Tongue's). Garden origin.
„ *Tormenti'lla* (Tormentilla). ½–1. Europe (Britain). "Tormentil."
„ *tridenta'ta* (three-toothed-*leaved*). ½. White. June. N. Amer. 1774.
„ *tubero'sa* (tuberous). See P. RECTA.
„ *tyrole'nsis* (Tyrolese). Europe.
„ *umbro'sa* (shady). ½. White. May. Tauria. 1818.
„ *unguicula'ta* (clawed). ½–1. White. July, August. California. 1880.
„ *uniflo'ra* (one-flowered). See P. GELIDA.
„ *valde'ria* (Valderian). ½. Northern Italy.
„ *Vei'tchii* (Veitch's). 3–4. Snow-white. May to October. Western China. 1911. Evergreen shrub.
„ *veluti'na* (velvety). See P. PEDUNCULARIS.
„ *ve'rna* (spring). ½. June. Europe (Britain).
„ *verticilla'ris* (whorled-*leaved*). See P. MULTIFIDA.
„ *villo'sa* (shaggy). ½. June. Siberia, &c. 1820.
„ *visco'sa* (clammy). 1. July. Dahuria. 1797.
„ *wallichia'na* (Wallichian). See P. ARGYROPHYLLA ATROSANGUINEA.
„ *Weinma'nnii* (Weinmann's). See P. COLLINA.
„ *wrangelia'na* (Wrangelian). Siberia.

POTE'RIUM. (From *poterion*, a drinking-cup; the leaves having been used at one time for making a medicinal drink. Nat. ord. Rosaceæ.)
Hardy herbaceous, perennials. Seeds; divisions. Ordinary soil.

P. alpi'num (alpine). 2–3. Purple. Siberia. 1837.
„ *Anderso'nii* (Anderson's). Pink. July. Siberia.
„ *canade'nse* (Canadian). 3–4. White. N. Amer.; Japan. 1633.
„ *„ me'dium* (intermediate). 4. Flesh. August. Canada. 1785.
„ *cauda'tum* (tailed). 2–3. Greenish. January to April. Canary Islands. 1779. Greenhouse shrub.
„ *dia'ndrum* (two-anthered). Purplish. July. Himalaya.
„ *dodeca'ndrum* (twelve-anthered). 2–3. Purplish. Europe.
P. murica'tum (warted-fruited). 1–1½. Purplish. Europe (England).
„ *officina'le* (shop). 2–3. Purple. July. Europe (Britain); N. Asia; N. Amer. "Great Burnet."
„ *„ auricula'tum* (eared). 4. Pink. July. Sicily.
„ *„ ca'rneum* (flesh-coloured). 4. Red. July. Siberia. 1823.
„ *„ negle'ctum* (neglected). 4. White. July. Europe. 1800.
„ *„ præ'cox* (early). 3. Pink. May. Siberia. 1827.
„ *Sanguiso'rba* (Sanguisorba). 1–1½. Green to purplish. May to July. N. temperate regions. "Salad Burnet."
„ *sitche'nse* (Sitcha). 2–3. Purplish. North-western Amer.
„ *spino'sum* (spiny). 2–3. Greenish. April to August. S. Europe; Syria. 1595. Hardy shrub.
„ *tenuifo'lium* (slender-leaved). 2–3. Purplish. June to August. Eastern Asia.
„ *„ a'lbum* (white). 2–3. White. June to August.
„ *verruco'sum* (warted). 4. Pink. July. Mediterranean region. 1810.

POT-HERB MOTH. *Mamestra.*

POT-HERBS. See HERBARY.

PO'THOS. (The Cingalese name for one species. Nat. ord. *Arads* [Araceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Anthurium.)
The following are stove epiphytes; but there are many more, and some evergreen trailers, not worth notice. Dividing the roots in spring; fibrous peat, fibrous loam, rotten wood, and charcoal. Winter temp., 55° to 60°; summer, 60° to 90°.

P. acau'lis (stemless) of Jacquin. See ANTHURIUM ACAULE.
„ *angusta'tus* (narrow). See ANTHURIUM ANGUSTATUM.
„ *arge'nteus* (silvery). Leaves silvery-grey, showy. Borneo. 1887. Climber.
„ *argyræ'a* (silvery). See SCINDAPSUS PICTUS.
„ *au'reus* (golden). Leaves handsomely variegated with pale yellow and white. Solomon Isles. 1880.
„ *celatocau'lis* (hidden-stemmed). Leaves velvety-green, lying flat on the flat stems. Borneo. 1880. Climber.
„ *crassine'rvius* (thick-nerved) of Hooker. See ANTHURIUM HOOKERI.
„ *crassine'rvius* (thick-nerved) of Jacquin. See ANTHURIUM CRASSINERVIUM.
„ *elonga'tus* (elongated). Leaves long, leathery, glossy green. 1885. Climber.
„ *enderia'nus* (Enderian). Leaves sombre metallic black. Borneo. 1884. Climber.
„ *flexuo'sus* (flexuous). Leaves pale green, close-set over the flat stems. India. 1884. Climber.
„ *grandiflo'rus* (large-flowered). See ANTHURIUM GRANDIFOLIUM.
„ *grandifo'lius* (large-leaved). See ANTHURIUM GRANDIFOLIUM.
„ *Lourei'rii* (Loureir's). Philippines and China.
„ *macrophy'llus* (large-leaved) of Swartz. See ANTHURIUM SELLOUM.
„ *macrophy'llus* (large-leaved) of Willdenow. See ANTHURIUM GRANDIFOLIUM.
„ *ni'gricans* (blackening). Leaves glossy blackish-green. 1886.
„ *ni'tens* (shining). Leaves glossy, bronzy purplish-green. Malaya. 1887.
„ *ova'tus* (egg-shaped). See ORONTIUM AQUATICUM.
„ *rubrine'rvius* (red-nerved). See ANTHURIUM RUBRINERVIUM.
„ *sca'ndens* (climbing). May. India. 1821. Climber.
„ *Seema'nni* (Seemann's). May. China. 1821. Climber.

POTHUA'VA NUDICAU'LIS. See ÆCHMEA NUDICAULIS.

POT-MARIGOLD. *Cale'ndula officina'lis.*

POTTING. In performing this operation the *Pots* are the first consideration, and for information relative to these, see FLOWER-POTS.
Time of Potting.—This, when necessary, should generally be done after pruning, and when fresh growth has taken place. The reason for this is, that it is advisable never to give more checks to a plant at once than cannot be avoided. The cutting down is a check, the repotting

or shifting is another. Therefore, in both cases, we apply an extra stimulus for a short time immediately after, by keeping the plants closer and warmer.

State of the Soil.—It should neither be dry nor wet. If very dry, it will not pack so well in the pot; the water, if it passes freely at all, will find chinks and crannies for itself, and it will be long before the general mass becomes sufficiently moist to support a healthy vegetation. On the other hand, if wet soil is used, it is apt to pack too close; frequent waterings are apt to puddle it; the very closeness, even when the drainage is all right, prevents the air from penetrating. To know the proper dryness, take a handful; if by tightly squeezing it just holds together slightly, it will do; if it forms a compact mass, so that it might be laid on the potting-board without any risk of tumbling to pieces, it is too wet. It is not necessary that the whole of the material should be in a uniform state of moisture; for instance, we want some rough stuff to place over the drainage, that may be drier. The soil is rather fine; and to improve its mechanical texture we insert little nodules of fibrous loam or peat, little or big, in proportion to the size of the pot, and the smallness and largeness of the shift given. These nodules, if not too numerous, may be *drier*. So in the case of a manure, which we may wish to act both as a mechanical agent, and to give out its nourishment not at *once*, but for a long period. It should be old; but it should be *hard* and *dried*. When rapid action from manure is required, it should be finely divided, and regularly mixed with the soil, or used largely as a mulching or top-dressing.

The Soil should be Rough and Open.—Exceptions there are, such as a covering for small seeds, which must be fine; in fact, if just pressed into the appropriate soil, a dusting of silver-sand scattered over, and then a square of glass put over the pot, it will answer better than the finest-sifted soil. We would not use a sieve at all, unless a very fine one to get rid of the mere dusty portion; and this should always be done before adding sand as a lightening agent. The rule to follow, for general purposes, is to use rough and lumpy, fibrous soil, in opposition to that which is fine and sifted; but let that roughness consist in numbers of small rather than a few of larger pieces, and when the latter are used, let them be in proportion to the size of the pot, and the size of the shift given. For instance, for a 4-inch pot, the largest pieces may range from the size of peas to horse-beans; for an 8-inch pot, the largest pieces may be like walnuts, but not many of that size; and for a 16-inch pot, a few pieces may be as large as eggs, with every other size downwards, and well packed with the finer soil from which the mere dust has been extracted.

Securing and Preparing suitable Soil.—Heath-soil, so necessary for hair-like rooted plants, can only be procured from upland commons where the heath naturally grows. *Loam* of almost every quality can be procured by taking the surface turf from pasture and the sides of roads, and building it in narrow ridges when dry, and using it after being so built up for six or twelve months. Failing these sources, for all plants not requiring peat earth, suitable soil may be obtained from the sides of highways, and by skimming off the flaky material from the tops of ridges that have been trenched up for some time in the kitchen-garden. In using the latter, however, you must, in general, be content with small shifts, as you will not be able to get the soil rough enough for large ones. The plants, notwithstanding, will thrive beautifully, and size for size will often yield more bloom than if you had used large shifts and larger pots. If the latter is your wish, you may use pieces of charcoal, or, what will answer extremely well, get a few fibrous sods taken off quite thin, dry them over a furnace, or, what is better, char the grassy sides by putting them on an old spade or other iron, and then place them over a fire; allow the sods to be exposed for a few days to sweeten; and then, if broken into small pieces, they will not only be useful for placing over the drainage, but also for mixing with *any*, but chiefly *fine* soil to keep it open. Where rough soil is wanted for large shifts, it is best to pile the turf, when dry, in narrow stacks, through which the air may circulate, and yet the wet be excluded. In using such a heap, after the time specified, there is little occasion to turn it frequently afterwards, which would be necessary in the case of other fresh soil not so exposed; for we must not forget that every turning we give, while it renders the soil more aerated and sweet, renders it also more fine and *dense*, from the decomposition of its fibre. *Charcoal*, owing to its lightness, not to speak of its chemical properties, is the best assistant for rendering the soil porous; and enough of this may be got from every garden by charring the rubbish. Failing that, however, broken brick, broken pots, and lime-rubbish may be used with advantage, if there is nothing in the peculiar plant to render one or all unsuitable.

Draining.—A plant badly drained will never show fine cultivation. Where worms are likely to intrude, the convex side of the potsherd should be placed over the hole; but for amateurs, nothing is better than small caps of tin or zinc to cover over the hole completely; and in either case, plenty of drainage placed over them, the materials being smaller as it ascends. For anything requiring nicety, there ought to be at least one-inch drainage in a five-inch pot, and so in proportion. The best covering for the drainage is a sprinkling of green moss, to separate the drainage from the soil; over that some of the rougher materials should be placed, and then some of the finer, on which the base of the ball should rest.

Potting or Shifting.—The pots should be new or thoroughly clean. No man deserves to have a nice plant who would place it in a dirty pot, and rarely will he be rewarded with one. When he attempts to shift again, it serves him right to find that roots and soil alike are so sticking to the sides of the pot, that he must break the pot, or lacerate the roots. 1. Before commencing operations, see that the ball of the plant is *moist* from the centre to the circumference. If not, you can never moisten it afterwards without labour, which may as well be spared. 2. If you wish to rattle your plants *on* until a certain period, upon the successive shift system, never allow the roots to *mat* round the sides of the pot; but reshift as soon as they get there. 3. If the roots should be a little matted, gently disentangle them, even though in doing so you get rid of a good quantity of the old soil, and spread these roots out into layers, packing them as you proceed with soil of various degrees of fineness. 4. The soil in general should be as high in temperature, or nearly so, as the plant enjoyed previously. Cold soil has injured many a fine plant. We have said nothing of cutting roots, because that chiefly applies to particular times and instances. Generally, when after a period of rest, fresh growth is to be induced.

Immediately-after-treatment.—Whatever system of potting has been adopted, a greater excitement to growth than usual should be given. If well watered previously to potting, and a largish shift given, little water will be wanted at the root for a time; but that should be several degrees warmer than usual; and frequent syringings in bright weather should be imparted, accompanied with shading, if necessary. If a small shift was given, water will be wanted more freely at the root; and here, as well as in the other case, a higher temperature should for a time be maintained, until fresh growth has freely commenced, when air and exposure may be more freely given. See ONE-SHIFT SYSTEM.

POTTING-OFF is the term applied to moving into pots, singly, seedlings or cuttings from where they have been grown numerously together.

POTTLE. See BASKET.

POUPA'RTIA. (Called *Bois de Poupart*, in the Isle of Bourbon. Nat. ord. *Terebinths* [Anacardiaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*. Now referred to Spondias.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass; peat and loam. Winter temp., 55° to 60°; summer, 60° to 85°.

P. borbo'nica (Bourbon). See SPONDIAS BORBONICA.
„ *du'lcis* (sweet). See SPONDIAS DULCIS.
„ *mangi'fera* (mango-bearing). See DRACONTOMELON MANGIFERUM.

POUROU'MA. (The native name. Nat. ord. Urticaceæ.)

Greenhouse tree with evergreen foliage. Cuttings of ripe wood in sand, with bottom-heat. Fibrous loam peat, and sand.

P. edu'lis (edible). Green. Colombia. 1873.

POURRE'TIA. (Commemorative of *P. A. Pourret*, a French botanist. Nat. ord. Bromeliaceæ. Now referred to Puya.)

P. Achupa'lla (Achupalla). See PUYA BONPLANDIANA.
,, *coarcia'ta* (contracted). See PUYA CHILENSIS.
,, *fri'gida* (cold). See DYCKIA FRIGIDA.
,, *Joinvi'llei* (Joinville's). See RHODOSTACHYS ANDINA.
,, *mexica'na* (Mexican). See RHODOSTACHYS ANDINA.

POUTE'RIA. (A commemorative name. Nat. ord. Sapotaceæ.)

A greenhouse evergreen tree. Cuttings of mature wood in sand, in gentle heat, and under a hand-light. Fibrous loam, peat, and sand.

P. sua'vis (sweet-scented). Green. Fruit pear-shaped, with edible, perfumed rind. Uruguay. 1906.

PRAIRIE CLOVER. *Petaloste'mon.*

PRASOPHY'LLUM. (From *prason*, a leek, and *phullon*, a leaf; in allusion to the resemblance of the leaves to those of a leek. Nat. ord. Orchidaceæ.)

Terrestrial orchids requiring greenhouse protection. Imported roots. Fibrous peat, loam, and sand.

P. attenua'tum (attenuated). Australia. 1882.
,, *laufferia'num* (Laufferian). 1. Dusky green. Australia. 1888.
,, *plumæfo'rme* (plume-formed). Australia. 1882.
,, *triangula're* (triangular). Australia. 1882.

PRA'TIA. (Named after *M. Prat*, a French officer. Nat. ord. *Campanulads* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse or hardy herabceous perennials. Seeds in a slight hotbed, in spring; dividing the plants; cuttings of the young shoots in sandy soil, any time, but best in autumn and spring; sandy loam, and a little peat or leaf-mould; require a greenhouse or cold pit in winter.

P. angula'ta (angled). ½. White. May to July. New Zealand. 1829. Hardy, creeping.
,, *areno'sa* (sand) ½. White. July to September. New Zealand.
,, *begonifo'lia* (Begonia-leaved). ¼. Blue. June to September. Himalaya. 1827. Half-hardy.
,, *corymbo'sa* (corymbed). See LOBELIA CORYMBOSA.
,, *ere'cta* (upright). 1. Blue. June. Australia. 1819.
,, *hedera'cea* (Ivy-like). ¼. White. September. Brazil. 1832.
,, *ma'crodon* (large-toothed). ¼. White. July, August. New Zealand. Half-hardy.
,, *monta'na* (mountain). Java.
,, *physaloi'des* (Physalis-like). Bot. Mag., t. 6864.
,, *re'pens* (creeping). ¼. White, violet. June to October. Magellan regions.

PRE'MNA. (From *premnon*, a stock or trunk of a tree; in allusion to the habit of the plants. Nat. ord. Verbenaceæ.)

Stove trees or shrubs. Seeds; cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

P. escule'nta (esculent). 6–8. Yellow-white. May. India. 1824.
,, *integrifo'lia* (entire-leaved). 6–10. Greenish-white. July. India; Malaya. 1827. "Headache Tree."
,, *latifo'lia* (broad-leaved). 10–15. White. June. India. 1827.
,, *serratifo'lia* (saw-leaved). See P. INTEGRIFOLIA.
,, *spino'sa* (spiny). See P. INTEGRIFOLIA.

PRENA'NTHES. (From *prenes*, bending downwards, and *anthos*, a flower; the flower-heads are drooping. Nat. ord. Compositæ.)

Hardy herbs. Seeds; divisions. Ordinary soil.

P. a'lba (white). 2–4. White. August to October. N. Amer. 1762.
,, *arbo'rea* (tree-like). See SONCHUS ARBOREUS.
,, *pinna'ta* (pinnate). See SONCHUS LEPTOCEPHALUS.
,, *purpu'rea* (purple). 1½–3. Purple. July, August. Europe. 1658.
,, *tenuifo'lia* (slender-leaved). See P. PURPUREA.
,, *virga'ta* (twiggy). 2–3. Lilac. July, August. N. Amer. 1823.

PREPTA'NTHE. See CALANTHE.

PREPU'SA. (From *prepousa*, comely; the beauty of the flowers. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Leianthus.)

Stove herbaceous perennials. Seeds in a hotbed, in spring; division of the plant at the same time. Winter temp., 48° to 55°; summer, 60° to 80°.

P. hookeria'na (Hooker's). 1. White, crimson. March. Brazil. 1839.

PRESCO'TTIA. (Commemorative of *John Prescott*, a Russian botanist. Nat. ord. Orchidaceæ. Allied to Ponthieva.)

Terrestrial stove orchids. Imported roots. Fibrous loam, fibrous peat, leaf-mould, and sand.

P. colo'rans (colouring). See P. STACHYODES.
,, *densiflo'ra* (dense-flowered). ½. White. Brazil. 1866.
,, *plantagi'nea* (plantain-like). See P. PLANTAGINIFOLIA.
,, *plantaginifo'lia* (plantain-leaved). Greenish-white. Brazil. 1822.
,, *stachyo'des* (spike-like). 1½–2. Green. W. Ind.; Brazil. 1834.

PRE'SLIA. (Commemorative of *C. B.* and *J. S. Presl*, Belgian botanists. Nat. ord. Labiatæ. Allied to Mentha, and in habit like *M. Pulegium*.)

Hardy perennial, prostrate herb. Seeds; divisions in spring. Ordinary soil.

P. cervi'na (deer). ½. Pale purple. June, July. Western Mediterranean region. 1684.

PRESTINA'RIA. See COREOPSIS.

PRESTO'EA. (Commemorative of *H. Prestoe*, a director of the Botanic Gardens, Trinidad. Nat. ord. Palmaceæ.)

Stove Palms. Seeds. Loam, one-third peat, and sand.

P. Carde'ri (Carder's). Colombia. 1876.
,, *monta'na* (mountain). 30. Trop. Amer. 1820.
,, *pubi'gera* (down-bearing). 6–12. Trinidad.

PRESTO'NIA. (Named after *C. Preston, M.D.* Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Malouetia.)

Stove evergreen, white-flowered twiners. Cuttings of half-ripened, stubby side-shoots in sand, under a bell-glass, in heat; sandy loam, and a little fibrous peat or dried leaf-mould. Winter temp., 48° to 58°; summer, 60° to 85°.

P. glabra'ta (smoothed). 8. July. Ecuador. 1823.
,, *hirsu'ta* (hairy). 5–10. Yellow, rose. August, September. Brazil. 1843.
,, *tomento'sa* (downy). 8. July. Brazil. 1820.
,, *veno'sa* (veiny). Yellow-green. June. W. Ind. 1821.

PRICKING-OUT is transplanting seedlings from their seed-bed more thinly that they may acquire more fibrous roots and strength previously to their being finally planted out.

PRICKLY CEDAR. *Cyatho'des acero'sa.*

PRICKLY PEAR. *Opu'ntia.*

PRICKWOOD, or **TIMBER.** *Euo'nymus europæ'us* and *Co'rnus sangui'nea.*

PRIE'STLEYA. (Named after *Dr. Priestley*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Liparia.)

Greenhouse, yellow-flowered, evergreen shrubs, from South Africa, all about 3 feet high. Cuttings of half-ripened short shoots in sand, under a bell-glass; sandy loam and fibrous peat, and thoroughly well-drained, to assist which charcoal and pieces of broken brick or sandstone may be mixed with the compost. Winter temp., 40° to 48°. Such species as *vesti'ta* should be tried against a wall.

P. axilla'ris (axillary-*flowered*). See AMPHITHALEA DENSA.
,, *capita'ta* (headed-*flowered*). July. 1812.
,, *elli'ptica* (oval-*leaved*). 1825.
,, *ericæfo'lia* (heath-leaved). See AMPHITHALEA ERICÆFOLIA.
,, *graminifo'lia* (grass-leaved). June. 1800.
,, *hirsu'ta* (hairy-*stemmed*). August. 1792.
,, *læviga'ta* (smooth-*leaved*). See P. TERES.
,, *myrtifo'lia* (myrtle-leaved). June. 1823.
,, *seri'cea* (silky-*leaved*). June. 1794.
,, *te'res* (round-*stemmed*). June. 1816.
,, *tomento'sa* (downy). July. 1812.
,, *umbelli'fera* (umbelliferous). July. 1826.
,, *vesti'ta* (clothed). May. 1800.
,, *villo'sa* (woolly). June. 1774.

PRI'MULA. Primrose. (From *primus*, the first; early flowering. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Seeds in April, in light, sandy border; divisions of the plant in March and April, or when the plants have done flowering, or in the autumn. *Præ'nitens*, or *sine'nsis*, and its varieties, generally by seed in a slight hotbed, in spring or the beginning of autumn, according as the plants are wanted to bloom early in winter or the following spring. The Chinese double varieties (so useful for nosegays in winter), by cuttings after flowering, in April or May, and by re-potting the small plants of last year; sandy loam and peat, enriched with a little decayed cow-dung, and kept open with small nodules of charcoal. These should seldom be below 40° in winter, and the nearer they range from 45° at night, and 50° and 55° during the day, the better they will bloom.

Greenhouse Herbaceous.

P. blattarifo'rmis (Blattaria-formed). ½–1. Lilac. Yunnan, China. 1887.
„ *bovea'na* (Bovean). See P. VERTICILLATA.
„ *floribu'nda* (free-flowering). ½–¾. Yellow. Winter. Himalaya. 1883.
„ „ *grandiflo'ra* (large-flowered). Flowers larger.
„ „ *grandiflo'ra isabelli'na* (Isabelline). ½. Yellow fading to lemon. Winter. 1901.
„ *Forbe'sii* (Forbes's). 1–1½. Pale lilac. Autumn and winter. Yunnan, China. 1891. "Baby Primrose."
„ *geraniifo'lia* (Geranium-leaved). 1. Bright purple. Himalaya. 1888.
„ *imperia'lis* (imperial). 3–4. Cowslip-yellow, tinted with orange. Java. 1890.
„ *kewe'nsis* (Kew). 1–1½. Bright yellow. Winter. 1900. (*P. floribunda* × *verticillata*.)
„ *malacoi'des* (mallow-like). 1. Pink, with yellow eye. Autumn and winter. Yunnan, China. 1908.
„ *mo'llis* (soft-*leaved*). 1. Purple. April, May. Himalaya. 1854.
„ *obco'nica* (obconical). 1. Bright mauve or lilac. Summer and winter. China. 1882.
„ „ *cæru'lea* (sky-blue). Blue. 1907.
„ „ *fimbria'ta* (fringed). Corolla fringed. 1897.
„ „ *gigante'a* (giant). Lilac-rose or carmine. 1908.
„ „ *ro'sea* (rosy). Rose. 1897.
„ „ *semiple'na* (semi-double). Deep rose, mostly semidouble. 1902.
„ „ *supe'rba* (superb). Large bright rose. 1906.
„ *petiola'ris* (long-stalked). Pale purple. Himalaya.
„ „ *na'na* (dwarf). ½. Lilac-purple, with white and yellow eye. Himalaya. 1889.
„ *poculifo'rmis* (bowl-formed). See P. OBCONICA.
„ *Poisso'ni* (Poisson's). ½–1. Rich purple. Yunnan, China. 1889.
„ *præ'nitens* (very-glossy). See P. SINENSIS.
„ *proli'fera* (proliferous). 1. Yellow. Himalaya. 1884.
„ *pusi'lla* (puny) of Wallich. ½–¾. Rich violet-purple. Himalaya.
„ *Ru'shyi* (Rusby's). ½–¾. Deep brownish-purple, with yellow eye. Spring. New Mexico. 1881.
„ *sine'nsis* (*Chinese*). ½. Pink. May. China. 1820.
„ „ *fimbria'ta a'lba* (fringed-white). ½. White. June. 1833.
„ „ *fimbria'ta ro'sea* (fringed-rosy). 1. Rose. June. 1833.
„ „ *flo're-a'lbo* (white-flowered). ½. White. May. China.
„ „ *ple'na-a'lba* (double-white). White. March. China.
„ „ *ple'na-ro'sea* (double-rosy). Rose. March. China.
„ *verticilla'ta* (whorled). Yellow. March. Arabia. 1826. "Abyssinian Primrose."

Hardy Herbaceous.

P. acau'lis (stemless). See P. VULGARIS and varieties.
„ *admonte'nsis* (Admontan). Lilac. May. Upper Styria. 1884. (*P. Auricula* × *clusiana*.)
„ *a'lgida* (cold). Pale purple. March, April. Siberia.
„ *Allio'ni* (Allioni's). ½. Red. April. France. 1818.
„ *alpi'na* (alpine). See P. RHÆTICA.
„ *alta'ica* (Altaian). ½. Red. April. Altai. 1819.
„ *alta'ica* (Altaian) of Lindley. See P. VULGARIS SIBTHORPII.
„ *amethysti'na* (amethyst). Reddish-purple or amethyst. June. China.
P. ama'na (pleasing). ½. Purple. April. Caucasus. 1823.
„ *angu'stidens* (narrow-toothed). Deep clear purple, whorled. Yunnan, China. 1908.
„ *angustifo'lia* (narrow-leaved). N. Amer.
„ *anisi'aca* (anise-scented). Natural hybrid. (*P. elatior* × *vulgaris*.) 1910.
„ *apenni'na* (Apennine). Piedmont.
„ *Arcto'tis* (Arctotis). White to purple. 1886. (*P. Auricula* × *viscosa*.)
„ *assi'milis* (similar). Europe.
„ *Auri'cula* (Auricula). ½. Yellow. April. Switzerland. 1596. "Auricula." "Bear's Ears."
„ „ *bellune'nsis* (Bellunan). See P. BALBISII BELLUNENSIS.
„ „ *brevi'styla* (short-styled). See P. BREVISTYLA.
„ „ *calyca'ntha* (coloured-calyxed). ½. Yellow. April. Switzerland. 1596.
„ „ *carinthi'aca* (Carinthian). Carinthia.
„ „ *dolomi'tica* (dolomitic). Funnel-shaped, lemon-yellow. Tyrol. 1884.
„ „ *horte'nsis* (garden). ½. Variegated. April. Europe. 1596.
„ „ *integ'rrima* (most-entire). ½. Variegated. April. Switzerland. 1596.
„ „ *lu'tea* (yellow). ½. Yellow. May. Switzerland. 1596.
„ „ *lu'tea ple'na* (double-yellow). ½. Yellow. April. Gardens.
„ „ *monace'nsis* (Monaco). Monaco.
„ *auricula'ta* (small-eared). ½. Red. April. Asia Minor, &c. 1790.
„ *Balbi'sii* (Balbis's). ½. Yellow. April. S. Europe. 1823.
„ „ *bellune'nsis* (Bellunan). ½. Bright yellow. April, May. Europe.
„ *be'lla* (pretty). Violet-purple. June, July. China. 1884.
„ *bellune'nsis* (Bellunan). See P. BALBISII BELLUNENSIS.
„ *Berni'na* (Berne's). ½. Rose-purple. April. Switzerland.
„ *bifo'ra* (two-flowered). ½. Rose. March to May. Switzerland.
„ *bractea'ta* (large-bracted). Yellow. March, April. Yunnan, China.
„ *brevi'styla* (short-styled). ½. Yellow. June. France. 1818. Hybrid.
„ „ *versi'color* (party-coloured). ½. Yellow, red. June. France. 1818.
„ *bulleya'na* (Bulleyan). 1½–3. Orange-buff to reddish-orange. S.W. China. 1909.
„ *cadine'nsis* (Cadinan). See P. CENENSIS.
„ *calyca'ntha* (coloured-calyxed). Reddish-blue in many-flowered umbels. Yunnan, China. 1892.
„ *calyci'na* (large-calyxed). ½. Pink or purple. June. Lombardy or Italian Tyrol. 1826.
„ *candollea'na* (Candollean). See P. INTEGRIFOLIA.
„ *capita'ta* (*round*-headed-*mealy*). ½. Purple. October. Himalaya. 1850.
„ *capitella'ta* (small-headed). ½–1. Deep purple. Asia Minor; Persia; Afghanistan. 1904.
„ *carnio'lica* (Carniolan). ½. Purple. March. Carniola. 1826.
„ „ *mu'lticeps* (many-headed). Flowers numerous, darker.
„ *carpa'tica* (Carpathian). See P. ELATIOR CARPATICA.
„ *cashmiria'na* (Cashmerian). See P. DENTICULATA CASHMIRIANA.
„ *ce'rnua* (drooping). Violet. June, July. Yunnan, China.
„ *Churchi'llii* (Churchill's). See P. ADMONTENSIS.
„ *cilia'ta* (hair-fringed). ½. Red. April. Switzerland. 1700.
„ „ *balfouria'na* (Balfourian).
„ „ *cocci'nea* (scarlet). Deep red.
„ „ *purpu'rea* (purple). Purple.
„ *clusia'na* (Clusian). Rose. April. Tyrol, &c.
„ „ *denta'ta* (toothed). See P. ADMONTENSIS.
„ *cockburnia'na* (Cockburnian). 1. Orange-scarlet, in whorls. W. China. 1905.
„ *cogna'ta* (cognate). ½–¾. Pale bluish-purple, fragrant. Western China. 1906.
„ *Colu'mnæ* (Columna's). ½. Yellow. April. Europe. 1824.
„ „ *Tommasi'nii* (Tommasin's).

P. commuta'ta (changed). ½. Deep rose. May. Europe.
„ *confi'nis* (nearly-related). See P. HIRSUTA CONFINIS.
„ *corona'ta* (crowned). Tyrol.
„ *cortusoi'des* (Cortusa-like). 1. Red. June. Siberia. 1794.
„ „ *a'lba* (white). 1. White. May. Japan. 1865.
„ „ *lichiange'nsis* (Lichiang). ½–1½. Rose-red or crimson. S.W. China. 1909.
„ „ *Siebo'ldi* (Siebold's). See P. SIEBOLDI.
„ *co'ttia* (Cottian). Alps of Piedmont.
„ *Cou'rtii* (Court's). See P. VERTICILLATA.
„ *crena'ta* (notched). See P. MARGINATA.
„ *cridale'nsis* (Cridalan). ½. Purple. May. Tyrol. 1884.
„ *daone'nsis* (Daonan). See P. ŒNE'NSIS.
„ *davu'rica* (Davurian). ½. Red. May. Siberia. 1806.
„ *deci'piens* (deceiving). Alps.
„ *deco'ra* (comely). See P. HIRSUTA.
„ *defle'xa* (deflexed). 1½–2. Dark blue or rose-purple. Western China. 1906.
„ *Delava'yii* (Delavay's). 1. Purple. July. Yunnan, China.
„ *denticula'ta* (toothletted-*leaved*). Purple. May. Himalaya.
„ „ *a'lba* (white). ½–1. White. 1886.
„ „ *capita'ta* (headed). See P. CAPITATA.
„ „ *cashmiria'na* (Cashmerian). ½–1. Small, purple; eye small, yellow. Cashmere. 1879.
„ „ *cashmiria'na a'lba* (white). ½–1. White. 1897.
„ „ *grandiflo'ra* (large-flowered). Flowers twice the usual size, white, lilac, rose, or violet. 1909.
„ „ *pulche'rrima* (fairest). ½–1. Small, rich lilac.
„ „ *purpu'rea* (purple). ½–1. Purple. Himalaya. 1873.
„ „ *ro'sea* (rosy). ½–1. Rose.
„ „ *variega'ta* (variegated). Leaves edged with white. 1889.
„ *dentiflo'ra* (toothed-flowered). See P. CORTUSOIDES.
„ *deo'rum* (the gods'). ½. Purplish violet, 20 in an umbel. Mt. Rilo, Bulgaria. 1905.
„ *dige'nea* (two-begotten). ½. Yellow. May. Europe. (*P. elatior* × *vulgaris*.)
„ *dinya'na* (Dinyan). ½. Dark purple. April. Switzerland.
„ *di'scolor* (two-coloured). ½. Purple. April. Northern Italy.
„ *dolomi'tica* (dolomitic). See P. AURICULA DOLOMITICA.
„ *dryadifo'lia* (Dryas-leaved). Violet. July. Yunnan, China.
„ *Dumouli'nii* (Dumoulin's). ½. Rose. March, April. Alps. 1877.
„ *ela'tior* (taller). 1. Yellow. May. Britain. "Oxlip."
„ „ *amœ'na* (lovely). See P. AMŒNA.
„ „ *calyca'ntha* (coloured-calyxed). ½. Variegated. April. Britain.
„ „ *carpa'tica* (Carpathian). Soft yellow. May. Carpathian Alps. 1882.
„ „ *flo're-ple'no* (double-flowered). ½. Brown, crimson. April. Britain.
„ „ *intrica'ta* (intricate). Pale yellow. May.
„ „ *polya'ntha* (many-flowered). ½. Variegated. April. Britain.
„ *e'legans* (elegant). See P. SIBIRICA KASHMIRIANA.
„ *elli'ptica* (elliptic). ½. Blue-purple. May, June. Himalaya.
„ *elwesia'na* (Elwesian). ½. Purple. May, June. Himalaya.
„ *ero'sa* (eroded). 1. Dark purple. June. Himalaya.
„ *Esche'ri* (Escher's). ½. Rosy-purple. April. Europe. 1880.
„ *Facchi'nii* (Facchin's). ½. Rosy-purple. April, May. Northern Italy. 1880.
„ *farino'sa* (mealy). ½. Lilac. June. Britain. "Bird's-eye Primrose."
„ „ *magella'nica* (Magellan). Magellan regions.
„ *Fedtsche'nkoi* (Fedtschenko's). ½–¾. Violet-purple. June to August. Turkestan. 1875.
„ *finma'rchica* (Finmarck). See P. SIBIRICA.
„ *flagellicau'lis* (whip-stemmed). Europe.
„ *flœrkea'na* (Flœrkean). ½. Pale purple. April, May. Alps of S. Europe.
„ *Forre'stii* (Forrest's). ½–¾. Deep yellow, fragrant; eye orange. S.W. China. 1909.
„ *Forste'ri* (Forster's). ½. Rose, with white eye. Tyrol. 1879.

P. Freye'ri (Freyer's). See P. CARNIOLICA.
„ *frondo'sa* (leafy). ½–¾. Bright lilac. May, June. Thrace.
„ *gambelia'na* (Gambelian). Purple. Himalaya. 1884.
„ *gamblea'na* (Gamblean). ½. Purple, with yellow eye. Himalaya. 1901.
„ *gigante'a* (giant). ½. Red. June. Siberia. 1820.
„ *glacia'lis* (glacial). Violet. June, July. China.
„ *glauce'scens* (milky-green). See P. CALYCINA.
„ *glutino'sa* (clammy). ½. Red. June. S. Europe. 1824.
„ *Gœbe'lii* (Gœbel's). ½. Yellow. April, May. Tyrol.
„ *grandiflo'ra* (large-flowered). See P. CARNIOLICA.
„ *gra'ndis* (grand). ½. Yellow. Caucasus. 1878.
„ *haza'rica* (Hazarian). ½. Purple; tube pale yellow. Himalaya. 1906.
„ *Hee'rii* (Heer's). ½. Purple. April. Switzerland.
„ *helve'tica* (Helvetian). See P. PUBESCENS and varieties.
„ *hetero'donta* (various-toothed). Purple. June, July. China.
„ *hirsu'ta* (hairy). ½. Pink. April. Europe. 1800.
„ „ *confi'nis* (nearly related). ½. Dark rose. May. Europe.
„ *hornemannia'na* (Hornemannian). See P. FARINOSA.
„ *Hugueni'nii* (Huguenin's). ½. Purple. April. Europe.
„ *hu'milis* (humble). See P. PUSILLA.
„ *Hute'ri* (Huter's). ½. Violet. April, May. Tyrol, &c.
„ *infla'ta* (inflated). See P. OFFICINALIS PANNONICA.
„ *integrifo'lia* (entire-leaved). ½. Pink. June. Pyrenees. 1792.
„ *integrifo'lia* (entire-leaved) of Jacquin. See P. CLUSIANA.
„ *interme'dia* (intermediate). Deep purple. April, May. Tyrol.
„ *involucra'ta* (ruffed). ½. White. April. N. India. 1845.
„ „ *Munro'i* (Munro's). ½. White; yellow eye. May. Himalaya. 1845.
„ *jæschkia'na* (Jæschkian). See P. NIVALIS.
„ *japo'nica* (Japanese). 1–1½. Crimson, with darker eye. May, July. Japan. 1871.
„ „ *a'lba* (white). White, with rosy zone. 1887.
„ „ *pulverule'nta* (powdery). 1½–2. Deep crimson. Plant powdery. W. China. 1905.
„ *jellenkia'na* (Jellenkian). See P. CARNIOLICA.
„ *Juribe'lla* (Juribella). S. Tyrol.
„ *kaufmannia'na* (Kaufmannian). ½–1. Violet. June, July. Central Asia. 1875.
„ *Kerne'ri* (Kerner's). ½. Red-violet. April. Europe.
„ *kitaibelia'na* (Kitaibelian). ½–¾. Rosy-purple. April, May. Croatia.
„ *knuthia'na* (Knuthian). ½. Rosy-lilac. March. N. China. 1912.
„ *kolbia'na* (Kolbian). Northern Italy.
„ *latifo'lia* (broad-leaved). ½. Red. April. Pyrenees. 1820.
„ *lebelia'na* (Lebelian). ½. Purple. April. Europe. 1880.
„ *littonia'na* (Littonian). See P. VIALI.
„ *longiflo'ra* (long-flowered). ½. Red June. Europe. 1825.
„ *longifo'lia* (long-leaved). See P. AURICULATA.
„ *longisca'pa* (long-flower-stalked). See P. FARINOSA.
„ *longoba'rda* (Lombardy). ½. Purple. April. Lombardy.
„ *lu'tea* (yellow). See P. AURICULA.
„ *lu'teola* (small-yellow). 1½–2. Soft yellow. June to August. Caucasus. 1867.
„ *magiasso'nica* (Magiassonian). See P. FACCHINII.
„ *magnifica* (magnificent). See P. ROSEA MAGNIFICA.
„ *margina'ta* (silver-edged). ½. Pink. April. Switzerland. 1777.
„ „ *cæru'lea* (sky-blue). ½. Sky-blue. April.
„ „ *densiflo'ra* (dense-flowered). Flowers numerous crowded. April.
„ „ *grandiflo'ra* (large-flowered). Flowers larger. April.
„ „ *ma'jor* (larger). Pink. April.
„ *Maximowiczii* (Maximowicz's). ½–1. Dark red. March. W. China. 1910.
„ *megaseæfo'lia* (Megasea-leaved). ½. Rosy-lilac or purple. February, March. Asia Minor. 1901.
„ „ *supe'rba* (superb). Velvety reddish-mauve; eye orange. 1904.
„ *microca'lyx* (small-calyxed). See P. MARGINATA.

P. mi'nima (least). ½. Purple. April. S. Europe. 1819.
„ „ *hy'brida* (hybrid). See P. FLŒRKEANA.
„ „ *multidenta'ta* (many-toothed). Corolla fringed with teeth. Europe. 1597.
„ „ *pube'scens* (downy). See P. STURII.
„ *minuti'ssima* (smallest). ½. Warm purple. June. Himalaya.
„ *mistassi'nica* (Lake Mistassins). ½. Red. June. N. Amer. 1818.
„ *mu'lticeps* (many-headed). See P. CARNIOLICA MULTICEPS.
„ *Munro'i* (Capt. Munro's). See P. INVOLUCRATA MUNROI.
„ *muretia'na* (Muretian). ½. Dark purple. April. Switzerland.
„ *muscarioi'des* (Muscari-like). ½. Deep purple-blue. China. 1907.
„ *muscoi'des* (moss-like). Purple. Himalaya. 1884.
„ „ *tenui'loba* (slender-lobed). Purple. Himalaya.
„ *Nelso'ni* (Nelson's). See P. VISCOSA.
„ *niva'lis* (snowy) of gardens. See P. PUBESCENS ALBA.
„ *niva'lis* (snowy) of Pallas. ½. Purple. April. Central Asia. 1790.
„ „ *farino'sa* (mealy). Leaves covered beneath with white meal. Central Asia. 1878.
„ „ *longifo'lia* (long-leaved). Deep purple. Leaves longer, narrower, mealy beneath. Central Asia. 1878.
„ „ *turkesta'nica* (Turkestan). ½. Deep rose, in two whorls. Central Asia. 1878.
„ *ni'vea* (snow-white). See P. PUBESCENS ALBA.
„ *norve'gica* (Norwegian). See P. SIBIRICA FINMARCHICA.
„ *obova'ta* (obversely-egg-shaped). ½. Rosy. April. Venetian Alps.
„ *Obri'stii* (Obrist's). ½. Purple. April. Northern Italy.
„ *obtusifo'lia* (obtuse-leaved). ½. Deep claret purple. May. Himalaya. 1887.
„ *œne'nsis* (Œnan). Rose; eye white. May. S. Tyrol and Italian Alps. 1854.
„ *officina'lis* (officinal). ½–1. Bright yellow. April, May. Europe (Britain). "Cowslip."
„ „ *ela'tior du'plex* (double). Calyx like the corolla, hose-in-hose.
„ „ *macroca'lyx* (large-calyxed). ½–1. Yellow. May.
„ „ *panno'nica* (Pannonian). ½. Yellow. May. Hungary. 1825.
„ „ *ru'bra* (red). ½. Red. May. Britain.
„ „ *suave'olens* (sweet-scented). See P. COLUMNÆ.
„ *O'lgæ* (Madame Olga's). ½. Rose-lilac. April, May. Turkestan. 1875.
„ *orbicula'ris* (orbicular). 1. Yellow, mealy, fragrant. Western China. 1906.
„ *ovalifo'lia* (oval-leaved). ½ Blue, in umbels. Central and Western China. 1903.
„ *Palinu'ri* (Palinur's). ½. Yellow. April. Naples. 1816.
„ *Palla'sii* (Pallas's). ½. Yellow. June. Altai. 1823.
„ *pa'llida* (pale). See P. HIRSUTA.
„ *panno'nica* (Pannonian). See P. OFFICINALIS PANNONICA.
„ *Pa'rryi* (Parry's). ½. Purple; eye yellow. April, May. North-western Amer. 1865.
„ *pedemonta'na* (Piedmont). ½. Pink. May. Piedmont. 1826.
„ „ *ro'sea* (rosy). ½. Rose. May.
„ *perreinia'na* (Perrein's). 4. Yellow. June. Spain.
„ *Peyri'tschii* (Peyritsch's). ½. Purple. April. Tyrol.
„ *pinnati'fida* (deeply-lobed). Violet. July. Yunnan, China.
„ *Pla'ntæ* (Mrs. Plant's). ½. Rose-purple. April. Europe. 1880.
„ *Po'rtæ* (Madame Port's). ½. Red. April. Europe. 1873.
„ *pube'scens* (downy). ½. Red. April. S. Europe. 1800.
„ „ *a'lba* (white). ½. White. March, April.
„ *pu'lchra* (beautiful). 1. Purple. June. Himalaya. 1884.
„ *pu'mila* (dwarf). ½. Rose-purple. April. Europe.
„ *purpu'rea* (purple). See P. NIVALIS.
„ *pusi'lla* (weak) of Goldie. See P. MISTASSINICA.
„ *Rei'dii* (Reid's). Cream. May. Himalaya. 1886.
„ *reticula'ta* (netted). 1. Yellow. June. Himalaya.
„ *rhæ'tica* (Rhætic). Violet-purple. May. Switzerland.
„ *ro'sea* (rosy). ½–¾. Bright rose. April, May. Himalaya. 1879.
P. ro'sea grandiflo'ra (large-flowered). ½. Bright rose, larger.
„ „ *magnifica* (magnificent). Full-grown leaves grey-white. Seedling from *P. rosea grandiflora*. 1904.
„ *rotundifo'lia* (round-leaved) of Pallas. See P. SIBIRICA.
„ *rotundifo'lia* (round-leaved) of Wallich. ½. Purple, with yellow eye. June. Himalaya.
„ *salisburge'nsis* (Salisburgan). ½. Red-purple. April. Tyrol.
„ *Sali'sii* (Salis's). ½. Purple. April. Switzerland. (*P. latifolia* × *viscosa*.)
„ *sapphiri'na* (sapphirine). ½–¾. Purple. Himalaya. 1884.
„ *Saute'ri* (Sauter's). See P. MINIMA.
„ *sco'tica* (Scotch). ½. Red. June. Scotland.
„ *secundifo'ra* (one-sided-flowered). Violet. July. Yunnan, China.
„ *Sendtne'ri* (Sendtner's). April. Tyrol.
„ *septe'mloba* (seven-lobed). Purple. June, July. Yunnan, China.
„ *serratifo'lia* (saw-leaved). 1. Bright yellow. June. Yunnan, China.
„ *sibi'rica* (Siberian). ½. Red. May. Siberia. 1798.
„ „ *chine'nsis* (Chinese). Lilac, larger; eye white. China. 1909.
„ „ *finma'rchica* (Finmarck). ½. Dark lilac. May. Lapland. 1798.
„ „ *intege'rrima* (very-entire). ¾. Rose, lilac. April. Altai. 1833. Half-hardy.
„ „ *kashmiria'na* (Cashmirian). ½. Rosy-pink. May. Himalaya.
„ *Sibtho'rpii* (Sibthorp's). See P. VULGARIS SIBTHORPII.
„ *Siebo'ldi* (Siebold's). 1. Rose. April, May. Japan. 1865.
„ *sikkime'nsis* (Sikkim). 1. Yellow. May. Himalaya. 1850. "Himalayan Cowslip."
„ *si'milis* (similar). ½. Purple. April. Tyrol. (*P. Auricula* × *subbalbisii*.)
„ *Si'msii* (Sims's). See P. VILLOSA ALBA.
„ *soldanelloi'des* (Soldanella-like). White. Himalaya. 1884.
„ *sonchifo'lia* (Sonchus-leaved). ½–¾. Blue. N.W. Yunnan, China. 1910.
„ *specta'bilis* (showy). ½–¾. Deep rosy-purple. July. Tyrol, &c. 1879.
„ „ *kitaibelia'na* (Kitaibelian). See P. KITAIBELIANA.
„ „ *wulfenia'na* (Wulfenian). See P. WULFENIANA.
„ *spica'ta* (spiked). Violet. June, July. Yunnan, China. 1884.
„ *Ste'nii* (Stein's). ½. Purple. April. 1878. (*P. hirsuta* × *minima*.)
„ *stri'cta* (erect). ½. Pink. April. Denmark. 1822.
„ *Stua'rtii* (Stuart's). ½. Yellow. June. Himalaya. 1845.
„ *Stu'rii* (Stur's). ½. Rosy-purple. April. Styria, &c. 1856. (*P. minima* × *villosa*.)
„ *suave'olens* (sweet-scented). See P. COLUMNÆ.
„ *suffrute'scens* (subshrubby). ½–¾. Maroon-purple; eye yellow. May. California. 1883.
„ *tangu'tica* (Tangutic). 2–3. Brownish-purple, fragrant, in whorls. W. China and Tibet. 1905.
„ *tene'lla* (very-slender). ½. Blue. June. Himalaya. 1884.
„ *tenui'loba* (slender-lobed). See P. MUSCOIDES TENUILOBA.
„ *Tra'lli* (Traill's). 1. Blush, tinted white. April. Himalaya. 1897.
„ *trunca'ta* (abrupt-ended-*leaved*). See P. MINIMA.
„ *tyrole'nsis* (Tyrolese). ½. Purple; eye white. April. Tyrol, &c.
„ *unifio'ra* (one-flowered). ½. Lilac. June. Himalaya. 1884.
„ *varia'bilis* (variable). ½. Yellow. April. Britain. (*P. officinalis* × *vulgaris*.)
„ *Vei'tchii* (Veitch's). 1–1½. Rosy-purple. May. China. 1905.
„ *venu'sta* (neat). ½. Purple. April. Hungary. 1833.
„ *Venzo'i* (Venzo's). Purple. April. Tyrol. 1887. Hybrid.
„ *ve'ris* (spring). See P. OFFICINALIS and varieties.
„ *Via'li* (Vial's). 1–2. Violet-purple; bracts and calyx blood-red. S.W. China. 1909.
„ *villo'sa* (shaggy-*leaved*). ½. Purple. April. Switzerland. 1768.
„ „ *a'lba* (white). ½. White. April. Switzerland. 1768.

P. vincifło'ra (Vinca-flowered). Purple-violet, Vinca-like, solitary. Yunnan, China. 1887.
„ *violodo'ra* (violet-scented). 1. Mauve, violet-scented. May. Central China. 1902.
„ *visco'sa* (clammy). ½. Purple. April. Piedmont. 1792.
„ „ *a'lba* (white). ½. White. April.
„ *vitta'ta* (striped). 1½. Magenta-purple, in whorls. W. China; Tibet. 1905.
„ *vochine'nsis* (Vochinan). ½. Purple. April. Carinthia. (*P. minima* × *wulfeniana*.)
„ *vulga'ris* (common). ½. Yellow. April. Europe (Britain). "Primrose."
„ „ *a'lba* (*single*-white). ½. White. April. Britain.
„ „ *bracteа'ta* (large-bracted).
„ „ *cæru'lea* (sky-blue). ½. Blue. April.
„ „ *ibe'rica* (Iberian). ½. Lilac. April. 1885.
„ „ *ple'na a'lba* (double-white). ½. White. April. Britain.
„ „ *ple'na a'tro-purpu'rea* (double-dark-purple). ½. Purple. April. Britain.
„ „ *ple'na ca'rnea* (double-flesh-coloured). ½. Flesh. April. Britain.
„ „ *ple'na cu'prea* (double-copper). ½. Copper. April. Britain.
„ „ *ple'na ru'bra* (double-red). ½. Red. April. Britain.
„ „ *ple'na sulphu'rea* (double-brimstone). ½. Pale yellow. April. Britain.
„ „ *ple'na viola'cea* (double-violet). ½. Violet. April. Britain.
„ „ *polya'ntha* (many-flowered. "*Polyanthus*").
„ „ *ru'bra* (red). See P. VULGARIS SIBTHORPII.
„ „ *Sibtho'rpii* (Sibthorp's). ½. Pale pink. Greece. The first coloured Primrose.
„ „ *ural'nsis* (Ural).
„ *Wettstei'nii* (Wettstein's). ½. Purple. April. Styria, &c. (*P. minima* × *subclusiana*.)
„ *Wilso'ni* (Wilson's). 2–4. Reddish-purple to mauve, in 5 to 6 whorls. Yunnan, China. 1902.
„ *wulfenia'na* (Wulfenian). ½. Violet-purple. April. Carinthia, &c.
„ *yunnane'nsis* (Yunnan). Violet-purple. July. Yunnan, China.

PRIMULI'NA. (Primula-like; it resembles a Primula. Nat. ord. Gesneraceæ.)
A hardy or half-hardy perennial alpine, with the habit of a Primula; the flowers have the odour of Tobacco. Seeds; cuttings in sand. Light, well-drained soil, or loam, leaf-mould, and sand in a cold frame.
P. sine'nsis (Chinese). See P. TABACUM.
„ *Taba'cum* (Tabacum). ½–1. Violet-purple. China. 1889. "Shekin" or "Rock Tobacco."

PRI'NOS. Winter Berry. (The ancient name of the Holly, which some of the species resemble. Nat. ord. *Hollyworts* [Aquifoliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Ilex.)
P. ambi'guus (ambiguous). See ILEX AMBIGUA.
„ *atoma'rius* (atomed). See ILEX LUCIDA.
„ *coria'ceus* (leather-*leaved*). See ILEX LUCIDA.
„ *deci'duus* (deciduous). See ILEX DECIDUA.
„ *du'bius* (doubtful). See ILEX MOLLIS.
„ *gla'ber* (smooth). See ILEX GLABRA.
„ *læviga'tus* (smooth). See ILEX LÆVIGATA.
„ *lanceola'tus* (spear-head-*leaved*). See ILEX LANCEOLATA.
„ *lu'cidus* (shining). See ILEX LUCIDA.
„ *monta'nus* (mountain). See ILEX MONTANA.
„ *verticilla'tus* (whorled). See ILEX VERTICILLATA.

PRINSE'PIA. (A commemorative name. Nat. ord. Rosaceæ.)
Hardy, spiny shrub. Cuttings in sand, under a hand-light, during summer. Ordinary soil.
P. sine'nsis (Chinese). Nankin yellow. N. China. 1897.

PRI'NTZIA. (A commemorative name. Nat. ord. Compositæ. Allied to Podolepis.)
Greenhouse evergreen shrubs. Cuttings in sand under a bell-glass. Fibrous loam, leaf-mould, and sand.
P. aroma'tica (aromatic). Yellow. S. Africa.
„ *Be'rgii* (Berg's). 1½. Orange. August. S. Africa. 1820.

PRIO'NIUM. (From *prionion*, a small saw, the diminutive of *prion*; the leaves are finely sawed on the edges. Nat. ord. Juncaceæ.)
This remarkable stove aquatic is closely allied to the Rush, and in its native country grows in swamps and in the edges of rivers, partly choking them up. Seeds; offsets. Loam and leaf-mould in pots, dipping into a warm tank.
P. Palmi'ta (Palmita). 3–6. Pale brown. S. Africa. 1857.

PRISMATOCA'RPUS. (From *prisma*, *prismatos*, a prism, and *carpos*, a fruit; the fruits are angled and prism-shaped. Nat. ord. Campanulaceæ. Allied to Specularia.)
Perennial herbs for the greenhouse. Cuttings in sand in a gentle heat. Fibrous loam, leaf-mould, with sand to make it porous.
P. diffu'sus (diffuse). 1. Blue. August. S. Africa. 1787. Evergreen.
„ *falca'tus* (sickle-shaped). See SPECULARIA FALCATA.
„ *frutico'sus* (shrubby). 1. Blue. August. S. Africa. 1787. Evergreen.
„ *hirsu'tus* (hairy). See SPECULARIA SPECULUM.
„ *hy'bridus* (hybrid). See SPECULARIA HYBRIDA.
„ *interru'ptus* (interrupted). 1. Blue. June. S. Africa. 1818.
„ *ni'tidus* (shining). ½–1. White. July, August. S. Africa. 1787.
„ *panicula'tus* (panicled). Blue. June. S. Africa. 1827.
„ *pentago'nius* (five-angled). See SPECULARIA PENTAGONIA.
„ *perfolia'tus* (stem-pierced). See SPECULARIA PERFOLIATA.
„ *Spe'culum* (Speculum). See SPECULARIA SPECULUM.

PRITCHA'RDIA. (Commemorative of *W. T. Pritchard*, a traveller and writer. Nat. ord. Palmaceæ.)
Handsome stove Palms, with fan-shaped leaves. Seeds. Fibrous loam, one-third peat and sand. Winter temp., 60° to 65°; summer, 70° to 90°.
P. au'rea (golden). Petioles golden. Fiji.
„ *fili'fera* (thread-bearing). See WASHINGTONIA FILIFERA.
„ *Gaudichau'dii* (Gaudichaud's). Sandwich Islands. 1879.
„ *gra'ndis* (grand). See LICUALA GRANDIS.
„ *macroca'rpa* (large-fruited). See P. GAUDICHAUDII.
„ *Ma'rtii* (Martius's). Sandwich Islands.
„ *paci'fica* (Pacific). Fiji. 1870.
„ *pericula'rum* (dangerous islands). Petioles dusky golden. Potomou Islands. 1883.
„ *Thursto'ni* (Thurston's). Inflorescence longer than the leaves. Fiji. 1887.
„ *vuylstekia'na* (Vuylstekian). Trunk thick. Potomou Islands. 1883.
„ *Wri'ghtii* (Wright's). Trunk barrel-shaped. Cuba. 1908.

PRI'VA. (Meaning not obvious. Nat. ord. Verbenaceæ.)
Greenhouse perennial herb. Seeds; cuttings in sand under a bell-glass. Fibrous loam, leaf-mould, and sand.
P. la'vis (smooth). 1–1½. Deep lilac, or reddish. June to September. Argentina. 1833.

PRIVET. *Ligu'strum.*

PRO'CKIA. (Probably a commemorative name. Nat. ord. *Tiliads* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
Stove, yellow-flowered, evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy, fibrous loam, and a little fibrous peat. Winter temp., 55° to 60°; summer, 60° to 85°.
P. Cru'cis (St. Cruz), 4. July. W. Ind. 1822.
„ *serra'ta* (saw-*leaved*). See THIODIA SERRATA.
„ *theæfo'rmis* (tea-shaped). 6. July. Bourbon. 1820.

PROLIFEROUS. (See DOUBLE FLOWER.) The term is also applied to plants producing many suckers. The term is frequently applied to plants which produce leafy buds or young plants upon their leaves, like *Bryophyllum calycinum* and many ferns. The hen-and-chicken daisy is another type of prolification, where numerous small flower-heads are produced around the primary or principal one.

PROMENÆ'A. (Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*. 1-*Monandria*. Now referred to Zygopetalum.)

P. citri'na (citron-*flowered*). See ZYGOPETALUM XANTHINUM.
„ *lentigino'sa* (freckled). See ZYGOPETALUM LENTIGINOSUM.
„ *Rollisso'nii* (Rollisson's). See ZYGOPETALUM ROLLISSONII.
„ *stapelioi'des* (Stapelia-like). See ZYGOPETALUM STAPELIOIDES and varieties.
„ *xanthi'na* (yellow-*flowered*). See ZYGOPETALUM XANTHINUM.

PRONA'YA. (Named after *M. Pronay*, a French naturalist. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Sollya.)

Greenhouse evergreen twiner. Cuttings of young shoots in sand, under a glass; sandy loam and peat. Winter temp., 40° to 48°.

P. e'legans (elegant). 4. Blue. August. Australia. 1837.

PROPAGATING FRAME. Where much propagation has to be accomplished at different periods of the year, and especially in spring and autumn, it is necessary to have a propagating frame or case fitted up over the hot-water pipes in a house with a temperature similar to that of a stove, and in which it would be easy to maintain a bottom-heat of 60° to 80°, according to the plants being rooted. Few stove plants would require the latter temperature, and the atmosphere of the same house would necessarily always be lower than that of the frame. The frame may be of wood or bricks, with a movable glass light on the top. The bottom of the frame may be of wood, corrugated iron, or roofing slates, and at least a foot above the hot-water pipes. On the bottom, 6 inches of cocoanut fibre or fine oak tan should be laid in which to plunge the pots containing cuttings. In most cases the frame should be closed at night, but as the temperature rises during the day a label may be used to tilt up the sash for the escape of superfluous vapour to prevent damping of the cuttings by drip from condensation.

PROPS are the supports required by plants to sustain them in a desired position. They must vary in height and strength accordantly with the plant to which they are applied, and should always be as slight as is consistent with efficiency. Nothing looks worse than a disproportioned prop; indeed, it should be concealed as much as possible. The props for peas should be of the branches of the hazel, or of frames and strings, which we prefer; for runner kidney beans, rods of ash. For flowers, stout iron wire, painted brown or dark green, is to be preferred. Whenever wooden props are used, the end thrust into the ground should be previously charred; if this precaution be taken, and when, no longer required, they are stored in a dry shed, they will last for several seasons. Props should be placed on the south sides of the plants, as they incline in that direction, as being most light.

The fewest possible number of props is one of the evidences of good cultivation and good taste.

PROSERPINA'CA. Mermaid Weed. (From *proserpuzo*, *proserpuo*, or *proserpo*, to creep forward; the stems are creeping. Nat. ord. Haloragaceæ.)

Half-hardy water plants. Cuttings in sand in a deep pan of water. May be planted on the shallow edges of ponds, or ornamental water in summer; but reserve plants should be grown in pans for preservation in a cold frame during winter.

P. palu'stris (marsh). White. June to September. N. Amer. 1818.
„ *pectina'ta* (comb-like-leaved). White. June to September. N. Amer. 1821.

PROSO'PIS. (A name of a plant employed by Dioscorides. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Adenanthera.)

Stove evergreen trees. Cuttings of young shoots, when a little firm, taken off close to the older stems, in sand, under a bell-glass, and in a little bottom-heat; sandy loam, and sandy, fibrous peat. Winter temp., 45° to 55°, and rather dry; summer, 60° to 85°, and plenty of moisture at root and top. *Siliqua'strum* stood several years against a wall in the Horticultural Society's Gardens. All the plants mentioned below, except *Jacari* and *strombulifera*, are sometimes regarded as forms of *P. juliflora*.

P. cumane'nsis (Cumana). 20. White, green. Cumana. 1822.
„ *dominge'nsis* (St. Domingo). 30. Yellow, green. St. Domingo. 1818.
„ *du'lcis* (sweet). 20. White, green. New Spain. 1818.
„ *ho'rrida* (horrid). 30. Yellow. Jamaica. 1800.
„ *Jaca'ri* (Jacari). Gardens.
„ *juliflo'ra* (July-flower). 30. White. Trop. Amer. 1826. "Algarobo."
„ *Siliqua'strum* (silique-podded). 30. White. Chili. 1827.
„ *strombuli'fera* (cone-bearing). 8. S. Amer. 1825.

PROSTANTHE'RA. (From *prostheke*, appendage, and *anthera*, anther; connections of the anthers are spurred. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 21-*Angiospermia*.)

Greenhouse evergreen shrubs, from Australia. Frequently by seeds in a slight hotbed, in April; generally by cuttings of the young shoots in sandy soil; sandy peat, with plenty of fibre in it, and a portion of broken pots and charcoal nodules mixed with it, and good drainage. Winter temp., 38° to 48°. *Lasia'nthos* stood some years against a wall in the Gardens of the Horticultural Society.

P. cæru'lea (blue-*flowered*). 3. Blue. May. 1824.
„ *cunea'ta* (wedge-shaped). 2. White. June.
„ *denticula'ta* (toothed). 4. July. 1824.
„ *empetrifo'lia* (Empetrum-leaved). 2. Violet. August. 1829.
„ *lasia'nthos* (woolly-flowered). 3. Purple, lilac. June. 1808.
„ *ni'vea* (snowy). Leaves hoary. 1867.
„ *prunelloi'des* (Prunella-like). Purple. April. 1826.
„ *retu'sa* (abruptly-ended). See P. ROTUNDIFOLIA.
„ *rotundifo'lia* (round-leaved). 2–3. Purple. July, August. 1824.
„ *viola'cea* (violet). 5. Violet. June. 1820.

PRO'TEA. (From *Proteus*, a sea-god, who could transform himself into any shape; referring to the diversity of the species. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from South Africa. Cuttings of ripened young shoots, cut close to a joint, and the leaf there, and perhaps the one above, removed, the rest allowed to remain, inserted firmly in sand, over a little sandy loam, the pots being three-parts filled with drainage; the pots, with their cuttings, may then be set in a cold pit, and at such a distance from the glass that shading will be little required; the glasses should also be frequently wedged up at night to prevent damping; fibrous loam, with a good portion of sand, and about a fourth part consisting of a mixture of charcoal, freestone, broken pots, and a little peat. Winter temp., 38° to 48°. These have not been tried against a wall, as they should be, with movable lights, or reed coverings, to be taken away in summer.

P. acau'lis (stemless). 1½. Purple. July. 1802.
„ *acero'sa* (sharp). Purple. Spring. 1803.
„ *acumina'ta* (sharp-pointed). 3. Purple. May. 1809.
„ *amplexicau'lis* (stem-clasping). 1½. Purple. February. 1802.
„ *anemonifo'lia* (Anemone-leaved). See ISOPOGON ANEMONIFOLIUS.
„ *angusta'ta* (narrow-*leaved*). 1. Purple. June. 1820.
„ *argentiflo'ra* (silvery-flowered). See SERRURIA TRITERNATA.
„ *cæspito'sa* (tufted). See P. TURBINIFLORA.
„ *canalicula'ta* (channel-*leaved*). 3. Pink. July. 1800.
„ *ca'ndicans* (white). See LEUCOSPERMUM TOMENTOSUM.
„ *cocci'nea* (scarlet). 5. Scarlet. June. 1824.
„ *coni'fera* (cone-bearing). See LEUCADENDRON STRICTUM.
„ *corda'ta* (heart-*leaved*). 1½. Purple. April. 1790.
„ *corona'ta* (crowned). See P. FORMOSA.
„ *corymbo'sa* (corymbose). See LEUCADENDRON CORYMBOSUM.
„ *cynaroi'des* (artichoke-like). 1½. Purple. August. 1774.

P. cynaroi'des elli'ptica (elliptic-leaved).
„ *decu'mbens* (lying down). See SERRURIA NIVENI.
„ *divarica'ta* (spreading). See ISOPOGON ANETHIFOLIUS.
„ *elonga'ta* (lengthened). 4½. Purple. July. 1820.
„ *formo'sa* (handsome). 6. Red. May. 1789.
„ *globo'sa* (globular). See LEUCADENDRON CONCOLOR.
„ *glomera'ta* (crowded). See SERRURIA PEDUNCULATA.
„ *grandiflo'ra* (large-flowered). 8. White. May. 1787.
„ „ *angustifo'lia* (narrow-leaved).
„ „ *margina'ta* (bordered). 6. White. June. 1795.
„ *hirsu'ta* (hairy). See LEUCADENDRON HIRSUTUM.
„ *hu'milis* (humble). 2–3. Purple.
„ *imbrica'ta* (overlapping). See LEUCADENDRON BUXIFOLIUM.
„ *incu'rva* (incurved). See LEUCADENDRON ÆMULUM.
„ *læ'vis* (smooth). Pale green. May, June.
„ *lago'pus* (hare-footed). See NIVENIA CRITHMIFOLIA.
„ *latifo'lia* (broad-leaved). 7. Purple. August. 1806.
„ „ *cocci'nea* (scarlet). 5. Scarlet. August. 1806.
„ „ *viridiflo'ra* (green-flowered). 7. Green. August. 1806.
„ *lepidoca'rpon* (scaly-fruited). 6. Purple. May. 1806.
„ *ligulæfo'lia* (strap-leaved). See P. LONGIFOLIA.
„ *longiflo'ra* (long-flowered). 5–8. Creamy-yellow. October. 1809.
„ *longifo'lia* (long-leaved). 2. Purple. May. 1798.
„ *macrophy'lla* (large-leaved). 8. White. May. 1824.
„ *magnifica* (magnificent). 6. White. April. 1789.
„ *melaleu'ca* (black and white). 6. Purple. May. 1786.
„ *melli'fera* (honey-bearing). 6. Pale yellow. September. 1774.
„ „ *a'lba* (white). 6. White. September. 1795.
„ *mucronifo'lia* (pointed-leaved). 3. White. September. 1803.
„ *na'na* (dwarf) of Bot. Mag. 2. Crimson. May, June. 1889.
„ *na'na* (dwarf) of Thunberg. See P. ROSACEA.
„ *neriifo'lia* (oleander-leaved). 6. White. March. 1806.
„ *obtu'sa* (blunt-*leaved*). See P. SPECIOSA.
„ *pinifo'lia* (pine-leaved). See AULAX PINIFOLIA.
„ *pinna'ta* (feather-leaved). See SERRURIA PINNATA.
„ *pulche'lla* (neat). 3. Red. June. 1795.
„ „ *cilia'ta* (hair-fringed). 3. Red. June. 1795.
„ „ *gla'bra* (smooth). 3. Red. June. 1795.
„ „ *specio'sa* (showy). 3. Red. June. 1795.
„ *radia'ta* (rayed). See P. LATIFOLIA.
„ *re'pens* (creeping). See P. AMPLEXICAULIS.
„ *revolu'ta* (curled-back-*leaved*). 1½. Purple. May. 1824.
„ *rhoda'ntha* (red-flowered). 2–3. Rose, with orange stamens. Transvaal. 1893.
„ *rosa'cea* (rosy). 2. Pink. May. 1787.
„ *sali'gna* (willow-like). See LEUCADENDRON FLORIDUM.
„ *Sco'lymus* (Scolymus). Pale green. July, August. 1780.
„ *specio'sa* (showy). 2–10. Purple. April. 1786.
„ *spica'ta* (spiked). See NIVENIA MEDIA.
„ *stella'ris* (starry). See LEUCADENDRON FUSCIFLORUM.
„ *teretifo'lia* (round-leaved). See LEUCADENDRON ABIETINUM.
„ *trilerna'ta* (thrice-three-divided). See SERRURIA TRIPLICATO-TERNATA.
„ *turbiniflo'ra* (top-shaped-flowered). ¼. Pink. April. 1803.
„ *umbella'ta* (umbelled). See AULAX CNEORIFOLIA.
„ *villi'fera* (hair-bearing. 7. Purple. August. 1800.
„ *virga'ta* (twiggy). See P. ACEROSA.

PROTECTION. See SCREENS.

PROTEINOPHA'LLUS. See AMORPHOPHALLUS.

PRO'TIUM. (From *protos*, most distinguished, or first in rank. Nat. ord. Burseraceæ. Allied to Balsamodendron.)

Stove trees with a balsamic juice. Cuttings in sand in a close case with bottom-heat; seeds. Fibrous loam, peat, and sand.

P. alti'ssimum (tallest). 100. Trop. Amer. 1822.
„ *Aracou'chili* (Aracouchili). 50. Brazil. 1826.
„ *deca'ndrum* (ten-anthered). 20. Guiana. 1822.
„ *guiane'nse* (Guianan). 50. Trop. Amer. 1823.
„ *heptaphy'llum* (seven-leaved). 30. Trop. Amer. 1819.
„ *serra'tum* (serrated). 30. E. Ind. 1818.

PROU'STIA. (Commemorative of *M. Proust*. Nat. ord. Compositæ. Allied to Perezia.)

Greenhouse climbing shrub. Cuttings of wood getting firm, under a bell-glass, with bottom-heat. Loam, peat, and sand.

P. pyrifo'lia (pear-leaved). White; pappus rose. Chili. 1865.

PRUMNO'PITYS. (From *prumnos*, the extreme or last, and *pitys*, a pine. Nat. ord. Coniferæ. Allied to Podocarpus.)

Hardy or half-hardy evergreen Conifers with the habit of the yew. Cuttings in sand in a frame or pit from which frost is excluded. Ordinary soil.

P. e'legans (elegant). 20–40. Chili. 1863.
„ *spica'ta* (spiked). 20–30. New Zealand. 1843.
„ *taxifo'lia* (yew-leaved). 40. Andes. 1820.

PRUNE'LLA. Self-Heal. (Altered from the German *Die bräune*, a disease of the jaws; supposed medicinal qualities. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

All hardy herbaceous perennials, except *ova'ta*, which is annual. Seeds, and divisions of the plant in spring; ornamental for rock-works and the front of flower-borders.

P. a'lba (white). See P. LACINIATA.
„ *grandiflo'ra* (large-flowered). ½. Blue. August. Austria. 1596.
„ „ *ru'bra* (red). ½. Red. July, August.
„ *hi'spida* (hairy). See P. VULGARIS HISPIDA.
„ *hyssopifo'lia* (hyssop-leaved). ½. Pale purple. July, August. Europe. 1731.
„ *inci'sa* (incised). See P. VULGARIS LACINIATA.
„ *lacinia'ta* (deeply-cut). ½. White. Europe, N. Africa, &c.
„ *Marrya'ttæ* (Mrs. Marryatt's). 1½. Purple. July.
„ *ova'ta* (egg-*leaved*). ½. Purple. July. Amer.
„ *pennsylva'nica* (Pennsylvanian). See P. VULGARIS ELONGATA.
„ *vulga'ris* (common). ½. Pink. July. Temperate regions (Britain). "Common Self-heal."
„ „ *elonga'ta* (lengthened). Violet. July. N. Amer.
„ „ *flo're-ple'no* (double-flowered). ½. Pink. July. Britain.
„ „ *hi'spida* (hairy). ½. Pale purple. July, August. Europe.
„ „ *lacinia'ta* (deeply-cut). ½. Leaves deeply cut. July, August.
„ „ *pinnati'fida* (deeply-cut). See P. VULGARIS LACINIATA.
„ „ *ru'bra* (red). ½. Red. July, August.
„ *webbia'na* (Webbian). 1. Lilac. July, August. Garden origin.

PRUNING. as practised in the garden, has for its object the regulation of the branches to secure the due production of blossom and maturity of fruit. If carried to too great an extent that object is not attained, for every tree requires a certain amount of leaf-surface for the elaboration of its sap; and, therefore, if this be reduced too much, blossom-buds are produced less abundantly, for leaves are more necessary for the health of the plant; and by a wise provision, the parts less requisite for individual vigour are superseded by the parts more needed. On the other hand, if the branches are left too thick, they overshadow those beneath them, and so exclude the light as to prevent that elaboration of the sap, without which no blossom-buds are formed, but an excessive production of leaves, in the vain effort to attain, by an enlarged surface, that elaboration which a smaller surface would effect in a more intense light. The appropriate pruning is given when considering each species of fruit trees, and here we must confine ourselves to a few general remarks. The season for pruning must be regulated, in some degree, by the strength of the tree; for although, as a general rule, the operation should not take place until the fall of the leaf indicates that vegetation has ceased, yet if the tree be weak, it may be often performed with advantage a little earlier, but still so late in the autumn as to prevent the protrusion of fresh shoots. This reduction of the branches before the tree has finished vegetating directs a greater supply of sap to those remaining, and stores up in them the supply for increased growth next season. If the production of spurs be the object of pruning a branch, it should be pruned so as to leave a stump; because, as the sap supplied to the branch will be concentrated

upon those buds remaining at its extremity, these will be productive of shoots, though otherwise they would have remained dormant, it being the general habit of plants first to develop and mature those parts that are farthest from the roots. It is thus that the filbert is induced to put forth an abundance of young bearing wood, for its fruit is borne on the annual shoots, and similar treatment to a less severe extent is practised upon wall-fruit.

The chief guide in pruning consists in being well acquainted with the mode of the bearing of the different sorts of trees, and forming an early judgment of the future events of shoots and branches, and many other circumstances, for which some principal rules may be given; but there are particular instances which cannot be judged of but upon the spot, and depend chiefly upon practice and observation. *Peaches*, *Nectarines*, and *Apricots* all produce their fruit principally upon the young wood of a year old; that is, the shoots produced this year bear the year following; so that in all these trees a general supply of the best shoots of each year must be everywhere preserved at regular distances, from the very bottom to the extremity of the tree on every side; but in winter-pruning, or general shortening, less or more, according to the strength of the different shoots, is necessary, in order to promote their throwing out, more effectually, a supply of young wood the ensuing summer, in proper place for training in for the succeeding year's bearing.

Vines produce their fruit always upon the young wood-shoots of the same year, arising from the eyes of the last year's wood only; and must, therefore, have a general supply of the best regular shoots of each year trained in, which, in winter-pruning, must be shortened to a few eyes, in order to force out shoots from their lower parts, only properly situated to lay in for bearing the following year.

Figs bear also only upon the young wood of a year old, and a general supply of it is therefore necessary every year; but these shoots must at no time be shortened, unless the ends are dead, because they always bear principally towards the extreme part of the shoots, which, if shortened, would take the bearing or fruitful parts away; besides, they naturally throw out a sufficient supply of shoots every year for future bearing, without the precaution of shortening.

Apple, *Pear*, *Plum*, and *Cherry* trees bear principally on spurs, arising in the wood of from two or three to ten or twenty years old, the same branches and spurs continuing to bear a great number of years; so that, having once procured a proper set of branches to form a spreading head, no farther supply of wood is wanted than some occasional shoots now and then to supply the place of any worn-out or dead branch. The above-mentioned spurs or fruit-buds are short, robust shoots of from about ½ inch to 1 or 2 inches long, arising naturally, first towards the extreme parts of the branches of two or three years old, and as the branch increases in length, the number of fruit-buds increase accordingly.

In pruning, always cut quite close, both in the summer and winter pruning. In the summer pruning, if attended to early, while the shoots are quite young and tender, they may be readily rubbed off quite close with the thumb; but when the shoots become older and woody, as they will not readily break, it must be done with a knife, cutting them as close as possible; and all winter-pruning must always be performed with a knife.

Summer-pruning is a most necessary operation. Young shoots require thinning to preserve the beauty of the trees and encourage the fruit; and the sooner it is performed the better. It is therefore advisable to begin this work in May, or early in June, removing all superfluous growths and ill-placed shoots, which may be done with considerably more expedition and exactness than when the trees have shot a considerable length. Where, however, a tree is inclined to luxuriancy, it is proper to retain as many of the regular shoots as can be commodiously trained in with any regularity, in order to divide and exhaust the too abundant sap. It will be necessary to review the trees occasionally, in order to reform such branches or shoots as may have started from their places, or taken a wrong direction; and according as any fresh irregular shoots produced after the general dressing may be displaced, or as the already trained ones advance in length, or project from the wall or espalier, they should be trained in close.

In the winter-pruning, a general regulation must be observed, both of the mother branches, and the supply of young wood laid in the preceding summer; and the proper time for this work is any time in open weather, from the fall of the leaf in November, until March; but the sooner the better. In performing this work, it is proper to unnail or loosen a chief part of the branches, particularly of peaches, nectarines, apricots, vines, and other trees requiring an annual supply of young wood.

PRUNO'PSIS LI'NDLEYI. See PRUNUS TRILOBA.

PRU'NUS. Plum. (From *prunus*, a plum-tree. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Hardy deciduous trees, white-flowered, and blooming in April. Seeds for varieties and stocks, suckers for grafting and budding; deep, loamy soil, if calcareous all the better. For the cultivated Plum, the Muscle and St. Julian stocks are generally used. When dwarfs are desired, the Myrobalan Plum is preferred. To obtain stocks in great plenty, the long shoots from the stools of last year's growth are laid down in the spring their full length, and covered with soil; almost every bud sends up a shoot, and roots are formed nearly contemporaneously. In autumn, the shoot laid down is cut off, and then cut into as many pieces as there are young shoots and roots. See PLUM.

The above paragraph refers to the species of Plum proper, but as all the stone fruits belonging to the order, and known as Peaches, Almonds, Apricots, Plums, Cherries, Bird Cherries, and Cherry Laurels, have been united under the name of Prunus by the *Genera Plantarum*, we here give them under their correct names, but in six sections, headed by the popular names by which they are best known. This necessitates six alphabetical lists, but the method of arrangement has the merit of showing the relationship of the species at a glance.

ALMONDS, PEACHES, AND NECTARINES (*Amygdalus*).

P. Amy'gdalus (Amygdalus). 15–25. Red or rose. March, April. S. Europe, Levant, &c. 1548. "Almond."
„ „ *a'lba* (white). White. March, April.
„ „ *ama'ra* (bitter). 15. Red. April. N. Africa. 1548. "Bitter Almond."
„ „ *ama'ra sylve'stris* (wild). 15. Red. April. "Wild Bitter Almond."
„ „ *du'lcis* (sweet). 15. Red. March, April. 1548. "Sweet Almond."
„ „ *flo're ple'no* (double-flowered). 15. Red. March, April. 1548.
„ „ *fo'liis variega'tis* (leaves variegated). 15. Red. March, April. 1548.
„ „ *fra'gilis* (brittle). 15. Red. April. N. Africa. 1548.
„ „ *grandiflo'ra ro'sea* (large-flowered-rosy). 15. Rose. March, April. 1548.
„ „ *macroca'rpa* (long-fruited). 15. Red. April. N. Africa. 1548.
„ „ *na'na* (dwarf). See P. NANA.
„ „ *pe'ndula* (drooping). 15. White. March, April. 1548.
„ „ *persicoi'des* (peach-like). 15. Red. April. N. Africa. 1548.
„ „ *pu'mila* (dwarf). 2–3. Rose.
„ „ *salicifo'lia* (willow-leaved). 15. White. March, April. 1548.
„ *Anderso'ni* (Anderson's). Western United States.
„ *Boissie'ri* (Boissier's). 4–6. Pale rose. Asia Minor. 1879.
„ *cochinchine'nsis* (Cochin-China). 30–40. White. March, April. Cochin-China. 1825. Greenhouse.
„ *davidia'na* (Davidian). 10–25. Pale rose. February to April. China. 1871. The presumed origin of the Peach.
„ „ *a'lba* (white). 10–25. White. February to April. China. 1872.
„ *ebu'rnea* (ivory). Persia, &c.
„ *inca'na* (hoary). 4–6. Red. March, April. Asia Minor; Caucasus. 1815.
„ „ *campe'stris* (field). See P. NANA ALBA.
„ „ *geo'rgica* (Georgian). See P. NANA GEORGICA.
„ *Jacquemo'ntii* (Jacquemont's). 10. Pink. May. Afghanistan; Himalaya. 1886.

P. na'na (dwarf). 2–3. Pale rose, small. March, April. S. Russia; Caucasus; Siberia. 1683. "Russian Almond."
„ „ *a'lba* (white). 2–4. White. March, April. Podolia. 1818.
„ „ *geo'rgica* (Georgian). 2–3. Red. April. Georgia. 1818.
„ „ *gessleria'na* (Geslerian). 2–3. March, April.
„ *orienta'lis* (eastern). 10. Red. April. Orient. 1756.
„ *peduncula'ta* (flower-stalked). 10. Red. April. Siberia. 1833.
„ *Pe'rsica* (Persica). 15–20. Rose. March, April. China, &c. 1562. "Peach."
„ „ *a'lba* (white). 14. White. Persia.
„ „ *camelliæflo'ra* (Camellia-flowered). Double rose. March, April.
„ „ *Chrysa'nthemum* (Chrysanthemum-flowered).
„ „ *compre'ssa* (compressed). 15. Red. Fruit flattened.
„ „ *dianthiflo'ra ple'na* (double-Dianthus-flowered).
„ „ *flo're a'lbo ple'no* (double-white-flowered).
„ „ *flo're ca'rneo ple'no* (double-flesh-flowered).
„ „ *flo're ro'seo ple'no* (double-rose-flowered).
„ „ *fo'liis au'reis* (golden-leaved). Leaves yellow.
„ „ *fo'liis ru'bris* (red-leaved). White. Young leaves deep red. 1874.
„ „ *fo'liis variega'tis* (variegated-leaved). 15. Persia.
„ „ *fru'ctu ple'no* (double-fruited). 15. Red. China. 1845.
„ „ *Ha'ncei pe'ndula* (Hance's-drooping). A weeping variety.
„ „ *hispa'nica* (Spanish). White. Spain. 1847.
„ „ *ispahane'nsis* (Ispahan). 15. Red. March, April. Ispahan, Persia. 1562. "Nectarine."
„ „ *læ'vis* (smooth). See P. PERSICA ISPAHANENSIS.
„ „ *magni'fica* (magnificent). Semidouble carmine-crimson. The best flowering Peach.
„ „ *pe'ndula* (drooping). 20. Large. White. February, March. 1842.
„ „ *ru'bra* (red). See P. PERSICA FO'LIIS RU'BRIS.
„ „ *sangui'nea ple'na* (double-blood-red). 15. Red. China. 1845.
„ *Simo'nii* (Simon's). White. March, April. China. 1872. "Apricot Plum."
„ *Sweginzo'wii* (Sweginzow's). 2–3. Deep rose. March, April. Turkestan. 1910.

APRICOTS (*Armeniaca*).

P. Armeni'aca (Armenian). 12–15. White. March, April. Northern China, &c. 1548. "Apricot."
„ „ *cordifo'lia* (heart-leaved). 15. White. March, April. Levant. 1548.
„ „ *flo're ple'no* (double-flowered). 15. White. April.
„ „ *fo'liis variega'tis* (variegated-leaved). Leaves variegated.
„ „ *ovalifo'lia* (oval-leaved). 15. White. March. Levant. 1548.
„ *briganti'aca* (Briançon). 6. Pink. March. S.E. France. 1819. "Briançon Apricot."
„ *dasyca'rpa* (thick-fruited). 15. White. April. 1800. "Black Apricot."
„ „ *persicifo'lia* (peach-leaved). 15. Pink. April. 1800.
„ *Mu'me* (Mume). 2–10. Rose or white. February, March. Japan. 1841. "Mume" or "Japanese Apricot."
„ „ *Alpha'ndi* (Alphand's). Semi-double rose-pink. Japan. 1885.
„ „ *flo're a'lbo ple'no* (double-white). Delicate rose in bud, pure white when open. 1903.
„ „ *flo're ro'seo ple'no* (double-pink). 10. Rose-pink. February, March. Japan.
„ „ *pe'ndula* (drooping). A weeping variety.
„ *sibi'rica* (Siberian). 4–6. Pink. April. Siberia. 1788.
„ *tomento'sa* (felted). 3–6. White, tinted pink. February, March. China and Japan. 1872.
„ *tri'loba* (three-lobed). 3–15. Pink or rose. March, April. China. 1857.
„ „ *flo're ple'no* (double-flowered). 3–15. Rose. March, April. China.
„ „ *Petzo'ldii* (Petzold's). 1886.
„ *virga'ta* (twiggy). See P. TRILOBA.

PLUMS (*Prunus*).

P. alleghanie'nsis (Alleghany). 10–15. White. April. S. United States. 1890. "Alleghany Plum."
„ *america'na* (American). 15–20. White. April. N. Amer. "Wild Yellow or Red Plum."
„ „ *salicifo'lia* (willow-leaved). Leaves narrow.
„ *angustifo'lia* (narrow-leaved). 8. White. April. N. Amer. 1806. "Chickasaw Plum."
„ *ape'tala* (petalless). See P. CERASEIDOS.
„ *baldschua'nica* (Baldschuanian). 10–15. Red. April. Baldschuan, Bokhara. 1890.
„ *bi'ferum* (double-bearing). White. April. 1875. Bears flowers and fruits contemporaneously.
„ *bleireia'na flo're ple'no* (Bleirean-double-flowered). Rose-pink, double or semi-double. 1905.
„ *ca'ndicans* (whitish). 15. Tauria. 1820.
„ *Cerasei'dos* (Ceraseidos). 10–15. April. Japan. 1904.
„ *cerasi'fera* (cherry-bearing). 10–15. White. March, April. ? Caucasus. "Myrobalan," "Cherry Plum."
„ „ *angustifo'lia pe'ndula* (narrow-leaved-drooping). 2–5. White. March. A weeping variety.
„ „ *atropurpu'rea* (dark-purple). 10–15. White. Leaves dark purple. March, April. Persia. 1881.
„ „ *atropurpu'rea He'ssei* (Hesse's). Leaves red, with a yellowish or crimson border. 1906.
„ „ *atropurpu'rea Mo'seri flo're ple'no* (Moser's-double-flowered). Double pink or blush. 1905.
„ „ *atropurpu'rea ni'gra* (black). Leaves blackish-purple. 1908.
„ „ *atropurpu'rea Purpu'si* (Purpus's). Leaves dark red, blotched yellow and rose. 1906.
„ „ *conto'rta* (twisted). Tree more erect. Leaves spirally twisted. 1895.
„ *Chapro'nii* (Chapron's). 10–15. White. April. Fruit red, with white specks. Roumania. 1881.
„ *Chica'sa* (Chicasa). See P. ANGUSTIFOLIA.
„ *Cocumi'lio* (Cocumilio). 20. Calabria. 1824.
„ *commu'nis* (common). 20–25. White. April. Origin doubtful. Wild in Europe (England).
„ „ *armenioi'des* (apricot-like). 20. White. April. (Plum Drap d'Or.)
„ „ *bokharie'nsis* (Bokharian). White. Himalaya. Greenhouse.
„ „ *claudia'na* (Claudian). 20. White. April.
„ „ *e'legans* (elegant). 20. White. Leaves narrow, with a white edge. 1905.
„ „ *flo're ple'no* (double-flowered). 20. White. April.
„ „ *fo'liis variega'tis* (leaves-variegated). 20. White. April.
„ „ *heterophy'lla* (variable-leaved). 20. White. 1846.
„ „ *julia'na* (Julian). 10–20. White. April. "Prunier de St. Julien."
„ „ *julia'na pe'ndula* (drooping). A weeping variety. 1889.
„ „ *pe'ndula* (drooping). A weeping Plum. 1838.
„ „ *pruneaulia'na* (Pruneaulian). 10–15. White. "Quetsche."
„ „ *pruneaulia'na flo're ple'no* (double-flowered). "Double Quetsche."
„ „ *turone'nsis* (Turin). 20. Turin. "Premier Swiss Plum."
„ *cu'rdica* (Curdic). 10–15. White. April. Asia Minor. 1896.
„ *divarica'ta* (spreading). 10–25. Caucasus. 1820.
„ *dome'stica* (domestic). See P. COMMUNIS and its varieties.
„ *hortula'na* (garden). White. April. N. Amer. "Wild Goose Plum."
„ *hy'brida re'pians* (creeping-hybrid). 1. Red. April. Habit prostrate. 1886. Hybrid.
„ „ *stri'cta* (erect). 3. White. April. Habit upright. 1886. Hybrid.
„ *insiti'tia* (grafted). 20. Europe (Britain). "Bullace."
„ „ *flo're-ple'no* (double-flowered). 20.
„ „ *fru'ctu lu'teo a'lbo* (yellowish-white-fruited). 20.
„ „ *fru'ctu ni'gro* (black-fruited). 20.
„ „ *fru'ctu ru'bro* (red-fruited). 20.
„ *ita'lica flo're ple'no* (double-Italian). White. April. Origin doubtful.
„ *lu'cida* (shining). White. April. Asia Minor.
„ *mari'tima* (sea). 4. E. United States. 1800. "Beach Plum."
„ „ *fru'ctu lu'teo* (yellow-fruited).

P. monti'cola (mountain-loving). 3-4. White. April. Branches drooping. Asia Minor.
„ *myrobala'na* (Myrobalan). See P. CERASIFERA.
„ *ni'gra* (black). White. April. N. Amer., &c. "Canada Plum," "Red Plum."
„ *orthose'pala* (straight-sepaled). 4-10. White. April. S. Texas. 1894.
„ *pattonia'na* (Pattonian). White. April. N.W. Amer. 1872.
„ *Pissa'rdi* (Pissard's). See P. CERASIFERA ATROPURPUREA.
„ *plantiere'nsis* (Plantieran). Semi-double. White. 1884. Possibly a form of *P. cerasifera*.
„ *pube'scens* (downy). See P. MARITIMA.
„ *spino'sa* (spiny). 15. Europe (Britain). "Sloe," "Black Thorn."
„ „ *flo're-ple'no* (double-flowered). 10. Tarascon.
„ „ *fo'liis variega'tis* (variegated-leaved). 10. Britain.
„ „ *macroca'rpa* (large-fruited). 10. Britain.
„ „ *microca'rpa* (small-fruited). 10. Britain.
„ „ *ova'ta* (egg-*fruited*). 10. Britain.
„ „ *purpu'rea* (purple). 5-10. Pink. Leaves dark purple. 1903.
„ *subcorda'ta* (somewhat-heart-shaped). 2-3. White. April. California. 1889.
„ *ta'rda* (late). 3-4. May. Eastern Texas.
„ *trifio'ra* (three-flowered). 8-10. White. May. China; Burma. "Japanese Plum."
„ „ *Satsu'ma* (Satsuma). 8. White.
„ *Watso'ni* (Watson's). 3-6. White. April. Nebraska to Arkansas. 1894. "Sand Plum."

CHERRIES (*Cerasus*).

P. a'cida (acid). 20. White. April. Europe.
„ „ *dumo'sa* (bushy). 4-6. White. April.
„ „ *flo're ple'no fo'liis variega'tis* (double, leaves variegated). White. April.
„ „ *hu'milis* (humble). White. April.
„ „ *Mara'sca* (Marasca). White. April. Europe. 1827.
„ „ *pyramida'lis* (pyramidal). Branches erect. 1886.
„ „ *salicifo'lia* (willow-leaved). Leaves narrow.
„ „ *semperflo'rens* (ever-flowering). 15-20. White. Summer. 1822. "All Saints Cherry."
„ „ *umbraculi'fera* (umbrella-bearing). 4. White. April. Upright dense, rigid bush.
„ *A'vium* (birds'). 40-60. White. April. Europe (Britain). "Gean," "Mazzard," "Wild Cherry."
„ „ *asplenifo'lia* (Asplenium-leaved). White. April.
„ „ *decuma'na* (long). Leaves long. 1866.
„ „ *dura'cina* (hard). 20. White. April. S. Europe.
„ „ *flo're ple'no* (double-flowered). 20. Double white. April.
„ „ *julia'na* (Julian). 20. White. April. S. Europe.
„ „ *lacinia'ta* (deeply-cut). 20. White. Leaves deeply cut. April.
„ „ *macroca'rpa* (large-fruited). 40-50. White. April. Switzerland.
„ „ *na'na* (dwarf). White. April.
„ „ *pe'ndula* (drooping). 10. White. April. S. Europe. 1821.
„ „ *præmo'rsa* (bitten).
„ *Besse'yi* (Bessey's). 2-3. White. May. N.W. United States. 1900. "Sand Cherry."
„ *borea'lis* (northern). See P. PENNSYLVANICA.
„ *cane'scens* (grey). 3. White, tinted rose. March. Szechuen, China. 1904.
„ *Ce'rasus* (Cerasus). 10-20. White. April. Europe (England). "Wild or Dwarf Cherry," "Morello Cherry."
„ „ *persiciflo'ra* (Peach-flowered).
„ „ *Rhe'xii flo're ple'no* (Rhex's-double). 10-20. Double white. April.
„ *Chamæce'rasus* (Ground Cherry). 3-8. White. May. Europe. 1597. "Ground Cherry."
„ „ *pe'ndula* (drooping). "Weeping Ground Cherry."
„ „ *reflе'xa* (reflexed). 3-5. White. May. Branches drooping.
„ „ *variega'ta* (variegated). 3-6. White. May. Leaves variegated.
„ *depre'ssa* (depressed). See P. PUMILA DEPRESSA.
„ *fenzlia'na* (Fenzlian). 5-10. White. February, March. Caucasus.
„ *hu'milis* (humble). White. April. China. 1873.
P. japo'nica (Japanese). 2-3. Pale blush. March, April, May. China and Japan. 1810.
„ „ *Engle'ri* (Engler's). 2-3. Pale flesh. March to May. Fruit scarlet. 1910.
„ „ *flo're a'lbo ple'no* (double-white-flowered). 2-3. Double white. N. China. 1846.
„ „ *flo're ro'seo ple'no* (double-rose-flowered). 2-3. Double rose. Japan. 1810.
„ „ *præ'cox* (early). Seedling from *P. japonica sphærica*. 1892.
„ „ *sphæ'rica* (spherical). Fruit globose, vinous red. 1887.
„ „ *Thunbe'rgii* (Thunberg's). 2-3. Rose. March to May. 1910.
„ *lannesia'na* (Lannesian). See P. PSEUDO-CERASUS.
„ *Maximowi'czii* (Maximowicz's). 15-25. White. Fruit crimson. Japan. 1893.
„ *microca'rpa* (small-fruited). White. April. Persia, &c.
„ *miquelia'na* (Miquelian). 10. Pale pink, nearly white. March, April. Japan. 1888.
„ *nepaule'nsis* (Nepaul). 20. White. May. Himalaya. 1820. Half-hardy.
„ *occidenta'lis* (western). 20. White. W. Ind. 1629. Stove evergreen.
„ *paniculа'ta* (panicled). See P. PSEUDO-CERASUS.
„ *paracе'rasus* (nearly-related-cherry). 10-15. White. May. Japan. 1909.
„ *pe'ndula* (drooping). 10-15. Pink. March. Japan. 1871. "Rose-bud Cherry."
„ „ *ro'sea* (rosy). See P. PENDULA.
„ *pennsylva'nica* (Pennsylvania). 20-30. White. May. N. Amer. 1773. "Wild Red Cherry."
„ „ *saximonta'na* (stony-mountain). 4-8. White. May. N. Amer. 1908.
„ *prostra'ta* (prostrate). 1. Pink. April. Mediterranean region; Orient. 1802.
„ *Pse'udo-ce'rasus* (bastard-cherry). 6-15. White. April, May. China and Japan. 1821.
„ „ *flo're lu'teo ple'no* (double-yellow-flowered). See P. SERRULATA FLORE LUTEO PLENO.
„ „ *Wa'tereri* (Waterer's). 6-10. Double white. April, May.
„ *Pu'ddum* (Puddum). 10-15. May. Himalaya.
„ *pu'mila* (dwarf). 3-4. White. May. N. Amer. 1805. "Sand Cherry."
„ „ *depre'ssa* (depressed). 1-2. White. May. Stem procumbent; branches erect.
„ *sali'cina* (willow-*leaved*). 4. White. April. China. 1822.
„ *Sarge'nti* (Sargent's). 10-15. White. May. Japan. 1897.
„ *semperflo'rens* (ever-flowering). See P. ACIDA SEMPERFLORENS.
„ *serrula'ta* (finely-sawed). 4-15. White. April, May. China and Japan. 1822.
„ „ *flo're a'lbo ple'no* (double-white-flowered). 4-15. Flowers semi-double, white.
„ „ *flo're lu'teo ple'no* (double-yellow-flowered). 4-15. Flowers pale primrose, semi-double.
„ „ *flo're ro'seo ple'no* (double-rose-flowered). 4-15. Deep rose, semi-double. Darkest and finest variety.
„ „ *grandiflo'ra* (large-flowered). 4-15. Large greenish-white, passing to pale yellow. Japan. 1903.
„ „ *Hisaku'ra* (Hisakura). 4-15. Semi-double, pale rose-red. Japan. 1902.
„ „ *Iroia'ye* (Iroiaye). 4-15. Japan. 1905.
„ „ *James H. Veitch*. See P. SERRULATA FLORE ROSEO PLENO.
„ „ *Mano'ga* (Manoga). 4-15. Japan. 1905.
„ „ *Osa'ka* (Osaka). 4-15. Japan. 1905.
„ *sine'nsis* (Chinese). See P. JAPONICA.
„ *sphæroca'rpa* (spherical-fruited). 10. White. June. Trop. Amer. 1820. Stove evergreen.
„ *subhirte'lla* (slightly hairy). 5-10. White. April. Japan. 1868.
„ *Susqueha'næ* (Susquehana's). See P. PUMILA.
„ *tortuo'sa* (twisted). 3. March. Asia Minor, &c.
„ *vulga'ris* (common). See P. CERASUS.

BIRD CHERRIES (*Padus*).

P. Ca'pollin (Capollin). See P. SEROTINA SALICIFOLIA.
„ *Ca'puli* (Capuli). See P. SEROTINA SALICIFOLIA.
„ *cornu'ta* (horned). 10. White. May. Himalaya. 1842.

P. Cuthbe'rti (Cuthbert's). 5. White. May. Central Georgia.
„ *demi'ssa* (lowered). White. May. United States.
„ *emargina'ta* (notched). White. April, May. Western United States. 1872.
„ *græ'ca* (Greek). 25. White. April, May. Europe. (*P. Mahaleb*×*P. Avium.*)
„ *graya'na* (Grayan). White. April, May. Japan.
„ *Maa'cki* (Maack's). White. April, May. Manchuria.
„ *Maha'leb* (Mahaleb). 20–30. White. April, May. Europe, &c. 1714. "Bois de Ste. Lucie," "St. Lucie Cherry."
„ „ *chrysoca'rpa* (golden-fruited). 20. White. Fruit golden. April, May.
„ „ *fru'ctu fla'vo* (yellow-fruited). 20. White. Fruit yellow. April, May. S. Europe.
„ „ *globo'sa* (globose). 10. White. April, May.
„ „ *latifo'lia* (broad-leaved). 20. White. May. S. Europe.
„ „ *monstro'sa* (monstrous). White. April, May.
„ „ *pe'ndula* (drooping). 20–25. White. April, May. "Weeping Mahaleb Cherry."
„ „ *variega'ta* (variegated). 20. White. April, May.
„ *Pa'dus* (Padus). 30–50. White. April, May. Europe (Britain); Asia. "Bird Cherry."
„ „ *argе'ntea* (silvery). 20. White. April. Leaves blotched with white. 1846.
„ „ *aucubæfo'lia* (Aucuba-leaved). 20. White. April. Leaves spotted white. 1845.
„ „ *au'rea* (golden). White. Leaves golden.
„ „ *bracteo'sa* (long-bracted). 30. White. April, May. Europe.
„ „ *commuta'ta* (changed). 20–25. White. April, May.
„ „ *flo're ple'no* (double-flowered). 20–25. Double white. April, May.
„ „ *heterophy'lla* (various-leaved). 20–25. White. April, May. 1845.
„ „ *leucoca'rpa* (white-fruited). 20–25. White. Fruit white. April, May.
„ „ *pe'ndula* (drooping). 20. White. April, May. "Weeping Bird Cherry."
„ „ *pube'scens* (downy). 20–25. White. April, May.
„ „ *rotundifo'lia* (round-leaved). 20–25. White. April, May.
„ „ *ru'bra* (red). 25–30. White. April, May. Britain. "Cornish Bird Cherry."
„ „ *sibi'rica parvifl'ra* (small-flowered). 25–30. White. April, May. N. Europe, &c.
„ „ *stri'cta* (upright). 25–30. White. Branches erect. April, May.
„ *Salze'ri* (Salzer's). 20–30. White. April. Fruit yellowish-white. Carinthia; Styria. 1892.
„ *sero'tina* (late). 30. White. June. United States. 1629. "Rum Cherry," "Wild Black Cherry."
„ „ *asplenifo'lia* (Asplenium-leaved). White. June.
„ „ *cartilagi'nea* (cartilaginous). Leaves long and leathery. 1889.
„ „ *pe'ndula* (drooping). White. June. "Weeping Wild Black Cherry."
„ „ *retu'sa* (blunt-ended). 30. White. May. S. Amer.
„ „ *salicifo'lia* (willow-leaved). White. May. Fruit like an Apricot. S. United States; Mexico, Peru. 1866. "Capollin."
„ *Ssio'ri* (Ssior's). 5–6. White. Sachalin.
„ *virginia'na* (Virginian). 30. White. May. United States. 1724. "Choke Cherry."
„ „ *asplenifo'lia* (Asplenium-leaved). 20. White. May.
„ „ *leucoca'rpa* (white-fruited). 6–10. White. May. Fruit white.
„ „ *na'na monstro'sa* (dwarf, monstrous). White. May.

CHERRY LAURELS (*Laurocerasus*). EVERGREEN.

P. carolinia'na (Carolinian). 38. White. May. Southern United States. 1759. "Wild Orange," "Mock Orange."
„ „ *ro'sea* (rosy). 30. Pale rose-tinted, double. 1877.
„ *ilicifo'lia* (holly-leaved). 4–6. White. March to May. Western United States. "Islay," "Spanish Wild Cherry."
„ „ *integrifo'lia* (entire-leaved). 4–6. White. March to May. "Catalina Cherry."
P. Laurocе'rasus (Laurocerasus). 12–15. White. March, April. E. Europe; Orient. 1629.
„ „ *angustifo'lia* (narrow-leaved). 8. White. April.
„ „ *Bernha'rdti* (Bernhardt's). 12. White. April.
„ „ *camelliæfo'lia* (Camellia-leaved). 10. Leaves spirally coiled, small.
„ „ *cauca'sica* (Caucasian). 10–15. Leaves dark green. Very hardy.
„ „ *co'lchica* (Colchican). 10–15. Leaves narrow, light green. Very hardy.
„ „ *compa'cta* (compact). 5–8. White. April.
„ „ *fo'liis variega'tis* (leaves variegated). Leaves irregularly splashed with white.
„ „ *latifo'lia* (broad-leaved). 12–18. Leaves very long and broad.
„ „ *magnoliæfo'lia* (Magnolia-leaved). 10–12. Leaves very large.
„ „ *Oli'nii* (Otin's). 10–15. White. Leaves long, obovate.
„ „ *parvifo'lia* (small-leaved). Leaves small.
„ „ *pyramida'lis* (pyramidal). Habit upright.
„ „ *rotundifo'lia* (round-leaved). Leaves short and broad. Very hardy.
„ „ *salicifo'lia* (willow-leaved). Leaves narrow, willow-like.
„ „ *schipkæ'nsis* (Schipkan). 4–6. White. Leaves very narrow, dark green. Branches spreading.
„ „ *schipkæ'nsis mischea'na* (Mischean). Leaves shortly oval. Branches spreading. 1898.
„ „ *schipkæ'nsis zabelia'na* (Zabelian). Leaves willow-like, long, narrow. 1898.
„ „ *se'rbica* (Servian). 5–6. White. April.
„ „ *versaille'nsis* (Versailles). 5–10. White. April.
„ *lusita'nica* (Portuguese). 10–20. White. May. Spain and Portugal. 1648. "Portugal Laurel."
„ „ *azo'rica* (Azorean). 6–10. White. May. Leaves broad, Stems red. Azores.
„ „ *coria'cea* (leathery). 5–10. White. May.
„ „ *myrtifo'lia* (myrtle-leaved). 5–8. Leaves very small. Bush dense.
„ „ *ormstonie'nsis* (Ormstonian). 5–10. White. May.
„ „ *variega'ta* (variegated). 5–8. White. May. Leaves variegated.

PSAMMI'SIA. (Commemorative of *Psammis*, one of the ancient kings of Egypt. Nat. ord. Vacciniaceæ.)
Evergreen shrubs from the mountains of warm countries and requiring warm greenhouse or stove treatment. Cuttings of half-ripe shoots, with a heel of old wood, in sand, in a close case, with gentle bottom-heat. Loam, fibrous peat, and sand. Summer temp., 60° to 80°; winter, 50° to 60°.
P. hookeria'na (Hookerian). 4–6. Red. September. Colombia. 1847.
„ *Je'ssicæ* (Jessica's). See THIBAUDIA JESSICÆ.
„ *longi'colla* (long-necked). 3–4. Crimson. S. Amer. 1865.
„ *macrophy'lla* (large-leaved). White. Colombia.
„ *oblongifo'lia* (oblong-leaved). Country unknown. 1866.
„ *penduliflo'ra* (drooping-flowered). 3–4. Crimson. Colombia. 1859.
„ *planchonia'na* (Planchonian). Red. Colombia. 1854.
„ *sarca'ntha* (fleshy-flowered). 3–4. Red, with yellow tip. March, April. Colombia. 1852.
„ *sclerophy'lla* (hard-leaved). 3. Red, with yellow tip. Colombia, 1852.

PSEUDO-BULB. By this term is described the fleshy stem of the orchids; and the term is applicable as it resembles a bulb more than a stem.

PSEUDERA'NTHEMUM. (From *pseudo*, false, and *Eranthemum*; because the plants resemble an Eranthemum and are closely related. Nat. ord. Acanthaceæ.)
Stove evergreen shrub. Cuttings of young shoots, with a heel, in sand, in a close case, with bottom-heat. Loam, peat, and sand.
P. seti'calyx (bristly-calyxed). 1–2. Cinnabar-red; tube pale red. Nyasaland. 1909.

PSEU'DO-CHÆNO'MELES MAU'LEI. See CYDONIA MAULEI.

PSEU'DODRACO'NTIUM. (From *pseudo*, false, and *Dracontium*; because it resembles the latter. Nat. ord. Araceæ.)

Stove perennial herb, with tuberous rootstock. Imported seeds or tubers. Fibrous loam, leaf-mould, and sand. Water freely when in full growth, and rest in a dry, warm house when the solitary leaf dies down.

P. Lacou'rii (Lacour's). Light green. Leaves dark green, spotted with white. Cochin-China. 1878.

PSEU'DOGALTO'NIA. (From *pseudo*, false, and *Galtonia*; the plants resemble Galtonia. Nat. ord. Liliaceæ.)

Stove bulb. Offsets. Good loam, leaf-mould, and sand.

P. Pechue'lii (Pechuel's). 1. Flowers greenish, numerous. Damaraland. 1890.

PSEU'DOLA'RIX. (From *pseudo*, false, and *Larix*; tree closely similar to a larch. Nat. ord. Coniferæ.)

Hardy deciduous tree. Seeds. Ordinary soil.

P. Kæ'mpferi (Kæmpfer's). 10–120. China. 1884. "The Golden Larch."

PSEU'DOPA'NAX. (From *pseudo*, false, and *Panax*; closely related to Panax. Nat. ord. Araliaceæ. Allied to Polyscias.)

Greenhouse evergreen shrubs or small trees. Cuttings of young shoots with a heel, in sand, under a hand-light. Loam, fibrous peat, and sand.

P. crassifo'lium (thick-leaved). 5–10. Green. Leaves linear, leathery. New Zealand. 1846.

„ „ *trifo'lium* (three-leaved). Green. New Zealand. 1842.

„ *fe'rox* (fierce). 3–6. Green. New Zealand.

„ *Lesso'nii* (Lesson's). 4–20. Green. Leaves with 3–5 leaflets. New Zealand.

„ *longi'ssimum* (longest). See PANAX LONGISSIMUM.

PSEU'DOPHŒ'NIX. (From *pseudo*, false, and *Phœnix*; similar to Phœnix. Nat. ord. Palmaceæ.)

Stove Palm. Seeds. Loam, one-third peat and sand.

P. Sarge'ntii (Sargent's). 20–25. Spadix 3 ft. long. Berries orange or red. Florida. 1887.

PSEU'DOTSU'GA. (From *pseudo*, false, and *Tsuga*; related to Tsuga. Nat. ord. Coniferæ.)

Stately, evergreen, cone-bearing trees, differing from Picea in having long bracts, protruding from the cones. Seeds. Ordinary soil.

P. davidia'na (Davidian). See KETELEERIA DAVIDIANA.

„ *Dougla'sii* (Douglas's). 100–200. N.W. Amer. 1826. "The Douglas Fir."

„ „ *brevifo'lia* (short-leaved). Leaves very short.

„ „ *e'legans* (elegant). Leaves slender.

„ „ *fletcheria'na* (Fletcherian). 1. A pigmy bush 1 foot high in sixteen years. Seedling in 1896.

„ „ *Fre'tsii* (Fret's). Leaves short. Plant pyramidal. 1905.

„ „ *glau'ca pe'ndula* (glaucous-drooping). A sea-green weeping variety.

„ „ *glauce'scens* (glaucous). Leaves deep sea-green. 1895.

„ „ *globo'sa* (globose). Plant spherical, loose. 1905.

„ „ *pe'ndula* (drooping). 40–50. Branches drooping.

„ „ *revolu'ta* (revolute). Leaves rolled backwards.

„ „ *Stai'rii* (Stair's). Young foliage creamy-white. 1872.

„ „ *Standi'shii* (Standish's). Foliage quite silvery beneath.

„ „ *taxifo'lia* (yew-leaved). Leaves very long. Tree more massive.

„ „ *variega'ta* (variegated). Leaves variegated.

„ *lindleya'na* (Lindleyan). See P. DOUGLASII.

„ *japo'nica* (Japanese). Japan. 1909.

„ *macroca'rpa* (large-fruited). Southern California.

PSI'DIUM. Guava. (The Greek name once applied to the Pomegranate. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Myrtus.)

Stove, white-flowered evergreens. Cuttings of young shoots, getting a little firm at their base, in sand, under a bell-glass, and in bottom-heat; sandy, fibrous loam and peat, with the addition of leaf-mould and a little dried cow-dung, provided the drainage is good and plentiful. Winter temp., 48° to 58°; summer, 60° to 85°. But several, such as *cattleia'num*, will not only live, but produce their fruit in a greenhouse. The best *Guavas* we have seen were produced on the back of a vinery, from which the frost was little more than excluded in winter. See GUAVA.

P. a'cre (bitter). Country unknown. 1829.

„ *Ara'ca* (Araca). 4. May. Brazil. 1820.

„ *aroma'ticum* (aromatic). See P. GUAVA.

„ *cattleia'num* (Cattley's). 10. May. S. Amer. 1818.

„ „ *littora'le* (shore).

„ *chine'nse* (Chinese). May. China. 1828.

„ *corda'tum* (heart-shaped). See P. MONTANUM.

„ *cuneifo'lium* (wedge-leaved). Country unknown. 1833.

„ *decaspe'rmum* (ten-seeded). See TIMONIUS JAMBOSELLA.

„ *donia'num* (Donian). 4–6. May. Brazil.

„ *Gua'va* (Guava or Guajava). 10. June. Trop. Amer. 1779.

„ „ *pomi'ferum* (apple-bearing). 10. June. Trop. Amer. 1692.

„ „ *pu'milum* (dwarf). 2. May. 1824.

„ „ „ *sapidi'ssimum* (most-savoury). 10. June. 1824.

„ *i'ndicum* (Indian). See P. CATTLEIANUM.

„ *monta'num* (mountain). 60. Jamaica. 1779. "Mountain Guava."

„ *myrtifo'lium* (myrtle-leaved). 6. April. 1820.

„ *ni'grum* (black-*fruited*). May. Cochin-China.

„ *oligospe'rmum* (few-seeded). 10. 1817.

„ *passea'num* (Passean). 3–6. Fruit pale green or yellowish, size of a plum. 1890.

„ *polyca'rpon* (many-fruited). 3. May. Trinidad. 1810.

„ *pomi'ferum* (apple-bearing). See P. GUAVA POMIFERUM.

„ „ *sapidi'ssimum* (most-savoury). See P. GUAVA SAPIDISSIMUM.

„ *pu'milum* (dwarf). See P. GUAVA PUMILUM.

„ *pyri'ferum* (pear-bearing). See P. GUAVA.

„ *quadrangula're* (four-angled). Country unknown.

„ *ru'brum* (red-*fruited*). May. Cochin-China. 1820.

„ *sapidi'ssimum* (most-savoury). See P. GUAVA SAPIDISSIMUM.

PSI'LA. See CARROT MAGGOT.

PSILO'TUM. (From *psilos*, bald; the plant appears to consist of leafless twigs. Nat. ord. Lycopodiaceæ.)

An interesting stove plant, with nearly leafless, green stems. Imported plants. Fibrous peat to be tied on a piece of tree-fern stem and suspended in a warm, moist fernery or stove.

P. trique'trum (three-grooved). ½–¾. Trop. Amer.

PSOPHOCA'RPUS. (From *psophos*, a rattling noise, and *carpos*, a fruit; the fruits rattle in bursting. Nat. ord. Leguminosæ.)

A tall twining stove herb. Seeds; cuttings in sand with bottom-heat. Loam, leaf-mould, and sand.

P. tetragono'lobus (four-angled-podded). Lilac or violet. Mauritius, cultivated elsewhere.

PSORA'LEA. (From *psoraleos*, warted; the appearance of some of the species. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Amorpha.)

Herbaceous, by division, as fresh growth commences; shrubs, by cuttings of the half-ripened shoots in April or May, in sand, under a glass; sandy peat, and sandy, fibrous loam. Winter temp. for these, 40° to 48°. *Glandulo'sa* has stood in the open air for a number of years near London. There are some annuals and biennials, but not worth cultivating.

HARDY HERBACEOUS.

P. acau'lis (stemless). 1. Purple. Caucasus.

„ *cane'scens* (hoary). Purple. N. Amer.

„ *glandulo'sa* (glandular). 3–4. Blue and white. July to September. Chili. 1770. "Jesuits' Tea."

„ *Lupine'llus* (small lupin). 2. Purple. June. Carolina. 1812.

„ *macro'stachys* (long-spiked). 3. Purple. July. California. 1833.

„ *melilotoi'des* (Melilotus-like). 2. Light purple. July, August. N. Amer. 1814.

„ *Ono'brychis* (sainfoin-like). 3. Purple. August. N. Amer. 1818.

„ *orbicula'ris* (round-*leaved*). ½. Purple. June. California. 1835.

„ *physo'des* (windy). 2–3. Purple, white. N.W. Amer.

„ *pinna'ta* (leafleted). 4–6. Blue. June. S. Africa. 1690.

„ *tenuiflo'ra* (slender-flowered). 3. Purple. N. Amer.

GREENHOUSE EVERGREEN SHRUBS.

P. aculea'ta (prickly). 3. Blue and white. June. S. Africa. 1774.
„ *affi'nis* (related). 4–6. Blue. June. S. Africa. 1910, and previously.
„ *angustifo'lia* (narrow-leaved). 3. Blue. July. S. Africa. 1774.
„ „ *interme'dia* (intermediate). 3. Blue. June. S. Africa. 1820.
„ *aphy'lla* (leafless). 2. Blue. June. S. Africa. 1790.
„ *arbo'rea* (tree). 6. Bluish. May. S. Africa. 1814.
„ *bitumino'sa* (bituminous). 2. Violet. June. Mediterranean region; Arabia. 1771. Herbaceous.
„ *bractea'ta* (long-bracted). Purple and white. July. S. Africa.
„ *corylifo'lia* (hazel-leaved). Purple and white. July. India; Arabia. 1752.
„ *decu'mbens* (lying-down). ½. Purple and white. S. Africa. 1774.
„ *hi'rta* (hairy). 2. Blue. June. S. Africa. 1790.
„ *interme'dia* (intermediate). See P. ANGUSTIFOLIA INTERMEDIA.
„ *jacquinia'na* (Jacquinian). See P. HIRTA.
„ *Muti'sii* (Mutis's). Purple. July. Colombia. 1828.
„ *odorati'ssima* (most-fragrant). 6. Pale blue. June. S. Africa. 1725.
„ *palæsti'na* (Palestine). See P. BITUMINOSA.
„ *pedunculа'ta* (long-stalked). See P. TOMENTOSA.
„ *pube'scens* (downy). 2. Pale blue. August. Lima. 1825.
„ *re'pens* (creeping). 1½. Blue. July. S. Africa. 1774.
„ *seri'cea* (silky). See P. TOMENTOSA.
„ *spica'ta* (*long*-spiked). 4. Blue. April. S. Africa. 1774.
„ *Sta'chydis* (Stachys-*leaved*). 3. Brown. April. S. Africa. 1793.
„ *stria'ta* (channelled). 3. Blue. May. S. Africa. 1816.
„ *tenuifo'lia* (fine-leaved). 2. White, blue. June. S. Africa. 1793.
„ *tomento'sa* (woolly). 3. Blue. June. S. Africa. 1815.
„ *verruco'sa* (warted). See P. ANGUSTIFOLIA.

PSYCHO'TRIA. (From *psuche*, the breath of life; in allusion to its healing properties. Nat. ord. Rubiaceæ. Allied to Palicourea.)

Stove evergreen shrubs and small trees. Cuttings of mature wood, in sand, and placed in a close case, with bottom-heat. Fibrous loam, peat, and sand.

P. auranti'aca (orange). See P. MALAYANA.
„ *chontale'nsis* (Chontalan). See P. PILOSA.
„ *cro'cea* (saffron). See PALICOUREA CROCEA.
„ *cyanoco'cca* (blue-berried). 1. White; berries deep blue, showy. Nicaragua. 1870. A fine basket plant.
„ *eme'tica* (emetic). Colombia.
„ *jasminiflo'ra* (jasmine-flowered). 2–3. White. Brazil. 1860.
„ *gra'ndis* (grand). Trop. Amer.
„ *leucoce'phala* (white-headed). See RUDGEA MACROPHYLLA.
„ *linea'ta* (lined). See PALICOUREA APICATA.
„ *malaya'na* (Malayan). Malaya.
„ *micra'ntha* (small-flowered). Trop. Africa.
„ *officina'lis* (officinal). 4. June. Guiana. 1827.
„ *pilo'sa* (thinly-hairy). White; berries blue. Peru. 1870.
„ *racemo'sa* (racemose). 3. White. June. Brazil; Guiana. 1818.
„ *sulphu'rea* (sulphur). 2. Bright blue; berries sulphur-yellow. Fiji. 1887.
„ *tenuifo'lia* (slender-leaved). Dominica.

PSYLLA. The Chermes is allied to the Aphis. *P. pyri*, Pear Chermes, appears in May, not unlike a large Aphis, crimson-coloured, shaded with black. Mr. Kollar says, when pairing is over, the female lays her eggs in great numbers, near each other, on the young leaves and blossoms, or on the newly-formed fruit and shoots. They are of a longish shape, and yellow; and without a magnifying glass they resemble the pollen of flowers. They are called either nymphs or larvæ in this state, according to the extent of their development; and, like their parents, have their mouth in the breast. After a few days they change their skins, and become darker and somewhat reddish on the breast, and rather resemble bugs than plant-lice, having the extreme point of the body somewhat broad, and beset with bristles. After changing their skins, they quit the leaves, blossoms, and fruit, and proceed more downwards to the bearing wood and the shoots of last year, on which they fix themselves securely, one after the other, in rows, and remain there till their last transformation.

When the nymphs have moulted for the last time, and have attained their full size, the body swells out by degrees, and becomes cylindrical. They then leave their associates, and before they lay aside their nymph-like covering, they search out a leaf to which they fasten themselves firmly, and appear as if they were lifeless. After a few minutes, the skin splits on the upper part of the covering, and a winged insect proceeds from it. It is of a pleasant green colour, with red eyes and snow-white wings. It very much resembles its parents in spring, even in the colour. After a few days, this Chermes has assumed the colours of the perfect insect; the head, collar, and thorax are of an orange colour, and only the abdomen retains its green hue. It now flies away from the place of its birth to enjoy the open air.

P. mali (Apple Chermes). This, according to the same author, appears in June. In September, they pair, and lay their eggs, which are white, and pointed at both ends, a line and a half long, and the fourth of a line thick, and become yellow before the young escapes. The Apple Chermes lays its eggs in different places of the twigs of an apple-tree; usually, however, in the furrows of the knots, and sometimes in a very regular manner. The larvæ are scarcely escaped from the egg in the open air, when they hasten to the nearest bud, and begin to gnaw its scales. On the second day after their birth, they cast their first skin, after which they appear nearly of their former shape and colour. The second changing of the skin can sometimes be scarcely seen at all, because the larva not only puts out a thicker string with the tubercle, but also an immense number of very fine entangled threads or small hairs, which it turns upwards over its back, and with them entirely covers its body and head. In sunshine, these strings look transparent, as if they were made of glass, and become of a greenish variable colour. Under this screen the Chermes are secured from every attack of other insects; for no ants, mites, or bugs can disturb them in their fortification, or consume them as their prey. After changing the second skin, the young assume a different colour and form; they now become light green all over, the abdomen much broader than the thorax, and on the side of the latter, rudiments of the wings are distinctly seen. The third time of changing the skin comes on in about eight days, sometimes sooner and sometimes later, according to the weather. After this skin, the wing rudiments very distinctly make their appearance, and become larger and whiter the nearer the insect approaches to the perfect state. The body is also of a light green, and the larvæ have black eyes, and blackish antennæ. At last the time arrives when the insect assumes the perfect state; it then retires to a part of the leaf which it had selected, and after having firmly fixed itself there, the back splits open, and the beautiful-winged Chermes appears from the nymph. The back of the thorax is of a light green, the abdomen is marked with yellow rings, and the membranous wings with strongly-marked, snow-white veins.

P. cratægi infests the camellia.

P. ficus and *P. rosæ* are respectively on the fig and rose-trees. All the species are destroyed by syringing with tobacco-water until the insects are dead, and then syringing with water only. See APHIS.

PTA'RMICA. See ACHILLEA.

PTA'RMICA GRANDIFLO'RA FLO'RE PLE'NO. See ACHILLEA PTARMICA FLORE PLENO.

PTE'LEA. Shrubby Trefoil. (From *ptao*, to fly; winged fruit. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Trifolia'ta and its varieties are hardy; seed in April, and by layers in autumn; any common light soil.

P. Baldwi'nii (Baldwin's). Green. Northern California, &c.
„ *ova'tum* (egg-shaped). See PTELIDIUM OVATUM.
„ *pinna'ta* (leafleted). See ZANTHOXYLUM BLACKBURNIA.

P. trifolia'ta (three-leaved). 12. Green. June. N. Amer. 1704. "Hop Tree."
" " *au'rea* (golden). Leaves golden. 1886.
" " *fastigia'ta* (erect). Branches erect.
" " *glau'ca* (sea-green). Foliage sea-green.
" " *heterophy'lla* (various-leaved).
" " *mo'llis* (soft).
" " *variega'ta* (variegated-*leaved*). 12. Green. June. 1846.

PTELI'DIUM. (So named from its resemblance to *Ptelea*. Nat. ord. *Spindle-trees* [Celastraceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Stove evergreen shrub. Cuttings of young shoots in sand, under a glass, in heat; sandy peat and fibrous loam, with pieces of charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

P. ova'tum (egg-*leaved*). 6. Greenish-white. Madagascar. 1818.

PTE'RIS. Brake. (From *pteron*, a wing; the shape of the fronds, or leaves. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

All brown-spored. See FERNS.

HARDY.

P. aquili'na (eagle-like). 3. July. Cosmopolitan (Britain).
" " *cauda'ta* (tailed). 2. October. N. Amer. 1777.
" " *conge'sta* (crowded). 1–1½. Fronds rich green, plumose, compact. 1909.
" " *gla'bra* (smooth). Fronds smooth. Europe.
" " *lanugino'sa* (woolly). Fronds woolly. Europe.
" " *Nicholso'nii* (Nicholson's). 3. Fronds very slender, graceful. New Zealand. 1908.
" *arge'ntea* (silvery). ½. July. Siberia. 1816.
" *a'tro-purpu'rea* (purple). See PELLÆA ATROPURPUREA.
" *cauda'ta* (tailed). See P. AQUILINA CAUDATA.

GREENHOUSE.

P. aquili'na escule'nta (eatable). 3. August. N.S. Wales. 1815.
" *argu'ta* (sharp-*notched*). 1. August. Madeira. 1778.
" *Backe'ri* (Backer's). Fronds strong, tufted, finely crested. 1904.
" *colli'na* (hill). See P. PALMATA COLLINA.
" *cre'tica* (Cretan). 1. July. Candia. 1820.
" " *a'lbo-linea'ta* (white-lined). Pinnæ with white midrib.
" " *capita'ta* (headed). Fronds tufted, compact, much crested. 1904.
" " *crispa'ta* (crisped). 1. Dwarf, compact. Pinnules crisped with white band. 1891.
" " *crista'ta* (crested). Pinnæ crested.
" " *Ma'yi* (May's).
" " *no'bilis* (noble). Fronds erect, heavily crested and lobed at the apex.
" " *Summe'rsii* (Summers's). An improvement upon *P. cretica Wimsettii*. 1898.
" " *Wimse'ttii* (Wimsett's). Pinnæ irregularly and deeply lobed and crested.
" " *Wimse'ttii mu'lticeps* (many-headed). Finely crested and cut. 1902.
" *esculе'nta* (eatable). See P. AQUILINA ESCULENTA.
" *falca'ta* (sickle-shaped). See PELLÆA FALCATA.
" *inci'sa* (incised). 3–6. Trop. Amer.; New Zealand; S. Africa, &c. 1823.
" *i'ntra-margina'lis* (within-margined). See PELLÆA INTRAMARGINALIS.
" *kingia'na* (King's). See P. TREMULA KINGIANA.
" *latizo'na* (broad-zoned). 1½. June. Moreton Bay. 1831.
" *meta'llica* (metallic). 1½. Fronds thick, metallic-looking. 1903.
" *no'bilis* (noble). See P. PALMATA NOBILIS.
" *palma'ta* (hand-shaped). 1–1½. Trop. Amer. to Peru and Rio Janeiro. 1821. (*Doryopteris*.)
" " *colli'na* (hill). ½–1½. August. Brazil. Stove.
" " *no'bilis* (noble). 1½. Fronds bold and leathery. Stove.
" *rugulo'sa* (slightly-wrinkled). 2–3. September. Society Islands; Tasmania. 1844.
" *scabe'rula* (finely-rough). ½–2½. Fronds finely cut, three to four times. New Zealand.
" *serrula'ta* (finely-sawed). 1½–2½. China; Japan; Natal. 1770.
P. serrula'ta angusta'ta (narrow). Pinnæ narrow, crested at apices.
" " *applebya'na* (Applebyan). Pinnæ drooping, crested at tips.
" " *compa'cta* (compact). 1. Fronds compact, arching, heavily crested at apex. 1887.
" " *corymbi'fera* (corymb-bearing). Fronds upright heavily tasselled at apex.
" " *Cowa'ni* (Cowan's). 1. Dwarf, branched down to the stalks, heavily crested. 1883.
" " *crista'ta* (crested). Fronds and pinnæ crested at the tips. Japan. 1863.
" " *de'nsa* (dense). Fronds short, dense.
" " *gigante'a* (giant). 2½. Fronds very large. 1893.
" " *glorio'sa* (glorious).
" " *gra'cilis* (slender). Pinnæ narrow and slender.
" " *Le'yi* (Ley's). 1 Pinnæ narrowed, elongated, thread-like. 1876.
" " *ma'xima* (largest). A large, strong-growing form.
" " *Ouvra'rdii* (Ouvrard's).
" " *polyda'ctyla* (many-fingered). Frond and pinnæ much fingered.
" " *Rochfo'rdi* (Rochford's). Robust and crested. 1898.
" " *tenuifo'lia* (slender-leaved). Pinnæ narrow, slender.
" " *undula'ta* (waved). Pinnæ waved.
" *subverticilla'ta* (slightly-whorled). 1. Mexico. 1831.
" *tre'mula* (trembling). 3. July. Australia. 1820.
" " *arge'ntea* (silvery). Fronds pale green or grey. 1900.
" " *e'legans* (elegant). Pinnæ narrow.
" " *gra'ndiceps* (large-headed). Fronds much divided at apex. 1886.
" " *kingia'na* (Kingian). 2. June. Norfolk Island. 1831.
" " *smithia'na* (Smithian). 1½–2. Fronds divided to the base, much branched, and tasselled. 1889.
" " *variega'ta* (variegated). Fronds variegated. 1892.
" *umbro'sa* (shady). 3. July. Australia. 1823.
" " *corymbi'fera* (corymb-bearing). Fronds finely crested. 1904.
" " *crista'ta* (crested). 3. Segments crisped, much crested. 1879.
" " *Drinkwa'teri* (Drinkwater's). 2. Pinnæ broad, dark green. 1896.
" " *graci'llima* (very-graceful). 1½. Fronds slender very elegant. 1904.

STOVE.

P. aculea'ta (prickly). 3–4. Trop. Amer. to Peru.
" *Alexa'ndræ* (Queen Alexandra's). 1. Fronds variegated and crested. 1902.
" *alloso'rus* (Allosorus-like). See PELLÆA CORDATA.
" *a'mpla* (large). 6. July.
" *argyræ'a* (silvery). See P. QUADRIAURITA ARGYRÆA.
" *aspericau'lis* (rough-stemmed). See P. QUADRIAURITA ASPERICAULIS.
" *Bau'sei* (Bause's). See P. SEMIPINNATA BAUSEI.
" *biauri'ta* (two-eared). 2–3. Rather leathery. Tropics of both Worlds. 1823.
" " *nemora'lis* (grove). 3. Venation combined and free in same frond. E. Ind.
" " *nemora'lis variega'ta* (variegated). Fronds variegated.
" *Bino'ti* (Binot's). 1. Barren fronds three-lobed; fertile nine-lobed. Brazil. 1904.
" *brazzaia'na* (Brazzaian). 3. Pinnæ oblong; pinnules rounded. Congo. 1903.
" *calome'lanos* (neat-dark). See PELLÆA CALOMELANOS.
" *Cervante'sii* (Cervantes'). 1. July. Mexico. 1824.
" *chine'nsis* (Chinese). 2. July. China. 1824.
" *co'mans* (hairy). 2–3. Polynesia; New Zealand; Tasmania, &c. 1860.
" " *undula'ta* (wavy). Edges of pinnæ wavy.
" *corda'ta* (heart-shaped). See PELLÆA CORDATA.
" *cra'ssipes* (thick-stalked). See P. GIGANTEA.
" *crena'ta* (notched). See P. ENSIFORMIS.
" *crenula'ta* (scolloped). 2. July. 1827.
" *Curro'ri* (Curror's). 3–4. W. Trop. Africa; Fernando Po.
" *defle'xa* (deflexed). 4–6. Trop. Amer. to Brazil and Peru. 1844.
" *denticula'ta* (toothletted). 2–3. Trop. Amer. Resembles *P. cretica*.
" *di'scolor* (two-coloured). 3. August. Brazil. 1825.

P. droogmantia'na (Droogmantian). 3. Bipinnate. Congo Free State. 1900.
„ *edu'lis* (eatable). 3. New Zealand. 1837.
„ *ela'ta* (tall). 3–5. Trop. Amer. to Ecuador.
„ *e'legans* (elegant). 3. August. E. Ind. 1824.
„ *ensifo'rmis* (sword-shaped). 1–1½. Trop. Asia.
„ „ *crista'ta* (crested). Like *P. ensiformis Victoriæ*, but crested. 1892.
„ „ *Victo'riæ* (Victoria's). Fronds beautifully marbled with white. Malaya. 1890.
„ *felo'sma* (heavy-smelling). See P. QUADRIAURITA.
„ *flabella'ta* (fan-shaped). 2–4. S. Africa; Abyssinia, &c.
„ *Ghiesbre'ghtii* (Ghiesbreght's). See P. LACINIATA GHIESBREGHTII.
„ *gigante'a* (giant). 3–6. W. Ind.; Colombia; Peru.
„ *glaucovi'rens* (glaucous-green). See P. QUADRIAURITA.
„ *grandifo'lia* (large-leaved). 1½–3. Trop. Amer. to Peru. 1793.
„ „ *vitta'ta* (striped). Pinnæ striped, with nearly free veins.
„ *heteroda'ctyla* (various-fingered). Malaya.
„ *heterophy'lla* (various-leaved). 4. July. Jamaica. 1820.
„ „ *interna'ta* (divided-in-threes). W. Ind. 1880.
„ *Hi'llii* (Hill's). 3. Fronds bronzy-green, leathery, glossy. Brazil. 1904.
„ *hookeria'na* (Hookerian). 1½–2. Adam's Peak, Ceylon.
„ *interna'ta* (divided-in-threes). See P. HETEROPHYLLA INTERNATA.
„ *kunzea'na* (Kunzean). 3–5. Trop. Amer. to Peru.
„ *lacinia'ta* (laciniate). 3–5. Trop. Amer. to Peru.
„ „ *Ghiesbre'ghtii* (Ghiesbreght's). Fronds less hairy. 1857.
„ *la'ctea* (milky). 1. November.
„ *lanugino'sa* (woolly). 3. July. Bourbon. 1819.
„ *la'ta* (broad). 3½. June. Brazil. 1841.
„ *leptophy'lla* (slender-leaved). 1½–1¾. Brazil. 1824.
„ *longifo'lia* (long-leaved). 2–5. August. W. Ind. 1770.
„ „ *Marie'sii* (Maries's). Fronds shorter; pinnæ narrower. Japan. 1895.
„ *lo'ngipes* (long-stalked). 2–2½. India.
„ *lu'dens* (deceiving). 1–1½. Malaya; Philippines. (*Doryopteris.*)
„ *macile'nta* (meagre). 1½–4. New Zealand.
„ *macro'ptera* (large-winged). 3. Frond 1–1½ ft. broad. Brazil.
„ *milnea'na* (Milnean). 3–4. Solomon Isles; Fiji. 1865.
„ *mi'sera* (poor). ½–1. Malaya.
„ *molucca'na* (Moluccan). 3–4. Malaya. 1880.
„ *mutila'ta* (mutilated). ½–1. W. Ind.
„ *nemora'lis* (grove). See P. BIAURITA NEMORALIS.
„ *Ouvra'rdii* (Ouvrard's). See P. SERRULATA OUVRARDII.
„ *palea'cea* (scaly). 2–5. Stalk alone 2–4 ft. Diana's Peak, St. Helena.
„ *pa'tens* (spreading). 3. Tropics of Old World.
„ *peda'ta* (pedate). ½–¾. W. Ind. to Brazil. (*Doryopteris pedata.*)
„ *peruvia'na* (Peruvian). See GYMNOGRAMME CALOMELANOS PERUVIANA.
„ *Plumie'ri* (Plumier's). 2. July. S. Amer. 1818.
„ *podophy'lla* (stalked-leaved). 3–4. Trop. Amer., &c.
„ *pu'ngens* (prickly). 2–3. Stalks prickly. W. Ind.
„ *quadriauri'ta* (four-eared). 1½–5. Tropics of both Worlds. 1841.
„ „ *argyræ'a* (silvery). Midrib silvery-white. E. Ind. 1859.
„ „ *aspericau'lis* (rough-stemmed). 2. E. Ind.
„ „ *fu'scipes* (brown-stalked). 1. Solomon Islands. 1868.
„ „ *rubricau'lis* (red-stemmed). 1–1½. Stalks red.
„ „ *ru'bro-ne'rvia* (red-nerved). 1–2. Stalks and ribs purple-red. India. 1861.
„ „ *tri'color* (three-coloured). 1. Midrib silvery-white, tinted red. E. Ind. 1860.
„ *robu'sta* (robust). See P. ACULEATA.
„ *rotundifo'lia* (round-leaved). See PELLÆA ROTUNDIFOLIA.
„ *sagittifo'lia* (arrow-leaved). ½–1. Venezuela to Brazil. (*Doryopteris.*)
„ „ *hasta'ta* (halbert-shaped). Frond with two large horizontal lobes.
P. sagitta'ta (arrow-shaped). See PELLÆA CORDATA SAGITTATA.
„ *semipinna'ta* (half-pinnate). 2–2½. Tropical and subtropical Asia.
„ „ *Bau'sei* (Bause's). 1. Compact and densely tufted, erect. 1886.
„ *semisagitta'ta* (half-arrow-shaped). Fronds broad, half-arrow-shaped. S. Brazil. 1902.
„ *spinulo'sa* (small-spined). 1½. September. 1834.
„ *strami'nea* (straw-coloured). 1½–2. Chili.
„ *sulca'ta* (furrowed). See P. QUADRIAURITA.
„ *ternifo'lia* (three-leaved). See PELLÆA TERNIFOLIA.
„ *undula'ta* (waved). Fronds wavy. Fiji.
„ *Victo'riæ* (Victoria's), *Regi'næ* (Queen's), and *Victo'ria-Regi'næ* (Queen Victoria's). See P. ENSIFORMIS VICTORIÆ.
„ *wallichia'na* (Wallichian). 6–8. Himalaya; Japan; Philippines.

PTERISA'NTHES. (From *pteris*, a wing, and *anthos*, a flower; the receptacle of the flower is developed into a broad, membranous wing. Nat. ord. Ampelidaceæ.)
An evergreen stove climber, with the habit of a Cissus. Cuttings of half-ripe wood, in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.
P. poli'ta (polished). Green; rachis flattened like a knife. Malaya. 1896.

PTEROCA'CTUS. (From *pteron*, a wing, and *Cactus*; the seeds are broadly winged. Nat. ord. Cactaceæ.)
Warm and dry greenhouse succulents. Cuttings allowed to dry at the cut ends, inserted in sand in a dry atmosphere. Fibrous loam, leaf-mould, finely broken bricks, and sand.
P. deci'piens (deceiving). ¾. Yellow; stigmas purple. Argentina. 1907.
„ *Ku'ntzei* (Kuntze's). ½. Yellow. Plant tufted, sea-green. Argentina. 1907.

PTEROCA'RPUS. (From *pteron*, a wing, and *karpos*, a fruit; seed-pods with wing-like appendage. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 7-*Decandria*. Allied to Dalbergia.)
Stove evergreen trees. Cuttings of half-ripened, stubby side-shoots in sand, under a glass, and in bottom-heat; rich, fibrous loam. Winter temp., 50° to 55°; summer, 60° to 85°.
P. Bro'wnei (Brown's). See ECASTAPHYLLUM BROWNEI.
„ *buxifo'lius* (box-leaved). See BRYA EBENUS.
„ *dalbergioi'des* (Dalbergia-like). See P. INDICUS.
„ *Dra'co* (dragon). 40. White. W. Ind. 1820.
„ *escule'ntus* (eatable). 50. Yellow. Trop. Africa. 1793.
„ *fla'vus* (yellow). Yellow. April. Cochin-China. 1826.
„ *gla'ber* (smooth). See BRYA EBENUS.
„ *i'ndicus* (Indian). 30. White or yellow. India and China. 1813.
„ *luna'tus* (crescent-shaped). See DREPANOCARPUS LUNATUS.
„ *Marsu'pium* (pouched). 40. White. India. 1811.
„ *Plumie'ri* (Plumier's). See ECASTAPHYLLUM MONETARIA.
„ *Ro'hrii* (Rohr's). 20. Brazil. 1816.
„ *santalinoi'des* (sandal-wood-like). See P. ESCULENTUS.
„ *santali'nus* (Santalum-like). 60. Yellow. E. Ind. 1800. "Red Saunder's Wood."
„ *sca'ndens* (climbing). 15. Yellow. Caracas. 1817. Climber.
„ *Siebe'ri* (Sieber's). See ECASTAPHYLLUM BROWNEI.

PTEROCA'RYA. (From *pteron*, a wing, and *caruon*, a nut; winged fruit. Nat. ord. *Juglands* [Juglandaceæ]. Linn. 21-*Moncœcia*, 9-*Enneandria*. Allied to Juglans.)
Hardy deciduous trees; by layers of the young shoots; also by grafting on the Walnut; deep, moist soil in warm places; in cold situations shallow, poor soil will be best, that the wood may not be stronger than the sun will ripen.
P. cauca'sica (Caucasian). 40. Green. May. Caucasus; Orient. 1800. "Caucasian Walnut."
„ *fraxinifo'lia* (Ash-leaved). See P. CAUCASICA.
„ *hupehe'nsis* (Hupeh). 30–70. Green. Fruit in spikes 2 ft. long. Central China. 1910.
„ *Paliu'rus* (Paliurus). 20–50. Green. May. Central China. 1903.

P. rhoifo'lia (Rhus-leaved). Green. May. Japan.
„ *spachia'na* (Spachian). See P. CAUCASICA.
„ *steno'ptera* (narrow-winged). Green. May. China. 1882.

PTEROCELA'STRUS. (From *pteron*, a wing, and *Celastrus*; referring to the 3–6 wings of the fruit. Nat. ord. Celastraceæ. Allied to Celastrus.)

Greenhouse shrubs or small trees with small flowers. Cuttings of half-ripe shoots in sand, under a bell-glass in summer. Fibrous loam, peat, and sand.

P. rostra'tus (beaked). 3. White. May. S. Africa. 1821.
„ *tricuspida'tus* (shortly-three-pointed). 3. White. July. S. Africa. 1824.

PTEROCE'LTIS. (From *pteron*, a wing, and *Celtis*; alluding to the wing surrounding the fruit. Nat. ord. Urticaceæ. Allied to Celtis.)

A hardy shrub or small tree. Seeds; layers. Ordinary soil.

P. Tatarino'wii (Tatarinow's). 10. Green. Mongolia. 1904.

PTEROCE'PHALUS. See SCABIOSA.

PTEROCHI'LUS. See MICROSTYLIS.

PTEROCO'CCUS. See CALLIGONUM.

PTERODI'SCUS. (From *pteron*, a wing, and *discus*, a disk. Nat. ord. *Pedaliads* [Pedaliaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Martynia.)

Stove herbaceous perennials. Seeds in spring and autumn; division of the plant, and cuttings of young shoots under a bell-glass, in the beginning of spring and in the middle of autumn; sandy loam and leaf-mould. Winter temp., 40° to 48°; summer, 60° to 75°.

P. lu'ridus (lurid). 1½. Dusky yellow. July. S. Africa. 1868.
„ *specio'sus* (showy). 2. Lilac, purple. May. S. Africa. 1844.

PTERO'LEPIS. (From *pteron*, a wing, and *lepis*, a scale; in allusion to the feathery bristles between the calyx lobes. Nat. ord. Melastomaceæ. Allied to Pleroma.)

A small, evergreen, stove, shrubby plant. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, lumpy peat, and sand.

P. glomera'ta (clustered). 1½. Pink. July. Trop. Amer.; W. Ind. 1818.
„ „ *albiflo'ra* (white-flowered). 1½. White. January. Brazil. 1821.

PTEROLO'BIUM. (From *pteron*, a wing, and *lobos*, a pod; the pods are winged. Nat. ord. Leguminosæ. Allied to Hæmatoxylon and Gymnocladus.)

Stove tree or large shrub, armed with hooked prickles. Cuttings of half-ripened wood in sand, placed in a propagating case, with bottom-heat. Fibrous loam, peat, and sand.

P. i'ndicum (Indian). White. India.

PTEROLO'MA. See DESMODIUM.

PTERONEU'RON. (From *pteron*, a wing, and *neuron*, a nerve; winged seed-cord. Nat. ord. *Cruciferæ*. Linn. 15-*Tetradynamia*. Now referred to Cardamine.)

P. carno'sum (fleshy-*leaved*). See CARDAMINE CARNOSA.
„ *græ'cum* (Grecian). See CARDAMINE GRÆCA.

PTERO'NIA. (From *pteron*, a wing; in allusion to the feathery scales inside the flower-head. Nat. ord. Compositæ. Allied to Solidago.)

Evergreen, greenhouse shrubs from South Africa. Cuttings in sand, under a bell-glass, in gentle heat. Fibrous loam, leaf-mould, and sand.

P. camphora'ta (camphor-scented). 2–3. Yellow. June. 1774.
„ *Chamæpeu'ce* (Chamæpeuce). See CNICUS CHAMÆPEUCE.
„ *echina'ta* (prickly). See FELICIA ECHINATA.
„ *fascicula'ta* (bundled). 2. Yellow. June, July. 1818.
„ *flexicau'lis* (flexuous-stemmed). 2–3. Yellow. June, July. 1812.
„ *glomera'ta* (clustered). 2. Yellow. June, July. 1817.
„ *inca'na* (hoary). 2. Golden-yellow. June to August. 1907.
P. oppositifo'lia (opposite-leaved). 2. Yellow. June, July. 1774.
„ *pa'llens* (pale). 2. Yellow. June, July. 1816.
„ *pauciflo'ra* (few-flowered). See HELIPTERUM VIRGATUM.
„ *scario'sa* (scarious). 2. Yellow. June, July. 1815.
„ *stri'cta* (erect). See P. CAMPHORATA.

PTEROPHY'TON. See ACTINOMERIS.

PTERO'PSIS. See TÆNITIS.

PTEROSPE'RMUM. (From *pteron*, a wing, and *sperma*, a seed; winged seeds. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 7-*Dodecandria*. Allied to Astrapæa.)

Stove, white-flowered, evergreen trees, from the East Indies. Cuttings of half-ripened, stubby side-shoots, cut close to the stem, in sand, and in bottom-heat; sandy, fibrous loam and lumpy peat, with good drainage. Winter temp., 50° to 55°; summer, 60° to 85°.

P. acerifo'lium (maple-leaved). 10. August. 1790.
„ *platanifo'lium* (plane-leaved). 15. 1820.
„ *semisagitta'tum* (half-arrow-*leaved*). 10. 1820.
„ *suberifo'lium* (cork-tree-leaved). 10. 1783.

PTEROSTE'LMA. See HOYA.

PTEROSTI'GMA GRANDIFLO'RUM. See ADENOSMA GRANDIFLORUM.

PTEROSTY'LIS. (From *pteron*, a wing, and *stulis*, a style; in allusion to the winged column. Nat. ord. Orchidaceæ. Related to Corysanthes.)

Greenhouse terrestrial Orchids, with a small tuberous rootstock. Imported tubers and offsets. A little fibrous loam, much flaky leaf-mould, and sand. Winter temp., 45° to 50°; summer, 60° to 70°.

P. acumina'ta (long-pointed). ½. Green. April. Australia. 1827.
„ *Ba'nksii* (Banks's). 1–1½. Green. April. New Zealand. 1832.
„ *Bapti'stii* (Baptist's). 1–2. Green, with brown-purple tips to sepals and petals. N.S. Wales. 1877.
„ *conci'nna* (neat). ½. Green, tipped brown-purple. Australia. 1828.
„ *cu'rta* (short). ½. Green. Australia. 1829.
„ *nu'tans* (nodding). ½–1. Green. Australia. 1826.

PTEROSTY'RAX HI'SPIDUM. See HALESIA HISPIDA.

PTILOCNE'MA BRACTEA'TA. See PHOLIDOTA IMBRICATA.

PTILO'MERIS CORONA'RIA. See ACTINOLEPIS CORONARIA.

PTILO'TRICHUM. (From *ptilon*, a feather, and *thrix*, a hair. Nat. ord. *Cruciferæ* [Cruciferæ]. Linn. 15-*Tetradynamia*. Now referred to Alyssum.)

P. cane'scens (hoary). See ALYSSUM CANESCENS.
„ *elonga'tum* (lengthened). See ALYSSUM CANESCENS.

PTYCHOCO'CCUS. (From *ptux*, *ptuchos*, a fold, and *coccos*, a berry; there is a groove or fold in the fruit. Nat. ord. Palmaceæ.)

Stove palms. Seeds. Loam, peat, and sand.

P. are'cinus (Areca-like). 50–60. New Guinea. 1884.
„ *parado'xus* (paradoxical). 40–50. New Guinea.

PTYCHORA'PHIS. (From *ptux*, *ptuchos*, a fold, and *rhaphis*, a needle; in allusion to the beaked fruit. Nat. ord. Palmaceæ.)

Stove palms, with pinnate leaves resembling those of *Cocos weddelliana* when young. Seeds. Fibrous loam, peat, and sand.

P. augu'sta (august). 60–100. Stem slender. Nicobar Islands. 1892.
„ *siebertia'na* (Siebertian). Stem slender. Leaves coppery when young. Malaya. 1908.
„ *singapore'nsis* (Singapore). 50. Stem slender. Malaya. 1884.

PTYCHOSPE'RMA. (From *ptux*, *ptuchos*, a fold, and *sperma*, a seed; in allusion to the five grooves or furrows in the seeds of some of the species. Nat. ord. Palmaceæ.)

Stove Palms. Seeds. Fibrous loam, peat, and sand, fed with artificial manures, or loam, mixed with a little cow-manure, if planted out. Winter temp., 55° to 60°; summer, 65° to 80°.

P. Alexa'ndræ (Princess Alexandra's). See ARCHONTOPHŒNIX ALEXANDRÆ.
„ *angustifo'lia* (narrow-leaved). See COLEOSPADIX ONINENSIS.
„ *Bea'tricæ* (Beatrice's). Australia.
„ *cunninghamia'na* (Cunninghamian). See ARCHONTOPHŒNIX CUNNINGHAMIANA.
„ *di'sticha* (two-ranked). See PINANGA DISTICHA.
„ *e'legans* (elegant). Australia. 1868.
„ *fili'fera* (thread-bearing). See VITIPHŒNIX FILIFERA.
„ *Ku'hlii* (Kuhl's). See PINANGA KUHLII.
„ *lacera'ta* (torn). Central Amer. 1868.
„ *Macarthu'rii* (Macarthur's). Australia. 1879.
„ *Norma'nbyi* (Normanby's). See ARECA NORMANBYI.
„ *parado'xa* (paradoxical). See PTYCHOCOCCUS PARADOXUS.
„ *pa'tula* (spreading). See PINANGA PATULA.
„ *perbre'vis* (very short). See BALAKA PERBREVIS.
„ *rega'lis* (royal). India. 1867.
„ *Ru'mphii* (Rumphius's). See DRYMOPHLŒUS OLIVÆFORMIS.
„ *rupi'cola* (rock-loving). See LOXOCOCCUS RUPICOLA.
„ *sanderia'na* (Sanderian). 10–15. Stem slender. Fruit bright red. New Guinea. 1898.
„ *Seema'nni* (Seemann's). See BALAKA SEEMANNI.
„ *siebertia'na* (Siebertian). See PTYCHORAPHIS SIEBERTIANA.
„ *singapore'nsis* (Singapore). See PTYCHORAPHIS SINGAPORENSIS.
„ *Warle'ti* (Warlet's). Leaf sheaths and stalks covered with purplish hairs. 1898.

PUCCI'NIA. (Commemorative of *Puccini*, an Italian botanist. Nat. ord. Uredinaceæ.) A large genus of fungi attacking an equally varied class of plants, including garden herbs, shrubs, and trees. The life cycle of a Puccinia passes through three stages—(*a*) the Æcidium or Cluster-cup stage, (*b*) the Uredo or Rust stage, and (*c*) the Puccinia or final stage. The Cluster-cups usually live on a separate host plant from the other stages, but the Rust, produced during summer, is usually followed by the Puccinia or Brand, upon the same host, during late summer and autumn. The three stages have been traced in a few species only, the others being known only in one of the forms, and all three were, at one time, believed to constitute as many different genera.

A. The Æcidium or Cluster-cup consists of a layer of cells inside the leaves or young shoots of the host plant, enclosing a layer of mycelium at the base. From this mycelium numerous erect branches arise, that become jointed, each joint or cell forming a spore. At maturity the skin or epidermis of the host plant bursts and rolls backwards, forming the cups that usually form clusters, visible to the naked eye on the diseased parts of the plant attacked. The spores are scattered and commence to germinate directly they fall upon a suitable host plant. The best-known examples are the Cluster-cups of the barberry (*Puccinia graminis*), and those of the gooseberry (*Puccinia pringsheimiana*), on the leaves and fruits, forming a red or orange patch.

B. The Uredo or Rust stage is not enclosed by a cup, but the fungus consists of a rounded mass of mycelium, on which erect branches arise, bearing spores singly at their ends. This is produced inside the host plant, but the skin of the latter bursts at maturity, and the affected leaves appear covered with patches and spots of a reddish-brown or rust colour. The spores give this particular colour. They are thin-walled and germinate immediately on the same plant or on others of the same species during summer. Well-known examples are *P. graminis* on wheat, oats, barley, &c., *P. Menthæ* on Mint, *P. malvacearum* on Hollyhocks, and *P. Hieracii* on Chrysanthemums.

C. The Puccinia or Brand stage is very familiar on Roses as dark specks amongst the Uredo stage on the rusty blotches of the leaves. The growth of the fungus is similar to the Uredo stage, but the fruiting branches end in two-celled spores, which are thick-walled, darker in colour, and produced late in the season. They are named teleutospores, because they are the final stage of the fungus, and rest during the winter to commence the fungus anew in spring. Familiar examples are the Brand of Wheat (*Puccinia graminis*), that of sedges (*P. pringsheimiana*), that of Plums and other species of Prunes (*P. Pruni*), and that of Gentian (*P. Gentianæ*).

Preventive means are the best to adopt. All diseased portions should be cut and burned directly they appear. Plants should not be overcrowded, but given room, so that light and air can play amongst the foliage. Useless or diseased wild plants on which the fungus is known to grow should be cut down and burned. Spraying with dilute Bordeaux mixture will destroy the spores or prevent them from germinating afresh on the same or other plants. The foliage of soft-leaved plants like Chrysanthemums should be kept as dry as possible, because syringing and moisture, generally, favours the germination of the spores and the spread of the fungus. See also Æcidium and Hollyhock Disease.

PUCCOON. *Sanguina'ria.*

PUDDLING. See MUDDING.

PUERA'RIA. (Named after *M. Puerari*, a Danish botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Canavalia.)

Greenhouse evergreen climbers. Cuttings of half-ripened shoots in sand, under a glass; sandy peat and fibrous loam. Winter temp., 40° to 48°.

P. thunbergia'na (Thunbergian). Bluish-violet. Summer. China; Japan. 1889.
„ *tubero'sa* (tuberose). 2. Yellow. Himalaya. 1806.
„ *Walli'chii* (Wallich's). 3. Yellow. Himalaya. 1826.

PULICA'RIA. Flea-bane. (From *pulex*, a flea; the smell is, or was, reputed to drive away fleas. Nat. ord. Compositæ.)

Hardy perennial herbs. Seeds, cuttings under a handlight in summer or divisions in spring. Ordinary soil, the better for being rather moist.

P. dysente'rica (dysenteric). 1½–2. Yellow. July, August. Europe (Britain).
„ *odo'ra* (scented). 1½. Yellow. July, August. S. Europe. 1821.

PULMONA'RIA. Lungwort. (From *pulmonarius*, diseased lungs; referring to its supposed efficacy in those diseases. Nat. ord. *Boragewort*s [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy herbaceous perennials. Divisions in spring; common garden-soil.

P. alpi'na (alpine). See MERTENSIA ALPINA.
„ *angustifo'lia* (narrow-leaved). ½. Violet. April. Europe (Britain).
„ „ *azu'rea* (azure). 1. Bright blue. April. France; Poland. 1823.
„ „ *oblonga'ta* (oblong). See P. OBLONGATA.
„ *arverne'nsis* (Arvernan). 1. Blue-purple. May, June. Origin uncertain.
„ „ *a'lba* (white). 1. White. May, June. 1905.
„ *azu'rea* (light blue). See P. ANGUSTIFOLIA AZUREA.
„ *dahu'rica* (Dahurian). See MERTENSIA DAVURICA.
„ *denticula'ta* (small-toothed). See MERTENSIA SIBIRICA.
„ *grandiflo'ra* (large-flowered). See P. SACCHARATA.
„ *margina'ta* (bordered-*leaved*). See MERTENSIA LANCEOLATA.
„ *mari'tima* (sea-side). See MERTENSIA MARITIMA.
„ *mo'llis* (soft). See P. MONTANA.
„ *monta'na* (mountain). 1. Blue. May, June. Central Europe. 1805.
„ *oblonga'ta* (oblong). 1. Pink, blue. May. Europe.
„ *oblongifo'lium* (oblong-leaved). See MERTENSIA OBLONGIFOLIA.
„ *officina'lis* (shop). 1. Pink. April. Europe(England). "Common Lungwort."
„ „ *a'lba* (white-*flowered*). 1. White. June. England.
„ *panicula'ta* (panicled). See MERTENSIA PANICULATA.
„ *parviflo'ra* (small-flowered). See MERTENSIA MARITIMA.
„ *pube'scens* (downy). See MERTENSIA PANICULATA.
„ *ru'bra* (red). 1. Red. June. Transsylvania.
„ *sacchara'ta* (sugared). 1. Pink. June. Europe. 1817.
„ *sibi'rica* (Siberian). See MERTENSIA SIBIRICA.
„ *tubero'sa* (tuberous). See P. ANGUSTIFOLIA.
„ *virgin'ica* (Virginian). See MERTENSIA PULMONARIOIDES.

PULSATI'LLA REGELIA'NA. See ANEMONE REGELIANA.

PULSATI'LLA VULGA'RIS. See ANEMONE PULSATILLA.

PULTENÆ'A. (Named after *Dr. Pulteny*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Gastrolobium.)

Greenhouse, yellow-flowered, evergreen shrubs, from Australia. Cuttings of the points of shoots as growth is nearly finished, or, better still, small side-shoots, when from 2 to 3 inches long, in sand, in April, under a bell-glass; two parts of sandy, fibrous peat to one part of fibrous loam, with a little charcoal and good drainage. Winter temp., 40° to 48°; summer, 60° to 75°. Plenty of air, and screened from the full sun during the hottest period of the year.

P. argen'tea (silvery). See P. DENTATA.
„ *arista'ta* (awned). 1½. May. 1824.
„ *a'spera* (rough). See PHYLLOTA PHYLICOIDES.
„ *Ausfel'dii* (Ausfeld's). 1½. Australia. 1865.
„ *bi'loba* (two-lobed). See P. SCABRA.
„ *brachytropis* (short-keeled). 1½. Purple, orange. April. 1838.
„ *ca'ndida* (white). See P. TENUIFOLIA.
„ *cane'scens* (hoary). See P. PLUMOSA.
„ *como'sa* (tufted). See PHYLLOTA PHYLICOIDES.
„ *corda'ta* (*sharp*-hearted-*leaved*). See P. JUNIPERINA.
„ *crassifo'lia* (thick-leaved). 2. May. 1824.
„ *cunea'ta* (wedge-*leaved*). See P. MICROPHYLLA.
„ *daphnoi'des* (Daphne-like). 2. April. 1792.
„ *densifo'lia* (dense-leaved). 1½–2. May.
„ *denta'ta* (tooth-*bracted*). 2. June. 1820.
„ *echi'nula* (small-prickled). 1½. April. 1823.
„ *elli'ptica* (elliptic). 1. May. 1810.
„ *ericoi'des* (Erica-like). See AOTUS VILLOSA ERICOIDES.
„ *euchi'la* (fine-lipped). 1. May. 1824.
„ *fla'va* (yellow). 1½–2. May.
„ *flexilis* (yielding). 1½. May. 1801.
„ *Gu'nnii* (Gunn's). 2. Golden-yellow, striped brownish-purple. 1885.
„ *hypola'mpra* (brightish). See P. ELLIPTICA.
„ *incurva'ta* (bent-in). 2. May. 1823.
„ *juniperi'na* (juniper-*like*). 1½. June. 1824.
„ *linophy'lla* (flax-leaved). 2. April. 1789.
„ *microphy'lla* (small-leaved). 1. May. 1810.
„ *mucrona'ta* (pointed-*leaved*). See P. POLIFOLIA.
„ *na'na* (dwarf). See CHORIZEMA ILICIFOLIUM.
„ *obcorda'ta* (reversed-egg-*leaved*). 2. June. 1808.
„ *Otto'nis* (Otto's). 1–2. May. 1857.
„ *oxalidifo'lia* (Oxalis-leaved). See P. TERNATA.
„ *palea'cea* (scaly). 1½. May. 1789.
„ *Paxto'ni* (Paxton's). 1½. Yellow, marked with red. 1861.
„ *peduncula'ta* (*long*-flower-stalked). May. 1820.
„ *plumo'sa* (feathery). 1½. April. 1824.
„ *polifo'lia* (Polium-leaved). 2. May. 1824.
„ *polygalifo'lia* (Polygala-leaved). See P. VILLOSA.
„ *procu'mbens* (lying-down). ½. April. 1823.
„ *racemulo'sa* (small-racemed). 2. April. 1820.
„ *reticula'ta* (netted). 2. June. 1820.
„ *retu'sa* (abrupt-ended). 1. April. 1789.
„ *ro'sea* (rosy). 1½–2. Pink. April, May. 1877.
„ *rosmarinifo'lia* (rosemary-leaved). See P. POLIFOLIA.
„ *rupe'stris* (rock-inhabiting). 1. 1845.
„ *sca'bra* (rough-*leaved*). 1½. April. 1803.
„ *squarro'sa* (spreading). See PHYLLOTA PHYLICOIDES.
„ *stipula'ris* (stipuled). 2. April. 1792.
„ *stri'cta* (upright). 2. June. 1803.
„ *subumbella'ta* (slightly-umbelled). 1. April. 1831.
„ *Swee'tii* (Sweet's). See P. FLEXILIS.
„ *tenuifo'lia* (thin-leaved). 1½. April. 1817.
„ *terna'ta* (ternate). 2. April, May. 1825.
„ *thymifo'lia* (thyme-leaved). See P. ELLIPTICA.
„ *vesti'ta* (clothed). 3. April. 1803.
„ *villi'fera* ((hair-bearing). 2. May. 1824.
„ *villo'sa* (shaggy) of Willdenow. 2. May. 1790.

PU'NICA. Pomegranate. (From *puniceus*, scarlet; the colour of the flowers. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Deciduous trees, all blooming in August. Cuttings of the shoots and roots; layers and grafting; any light, rich soil. It flourishes against a wall, but in such places the twigs must be encouraged to grow, or there will be few flowers. The double kinds grafted on the single, and grown in rich loam, become nice flowering plants, as the plants do not grow so vigorously as on their own roots, but flower much longer.

P. Grana'tum (*common*-grained). 18. Red. S. Europe; Persia, &c. 1548.
P. Grana'tum albe'scens (whitish). 10. Whitish. China.
„ „ *albe'scens flo're-ple'no* (double-whitish). 10. Whitish.
„ „ *fla'vum* (yellow). 10. Yellow.
„ „ *flo're ple'no* (double-flowered). 10. White and pale yellow.
„ „ *na'na* (dwarf). 3–5. Red. Mauritius. 1823.
„ „ *ru'brum flo're-ple'no* (double-red-flowered). 10. Red. S. Europe.
„ *na'na* (dwarf). See P. GRANATUM NANA.

PUNNET. See BASKET.

PUPA. The various stages in the life of an insect are the egg, the caterpillar or larva, the pupa, and the perfect or winged form. The pupa of moths and butterflies is a resting stage, known also as a chrysalis, and is sometimes enclosed in a cocoon or case. The pupa of grasshoppers, cockroaches, earwigs, and others is active and not unlike the larva, or even the perfect form without wings.

PUPA'LIA. (From *Pupali*, an East Indian name for it. Nat. ord. Amarantaceæ.)

Stove, evergreen shrubby plant. Cuttings in sand, in a propagating case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

P. atropurpu'rea (dark-purple). 1½–2. Deep purple. August, September. Trop. Asia and Africa. 1756.

PURPLE LOOSESTRIFE. *Ly'thrum Salica'ria.*

PURPLE MEDICK. *Medica'go sati'va.*

PURPLE WREATH. *Petre'a volu'bilis.*

PURPURE'LLA. *Tibouchi'na.*

PU'RSHIA. (Named after *F. Pursh*, writer on American plants. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Chamæbatia.)

Hardy evergreen shrubs. Cuttings of young shoots in sand, under a hand light, in early summer; also by seeds, treated as rose-seeds; sandy, poor soil.

P. glandulo'sa (glandular). 2. Yellow-white, smelling like cinnamon. N.W. Amer. 1898.
„ *tridenta'ta* (three-tooth-*leaved*). 2. Yellow. N. Amer. 1826.

PU'RSHIA OF SPRENGEL. (Nat. ord. Boraginaceæ.) See ONOSMODIUM.

P. hi'spida (hairy). See ONOSMODIUM HISPIDUM.
„ *mo'llis* (soft). See ONOSMODIUM MOLLE.

PURSLANE. (*Portula'ca.*) *P. olera'cea*, Green, or Garden Purslane. *P. sati'va*, Golden Purslane.

A light, rich *soil* they thrive in most, and they must have a warm situation, as a south border. Sow in February and early in March, in a moderate hotbed, to remain where sown; and at the close of March, and once monthly, during April, May, and the summer months until the end of August, in the open ground.

Sow in drills 6 inches apart, very thin, and not more than ¼ inch deep. Keep the seedlings clear of weeds, and thin to 6 or 8 inches asunder. In dry weather water moderately two or three times a week.

In general, they are ready for gathering from in six weeks after sowing, the young shoots being made use of from 2 to 5 inches in length, and the plants branch out again.

The hotbed crops require the air to be admitted as freely as the weather permits, the temperature ranging between 50° and 75°.

To obtain Seed.—A few of the earliest border-raised plants must be left ungathered from, the strongest and largest leaved being selected. They must be cut immediately the seed is ripe, laid on a cloth, and when perfectly dry, thrashed, and the refuse is best separated by means of a very fine sieve.

PURSLANE-TREE. *Portulaca'ria.*

PUSCHKI'NIA. (Named after *M. Pouschkin*, a Russian botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Hyacinth.)

Half-hardy bulb. Offset-bulbs; deep, sandy loam; requires a little protection, or to be taken up in winter.

P. libano'tica (Lebanon). See P. SCILLOIDES.
„ *scilloi'des* (Scilla-like). ¼. Pale blue, May. Asia Minor, &c. 1819. "Striped Squill."
„ „ *compa'cta* (compact). Truss of flowers compact.
„ *si'cula* (Sicilian). See P. SCILLOIDES.

PUSS MOTH. *Ceru'ra vi'nula.*

PUTO'RIA. (From *putor*, a foul smell; the leaves are strongly and disagreeably scented. Nat. ord. Rubiaceæ.)
A small, evergreen shrubby plant. Divisions; cuttings in sand under a hand-light. Light, well-drained soil.
P. cala'brica (Calabrian). ½. Red. July. Mediterranean region. 1820.

PUTTERLI'CKIA. (Commemorative of *A. Putterlick*, a botanist of Vienna. Nat. ord. Celastraceæ.)
Greenhouse shrubs. Cuttings in sand under a bell-glass. Fibrous loam, a little peat and sand.
P. Pyraca'ntha (fiery-thorn). 2–3. Green and purple. Winter. S. Africa.
,, *verruco'sa* (warty). 2–3. Green. S. Africa.

PUTTY is a compound of boiled linseed-oil and whiting, but as it may be bought in London at half a guinea per cwt., it is scarcely worth while to make it. One cwt. is enough for puttying about three hundred square feet of glass.
Old putty may be softened by applying to it rags dipped in a saturated solution of caustic potash, leaving them on for twelve hours; or by rubbing a hot iron along the putty.
If the gardener does make putty, the whiting should be well dried, and then pounded and sifted till it becomes a fine powder, and is quite free from grit. The whiting, a little warm, should be gradually added to the oil, and well mixed by means of a piece of stick, or a spatula. When it is sufficiently stiff, it should be well worked with the hand on a table, and afterwards beaten on a stone with a wooden mallet till it becomes a soft, smooth, tenacious mass. A ball of putty, when left some days, becomes somewhat hard, but may be easily softened by beating.

PU'YA. (Native name. Nat. ord. *Bromeliads* [Bromeliaceæ]. Linn. *Hexandria*, 1-*Monogynia*.)
Stove herbaceous perennials, except *magni'spatha*, which is a stove epiphyte. Seeds in a hotbed, but chiefly by suckers; sandy loam and peat. Winter temp., 55° to 60°; summer, 60° to 85°.
P. Acupu'lla (Acupulla). See P. BONPLANDIANA.
,, *Altenstei'nii* (Altenstein's). See PITCAIRNIA ALTENSTEINII.
,, ,, *gigante'a* (gigantic). See PITCAIRNIA ALTENSTEINII GIGANTEA.
,, *bonplandia'na* (Bonplandian). Colombia.
,, *cæru'lea* (blue). See PITCAIRNIA CÆRULEA.
,, *chile'nsis* (Chilian). 1–4. Scarlet. June, July. Chili. 1820.
,, *coarcta'ta* (compressed). See P. CHILENSIS.
,, *flocco'sa* (woolly-tufted). See PITCAIRNIA FLOCCOSA.
,, *gi'gas* (giant). 20–30. Whitish. Colombia. 1880.
,, *grandiflo'ra* (large-flowered). See PITCAIRNIA FERRUGINEA.
,, *heterophy'lla* (various-leaved). See PITCAIRNIA HETEROPHYLLA.
,, *lanugino'sa* (woolly). 3–4. Pale sea-green. Peru. 1872.
,, *longifo'lia* (long-leaved). See PITCAIRNIA HETEROPHYLLA.
,, *magni'spatha* (large-spathed). ½. Green, white. May. S. Amer. 1820.
,, *maidifo'lia* (Mays-leaved). See PITCAIRNIA MAIDIFOLIA.
,, *paniculo'ta* (panicled). See PITCAIRNIA PHILIPPII.
,, *pyramida'ta* (pyramidal). 1. Yellow. June. Peru. 1822.
,, *recurva'ta* (curled-back). See PITCAIRNIA RECURVATA.
,, *Rœ'zli* (Rœzl's). See PITCAIRNIA RŒZLI.
,, *rubricau'lis* (red-stemmed). Blue, red. June. Chili. 1827.
,, *spatha'cea* (large-spathed). See PITCAIRNIA SPATHACEA.
,, *subero'sa* (corky). See P. CHILENSIS.
,, *sulphu'rea* (sulphur-coloured). See PITCAIRNIA WENDLANDI.
,, *thomasia'na* (Thomasian). 3–5. Bluish-green. S.W. Colombia. 1899.
,, *tunare'nsis* (Tunaran). Bolivia.
,, *vire'scens* (greenish). See PITCAIRNIA VIRESCENS.
,, *Warscewi'czii* (Warscewicz's). See PITCAIRNIA ATRORUBENS.
,, *Why'tei* (Whyte's). See PITCAIRNIA CÆRULEA.

PYCNA'NTHEMUM. (From *puknos*, dense, and *anthemon*, relating to the blooming time of flowers; flowers densely arranged. Nat. ord. Labiatæ. Allied to Origanum.)
Hardy, perennial herbs. Seeds; divisions; cuttings in sand under a hand-light in summer. Ordinary soil.
P. lanceola'tum (lance-shaped). 1. Purple, with darker spots on the lip. N. Amer. "Mountain Mint."
,, *pilo'sum* (thinly-hairy). 1–2. White. July. N. Amer. 1897. Aromatic.

PYCNO'STACHYS. (From *puknos*, dense, and *stachys*, a spike; dense flower-spikes. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)
Stove annual herb and shrub. For culture, see O'CIMUM.
P. cæru'lea (blue). 3. Blue. August. Madagascar. 1825.
,, *Da'wei* (Dawe's). 4–6. Cobalt-blue. Uganda. 1907. Perennial herb. Greenhouse.
,, *urticifo'lia* (nettle-leaved). Blue. Trop. Africa. 1863. Shrubby.

PYGÆ'RA BUCE'PHALA. Buff-tip Moth. This moth is from 2 to 3 inches across the opened fore-wings, which are silvery-grey, crossed by a slender black line, and preceded by a red one near the base of the wings, several dusky bars in the middle, and with a large oval cream-coloured patch, enclosing some small buff spots; edged with a curved red line, preceded by a black one; the edges of the wings varied, black, grey, and tawny red. Hind-wings whitish; body buff, dark brown at the sides, and behind. The caterpillars are yellow, with black legs, and several rows of interrupted black stripes. Sometimes the green and black most prevail, so that the yellow seems to constitute the bands. They are found whilst young, thirty or forty together, on the leaves of the filbert during August and September, but also on the leaves of the elm, oak, &c. The chrysalis is found in the earth; it has two small points at its tail. The caterpillars are so large and conspicuous that hand-picking is an easy and quick remedy.

PYRENACA'NTHA. (From *puren*, the stone of a fruit, and *akantha*, a thorn. Nat. ord. Olacaceæ.)
A stove climber, with a fleshy rootstock more than 3 feet across. Cuttings of short side-shoots in sand, placed in a close case, with bottom-heat. Fibrous loam, leaf-mould, broken bricks, and sand.
P. malvifo'lia (mallow-leaved). 6–10. Greenish. Fruits orange-red. E. Trop. Africa. 1906.

PYRE'THRUM. Feverfew. (From *pur*, fire; alluding to its acrid roots. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Chrysanthemum.)

GREENHOUSE EVERGREENS.

P. anethifo'lium (dill-leaved). See CHRYSANTHEMUM ANETHIFOLIUM.
,, *Broussone'tii* (Broussonet's). See CHRYSANTHEMUM BROUSSONETII.
,, *coronopifo'lium* (buckhorn-leaved). See CHRYSANTHEMUM GRANDIFLORUM.
,, *diversifo'lium* (variable-leaved). See BRACHYCOME DIVERSIFOLIA.
,, *frute'scens* (shrubby). See CHRYSANTHEMUM FRUTESCENS.
,, *grandiflo'rum* (large-flowered). See CHRYSANTHEMUM GRANDIFLORUM.
,, *specio'sum* (showy). See CHRYSANTHEMUM GRANDIFLORUM.

HARDY ANNUALS.

P. breviradia'tum (short-rayed). See CHRYSANTHEMUM CORONARIUM.
,, *e'legans* (elegant). See MATRICARIA MARITIMA.
,, *i'ndicum* (Indian). See CHRYSANTHEMUM INDICUM.
,, *inodo'rum* (scentless). See MATRICARIA INODORA.
,, *parvifo'rum* (small-flowered). See MATRICARIA INODORA.
,, *præ'cox* (early). See MATRICARIA PRÆCOX.

HARDY HERBACEOUS.

P. achilleæfo'lium (milfoil-leaved). See CHRYSANTHEMUM ACHILLEÆFOLIUM.
„ *alpi'num* (alpine). See CHRYSANTHEMUM ALPINUM.
„ „ *pube'scens* (downy). See CHRYSANTHEMUM ALPINUM PUBESCENS.
„ *Barreli'ri* (Barrelier's). See CHRYSANTHEMUM CORONOPIFOLIUM.
„ *bipinna'tum* (doubly-leafleted). See CHRYSANTHEMUM BIPINNATUM.
„ *Bocco'ni* (Bocconi's). See CHRYSANTHEMUM BOCCONI.
„ *cauca'sicum* (Caucasian). See CHRYSANTHEMUM CAUCASICUM.
„ *ceratophylloi'des* (hornwort-like). See CHRYSANTHEMUM CORONOPIFOLIUM.
„ *cinerariæfo'lium* (Cineraria-like). See CHRYSANTHEMUM CINERARIÆFOLIUM.
„ *corymbo'sum* (corymbed). See CHRYSANTHEMUM CORYMBOSUM.
„ *decaisnea'num* (Decaisnean). See CHRYSANTHEMUM DECAISNEANUM.
„ *Halle'ri* (Haller's). See CHRYSANTHEMUM CORONIPIFOLIUM.
„ *latifo'lium* (broad-leaved). See CHRYSANTHEMUM PALUSTRE.
„ *leptophy'llum* (fine-leaved). See TANACETUM LEPTOPHYLLUM.
„ *leucopiloi'des* (white-haired). See CHRYSANTHEMUM LEUCOPILOIDES.
„ *macrophy'llum* (large-leaved). See CHRYSANTHEMUM MACROPHYLLUM.
„ *mandia'num* (Mandian). 1½. July. Isle of France. 1816.
„ *margina'tum* (margined). See CHRYSANTHEMUM MARGINATUM.
„ *mari'timum* (sea). See MATRICARIA MARITIMA.
„ *ma'ximum* (largest). See CHRYSANTHEMUM MAXIMUM.
„ *millefolia'tum* (thousand-leaved). See CHRYSANTHEMUM MILLEFOLIATUM.
„ *palu'stre* (marsh). See CHRYSANTHEMUM PALUSTRE.
„ *parthenifo'lium* (Parthenium-leaved). See CHRYSANTHEMUM PRÆALTUM.
„ *Parthe'nium* (*common*-pellitory). See CHRYSANTHEMUM PARTHENIUM.
„ „ *flo're-ple'no* (double-flowered). See CHRYSANTHEMUM PARTHENIUM FLORE PLENO.
„ *pinnati'fidum* (deeply-cut-*leaved*) of Link. See CHRYSANTHEMUM GRANDIFLORUM.
„ *ro'seum* (rosy). See CHRYSANTHEMUM COCCINEUM.
„ *starckia'num* (Starckian). See CHRYSANTHEMUM STARCKIANUM.
„ *Tchihatche'wii* (Tchihatcheff's). See MATRICARIA TCHIHATCHEWII.
„ *uligino'sum* (marsh). See CHRYSANTHEMUM ULIGINOSUM.

PY'ROLA. Winter-green. (From *pyrus*, a pear-tree; resemblance of the leaves. Nat. ord. *Winter-greens* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Chimaphila.)

Hardy herbaceous perennials. Seeds and divisions in a shady, sandy peat-border.

P. asarifo'lia (Asarum-leaved). See P. ROTUNDIFOLIA ASARIFOLIA.
„ *chlora'ntha* (greenish-yellow-flowered). Green, yellow. Europe; N. Amer. 1818.
„ *convolu'ta* (rolled-together). See P. CHLORANTHA.
„ *corymbo'sa* (corymbose). See CHIMAPHILA UMBELLATA.
„ *denta'ta* (toothed-*leaved*). See P. PICTA.
„ *elli'ptica* (oval-*leaved*). ½. White. N. Amer. 1818.
„ *macula'ta* (blotched). See CHIMAPHILA MACULATA.
„ *me'dia* (intermediate). ½. White, red. Europe (England).
„ *mi'nor* (smaller). ½. Red. N. temperate regions (Britain).
„ *occidenta'lis* (western). See P. CHLORANTHA.
„ *pi'cta* (painted). Yellow. N. Amer. 1827.
„ *ro'sea* (rosy). See P. MINOR.
„ *rotundifo'lia* (round-leaved). ½. White. N. temperate regions (Britain). "Canker Lettuce."
„ „ *asarifo'lia* (Asarum-leaved). ½. Green, yellow. 1822.
„ *secu'nda* (side-*flowering*). ½. White. N. temperate regions (Britain).
„ *umbella'ta* (umbellate). See CHIMAPHILA UMBELLATA.
„ *uniflo'ra* (single-flowered). See MONESES GRANDIFLORA.

PYROLI'RION. Flame Lily. (From *pur*, fire, and *lirion*, a lily. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Referred to Zephyranthes.)

P. au'reum (golden). See ZEPHYRANTHES AUREA.
„ *fla'vum* (yellow). See ZEPHYRANTHES FLAVA.

PYRRHEI'MA. (From *purrhos*, reddish, and *eima*, clothing; the plant is covered with reddish-brown hairs. Nat. ord. Commelinaceæ.)

Stove perennial herb. Cuttings in bottom-heat. Loam, leaf-mould, and sand.

P. Loddige'sii (Loddiges'). 1. Blue. Brazil. 1820.
„ *mi'nus* (lesser). See P. LODDIGESII.

PYRRHOPA'PPUS. (From *purrhos*, ruddy or reddish, and *pappus*; the reddish pappus is a distinguishing mark of the genus. Nat. ord. Compositæ. Allied to Taraxacum.)

An annual or perennial herb. Seeds. Ordinary soil.

P. carolinia'nus (Carolinian). ½–1. Yellow. N. Amer. "False Dandelion."

PYRULA'RIA. (From *Pyrus*, the pear; the fruit resembles that of the pear. Nat. ord. Santalaceæ.)

A half-hardy, deciduous shrub. Cuttings in a cold frame in autumn. Light, sandy loam.

P. olei'fera (oil-bearing). See P. PUBERA.
„ *pu'bera* (downy). 3–12. Greenish. N. Amer. 1800. "Buffalo Nut," "Oil Nut."

PY'RUS. (From *pirum* or *pyrum*, a pear, and *pirus* or *pyrus*, a pear-tree; the old Latin names. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-Pentagynia*.)

Hardy deciduous trees, white-flowered, except where otherwise mentioned. Seeds for stocks and new varieties; as, also, in the case of the timber-trees, for the continuance of the species; but for all particular sorts, by budding and grafting upon wild pears, apples, quinces, and thorns, according to the future effects required; also by suckers; good garden soil, and deep, loamy soil for the wild varieties. See PEAR, APPLE, and QUINCE.

The genus Pyrus includes pears, apples, white beam, service, and other trees, and the seven separate lists given below will show at a glance the affinities and characters of the various species.

PEARS (*Pyro'phorum*).

P. amygdalifo'rmis (almond-formed). 15. May. S. Europe, &c. 1810.
„ „ *oblongifo'lia* (oblong-leaved).
„ *auricula'ris* (eared). 15–40. April, May. A hybrid (*P. Aria* × *communis*). Europe. 1786.
„ *Bala'nsæ* (Balansa's). Persia.
„ *betulæfo'lia* (birch-leaved). 10–20. April. China and Japan. 1879.
„ *bollwylleria'na* (Bollwyllerian). See P. AURICULARIS.
„ *cane'scens* (hoary). April. Origin doubtful.
„ *commu'nis* (common). 20–30. April. Europe (England); Asia. "Wild Pear."
„ „ *A'chras* (Achras). 20. April.
„ „ *Bri'ggsii* (Briggs's). See P. CORDATA.
„ „ *cotinifo'lia* (Cotinus-leaved). 15. April.
„ „ *fascicula'ris* (bundled). 10–15. April.
„ „ *flo're ple'no* (double-flowered). 20. April.
„ „ *fo'liis variega'tis* (variegated-leaved). 20. April.
„ „ *fru'ctu variega'to* (variegated-fruited). 20. April.
„ „ *jaspi'dea* (striped-barked). 20. April.
„ „ *pe'ndula* (drooping). 10–15. April. A weeping variety.
„ „ *Pyra'ster* (Pyraster). 20. April.
„ „ *sanguinole'nta* (blood-coloured). 20. April.
„ „ *sati'va* (cultivated). 20–30. April.
„ *corda'ta* (heart-shaped). 15–20. April. Europe, &c.
„ *elæagrifo'lia* (wild-olive-leaved). 20. April. Caucausus; Asia Minor. 1806.
„ *gla'bra* (smooth). Persia.
„ *heterophy'lla* (various-leaved). Leaves entire, deeply cut or intermediate. Asia. 1888.
„ „ *Koopma'nni* (Koopmann's).
„ *insi'gnis* (remarkable). 15–20. White. May. Himalaya.
„ *japo'nica* (Japanese). See CYDONIA JAPONICA.
„ *leucoca'rpa* (white-fruited). Fruit dull white or creamy, depressed. 1879.

P. lo'ngipes (long-stalked). Algeria.
„ *malifo'lia* (apple-leaved). Hybrid origin.
„ *Michau'xi* (Michaux's). 15–20. May. Asia (?). 1837.
„ *niva'lis* (snowy). 6–15. April, May. Levant, &c. 1806.
„ „ *salvifo'lia* (sage-leaved). 6–15. April, May. Leaves broader. France. 1806.
„ „ *variega'ta* (variegated). 6–15. April.
„ *orienta'lis* (oriental). See P. SALICIFOLIA.
„ *parvifo'ra* (small-flowered). See P. AMYGDALIFORMIS.
„ *Pa'shia* (Pashia). 30–50. May. India. 1825.
„ *Pollve'ria* (Bollwyllerian). See P. AURICULARIS.
„ *salicifo'lia* (willow-leaved). 20. May. Levant. 1780.
„ „ *pe'ndula* (drooping). 10–15. May. A weeping variety.
„ *salvifo'lia* (sage-leaved). See P. NIVALIS SALVIFOLIA.
„ *sina'ica* (Sinaian). 20. May. Asia Minor. 1820.
„ *sine'nsis* (Chinese). 15. White. May. China. 1820. "Sand Pear."
„ „ *Simo'nii* (Simon's). 15. White. May. China. 1872.
„ *tomento'sa* (felted) of Moench. See P. AURICULARIA.
„ *Tschono'skii* (Tschonosky's). 15–20. White, flushed red. April. Japan. 1894.
„ *ussurie'nsis* (Ussurian). See P. SINENSIS.
„ *variolo'sa* (variable). See P. PASHIA.

APPLES (*Ma'lus*).

P. ace'rba (sour). See P. MALUS ACERBA.
„ *angustifo'lia* (narrow-leaved). 20. Pink. May. United States. 1750.
„ *astraca'nica* (Astrachan). See P. MALUS ASTRACANICA.
„ *bacca'ta* (berried). 15–25. Pink. April. Himalaya, &c., to Japan. 1784. "Siberian Crab."
„ „ *pe'ndula* (drooping). A weeping variety.
„ *corona'ria* (garland). 20. Pink, fragrant. May. Eastern United States. 1724. "American Crab Apple."
„ „ *flo're ple'no* (double-flowered). 20. Pink, double, sweet-scented. May. 1893.
„ *denticula'ta* (finely-toothed). China (?).
„ *dioi'ca* (dicœcious). See P. MALUS DIOICA.
„ *floribu'nda* (free-flowering). 8–10. May. Japan. 1818.
„ „ *atrosangui'nea* (dark-blood-red). 8–10. Crimson in bud, paler when open. May.
„ „ *citrifo'lia polype'tala* (citron-leaved, many-petaled).
„ *hallia'na* (Hallian). 8–10. Rosy-red, semidouble. May. Origin doubtful. 1888.
„ *ioe'nsis* (Iowan). 10–15. Pink. May. United States. "Prairie States Crab."
„ *Ma'lus* (Malus). 20–30. Pink. May. Europe (Britain), &c. "Crab Apple."
„ „ *ace'rba* (sour). 20. Pink. April, May. Europe (Britain).
„ „ *a'lba ple'na* (double-white). 20. White. April, May.
„ „ *astraca'nica* (Astrachan). 20. Pink. May. Astrachan. 1810.
„ „ *au'rea* (golden). Leaves yellow, with a central green blotch. 1889.
„ „ *Berti'ni* (Bertin's). Fruits brightly coloured, abundant.
„ „ *cocci'nea* (scarlet). 20. Bright red. May.
„ „ *crata'gina* (Cratægus-like). Fruit with persistent sepals. 1881.
„ „ *dioi'ca* (dicœcious). 10. Pink. May. 1818.
„ „ *fle'xilis* (flexuous). 10–15. Pink. April.
„ „ *flo're a'lbo ple'no* (double-white-flowered). 20–25. White, double. May.
„ „ *mi'tis* (mild). 20. Pink. Young leaves and fruit hairy. May. Britain.
„ „ *monstro'sa* (monstrous). 15–20. Pink. May.
„ „ *nervo'sa* (nerved). 20. Pink. May.
„ „ *pe'ndula* (drooping). A weeping variety.
„ „ *præ'cox* (early). 10. Blush. April. Russia. 1784. "Paradise."
„ „ *ro'sea* (rosy). 20. Rose. May.
„ „ *sempervi'rens* (evergreen). 15–20. Pink. May. Siberia. 1814. "Evergreen Crab."
„ *niedzwetzkya'na* (Niedzwetzkyan). 5–10. Purple. May. Caucasus. 1902.
„ *orthoca'rpa* (straight-fruited). 10. Pink. May. Japan.

P. Parkma'nni (Parkmann's). See P. HALLIANA.
„ *præ'cox* (early). See P. MALUS PRÆCOX.
„ *prunifo'lia* (plum-leaved). 20. Pink. May. Siberia, &c. 1758.
„ „ *cerasifo'rmis* (cherry-formed). Fruit red and yellow.
„ „ *chloroca'rpa* (green-fruited). Fruit green.
„ „ *flo're ple'no* (double-flowered). Flowers double pink.
„ „ *fru'ctu cocci'nea* (scarlet-fruited). Fruit scarlet or crimson. 1900.
„ „ *fru'ctu du'lcis* (sweet-fruited). Fruit sweet, eatable.
„ „ *interme'dia* (intermediate).
„ „ *pe'ndula* (drooping). Pink. May. A weeping variety.
„ „ *xanthoca'rpa* (yellow-fruited). Fruit yellow.
„ *Ri'ngo* (Ringo). 10–15. Rose and white. Fruit yellow. May. Japan. 1881.
„ „ *fastigia'ta* (upright). Branches upright.
„ „ *subloba'ta* (somewhat-lobed). Leaves lobed.
„ *rivula'ris* (brook). 15–20. White. April, May. N. California to Alaska. 1836. "Oregon Crab Apple."
„ „ *integrifo'lia* (entire-leaved).
„ *Scheidecke'ri* (Scheidecker's). 5–10. Rose. May. (*P. prunifolia* × *floribunda*.)
„ *Siebo'ldii* (Siebold's). See P. TORINGO.
„ *sikkime'nsis* (Sikkim). Pink. May. India.
„ *specta'bilis* (showy). 20–25. Rosy-pink. May. China; Japan. 1780. "Chinese Apple."
„ „ *flo're a'lbo* (white-flowered). 20. White. May.
„ „ *flo're ple'no* (double-flowered). 20. Rosy-pink, semidouble.
„ „ *Kai'do* (Kaido). 15–20. Blush-white. Japan. 1874.
„ „ *Rive'rsii* (Rivers'). Large, deep crimson in bud.
„ *tomento'sa* (felted) of Decandolle. Pink. May. Siberia.
„ *Tori'ngo* (Toringo). 10. White to pink. May. Japan.
„ „ *ma'jor* (larger). 10–15. Pink. May.
„ „ *Ri'ngo* (Ringo). See P. RINGO.
„ *Tori'ngo* × *specta'bilis flo're ple'no* (double-Toringo). 10. Flesh, double.

WHITE BEAM TREES (*A'ria*).

P. alnifo'lia (alder-leaved). White. May. Japan; China.
„ *alpi'na* (alpine). 3–6. White. May. 1879. (*P. arbutifolia* × *Aria*.)
„ „ *compa'cta* (compact). 3. White. May.
„ „ *supera'ria* (Aria-like). 3–10. White. May.
„ *A'ria* (Aria). 40. White. May. N. temperate zone (Britain). "White Beam."
„ „ *acutifo'lia* (acute-leaved). 40. May. Europe.
„ „ *angustifo'lia* (narrow-leaved). 30–40. May.
„ „ *arioi'des* (Aria-like). 30–40. May.
„ „ *bulla'ta* (blistered). 30. May. S. Europe.
„ „ *chrysophy'lla* (golden-leaved). Leaves golden.
„ „ *cre'tica* (Cretan). 30. May. Crete.
„ „ *flabellifo'rmis* (fan-formed). Leaves broad, plicate.
„ „ *græ'ca* (Greek). Leaves very white. Greece.
„ „ *himala'ica* (Himalayan). Leaves 1–1½ ft. long, white felted beneath. 1902.
„ „ *latifo'lia* (broad-leaved). See P. ROTUNDIFOLIA.
„ „ *lute'scens* (yellowish). Leaves yellow.
„ „ *obtusifo'lia* (blunt-leaved). 40. May. Europe.
„ „ *quercoi'des* (oak-like). Leaves deeply lobed.
„ „ *rugo'sa* (wrinkled). 30. May. S. Europe.
„ „ *rupi'cola* (rock-loving). See P. RUPICOLA.
„ „ *salicifo'lia* (willow-leaved). Leaves long and narrow.
„ „ *sulphu'rea* (sulphur). Leaves sulphur-yellow.
„ „ *undula'ta* (waved). 30. May. S. Europe.
„ *auricula'ta* (eared). 20–30. May. Egypt. 1800. This is probably a form of *P. pinnatifida*.
„ *Chamæme'spilus* (ground-Medlar). 8. White, tinted rose. May. Alps of Europe. 1683.
„ „ *Ho'stii* (Host's). See P. HOSTII.
„ *Conwe'ntzii* (Conwentz's). 15–20. May. (*P. Aria* × *suecica*.) Pomerania. 1899.
„ *crataegifo'lia* (Cratægus-leaved). 15. May. N. Italy. 1800.
„ *crena'ta* (scolloped). See P. VESTITA.
„ *decaisnea'na* (Decaisnean). May. Origin unknown.

P. densiflo'ra (dense-flowered). See P. ALPINA.
„ *edu'lis* (eatable). See P. ARIA.
„ *fe'nnica* (Finland). See P. PINNATIFIDA.
„ *glabra'ta* (smooth). May. Origin doubtful.
„ *Ho'stii* (Host's). 8–10. Rosy-pink. May. Austrian Alps. 1877. (*P. Aria* × *Chamæmespilus.*)
„ *interme'dia* (intermediate). 40. May. Europe (England). 1789.
„ „ *angustifo'lia* (narrow-leaved). 10–20. May.
„ „ *latifo'lia* (broad-leaved). 30–40. May. France; Denmark. 1789.
„ *lana'ta* (woolly). 15. April. Himalaya. 1818.
„ *pinnati'fida* (deeply-cut). 40–50. May. Europe (Island of Arran, Scotland).
„ „ *fastigia'ta* (upright). Branches upright.
„ *rotundifo'lia* (round-leaved). 14–40. May. Europe.
„ *rupi'cola* (rock-loving). 4–10. May. Leaves white beneath. Britain.
„ *tormina'lis* (gripping). 30–50. May. Europe (England). "Wild Service."
„ *triloba'ta* (three-lobed). 20. May. Leaves 3–7-lobed. Syria. 1810.
„ *vesti'ta* (clothed). 20–30. May, June. India. 1820.

MOUNTAIN ASHES (*So'rbus*).

P. america'na (American). 15–20. May. N. Amer. 1782. "American Mountain Ash."
„ „ *fru'ctu a'lbo* (white-fruited). Fruit white.
„ „ *microca'rpa* (small-fruited). 10. Fruits small. N. Amer.
„ „ *na'na* (dwarf). 4–5. May.
„ *Aucupa'ria* (fowler's). 20–30. May. Northern Hemisphere (Britain). "Mountain Ash" or "Rowan."
„ „ *aspleniifo'lia* (Asplenium-leaved). Leaves much cut.
„ „ *Backhou'sei* (Backhouse's).
„ „ *di'scolor* (two-coloured). Leaves hoary beneath. Eastern Siberia. 1891.
„ „ *du'lcis* (sweet). Fruit sweet.
„ „ *du'lcis lacinia'ta* (deeply-cut). Leaves deeply cut. A sport. 1899.
„ „ *fastigia'ta* (upright). 30. May. Branches upright, rigid.
„ „ *fo'liis variega'tis* (variegated-leaved). Leaves variegated. Britain.
„ „ *fru'ctu lu'teo* (yellow-fruited). 30. May. Britain.
„ „ *Hodgi'nsii* (Hodgins's).
„ „ *japo'nica* (Japanese). White. May. Leaves smooth and green on both sides. Japan. 1909.
„ „ *madere'nsis* (Madeira). White. May. Leaves smooth when adult, small. Madeira. 1907.
„ „ *mora'vica* (Moravian). Leaves deeply cut.
„ „ *pe'ndula* (drooping). "Weeping Mountain Ash."
„ „ *pe'ndula Dawso'nii* (Dawson's drooping). "Dawson's Weeping Mountain Ash."
„ „ *pe'ndula variega'ta* (variegated-drooping). "Variegated Weeping Mountain Ash."
„ „ *satureifo'lia* (savoury-leaved).
„ *dome'stica* (domestic). See P. SORBUS.
„ *foliolo'sa* (leafy). 15–20. White, sweet-scented. June. Himalaya; W. China. 1904.
„ *hy'brida* (hybrid). 10–20. May. 1800. (*P. arbutifolia* × *Aucuparia.*)
„ „ *pe'ndula* (drooping). May. Fruit dark purple.
„ *lanugino'sa* (woolly). 20–30. May. Tree upright. Eastern Europe.
„ *microca'rpa* (small-fruited). See P. AMERICANA MICROCARPA.
„ *microphy'lla* (small-leaved). Himalaya.
„ *mi'nima* (smallest). Britain.
„ *neuillye'nsis* (Neuillyan). Garden origin. (*P. Aucuparia* × *hybrida* (?).)
„ *occidenta'lis* (western). 5–10. May. Washington, Oregon, &c. 1897.
„ *pohuashane'nsis* (Pohuashan). Closely related to *P. Aucuparia.* Mountains near Pekin. 1901.
„ *reflexipe'tala* (reflexed-petaled). White; petals reflexed. Leaflets 11–17, almost glabrous. Japan (?). 1906.
„ *sambucifo'lia* (Sambucus-leaved). 20. May, June. North-eastern Asia; N. Amer. 1818.
„ *sero'tina* (late). White; petals reflexed. Leaflets 9–13; rachis covered with rusty hairs, ultimately smooth. Japan (?). 1906.
P. So'rbus (Sorbus). 20–30. May. Europe (England). "Service Tree."
„ „ *malifo'rmis* (apple-formed). 30. May.
„ „ *pyrifo'rmis* (pear-formed). 30. May.
„ *thianscha'nica* (Thianschan). 10–20. May. Eastern Asia. 1890.

ARONIAS (*Adeno'rachis*).

P. arbutifo'lia (Arbutus-leaved). 4–6. May. Fruit dark red or black. N. Amer. 1700. "Choke-berry."
„ „ *interme'dia* (intermediate). 3–4. May. Fruit brown.
„ „ *melanoca'rpa* (black-fruited). 3–5. May. Fruit large, black. N. Amer. 1700.
„ „ *pu'mila* (dwarf). 1–1½. May. Fruit reddish-black. Plant rooting at the joints.
„ „ *sero'tina* (late). 3–4. May. Fruit late, particoloured.
„ *depre'ssa* (depressed). See P. ARBUTIFOLIA PUMILA.
„ *floribu'nda* (free-flowering) of Lindley. See P. ARBUTIFOLIA.
„ *Folgne'ri* (Folgner's). 10–30. White. May. Central China. 1910.
„ *grandifo'lia* (large-leaved). See P. ARBUTIFOLIA.
„ *melanoca'rpa* (black-fruited). See P. ARBUTIFOLIA MELANOCARPA.
„ *ni'gra* (black). 3–5. May. Fruit black. N. Amer. 1890.
„ *pu'bens* (downy). See P. ARBUTIFOLIA.

FALSE QUINCE (*Pseudocydo'nia*).

P. Delava'yi (Delavay's). Yunnan, China.

MEDLAR (*Me'spilus*).

P. germa'nica (German). 12–15. White. May, June. Europe (England), Asia. 1596. "Medlar."
„ „ *diffu'sa* (diffuse). 12. June. Europe.
„ „ *stri'cta* (upright). 12. June. Europe. Subevergreen.
„ „ *sylve'stris* (wild). 6–10. June. Tree spiny.
„ *loba'ta* (lobed). 15–20. White. May, June. Garden origin (?). 1800.

PYXIDANTHE'RA. (From *puxis*, a box, and *anthera*, an anther; the shape of the anthers. Nat. ord. Diapensiaceæ.)

A perennial herb or tiny creeping shrub. Seeds or divisions. Peat, loam, and sand. It is better for being cultivated in pots so that it may be kept dry overhead in winter, in a cold frame.

P. barbula'ta (finely-bearded). ¼. White. June. N. Amer. 1851. "Pine-barren Beauty."

Q

QUAKING GRASS. *Bri'za.*

QUA'LEA. (The name in Guiana. Nat. ord. *Vochysiads* [Vochysiaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Vochysia.)

Stove evergreen tree. By seeds in a hotbed, and cuttings of half-ripened shoots in sandy soil, under a bell-glass, and in bottom-heat; peat and loam. Winter temp., 50° to 60°; summer, 60° to 85°.

Q. ro'sea (rosy). Violet. Brazil. 1824.
„ *viola'cea* (violet). See Q. ROSEA.

QUA'MOCLIT. (From *kuamos*, a kidney-bean, and *klitos*, dwarf; resemblance of habit. Nat. ord. *Bindweeds* [Convolulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Ipomœa].

Seeds in a hotbed, and cuttings of the points and side-shoots of growing stems, the former plan being adopted chiefly with annuals, and the latter with perennials; the annuals being generally grown out of doors after the end of May, and the perennials in the plant stove.

STOVE PERENNIAL TWINERS.

Q. globo'sa (globular). See IPOMŒA HARTWEGI.
„ *grandiflo'ra* (large-flowered). See IPOMŒA FUNIS.
„ *longiflo'ra* (long-flowered). See IPOMŒA BONA-NOX.
„ *Natio'nis* (Nation's). See IPOMŒA NATIONIS.
„ *pa'tula* (spreading). 6. Scarlet. Mexico. 1826. Evergreen.
„ *sangui'nea* (bloody). See IPOMŒA HEDERIFOLIA.

STOVE ANNUAL TWINERS.

Q. cocci'nea (scarlet). See IPOMŒA COCCINEA.
„ *digita'ta* (hand-*leaved*). See IPOMŒA DIGITATA.
„ *hederifo'lia* (ivy-leaved). See IPOMŒA HEDERIFOLIA.
„ *lu'teola* (yellowish). See IPOMŒA COCCINEA.
„ *phœni'cea* (crimson). See IPOMŒA COCCINEA.
„ *sero'tina* (late-*blooming*). See IPOMŒA SEROTINA.
„ *tri'loba* (three-lobed). See IPOMŒA TRILOBA.
„ *vulga'ris* (common). See IPOMŒA QUAMOCLIT.
„ „ *albiflo'ra* (white-flowered). See IPOMŒA QUAMOCLIT ALBA.

QUA'QUA. (The native name given by the Hottentots. Nat. ord. Asclepiadaceæ.)

A dwarf succulent, eaten by the Hottentots. Cuttings allowed to get partly dried before insertion in sand in a dry stove; also seeds. Loam, finely broken bricks, and sand in equal proportions. Keep it very dry in winter.

Q. Hottentoto'rum (Hottentots'). ½. Pale yellow. Namaqualand, S.W. Africa. 1878.

QUARARI'BEA. (Probably from the native name. Nat. ord. Malvaceæ. Allied to Fremontia.)

A large stove shrub or tree. Cuttings of half-ripe wood in sand in a close case with bottom-heat. Fibrous loam, peat, and sand.

Q. turbina'ta (top-shaped). 6–15. White, large. Brazil. 1793.

QUA'SSIA. (From the name of a slave (Quassi), who first used the bark as a febrifuge. Nat. ord. *Quassiads* [Simarubaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove evergreen tree, the source of the well-known Quassia-chips, used for poisoning flies; the bitter has also been substituted for hops. Cuttings of ripe shoots in sand, under a bell-glass, in heat; sandy, rich loam and fibrous peat. Winter temp., 55° to 65°; summer, 65° to 90°.

Q. ama'ra (bitter). 20. Red. June. Guiana. 1790. "Surinam Quassia."
„ *excel'sa* (lofty). See SIMARUBA EXCELSA.
„ *Simaru'ba* (Simaruba). See SIMARUBA AMARA.

QUEBEC OAK. *Que'rcus a'lba.*

QUEEN LILY. *Phædrana'ssa.*

QUEEN OF THE MEADOW. *Spiræ'a Ulma'ria.*

QUEKE'TTIA. (Commemorative of *E. J. Quekett*, a vegetable anatomist. Nat. ord. Orchidaceæ.)

Stove orchids. Divisions when growth is commencing. Fibre of peat, sphagnum, and plenty of crocks in the pots.

Q. Jenma'ni (Jenman's). ½. White, small. British Guiana. 1906.
„ *microsco'pica* (microscopic). ½. Yellow. Brazil.

QUENOUILLE is a fruit-tree with a central stem, and its branches trained in horizontal tiers, the lowest being the longest, and the others gradually lessening in length as they do in age; so that the tree, like a spruce-fir, acquires a pyramidal form.

QUERCITRON. *Que'rcus tincto'ria.*

QUE'RCUS. The Oak. (From the Celtic *quer*, fine, and *cuez*, a tree. Nat. ord. *Mastworts* [Cupuliferæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)

By acorns, sown as they drop from the tree; or collected, dried, and kept packed in sand, in a dry place, until the following March, when they may be sown in rows, and covered half an inch deep; deep, loamy soil they like best. Particular varieties are kept up by grafting.

Q. acu'ta (acute). Japan. 1884. "Akakasi." Evergreen.
„ „ *a'lbo-ne'rvia* (white-nerved). Leaves white-veined.
„ „ *bambusæfo'lia* (Bambusa-leaved). Leaves narrow.
„ „ *ro'seo-ne'rvia* (rosy-nerved). Leaves rosy-veined.
„ *Ægilops* (Ægilops). 20. Levant. 1731. "Valonia Oak."
„ „ *latifo'lia* (broad-leaved).
„ „ *macro'lepis* (large-scaled). Crete; Greece.
„ „ *pe'ndula* (drooping).
„ „ *Pyra'mi* (Pyramus's).
„ „ *Unge'ri* (Unger's).
„ *agrifo'lia* (scabby-leaved). May. 1837. California. 1837. "Encina."
Q. a'lba (white). 60. May. N. Amer. 1724. "White Oak."
„ „ *pinnati'fida* (deeply-cut-*leaved*). 60. May. N. Amer. 1724.
„ „ *repa'nda* (wavy-*leaved*). 60. May. N. Amer.
„ *Albe'rti* (Albert's). Leaves large, ornamental. 1905.
„ *alie'na* (alien). China; Corea; Japan. 1909.
„ *alnifo'lia* (alder-leaved). Leaves golden beneath. Mountains of Cyprus. 1880. Half-hardy. "Golden Cyprus Oak."
„ *ambi'gua* (ambiguous). See Q. RUBRA.
„ *angustifo'lia* (narrow-leaved). Japan. Evergreen.
„ *apenni'na* (Apennine). See Q. PEDUNCULATA.
„ *aqua'tica mari'tima* (sea). See P. NIGRA.
„ *austra'lis* (southern). See Q. LUSITANICA.
„ *austri'aca sempervi'rens* (evergreen-Austrian). See Q. TURNERI.
„ *Ballo'ta* (Ballota). 60. May. Spain, Portugal. "Sweet Acorn Oak."
„ *bambusæfo'lia* (Bambusa-leaved). See Q. ACUTA BAMBUSÆFOLIA.
„ *Baniste'ri* (Banister's). See Q. ILICIFOLIA.
„ *bi'color* (two-coloured). 70. N. Amer. 1800. "Swamp White Oak."
„ *Buerge'rii* (Buerger's). See Q. ACUTA.
„ *calyci'na* (*large*-calyxed). May. Europe.
„ *castaneæfo'lia* (chestnut-leaved). 60. Caucasus. 1846.
„ *castella'na* (Castile). See Q. ILEX.
„ *Catesbæ'i* (Catesby's). 15. May. N. Amer. 1823.
„ *Ce'rris* (bitter oak). 50. May. S. Europe. 1735. "Turkey Oak."
„ „ *austri'aca* (Austrian). 40. May. Austria. 1824.
„ „ *ca'na ma'jor* (larger-hoary-*leaved*). May. S. Europe.
„ „ *ca'na mi'nor* (lesser-hoary-*leaved*). May. S. Europe.
„ „ *cri'spa* (crisped). 60–70. Leaves crisped.
„ „ *denta'ta* (toothed). See Q CERRIS FULHAMENSIS.
„ „ *fulhame'nsis* (Fulham). 80. May. "Fulham Oak."
„ „ *fulhame'nsis latifo'lia* (broad-leaved). "Broad-leaved Fulham Oak."
„ „ *lacinia'ta* (cut-leaved). Leaves deeply and irregularly cut.
„ „ *lucombea'na* (Lucombean). See Q. LUCOMBEANA.
„ „ *pe'ndula* (drooping). 50. May. S. Europe.
„ „ *Ra'gnal* (Ragnal). See Q. CERRIS.
„ „ *subpere'nnis* (subperennial). See Q. CERRIS FULHAMENSIS.
„ „ *variega'ta* (variegated-*leaved*). 50. May. S. Europe.
„ *chryso'lepis* (golden-scaled). Oregon; California. "Maul Oak."
„ *cine'rea* (grey). 10–20. May. Southern United States. 1789. "Blue Jack."
„ *cocci'fera* (kermes-bearing). 10. May. S. Europe. 1683. "Kermes Oak."
„ *cocci'nea* (scarlet). 50. May. N. Amer. 1691. "Scarlet Oak."
„ *confe'rta* (crowded). 40. May. Italy to Hungary, &c. 1739.
„ *Coo'kii* (Captain Cook's). See ILEX GRAMUNTIA.
„ *crena'ta* (scolloped). See Q. PSEUDO-SUBER.
„ *cri'spula* (finely-crisped). Japan. "Nara gasi."
„ „ *grosseserra'ta* (coarsely-sawed).
„ *cunea'ta* (wedge-shaped). April. United States. "Spanish Oak."
„ *cupressoi'des* (cypress-like). See Q. PEDUNCULATA FASTIGIATA.
„ *cuspida'ta* (short-pointed). Japan. 1879. Evergreen.
„ „ *angustifo'lia* (narrow-leaved). Japan.
„ „ *latifo'lia* (broad-leaved). Japan.
„ „ *variega'ta* (variegated). Leaves variegated. 1879.
„ *Dalecha'mpii* (Dalechamp's). S. Europe.
„ *Dai'mio pinnati'fida* (deeply-cut). See Q. DENTATA.
„ *dealb'ata* (whitened). May. Nepaul. 1828.
„ *densiflo'ra* (dense-flowered). Oregon; California. 1865. "Tan Bark Oak."
„ *denta'ta* (toothed). Leaves one foot long or more. Japan. 1888. "Kashiwa."
„ *digita'ta* (hand-*leaved*). See Q. CUNEATA.
„ *Dougla'sii* (Douglas's). California. "Blue Oak."
„ *E'sculus* (eatable). See Q. CERRIS.
„ *expa'nsa* (spreading). See Q. ILEX.
„ *fagi'nea* (beech-like). See Q. LUSITANICA.
„ *falca'ta* (sickle-shaped). 80. May. N. Amer. 1763

Q. ferrugi'nea (rusty). See Q. MARILANDICA.
„ *frutico'sa* (shrubby). See Q. HUMILIS.
„ *Gambe'lii* (Gambel's). Colorado, &c. "Shin Oak."
„ *garrya'na* (Garryan). North-western Amer.
„ *georgia'na* (Georgia). 2–3. Autumn leaves scarlet. Georgia. 1888.
„ *gi'lva* (pale-yellow). Japan. Evergreen.
„ *gla'bra* (smooth). Japan. 1879. Evergreen.
„ *glanduli'fera* (gland-bearing). Japan. 1880. "Iodame." Evergreen.
„ *glau'ca* (milky-green). 30. Japan. 1822. "Ara kasi."
„ *Gramu'ntia* (Grammont). See Q. ILEX GRAMUNTIA.
„ *Ha'as* (Haas). See Q. PEDUNCULATA HAAS.
„ *haliphle'os* (sea-side). See Q. PSEUDO-SUBER.
„ *hemisphæ'rica* (half-globe). See P. NIGRA.
„ *heterophy'lla* (various-leaved). 40. May. N. Amer.
„ *Hi'ndsii* (Hinds's). See Q. LOBATA.
„ *hu'milis* (low). 2–12. May. Western Mediterranean region. 1824.
„ *hy'brida* (hybrid). See Q. LUSITANICA.
„ *I'lex* (holly). 60. May. Mediterranean region. "Holm Oak," "Holly Oak," "Evergreen Oak."
„ „ *cri'spa* (curled-*leaved*). 60. May. S. France.
„ „ *diversifo'lia* (diverse-leaved).
„ „ *fagifo'lia* (beech-leaved). 60. May. S. France. 1781.
„ „ *fastigia'ta* (upright). See Q. ILEX FORDII.
„ „ *Fo'rdii* (Ford's). Branches erect.
„ „ *Gena'bii* (Genab's).
„ „ *Gramu'ntia* (Grammont). 40. June. France. 1736.
„ „ *integrifo'lia* (entire-leaved). 60. May. S. France. 1581.
„ „ *latifo'lia* (broad-leaved). 60. May. S. France. 1781.
„ „ *longifo'lia* (long-leaved).
„ „ *macrophy'lla* (large-leaved). Leaves large.
„ „ *rotundifo'lia* (round-leaved). June. Spain. 1818.
„ „ *serratifo'lia* (saw-leaved). 60. May. S. France. 1781.
„ „ *Smi'lax* (Smilax-leaved).
„ „ *variega'ta* (variegated-*leaved*).
„ *ilicifo'lia* (holly-leaved). 6. N. Amer. 1800. "Bear Oak."
„ *imbrica'ria* (tiled). 40. June. N. Amer. 1786. "Shingle Oak."
„ *inca'na* (hoary). 40. Himalaya. 1818. Evergreen. Half-hardy.
„ *infecto'ria* (dying). Levant. 1812.
„ „ *Cy'pri* (Cyprus).
„ *insi'gnis* (remarkable). 60. Mexico. 1846.
„ *inve'rsa* (inverted). See Q. THALASSICA.
„ *Kello'ggii* (Kellogg's). Oregon and California.
„ *lana'ta* (woolly-*leaved*). See Q. INCANA.
„ *lanugino'sa* (woolly). Europe; W. Asia.
„ „ *disse'cta* (cut). Leaves deeply cut.
„ „ *pe'ndula* (drooping). A weeping form.
„ *laurifo'lia* (laurel-leaved). 60. May. N. Amer. 1786.
„ „ *hy'brida* (hybrid). 60. May. N. Amer. 1786.
„ *lauri'na* (laurel-like). 30. Mexico. 1837.
„ *lea'na* (Lean). United States.
„ *lezermia'na* (Lezermian). May. S. Europe.
„ *Li'bani* (Lebanon). 30. Asia Minor. 1870. "Lebanon Oak."
„ „ *angustifo'lia* (narrow-leaved).
„ „ *macroca'rpa* (large-fruited).
„ *loba'ta* (lobed). California. 1865. "Valley Oak."
„ *lucombea'na* (Lucombean). 80. May. 1772. "Lucombe Oak." (? *Q. Cerris* × *Suber*.)
„ *lusita'nica* (Portuguese). 40. June. S. Europe; Asia Minor. 1824.
„ „ *Boissie'ri* (Boissier's).
„ *lu'tea* (yellow). 20. May. Mexico. 1825.
„ *lyra'ta* (lyre-*leaved*). 15. May. N. Amer. 1786. "Overcup Oak."
„ *macedo'nica* (Macedonian). Italy to Macedonia, &c. 1892.
„ *macranthe'ra* (long-anthered). Armenia, &c.
„ *macroca'rpa* (large-fruited). 40. N. Amer. "Burr Oak."
„ „ *olivæfo'rmis* (olive-formed). 60. May. N. Amer. 1811.
„ *marila'ndica* (Maryland). United States. "Black Jack."
„ *mari'tima* (sea). See Q. NIGRA.
Q. Michau'xii (Michaux's). Southern United States. "Cow Oak."
„ *Mirbe'ckii* (Mirbeck's). Spain; Portugal; N. Africa.
„ *mongo'lica* (Mongolian). Manchuria, &c.
„ *monta'na* (mountain-*chestnut*). See Q. PRINUS.
„ *Muehlenbe'rgii* (Muehlenberg's). 80. May. United States. 1822. "Yellow Oak," "Yellow Chestnut Oak."
„ *myrtifo'lia* (myrtle-leaved). See Q. NIGRA.
„ *ni'gra* (black). 20. May. N. Amer. 1739. "Water Oak."
„ *obtusi'loba* (blunt-lobed). 60. May. N. Amer. 1819.
„ *olivæfo'rmis* (olive-shaped-*fruited*). See Q. MACROCARPA OLIVÆFORMIS.
„ *palu'stris* (marsh). 60. May. N. Amer. 1720. "Pin Oak."
„ „ *pe'ndula* (drooping). A weeping form.
„ „ *Reichenba'chi* (Reichenbach's). Leaves red from the time they open. 1896.
„ *panno'nica* (Pannonian). See Q. CONFERTA.
„ *pectina'ta* (comb-like). See Q. PEDUNCULATA FILICIFOLIA.
„ *peduncula'ta* (*long*-flower-stalked). 90. May. Europe (Britain); Asia. "Common Oak."
„ „ *au'rea leucoca'rpa* (golden, white-fruited).
„ „ *Conco'rdia* (harmony). Leaves bright yellow.
„ „ *fastigia'ta* (tapering). 4. May. S. Europe. 1820. "Cypress Oak." There are eight upright forms.
„ „ *filicifo'lia* (fern-leaved). 1854. "Fern-leaved Oak."
„ „ *fo'liis variega'tis* (variegated-*leaved*). 40. May. Britain.
„ „ *Ha'as* (Haas). Cilicia. 1870.
„ „ *heterophy'lla* (various-leaved). May. Britain.
„ „ *Hodgi'nsii* (Hodgin's). May. Britain.
„ „ *pe'ndula* (drooping). 70. May. Britain. "Weeping Oak."
„ „ *pube'scens* (downy). 60. May. Britain.
„ „ *purpura'scens* (purple). May. Britain.
„ „ *umbraculi'fera* (umbrella-bearing). Habit broadly globose. 1896.
„ „ *variega'ta* (variegated). Leaves variegated with purple and cream.
„ *Phe'llos* (willow). N. Amer. 1723. "Willow Oak."
„ „ *cine'rea* (ash-coloured). See Q. CINEREA.
„ „ *hu'milis* (dwarf). See Q. CINEREA.
„ „ *latifo'lia* (broad-leaved). 60. May. N. Amer
„ „ *mari'tima* (sea). May. Virginia.
„ „ *seri'cea* (silky) See Q. PUMILA.
„ „ *sylva'tica* (wood). 60. May. N. Amer. 1723.
„ *phillyræoi'des* (Phillyrea-like). Japan.
„ „ *cri'spa* (crisped).
„ *po'ntica* (Pontic). Lazistan. 1891.
„ *prasi'na* (leek-green). See Q. HUMILIS.
„ *prinoi'des* (Prinus-like). United States. "Chincapin Oak."
„ *Pri'nus* (Prinus). 60. June. N. Amer. 1730. "Chestnut Oak."
„ „ *acumina'ta* (pointed-*leaved*). See Q. MUEHLENBERGII.
„ „ *monti'cola* (mountain). See Q. PRINUS.
„ „ *palu'stris* (marsh). See Q. PALUSTRIS.
„ „ *pu'mila* (dwarf). See Q. PUMILA.
„ „ *tomento'sa* (downy-*leaved*). See Q. BICOLOR.
„ *Pseu'do-cocci'fera* (false-kermes-bearing). Mediterranean region.
„ *Pseu'do-su'ber* (false-cork). 60. May. S. Europe. 1824. "False Cork Oak."
„ „ *Fontane'sii* (Desfontaine's). See Q. PSEUDO-SUBER.
„ *pu'mila* (dwarf). 1–2. May. N. Carolina to Florida. 1724. "Running Oak."
„ *pyramida'lis* (pyramidal). See Q. PEDUNCULATA FASTIGIATA.
„ *pyrena'ica* (Pyrenean). See Q. TOZA.
„ *Quexi'go* (Quexigo). See Q. LUSITANICA.
„ *ravenscrofti'na* (Ravenscroftian). S. Amer. 1866.
„ *reticula'ta* (netted). 10. Mexico; Arizona, &c. 1840.
„ *Ro'bur* (strength). See Q. PEDUNCULATA.
„ *rotundifo'lia* (round-leaved). See Q. ILEX ROTUNDIFOLIA.
„ *ru'bra* (red). 40. May. N. Amer. 1739. "Red Oak."
„ „ *au'rea* (golden). Leaves yellow.
„ „ *bullo'sa* (blistered). Leaves blistered, with yellow ribs. 1905.
„ „ *longifo'lia* (long-leaved). Leaves long.

Q. ru'bra pe'ndula (drooping). "Weeping Red Oak."
„ *salici'na* (willow-like). 30–40. Japan. 1860. Evergreen.
„ *sessilifo'ra* (stalkless-flowered). 60. May. Europe (Britain). W. Asia.
„ „ *austra'lis* (southern). April. Portugal. 1835.
„ „ *falkenberge'nsis* (Falkenberg). Hanover. 1837.
„ „ *lacinia'ta* (cut-leaved). Leaves deeply cut.
„ „ *macroca'rpa* (large-fruited). 60. May. Britain.
„ „ *mespilifo'lia* (Medlar-leaved). Leaves narrow and long.
„ „ *pe'ndula* (drooping). A weeping variety. 1887.
„ „ *pube'scens* (downy). 40. May. Britain.
„ „ *rubicu'nda* (red). Leaves purple-red.
„ *sempervi'rens* (evergreen) of Miller. See Q. ILEX.
„ *sempervi'rens* (evergreen) of Walter. See Q. VIRGINIANA.
„ *seti'fera* (bristle-bearing). Japan. 1874. Evergreen.
„ *Ski'nneri* (Mr. Skinner's). 60. Mexico. 1843.
„ *stella'ta* (starry). 50. United States. 1819. "Post Oak."
„ *stria'ta* (lined). Leaves yellow, with green veins. Japan. 1870.
„ *Su'ber* (cork). 20. May. Spain. 1581. "Cork Oak."
„ „ *angustifo'lia* (narrow-leaved). 30. June.
„ „ *denta'ta* (toothed-*leaved*). 50. June.
„ „ *latifo'lia* (broad-leaved). 40. June.
„ *texa'na* (Texan). United States. 1894.
„ *thala'ssica* (Thalassian). Japan. 1850. Evergreen.
„ *tincto'ria* (dyer's). See Q. VELUTINA.
„ „ *angulo'sa* (angular-*lobed*). 70. May. N. Amer.
„ „ *sinuo'sa* (wavy-edged-*leaved*). 70. May. N. Amer.
„ *To'za* (Toza). 5–15. May. South-western Europe. 1824.
„ „ *splе'ndens* (shining).
„ *Turne'ri* (Turner's). Garden origin. (*Q. Ilex*×*pedunculata* or *Cerris* (?).) 1812.
„ *undula'ta* (wavy). Western N. Amer. "Scrub Oak."
„ *Unge'ri* (Unger's). See Q. ÆGILOPS UNGERI.
„ *varia'bilis* (variable). Japan.
„ *veluti'na* (velvety). 70. May. N. Amer. 1800. "Yellow Bark Oak."
„ „ *angulo'sa* (angular). 70. May. N. Amer.
„ „ *sinuo'sa* (wavy). 70. May. N. Amer.
„ *vibraya'na* (Vibrayan). Japan.
„ *vi'rens* (green). See Q. VIRGINIANA.
„ *virginia'na* (Virginian). 40. May. Southern United States. 1739. "Live Oak."
„ „ *angustifo'lia* (narrow-leaved).
„ „ *rubrifo'lia* (red-leaved).
„ *Wislize'ni* (Wislizen's). California.

QUESNE'LIA. (Commemorative of *M. Quesnel*, a French Consul at Guiana. Nat. ord. Bromeliads [Bromeliaceæ]. Allied to Billbergia.)

Tufted evergreen stove herbs. Increased by seeds and suckers. Fibrous loam, lumpy peat, some charcoal, and sand.

Q. cayenne'nsis (Cayenne). 4–6. Blue-violet; bracts red. S. Amer. 1882.
„ *columbia'na* (Colombian). 1. Violet. Spring. Colombia. 1882.
„ *Ende'ri* (Ender's). 1½–2. Violet. Brazil. 1888.
„ *pri'nceps* (chief). See Q. RUFA.
„ *ro'seo-margina'ta* (rosy-edged). See Q. RUFA.
„ *ru'fa* (reddish). 1½. Blue; bracts rose. January. Brazil. 1880.
„ *selloa'na* (Selloan). 1. Violet. Brazil.
„ *Ski'nneri* (Skinner's). See Q. RUFA.
„ *strobilispi'ca* (cone-spiked). 1½–2. Violet. Brazil. 1885.
„ *Va'n Hou'ttei* (Van Houtte's). 2. White, with dark blue tips; bracts white, tipped rose. Brazil. 1878.
„ *wittmackia'na* (Wittmackian). 3–4½. Dark blue; calyx red. Brazil. 1888.

QUICKSET, the same as Quick, Thorn, Hawthorn, or Whitethorn, *Cratæ'gus Oxyaca'ntha*. See HEDGE.

QUILLA'JA. (From *quillai*, the Chilian name. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*. Allied to Kageneckia.)

Hardy evergreen shrub, the bark of which is used instead of soap. Cuttings of ripened shoots in sandy loam, under a hand-light, and very likely by layers; sandy, deep loam, and a sheltered place.

Q. Sapona'ria (soap). White. April. Chili. 1832. "Soap Bush."

QUINA, QUINQUINA, or **QUINO.** *Cincho'na.*

QUINCE. *Cydo'nia vulga'ris.*

Varieties.—Common, Apple-shaped, Pear-shaped, and Portugal. The last is the best, and very distinct from the others. *C. sine'nsis*, the Chinese Quince, has been fruited in this country, but it requires a wall. The fruit is very different from that of either the Common or Portugal Quinces; it is cylindrical, about 6 inches in length, and exceedingly gritty.

Culture.—The trees may be raised from seed sown in autumn, but there is no certainty of having the same, or any good fruit from the seedlings. The several varieties may be propagated by cuttings and layers; also by suckers from such trees as grow upon their own roots, and by grafting and budding upon their own or pear stocks.

Cuttings, layers, and suckers may be planted in autumn, winter, or early spring. Choose young wood for the cuttings and layers. They will be rooted by next autumn; then transplanted into nursery rows 2 feet asunder; plant the suckers also at the same distance, and train the whole for the purposes intended; if for standards with a stem, to any desired height, from 3 to 6 feet; then encourage them to branch out at top, to form a head; and those designed as dwarfs must be headed near the ground, and trained accordingly, for espaliers or dwarf standards.

When they have formed tolerable heads, plant them out finally. Standard quinces, designed as fruit-trees, may be stationed in the garden or orchard, and some by the sides of any water in bye places, suffering the whole to take their own natural growth; and as espaliers, they may be arranged with other moderate-growing trees, about 15 feet apart. For other particulars of culture, see PEAR.

QUINCE, BENGAL. See ÆGLE MARMELOS.

QUINCUNX is the form resulting from planting in rows, with one plant opposite the centre of each vacancy between two plants in the row on each side of it. In other words, the plants in the second row are planted alternately with those in the first.

QUININE. An extract from the bark of several species of Cinchona.

QUINSY-BERRY. The fruit of the Black Currant, *Ri'bes ni'grum*.

QUISQUA'LIS. (From *quis*, who, and *qualis*, what kind; when first named it was doubtful to which class and order to refer it. Nat. ord. *Myrobalans* [Combretaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Combretum.)

Stove climber. Cuttings of the young shoots when several inches in length, after the plant has been stumped in after-flowering, taking the cuttings off with a heel, and inserting them in sand, under a bell-glass, and in bottom-heat; peat and loam, but most of the latter. Winter temp., 43° to 50°; summer, 60° to 88°.

Q. gla'bra (smooth). See Q. INDICA.
„ *i'ndica* (Indian). 20. Orange, red. June. Trop. Asia. 1815.
„ *pube'scens* (downy). See Q. INDICA.
„ *sine'nsis* (Chinese). See Q. INDICA.
„ *villo'sa* (shaggy). See Q. INDICA.

QUIVI'SIA. (*Bois de Quivi*, of the Isle of France. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Melia.)

Stove evergreen tree. Cuttings of ripened shoots in sand, under a glass, and in a brisk bottom-heat; sandy loam and fibrous peat. Winter temp., 48° to 55°; summer, 60° to 85°.

Q. heterophy'lla (various-leaved). 16. White. Mascarene Islands. 1822.

R

RACEME, a cluster. This is formed of numerous, rather distant flowers, each on its own stalk, but growing out of one central stalk, as in a bunch of currants.

RADISH. *Ra'phanus sati'vus.*

Spring Varieties.—Long rooted:—Long White; called also the White Transparent, White Italian, and Naples Radish. White Russian. Twisted Radish of Mons. Semi-long Scarlet. Rose-coloured Semi-long. Scarlet, or Salmon, or Scarlet-transparent Radish. Purple, formerly called exclusively the Short-topped. Red-necked White, and others.

Turnip-rooted.—White Turnip. Early White Turnip. Pink, Rose-coloured, Scarlet and Crimson Turnip. Purple Turnip. Yellow Turnip. New Yellow Short-topped.

Autumn and Winter Varieties.—These are all of the turnip-rooted kind, and are in the order they follow in coming into use: Yellow Turnip. Round Brown. White Spanish. Oblong Brown. Black Spanish. Large Purple. Winter or Purple Spanish.

The *soil*, a light loam, and moderately fertile, should be dug a full spade deep, and well pulverised. Manures should not be applied at the time of sowing. The situation should always be open, but for early and late crops warm and sheltered.

Sowing.—For the earliest productions, during December, January, and February, in a hotbed; and in the open ground once a month during winter, and every fortnight during the other seasons of the year.

In the open ground the seed is generally sown broadcast, and well raked in, but in drills is much the most preferable mode. In either case it must be inserted thin, and buried a quarter of an inch deep. Thick sowing causes the tops to be large, and the roots tough and thin.

If broadcast, the beds should be laid out 4 or 5 feet wide, divided by alleys a foot in width, the earth from which may be thrown out to raise the beds. If drills are employed for the long-rooted, they are required to be 3 inches asunder, for the turnip-rooted 4 or 5, and for the Spanish, &c., 6 or 8.

When the seedlings are well up, and advanced to five or six leaves, they are ready for thinning; the spindle-rooted to 3 inches apart, the turnip-rooted to 4, and the larger varieties to 6. The spaces, however, require to be rather increased in moist, warm weather. In dry weather they ought to be watered regularly every night. The early and late crops that have to withstand the attacks of frost, &c., should be kept constantly covered with dry straw or fern, to the depth of about 2 inches, or with matting, supported by hooping until the plants make their appearance, when the covering must be removed every mild day, but renewed towards evening, and constantly during frosty or tempestuous weather.

The bed should have a good watering the morning before that on which they are taken up, but none afterwards until subsequent to the drawing.

To draw for Salads whilst with their seed-leaves, sowings must be made once a week. The management is precisely that required for rape, mustard, &c.

To obtain Seed, leave in April, or early May, some of the most perfect plants of a main crop. When in full vigour, they must be taken up with as little injury as possible to the roots and leaves, and planted in rows, 3 feet asunder each way, being inserted by the dibble completely down to the leaves. Water must be applied until they have taken root, and occasionally throughout their growth, especially when in flower. If practicable, it is best to leave some plants where raised.

To obtain seeds of the Black Spanish, some seeds must be sown in March, or some of the winter-standing crop left or transplanted during that month. The pods must be cut as soon as they become of a brown hue, and well dried.

Two varieties must never be raised near each other, and seed of the previous year's raising should always be employed.

The seeds of the different varieties are easily distinguished by an experienced seedsman. Those of the long white radish are small, flat, and pale; of the scarlet and purple long-rooted, large; and of the first very light-coloured, compared with those of the latter; of the white turnip, small, round, and brown; scarlet turnip, rather larger, and somewhat darker; purple turnip, larger and brown, being similar to the long-rooted purple, except in size.

Forcing.—A moderate hotbed is required for this crop, of a length according with that of the frame to be employed; the earth about 8 inches deep, on the surface of which the seed is to be sown as soon as the violent heat is abated, and an additional fourth of an inch sifted over it.

The seedlings are in general up in less than a week, and in six they will be ready to draw. Throughout their growth air must be admitted as freely as is allowable. The glasses, however, must be closed on the approach of evening, and mats or other covering put on in proportion to the severity of the season. When the earth appears at all dry, a light watering must be given at noon.

The plants must not stand nearer than 2 inches to each other. The temperature required is from 50° to 70°; and it must be kept to this heat by moderate linings as required.

If there be a deficiency of frames, hoops and mats may be employed, a frame of boards being formed round the bed, light and air being admitted as freely and as often as possible. If seed is sown within a frame without any bottom-heat, the plants will be two or three weeks forwarder than if sown in the open ground.

RADISH FLY. *Anthomy'ia radi'cum.*

RA'FNIA. (Named after *C. Rafn*, a Danish botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Hovea.)

Greenhouse, yellow-flowered evergreens, from South Africa, except where otherwise mentioned. Seeds in a hotbed, in spring; cuttings of firm side-shoots at the beginning of summer, in sand, under a bell-glass; sandy peat and fibrous loam, kept rough by pieces of charcoal and broken pots, and drainage well attended to. Winter temp., 40° to 48°.

R. amplexicau'lis (stem-clasping). 3–4. July. 1816.
„ *angula'ta* (angular-*branched*). 2. May. 1816.
„ *corda'ta* (heart-*leaved*). 2. May. 1821.
„ *cuneifo'lia* (wedge-leaved). 2. Yellow, purple. June. 1816.
„ *elli'ptica* (oval-*leaved*). 2. June. 1819.
„ *filifo'lia* (thread-leaved). See R. ANGULATA.
„ *la'ncea* (spear-head-*leaved*). 2. June. 1823.
„ *oppo'sita* (opposite-*leaved*). 2. June. 1824.
„ *perfolia'ta* (stem-pierced). 3–4. June, July. 1812.
„ *triflo'ra* (three-flowered). 3. June. 1784.

RAGGED ROBIN. *Ly'chnis Flo's-cu'culi.*

RAGS. See VEGETABLE MANURES.

RAGWORT. *Otho'nna* and *Sene'cio.*

RAILING is of various forms, but all, if made of wood, are soon decayed if slight, and are clumsy and inelegant if strong. Iron railing is at once light, neat, and enduring, and may be erected for about 2*s*. per yard and upwards.

RAILLIA'RDIA. (Commemorative of *A. M. L. Railliard*. Nat. ord. Compositæ.)

Greenhouse evergreen shrub. Cuttings in sand under a bell-glass. Fibrous loam, leaf-mould, and sand.

R. ciliola'ta (finely-eye-lashed). 2. Yellow. July. Sandwich Islands. 1865.

RAIN BERRY. *Rha'mnus catha'rticus.*

RAIN TREE. *Pithecolo'bium Sa'man.*

RAINBOW FLOWER. *I'ris.*

RAISINS. Sun-dried grapes.

RAISIN-TREE. *Ri'bes ru'brum.*

RAISIN-TREE, JAPANESE. *Hove'nia du'lcis.*

RAJA'NIA. (Commemorative of the celebrated English naturalist, *John Ray*, the founder of the natural system of botany. Nat. ord. Dioscoreaceæ. Allied to Dioscorea.)

A stove twiner very similar to a Yam or Dioscorea. Seeds, offsets, or divisions of the tubers. Loam, leaf-mould, and sand.

R. brasilie'nsis (Brazilian). 6–8. Greenish. Brazi 1827.
„ *quina'ta* (five-leafleted). See AKEBIA QUINATA.

RAKE. This implement is now much less in use than formerly, when broadcast sowing was prevalent. Now the broad hoe is quite as efficient in covering drill-sown seed. The head of the rake is best made of wood, and of this ash is most desirable. If the head be of iron, the teeth are continually becoming loose. Rakes, with heads about 6 inches long, are required for dressing flower-

borders, but for open ground-work the length may be 15 inches. The hoe and the rake are sometimes attached to one handle; but it is a form liable to constant entanglement in the flower-garden, for which it is designed.

RAMO'NDIA. (Named after *L. Ramond*, a French botanist. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Streptocarpus.)

Hardy herbaceous perennials. Seeds and divisions in spring; sandy loam and a little peat; a sheltered place, or kept in a pit, in winter, as an alpine.

P. Heldrei'chii (Heldreich's). ½. Deep violet. Summer. Olympus, Thessaly. 1889.
„ *permi'xta* (much-mixed). ½. Servia.
„ *pyrena'ica* (Pyrenean). ½. Purple. May. Pyrenees. 1731. "Rosette Mullein."
„ „ *a'lba* (white). ½. White. 1886.
„ „ *leucope'tala* (white-petaled). ½. Pale lilac, shaded white. June, July. 1906.
„ „ *peregri'na* (strange). ½. Deep purple. June, July. 1906.
„ „ *quercifo'lia* (oak-leaved). ½. Violet. Leaves lobed. June, July. 1906.
„ *se'rbica* (Servian). ½. Mauve to violet. Servia.
„ „ *Natha'liæ* (Queen Nathalia's). ½. Rich violet; anthers orange. Carpathians.

RAMOON-TREE. *Tro'phis.*

RAMPION. *Phyteu'ma* and *Cy'phia Phyteu'ma.*

RAMPION. *Campa'nula Rapu'nculus.*

The *soil* ought to be moderately moist; but it must be light. A shady, rich border is most favourable.

Sow during March, April, and May, in drills 6 inches apart; the plants from sowings in the first two months soon run up to seed. The plants are to remain where sown; though, in case of any deficiency, those which are taken away in thinning the crops may be transplanted successfully, if removed to a border similar to the seed-bed, and inserted with the roots perpendicular, and without pressing the mould too close about them. The best time for the removal is of an evening.

They are fit for thinning when about 2 inches in height, and they must be set at a distance of 6 inches apart. The plants of the sowings during the two first-mentioned months will be fit for use at the close of August, or early in September, and continue through the autumn. Those of the last one will continue good throughout the winter, and until the following April. The soil throughout their growth must be kept moist by giving frequent waterings.

The root, for which it is cultivated, either to be sliced together with its leaves in salads, or eaten as the radish, as well as to be boiled like asparagus, is most palatable when drawn young, and eaten fresh from the ground.

To obtain Seed, leave a few of the winter-standing plants. These flower in July and August, and ripen abundance of seed in early autumn. Gather it before it begins to scatter, and dry on a cloth before thrashing.

RA'NDIA. (Named after *J. Rand*, a London botanist. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Gardenia.)

Stove evergreen shrubs, and white-flowered, except where otherwise mentioned. Cuttings of the young shoots in spring and summer, in sand, under a bell-glass, in a hotbed. Sandy, fibrous loam and fibrous peat, with a few nodules of charcoal. Temperature when at rest in winter, 45° to 50°; when growing in spring or summer, 60° to 80°.

R. aculea'ta (prickly). 7. July. W. Ind. 1733.
„ *arma'ta* (armed). See BASANACANTHA ARMATA.
„ *bowiea'na* (Bowie's). See R. MACRANTHA.
„ *charta'cea* (papery). Australia.
„ *dumeto'rum* (thickets). 4. July. Tropics, Old World. 1825.
„ *edu'lis* (eatable). 20. Cochin-China. 1823.
„ *fascicula'ta* (fascicled). 4. July. India. 1824.
„ *floribu'nda* (bundle-flowered). See R. DUMETORUM.
„ *ho'rrida* (horrid). 8. May. Cochin-China. 1825.
„ *latifo'lia* (broad-leaved). See R. ACULEATA.
„ *longiflo'ra* (long-flowered). 4. August. India. 1818.
„ *macra'ntha* (large-flowered). 5. Cream-coloured. August. Sierra Leone. 1596.
„ *macula'ta* (blotched). April. Trop. Africa. 1843.
„ *malaba'rica* (Malabar). India.
R. mallei'fera (hammer-bearing). 6. July. Trop. Africa. 1843.
„ *Mussæ'nda* (Mussænda-like). S. Amer.
„ *obova'ta* (reversed-egg-*leaved*). 6. May. New Grenada. 1818.
„ *octo'mera* (eight-parted). 4–6. July. Trop. Africa.
„ *oxype'tala* (sharp-petaled). Yellowish. May. Himalaya. 1843.
„ *parviflo'ra* (small-flowered). 4. August. E. Ind. 1818.
„ *pube'scens* (downy). 5. July. Peru. 1820.
„ *rotundifo'lia* (round-leaved). 6. July. Peru. 1820.
„ *sine'nsis* (Chinese). 5. July. China. 1818.
„ *stanleya'na* (Stanleyan). See R. MACULATA.
„ *uligino'sa* (marsh). India.

RANTRY. The Mountain Ash. (*Py'rus Aucupa'ria.*)

RANU'NCULUS. Crowfoot. (From *rana*, a frog; some of the species inhabiting marshy places. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

All yellow-flowered, except where otherwise specified. Annuals, seeds in common soil, in March and April, though few are worth the trouble, unless in a corner devoted to small native and alpine plants. Perennials, by division of the plant in spring. Aquatics, mostly natives, by division, and giving them any soil in shallow ponds or ditches; tuberous-rooted, by division of the roots in spring. *Asia'ticus*, the florists' Ranunculus, and its many varieties, may be planted in stiff, rich loam, either in October or March; if the former, the beds will require to be protected a little from heavy rains and from sharp frosts. See treatment as a florist's flower.

HARDY ANNUALS.

R. chi'us (Scio). ½. June. Greek Archipelago. 1827.
„ *hirsu'tus* (hairy). See R. SARDOUS.
„ *lomatoca'rpus* (fringed-fruited). 1. June. Orient. 1817.
„ *murica'tus* (warted). ½. July. Europe, &c.
„ *nodiflo'rus* (node-flowering). Europe.
„ *Nutta'llii* (Nuttall's). North-western Amer.
„ *ophioglossifo'lius* (Ophioglossum-leaved). ½. June. Europe (Jersey). 1826.
„ *parviflo'rus* (small-flowered). ½. June, July. Europe (England).
„ *philono'tis* (moisture-loving). See R. SARDOUS.
„ *sardo'us* (Sardinian). ½. July. Europe, &c. (England). 1800.
„ *sessiliflo'rus* (stalkless-flowered). ½. June. Australia.
„ *tri'lobus* (three-lobed). ½. June. Greece. 1818.
„ *tubercula'tus* (pimpled). See R. LOMATOCARPUS.
„ *uligino'sus* (marsh). See R. OPHIOGLOSSIFOLIUS.
„ *ventrico'sus* (swollen). See R. MURICATUS.

HARDY AQUATICS.

R. aqua'tilis (water). White. June. Temperate regions (Britain).
„ *obtusifo'lius* (blunt-leaved). 1. White. June. Spain.
„ *panto'thrix* (all-hairy). See R. TRICHOPHYLLUS.
„ „ *fluvia'tilis* (*long-leaved*. River). See R. AQUATILIS.
„ *polyphy'llus* (many-leaved). ½. April. Hungary. 1819. Annual.
„ *trichophy'llus* (hair-leaved). White. June. Europe (Britain).
„ *triparti'tus* (three-parted). White. June. Europe (England).

GREENHOUSE HERBACEOUS.

R. cortusæfo'lius (Cortusa-leaved). 1½–2. May. Canary Islands. 1826. Tuberous.
„ *geranioi'des* (Geranium-like). May. Colombia. 1836.
„ *lappa'ceus* (burdock-like). 1. June. Australia. 1822.
„ *Lya'llii* (Lyall's). 2–3. Pure white. Summer. New Zealand. 1879. "New Zealand Water Lily."
„ *plebei'us* (common). 1. June. Australia. 1820.

HARDY EVERGREENS.

R. filifo'rmis (thread-formed). See R. FLAMMULA.
„ *Fla'mmula* (Flammula). 1. June. Northern temperate regions (Britain).
„ *lappo'nicus* (Lapland). ½. May. Lapland. 1827.

HARDY TUBEROUS-ROOTED.

R. angula'tus (angled-*stemmed*). See R. SARDOUS.
„ *asia'ticus* (Asiatic). ½. Variegated. May. Levant. 1596. "Garden or Asiatic Ranunculus."
„ „ *sangui'neus* (blood-coloured). ½. Scarlet. May. Syria. "Turkey Ranunculus."
„ „ *tenuifo'lius* (fine-leaved). ½. White. May. Greece.
„ „ *vulga'ris* (common). Of any colour, except blue. "Persian Ranunculus."
„ *bractea'tus* (*large*-bracted). See R. BULBOSUS, and varieties.
„ *brevifo'lius* (short-leaved). ½. June. Naples. 1824.
„ *bulbo'sus* (bulbous). 1. May to July. Europe (Britain). "St. Anthony's Turnip."
„ „ *flo're ple'no* (double-flowered). 1. May to July.
„ „ *ochroleu'cus* (yellow-white). 1. Pale yellow. June to August. England.
„ *bulla'tus flo're-ple'no* (blistered-*leaved*-double-flowered). 1. May. S. Europe. 1640.
„ „ *grandiflo'rus* (large-flowered). 1. May. S. Europe. 1640.
„ *chærophy'llos* (chervil-leaved). 1. May. Mediterranean region.
„ *cicuta'rius* (Cicuta-like). 1. May. Caspian region. 1818.
„ *cre'ticus* (Cretan). 1. May. Crete. 1658.
„ „ *macrophy'llus* (large-leaved). See R. PALUSTRIS.
„ *Fica'ria* (Ficaria). ½. April. Europe (Britain). "Pilewort."
„ „ *ma'jor* (larger). ½. Flowers much larger.
„ „ *pa'llidus* (pale). ½. Pale yellow. May.
„ „ *ple'nus* (double). ½. Yellow. May. Britain.
„ *flabella'tus* (fan-shaped). See R. CHÆROPHYLLOS.
„ *fumarioefo'lius* (fumitory-leaved). See R. MILLEFOLIATUS.
„ *garga'nicus* (Garganian). See R. MILLEFOLIATUS.
„ *gra'cilis* (slender). ½. May. Island of Cos. 1818.
„ *grandifo'lius* (large-leaved). See R. CORTUSÆFOLIUS.
„ *grega'rius* (flocking). See R. CHÆROPHYLLOS.
„ *hy'bridus* (hybrid). ½. May. Austria. 1820.
„ *illy'ricus* (Illyrian). 1½. May. S. Europe. 1596.
„ *macrophy'llus* (large-leaved). See R. PALUSTRIS.
„ *millefolia'tus* (thousand-leaved). May. Mediterranean region. 1820.
„ „ *grandiflo'rus* (large-flowered). ½. April. Naples. 1833.
„ *monspeli'acus* (Montpelier). 1. May. Mediterranean region.
„ „ *cunea'tus* (wedge-*leaved*). 1. May. S. Europe.
„ „ *rotundifo'lius* (round-leaved). 1. May. S. Europe.
„ *oxyspe'rmus* (sharp-seeded). 1. Pale yellow. May. Caucasus. 1822.
„ *palu'stris* (marsh). 2. May. Mediterranean region. 1658.
„ *peda'tus* (doubly-lobed). 1. May. Hungary. 1805.
„ *scuta'tus* (shield-*leaved*). See R. THORA.
„ *Tho'ra* (Thora). ½. May. S. Europe. 1710. "Mountain Wolfsbane."
„ *tubero'sus* (tuberous). See R. NEMOROSUS.

HARDY HERBACEOUS.

R. aconitifo'lius (aconite-leaved). 1. White. May. Alps, Europe. 1596. "Fair Maids of France."
„ „ *crassicau'lis* (thick-stemmed). 1. White. May. Europe.
„ „ *flo're ple'no* (double-flowered). 1. White. Alps. 1596. "White Bachelor's Buttons."
„ „ *hu'milis* (lowly). ½. White. May. Europe.
„ *a'cris* (bitter). 1–2. May to July. Europe, &c. (Britain). "Upright Crowfoot."
„ „ *ple'nus* (acrid-double-flowered). 2. June. Britain. "Yellow Bachelor's Buttons."
„ „ *Steve'ni* (Steven's). 1½. June. Europe (Britain). 1819.
„ *affi'nis* (related). ½. May. Arctic regions. 1829.
„ „ *va'lidus* (strong). ½. May.
„ *alpe'stris* (alpine). ½. White. July. Europe.
„ „ *Traunfellne'ri* (Traunfellner's).
„ *amplexicau'lis* (stem-clasping). 1. White. May. Pyrenees. 1633.
„ *anemonoi'des* (Anemone-like) of Sievers. See CALLIANTHEMUM RUTÆFOLIUM.
„ *anemonoi'des* (Anemone-like) of Zahlbr. See CALLIANTHEMUM ANEMONOIDES.
R. angustifo'lius (narrow-leaved). 1. White. May. Pyrenees. 1822.
„ *apiifo'lius* (Apium-leaved). 2. White, red. June. Bonaria. 1816.
„ *a'rcticus* (northern). See R. AFFINIS.
„ *auri'comus* (golden-haired). 1½. May. North temperate regions (Britain).
„ *balde'nsis* (Mount Baldo). ½–1. May. Europe.
„ *bi'lobus* (two-lobed). S. Europe.
„ *bonarie'nsis* (Buenos Ayres). ½. June. Argentina. 1817.
„ *brevicau'lis* (short-stalked). See R. OVALIS.
„ *breynia'nus* (Breynius's). See R. NEMOROSUS.
„ *Bro'teri* (Broter's). Spain.
„ *bru'tius* (Brutian). 1½. May. Italy. 1823.
„ *Bucha'nani* (Buchanan's). ½–1. Pure white. New Zealand. 1890.
„ *bupleuroi'des* (hare's-ear-*leaved*). 1. May. Portugal. 1826.
„ *cardiophy'llus* (heart-leaved). See R. AFFINIS.
„ *carpa'ticus* (Carpathian). 1. Golden-yellow. Carpathians.
„ *cassu'bicus* (Cassubian). 2. June. Europe. 1794.
„ *cauca'sicus* (Caucasian). 1½. June. Caucasus. 1820.
„ *crassicau'lis* (thick-stemmed). 1. June. Europe. 1827.
„ *crena'tus* (scolloped). ½. White. June. Hungary. 1818.
„ *Cymbala'ria* (boat-shaped). ½. June. North temperate regions. 1824.
„ *disse'ctus* (cut-*leaved*). ½. June. Caucasus. 1818.
„ *Eny'sii* (Enys's). ½–1½. Yellow. New Zealand. 1910.
„ *Eschscho'ltzii* (Eschscholtz's). See R. NIVALIS.
„ *fascicula'ris* (bundled). 1. June. N. Amer.
„ *flabellifo'lius* (fan-leaved). See R. CASSUBICUS.
„ *fri'gidus* (cold) of Schrank. See R. LACERUS.
„ *glabe'rrimus* (smoothest). May. N. Amer. 1827.
„ *glacia'lis* (icy). ½. White. July. Northern and Arctic regions. 1775.
„ „ *aconitoi'des* (Aconitum-leaved). ½. White. July. Switzerland. 1819.
„ *Goua'ni* (Gouan's). 1. June. Pyrenees. 1818.
„ *Goua'ni* (Gouan's) of Smith. See R. CARPATICUS.
„ *grami'neus* (grassy). 1. May. Europe, &c.
„ „ *flo're-ple'no* (double-flowering). 1. May.
„ „ *phæmicifo'lius* (purple-leaved). 1. May. Europe.
„ *grandiflo'rus* (large-flowered). ½. May. Cappadocia.
„ *heldreichia'nus* (Heldreichian). 1. Pale chrome-yellow. Greece. 1882.
„ *hespero'xys* (western-acute). N. Amer.
„ *hi'rtus* (hairy). See R. PLEBEIUS.
„ *hi'spidus* (bristly). See R. PENNSYLVANICUS.
„ *hyperbo'reus* (northern). ½. June. N. Europe. 1820.
„ *insi'gnis* (remarkable). 1–3. Golden-yellow. New Zealand. 1910.
„ *isopyroi'des* (Isopyrum-like). See CALLIANTHEMUM RUTÆFOLIUM.
„ *la'cerus* (torn). ½. White. May. S. France. 1821.
„ *lanugino'sus* (woolly-*leaved*). 1. June. S. Europe. 1683.
„ *Li'ngua* (tongue-*leaved*). 2. July. Europe (Britain); Siberia.
„ *Macau'leyi* (Macauley's). N. Amer.
„ *monta'nus* (mountain). ½. June. Europe. 1775.
„ „ *geranifo'lius* (Geranium leaved).
„ *multi'fidus* (much-cut). July. N. Amer. 1827.
„ *napellifo'lius* (Napellus-leaved). 1. July. Greece. 1822.
„ *nemoro'sus* (grove). 1. June. S. Europe. 1810.
„ „ *pauciflo'rus* (few-flowered). See R. PARVIFLORUS.
„ *niva'lis* (snowy). ½. July. Northern and Arctic regions. 1775.
„ *nyssa'nus* (Nyssan). 1. Citron yellow. 1899.
„ *ova'lis* (oval). May. N. Amer. 1827.
„ *parnassifo'lius* (Parnassia-leaved). ½. White. June. S. Europe. 1769.
„ *pauciflo'rus* (few-flowered). See R. PARVIFLORUS.
„ *pedati'fidus* (doubly-lobe-cut). 1. April. Siberia. 1827.
„ *pennsylva'nicus* (Pennsylvanian). 1½. June. N. Amer. 1810.
„ *pi'nguis* (fat). Auckland Isle.
„ *plantagi'neus* (plantain-leaved). See R. PYRENÆUS.
„ *platanifo'lius* (plane-tree-leaved). See R. ACONITIFOLIUS.
„ *Pu'rshii* (Pursh's). See R. MULTIFIDUS.

R. pygmæ'us (pygmy). ½. April. Northern and Arctic regions. 1810.
„ *pyrenæ'us* (Pyrenean). 1. White. May. Europe. 1807.
„ „ *bupleurifo'lius* (Bupleurum-leaved). ½. White. June. Pyrenees. 1818.
„ *recurva'tus* (curled-back-*seeded*). June. N. Amer. 1827.
„ *re'pens* (creeping). ½–1. May to September. Northern temperate regions (Britain). "Creeping Crowfoot."
„ „ *flo're-ple'no* (creeping-double-flowered). ½. July.
„ *rhomboi'deus* (diamond-*leaved*). See R. OVALIS.
„ *ru'fulus* (reddish-*haired*). See R. CHÆROPHYLLOS.
„ *rutæfo'lius* (rue-leaved). ½. White. June. Austria. 1759.
„ *Sabi'ni* (Sabine's). See R. PYGMÆUS.
„ *salsugino'sus* (salt). 1. April. Siberia. 1822.
„ *Scho'ttii* (Schott's). Austria.
„ *Seguie'ri* (Seguier's). ½. White. June. Europe. 1819.
„ *Sibtho'rpii* (Sibthorp's). Greece.
„ *Sommie'ri* (Sommier's). 1. Bright yellow. Caucasus. 1897.
„ *spica'tus* (spike-*flowered*). 1. Yellow. April. Algiers. 1850.
„ *spruneria'nus* (Sprunerian). Greece.
„ *Steve'nii* (Steven's). See R. ACRIS STEVENI.
„ *tomento'sus* (woolly). See R. REPENS.
„ *uniflo'rus* (one-flowered). Country unknown.
„ *Villa'rsi* (Villars's). 1. June. S. Europe. 1819.
„ *wallichia'nus* (Wallichian). Himalaya.

RANU'NCULUS (*R. asia'ticus*) **AS A FLORIST'S FLOWER.**

Varieties.—These are very numerous and annually increased.

Soil.—This should be of a fine texture, easily broken, and moderately light. It should feel soft to the hand, and have a little—but a little—sand amongst it. The best is generally found near to rivers. Let it be laid on a long heap, not too thick, and turned over once a month for a year. It will then be in good condition for use. Remove the old soil away from the bed you intend for ranunculuses to the depth, if the situation is dry, of 15 inches: if wet, 10 inches will do. Put in a layer of very rotten cow-dung, 2 inches thick; then bring the soil, put in a layer of 4 inches, upon that put a layer of rotten hotbed dung 1 inch thick, and so proceed till the bed is full, and raised 2 or 3 inches above the surface. Let the bed be edged with boards or slates. Hoop it over, to protect it from heavy rain, snows, and hail-stones. Turn it over, mixing the materials together well, only take care not to disturb the layer of cow-dung at the bottom. Let this turning operation be performed two or three times at intervals of three or four weeks between, finishing the last about the end of January, so as to allow the bed to settle by the planting time in February.

Planting.—The best time for doing this is between the 8th and 20th of February. The soil of the bed ought to be neither wet nor dry. To prove its state, take up a handful, gently squeeze it, and let it fall about half a yard; if it is in a right condition, it will fall in pieces. With a rake level the soil; then, with a triangular-shaped and rather small hoe, or with the corner of a common hand-hoe, draw a drill across the bed, 2 inches deep; draw the next 5 inches distant from the first, and so on till the whole bed is finished. Commence this some fine morning, when there is a prospect of the day continuing fine. When the drills are all finished, sprinkle at the bottom of each drill some fine sand; then bring out your ranunculus roots, with a numbered label, made either of lead, with the number stamped upon it, or of wood, with each number written upon it with a black-lead pencil upon a coating of white-lead. Begin then to plant the variety written in your book opposite No. 1; take each root between your finger and thumb, and place it at the bottom of the drill, very gently pressing it down in the sand to about half the length of the claws of each root. Having placed the first to your mind, put the next at 4 inches distance from it, and so proceed till you have planted all the first kind; then thrust in the numbered label, either with the number facing the kind, or with its back to it. Both ways are practised by florists, but we prefer the number to face the variety it belongs to. If our plan is followed the number should be always put in first, the whole of the variety planted, and then the second number put in, and the second kind planted. Follow on in this manner till the bed is filled. As soon as that is completed, cover the roots just over the crowns with some more of the fine sand: this sand prevents the roots from getting too wet, or moulding. Then with a rake carefully level down the soil into the drills. If your bed is not edged with boards or slates (as recommended before), stretch a line on one side of the bed, about 4 inches from the roots, and with the back of the spade pat the soil on the side of the bed gently, to make it firm; then chop down the edge of the bed nearly perpendicularly.

After-culture.—It is essential to the success of this flower that the soil about them should be close and firm, almost approaching to hardness. If the bed has been rightly prepared, and the flower planted according to the instructions given, all will be well. When the tops begin to push through the soil, it will be of the greatest importance to tread the soil down very firm between the rows, and if any symptoms of cracking in the soil appear, the surface should be stirred to prevent it. Protection from sharp late frosts should be given, by covering whenever such weather is likely to take place, and it is equally beneficial to protect from heavy rains. Both are best excluded by hoops extended across the bed to support a covering of tarpaulin or oil-cloth. During April and May, should dry weather prevail, water may be cautiously administered at intervals in an evening, but only just so much as will prevent the soil of the bed from cracking; or a little moss or old, spent tanners' bark, &c., may be neatly placed between the rows, which will retain the moisture in the soil. The over-abundant application of water is a very common error, and one of the greatest evils.

The dying of leaves, in some instances, evidently depends on a want of vigour, or partial rot in the root; and, in some few cases, it would appear to be caused by large earthworms, forming their wide tracks amid the roots of the plants, nearly undermining them; but in the great majority of cases it is produced by injudicious watering.

During the expansion of the flower-buds, and when they are fully blown, an awning should be erected over the bed, as in the case of tulips, that rain and hot sun may be excluded; and gentle watering every second or third evening may be given, which will keep the bed cool and moist, and promote the size of the flower. As much air should be admitted as possible, that the flower-stems be not drawn and weakened.

Raising Seedlings.—Save seed only from varieties distinguished for excellence of form and colour. Sow in February, and place the boxes in a cool greenhouse or frame. Sow in boxes 18 inches by 11 inches, and 4 inches deep, full of loamy earth, and the surface level. Sow the seeds about the eighth of an inch apart; cover them as thinly as possible, and water with a fine rose; but place the boxes under glass, without heat. The plants usually make their appearance in about a month. Give air day and night, except in severe frost; then cover up with straw mats. With such protection, the young plants will endure the severest seasons. Put the boxes in the open ground up to the second week in May, and water daily until the leaves begin to wither; then suffer the boxes to become quite dry; and in the middle of July take them up, and preserve the roots in bags until February, and then plant them as the general stock. In the following June they flower.

Taking up.—The roots, in wet seasons, should be taken up as soon as the leaves turn yellow, as they are apt to sprout; but in dry seasons they may remain until the leaves are brown. Take them up as dry as the season will permit; complete the drying in a warm room, rather than in the sun, and store them in a dry, cool place.

Forcing.—Select tubers which have been kept three or four months, or even a year over the season of planting, these being more easily excited than those which have been only the usual time out of the soil; plant them in pots about the beginning of August; and, by bringing these into the greenhouse at different periods, a bloom is kept up from October to February.

RAPA'TEA. (From *rapum*, a turnip, in allusion to the tuberous rootstock. Nat. ord. Rapateaceæ.)

A perennial stove herb with a short, thick rhizome. Seeds, offsets, or cuttings of the rhizome. Loam, and peat in the edge of a tank.

R. pandanoi'des (Pandanus-like). 1. Yellow, spotted with brown; spathe red. Brazil. 1873.

RAPE, or **COLESEED.** (*Bra'ssica Na'pus.*) Like mustard and other small salading, it may be sown at any period of the year, when in request, being allowed a separate bed. It is cultivated as MUSTARD, which see.

To obtain Seed.—Some plants of a sowing made about the middle of July must be thinned to 18 inches apart: they will survive the winter, and flower in the May and June of the next year. The seed, which is produced in great abundance, ripens in July and August, and must be cut as it does so, and laid upon cloths to dry.

RAPE (*edible-rooted*). This name may be applied to a variety of the rape mentioned by Mr. Dickson, one of the vice-presidents of the Horticultural Society. Its root is white and carrot-shaped, about the size of the middle finger. It is much more delicate in flavour than the turnip, like which root it is cooked, only that it is not peeled, but scraped, its skin being remarkably thin.

Sowing.—For the main crop, sow from the middle of July to the end of August, or even later. These will supply the table until April; and if wanted throughout the year, a little may be sown in the latter end of October, the plants from which will be fit for use during April and May; the last crop to be sown from the middle of January to the middle of February, which will come in at the end of May and during June. On a north border, and if the soil is sandy and moist, it is possible to have them sweet and tender during the whole summer, to effect which sow at the close of March and May.

Cultivation.—Thin and hoe as turnips. In dry weather the beds must be watered regularly.

Soil.—One great advantage attending the cultivation of this vegetable is, that it requires no manure. Any soil that is poor and light, especially if sandy, is suitable to it. In rich, manured soil it grows much larger, but not so sweet and good.

To obtain Seed in February or March, some of the finest roots are transplanted to 2 feet asunder; but it would, perhaps, be a better practice to leave them where grown. The seed must be cut as soon as ripe, and treated as directed for turnips, &c.

RA'PHANUS. Radish. (From *ra*, quickly, and *phainomai*, to appear; rapid germination of the seeds. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Hardy annuals. Seeds; rich, sandy soil; but for standing the winter it should be dry and poor. See RADISH.

R. arcua'tus (curved). See CHORISPORA TENELLA ARCUATA.
„ *cauda'tus* (tailed). See R. SATIVUS.
„ *isatoi'des* (Isatis-like). 1½. Yellow. Garden form. 1886.
„ *La'ndra* (Landra). 3. Yellow. June. Italy. 1820. Biennial.
„ *mari'timus* (maritime). 2. Yellow. August, September. Western Europe (Britain). Biennial.
„ *Raphani'strum* (Raphanistrum). 1–2. White or pale yellow. July, August. Europe (Britain).
„ *sati'vus* (cultivated). 3. White, purple. May. Europe. 1548. "Common Radish."
„ *tene'llus* (slender). See CHORISPORA TENELLA.

RA'PHIA. (Possibly a native name. Nat. ord. Palmaceæ.)

Stove palms. Seeds. Loam, a little peat, and sand.

R. Gæ'rtneri (Gærtner's). 50. Trop. Africa.
„ *gentilia'na* (Gentilian). Leaves prickly. Congo. 1909.
„ *Hoo'keri* (Hooker's). Trop. Africa.
„ *Laure'ntii* (Laurent's). Congo (?). 1905.
„ *peduncula'ta* (long-stalked). 50–60. Madagascar. 1820.
„ *Ru'ffia* (Ruffia). See R. PEDUNCULATA.
„ *tædi'gera* (resin-bearing). See R. VINIFERA.
„ *vini'fera* (wine-bearing). 50. Trop. Africa. 1820.

RAPHIDO'PHORA. See RHAPHIDOPHORA.

RAPHIOLE'PIS. Indian Hawthorn. (From *rhaphis*, a needle, and *lepis*, a scale; formation of the bracts. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*. Allied to Cratægus.)

Half-hardy, white-flowered, evergreen shrubs. Cuttings of half-ripened shoots in sandy loam, in a sheltered place, under a hand-light; sandy loam and peat; a sheltered place against a wall, or protected in very cold places by a cold pit; most of them have stood at least several seasons protected by a wall in the vicinity of London.

R. i'ndica (Indian). White, pink. June. China. 1806.
„ *japo'nica* (Japanese). 2–3. White. July. Japan.
„ *ova'ta* (egg-shaped) of gardens. See R. JAPONICA.
„ *ova'ta* (egg-shaped) of Briot. Japan.
„ *Pheoste'mon* (brown-stamened). See R. INDICA.
„ *ru'bra* (red). See R. INDICA.
„ *salicifo'lia* (willow-leaved). See R. INDICA.

RAPHIONA'CME. (From *rhaphion*, a small needle, and *akme*, a point; in allusion to the slender-pointed scales of the corona. Nat. ord. Asclepiadaceæ.)

A dry stove succulent, with a large, turnip-shaped tuber. Seeds. Loam, with an equal portion of finely broken bricks and sand.

R. u'tilis (useful). ½–¾. Bright purple. Angola. 1908. Yields rubber.

RAPHISTE'MMA. (From *rhaphis*, a needle, and *stemma*, a crown; in allusion to the pointed scales of the corona. Nat. ord. Asclepiadaceæ.)

A stove climber. Cuttings of short side-shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

R. cilia'tum (eye-lashed). See DÆMIA EXTENSA.
„ *pulche'llum* (pretty). White, pink. July. India. 1852.

RASPA'LIA. (Named after *M. Raspail*, a French botanist. Nat. ord. *Bruniads* [Bruniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Brunia.)

Greenhouse evergreens. Cuttings of young, stubby shoots in sand, under a bell-glass, and in a cold frame; sandy, fibrous peat. Winter temp., 40° to 48°.

R. dregea'na (Dregean). 1–2. Yellowish. S. Africa.
„ *globo'sa* (globose). 2. White. July. S. Africa. 1816.
„ *microphy'lla* (small-leaved). 1. White. July. S. Africa. 1804.
„ *passerinoi'des* (Passerina-like). 2. White. July. S. Africa. 1805.
„ *phylicoi'des* (Phylica-like). See R. DREGEANA.

RASPBERRY. *Ru'bus Ida'us.*

Varieties.—The most useful are as follows: (1) Red Antwerp; (2) Yellow Antwerp; (3) Fastolff, or Filby; (4) Double-bearing; (5) Superlative; (6) the Guinea or Yellow Superlative. Of these, Nos. 1 and 2 have been for many years highly esteemed; but (3) has, of late, in a great degree, superseded them, being larger and of at least equal flavour, a great bearer, and possessing that desirable property in the summer Raspberries of producing occasionally fine autumnal fruit, which is superior to that of the double-bearing kinds. No. 4 is a decided autumn Raspberry. No. 5 is a strong grower, and the heaviest cropper, producing large crimson fruits; the Guinea is a seedling from it, of similar vigour, but the large fruits are not quite so sweet as those of Yellow Antwerp. Mr. Rivers, of Sawbridgeworth, has a new variety of No. 4 from America, which is said to be very superior. Another variety is a hybrid between the Raspberry and Blackberry; this Mr. Rivers calls "the Black," and states is good for preserving.

Propagation: by Suckers.—Those who desire to make a new plantation of Raspberries will do well to obtain their suckers from a healthy stock. We have known new plantations made in cases of emergency from a stock which had stood too long in the ground, and of course were lean, if not diseased. This leanness was evidently transmitted to their progeny, and, despite high manuring, a year or two was lost before they could recover. Suckers, then, may be planted any time between October and the middle of February, and they are drawn away from the old plants by hand; a slight pull will soon show which are those disposed to colonise. Deeply-dug ground is requisite, and it should have a liberal amount of half-rotten manure. Strong suckers (drawn with a ball of soil, if possible) may be planted three in a group, at the end of September, 4 feet apart from centre to centre; and the rows, if side by side, 6 feet apart. As soon as the leaf drops, say the begin-

ning of November, we would prune one strong cane to 3 feet, a second to 2 feet, and a third to within a couple or 3 inches of the soil. By these means a nice little crop may be taken the first year, and good shoots reserved for the next.

From Seed.—This is practised chiefly with a view of raising new kinds; and the seed collected from superior berries, when thoroughly ripe, is washed from the pulp and dried, then packed in papers until spring. In the beginning of February it must be sown, and a gentle hotbed would hurry the process much. The seedlings must be pricked out when 3 inches high, and generous treatment must be continued; and towards the middle of May, having been hardened off, they may be planted at once in their final destination. All that is requisite now is careful training, the keeping down suckers and watery spray; and when the shoots are 5 feet long, the top may be pinched to consolidate the wood.

Soil.—When wild, being an inhabitant of woods, a damp soil, somewhat retentive of moisture, is found to suit it best. We have generally known it most successful in a darkish soil of an alluvium character; any of our loams, however, of sound texture, will grow it in perfection, but the soil should be tolerably deep. A hot and loose sand, short of depth, is the least suitable. To meet the increased amount of transpiration from the leaf to which the cultivated plant is liable in sunny situations, extra provision in the way of top-dressing and mulching is highly to be commended.

Culture during the Growing Period.—Soon after the canes begin to shoot in spring, a slight thinning-out is very beneficial; this may take place about the beginning of May. In a few weeks' time a thinning of the suckers may take place, for, in general, they produce a profusion, and such draw on the resources of the plant, and exhaust the soil. About four or five may be left on each stool; if they are very gross, the moderate ones may be left; if weak, the strongest.

If they have not been mulched, it should be done immediately. As soon as the last fruit is gathered, the old bearing shoots may be cut clean away, and the young canes drawn a little closer together. When over 5 feet in height, the tops may be pinched; this, however, should not be done before the end of August.

Culture during the Rest Period.—As soon as the leaves have all fallen, pruning may take place, and our practice is to leave four canes. These we cut at different heights; the tallest about 4 feet; the next about 9 inches lower, and so on with the rest. By these means the young spray is nicely divided, and the plants fruit from bottom to top. The canes are now neatly fastened, and a top-dressing completes the rest period. All useless suckers or canes are drawn away.

Training.—The earliest and finest are obtained from canes planted beneath a south wall, and trained against it in fan-shape. But in the open ground the best mode of training is round a small hoop at top. The worst form is plaiting the canes together; and training in arches, or other compact forms, excluding the light and warmth of the sun, is little better.

Forcing.—Raspberries may be forced, growing either in pots or in the borders of the house. They may be also planted on the outside of a pit, and bearing canes being introduced within, and trained to a trellis, whilst the present year's shoots are left outside.

RASPBERRY MOTH. (*Lampronia rubiella.*) Where this tiny moth happens to be plentiful it is more destructive to the canes than the beetle which feeds on the fruit. The eggs are laid in the flowers in both cases, but the caterpillars of the Lampronia live through the winter months, secreted about the plants, and on the return of warm weather, and when the buds begin to swell, they crawl over the canes, from bud to bud, which they penetrate, devouring the pith and other parts of the interior. For this reason they are termed Raspberry Stem-bud Caterpillars to distinguish them from the beetle. The caterpillars are more or less of a bright red, with a black head, two pairs of black spots near the head, six black feet near the head, and about one-fourth of an inch long. The moth itself is under half an inch in expanse, and the fore-wings are brown, marked with numerous yellow specks and larger spots of the same hue. The injured buds afterwards grow, but as the season advances the leaves fade and the young shoots die, thus disclosing the fact that Raspberry Stem-bud Caterpillars have been at work in them during their early stages, and effecting their destruction.

Two means of prevention and remedy may be adopted. During May and June, as soon as the presence of caterpillars can be detected by the flagging and withering of the shoots, the latter should be broken or cut off with a knife and dropped in a pail of strong soap-suds to prevent the escape of the caterpillars during the process. These shoots must forthwith be burned in a furnace or on a burning heap of prunings or other rubbish, because, if merely thrown down, many of the caterpillars might be full grown, ready to enter the pupa stage, and would thus reach the perfect stage to renew their depredations during the summer. As soon as the crop is gathered, the old canes should be cut clean away, and immediately burned to destroy any young caterpillars, which may be upon them. All other stumps, and even the unnecessary young canes, should also be destroyed in the same way, and many of the caterpillars will be prevented from hibernating, to renew their depredations in spring.

RATTLESNAKE FERN. *Botry'chium virgi'nicum.*

RAUWO'LFIA. (Named after *L. Rauwolf, M.D.*, a botanical traveller. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Carissa.)

Stove evergreen shrubs. Cuttings of the points of shoots, or stubby side-shoots, in sand, under a bell-glass, in the beginning of summer, and in bottom-heat; sandy, fibrous loam, fibrous peat, a little dried leaf-mould, and pieces of charcoal. Winter temp., 50° to 60°; summer, 60° to 88°.

R. cane'scens (hoary). 7. Pink. Jamaica. 1759.
„ „ *tomento'sa* (woolly). 3. White. July. W. Ind. 1823.
„ *densiflo'ra* (dense-flowered). 4–6. White. July. E. Ind. 1824.
„ *ma'jor* (larger). 3–4. White. May. Java. 1850.
„ *ni'tida* (shining). 12. White. August. W. Ind. 1752.
„ *pleiosciа'dia* (many-umbelled). See R. VOMITORIA.
„ *serpenti'na* (serpent-like). 2. White to pink. May. India and Java. 1690.
„ *spino'sa* (thorny). Yellow. June. Peru. 1827.
„ *ternifo'lia* (three-leaved). 3. White. May. W. Ind. 1823.
„ *tomento'sa* (woolly). See R. CANESCENS TOMENTOSA.
„ *vomito'ria* (vomiting). 10–20. White. Trop. Africa. 1902.

RAVENA'LA. (The native name in Madagascar. Nat. ord. Scitaminaceæ.)

Noble stove plants resembling a banana, but having long stalks to the leaves. Seeds and suckers. Fibrous loam, leaf-mould, and sand, but old cow-manure may be used, if strong growth is desired.

R. guiane'nsis (Guianan). 10–15. White. Seeds with red aril. S. Amer. 1848.
„ *madagascarie'nsis* (Madagascar). 10–15. White. Seeds with blue aril. Madagascar. "Traveller's Tree."

RAVENE'A. (Commemorative of *Louis Ravené*, a patron of gardening at Berlin. Nat. ord. Palmaceæ.)

Stove palm, with the habit of a Chamædorea. Seeds. Loam, peat, and sand.

R. Hildebra'ndtii (Hildebrandt's). 10–12. Comoro Islands. 1878.

RAVE'NIA. (Possibly a commemorative name. Nat. ord. Rutaceæ. Allied to Ruta.)

Evergreen stove shrubs. Cuttings of young wood, getting firm, in sand, placed in a close case, with bottom-heat. Fibrous loam, peat, and sand.

R. ro'sea (rosy). 1½–2. Rose-red. July to September. Brazil. 1880.
„ *specta'bilis* (showy). 2. Rich rose. July to September. S. Amer. 1839.

RAVENSA'RA. (Derived from the native names, *raven*, a leaf, and *sara*, savoury; the leaves are scented like the clove. Nat. ord. Lauraceæ. Allied to Cinnamomum.)

Evergreen, stove tree. Cuttings in sand, in a close case, with bottom-heat.

R. aroma'tica (aromatic). 10–30. White. Madagascar. 1823.

REA'NA LUXU'RIANS. See TRIPSACUM DACTYLOIDES.

REAUMU'RIA. (Named after *A. Reaumur*, the French entomologist. Nat. ord. *Tamarisks* [Tamariscaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia*.)

Half-hardy evergreens. Cuttings from young shoots in sand, under a glass; sandy, fibrous loam, fibrous peat, and leaf-mould; dry soil in sheltered places; but generally requires a cold pit in winter.

R. hypericoi'des (St. John's-wort-like). 2. Purple. August. Caucasus; Persia. 1800.

,, *vermicula'ta* (worm-like-*leaved*). 1. Pink. June. Italy; N. Africa. 1828.

RED BAY. *Lau'rus caroline'nsis.*

RED CEDAR. *Juni'perus virginia'na.*

RED GUM-TREE. *Eucaly'ptus resini'fera.*

RED NIGHTSHADE. *Eri'ca halicaca'ba.*

RED SPIDER. See ACARUS.

REEVE'SIA. (Named after *J. Reeves, Esq.*, of Canton. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Helicteres.)

Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass; fibrous loam, and a little sandy peat. Winter temp., 40° to 48°.

R. thyrsoi'dea (thyrse-like-*flowered*). 4. White. January. China. 1826.

REGE'LIA. (Commemorative of *M. Regel* of the Imperial Botanic Gardens, St. Petersburg. Nat. ord. Myrtaceæ. The name Regelia has also been, erroneously, applied to species belonging to two other distinct natural orders.)

Evergreen greenhouse shrub. Cuttings in sand under a bell-glass. Fibrous loam and peat in equal parts, with some sand.

R. cilia'ta (eye-lashed). 3–5. Rosy-red. Australia. 1874.

REHMA'NNIA. (Commemorative of *Joseph Rehmann*, a Russian doctor. Nat. ord. Scrophulariaceæ.)

Hardy and half-hardy or greenhouse perennial herbs. Seeds; cuttings in sand under a bell-glass. Fibrous loam, plenty of leaf-mould, and some sand for pots, and well-drained soil for the hardy species.

R. angula'ta (angled) of gardens. See R. ELATA.

,, *Brisco'ei* (Briscoe's). ½. Cream and pink. (*R. elata* × *Henryi*.) 1910.

,, *chine'nsis* (Chinese). 1–2. Dull purple. April to June. China. 1835.

,, *ela'ta* (tall). 1–4. Purple, with darker spots. Spring and summer. Central China. 1903. Plant twice as large as the true *R. angulata*. Greenhouse.

,, ,, *tri'color* (three-coloured). Bright purple, changing to violet-rose, vermilion. Central China. 1909.

,, *glutino'sa* (clammy). See R. CHINENSIS.

,, *He'nryi* (Dr. Henry's). ½–1½. Sulphur, dotted red; limb white. July. Central China. 1909.

,, *rupe'stris* (rock). 1–1½. White, tinted rose. July. W. China. 1890.

REI'DIA GLAUCE'SCENS. See PHYLLANTHUS PULCHER.

REINE'CKIA. (Commemorative of *M. Reinecke*, Nat. ord. Liliaceæ. Allied to Convallaria.)

A hardy, evergreen, perennial herb. Divisions. Ordinary soil, well drained.

R. ca'rnea (flesh). ½. Flesh. April, May. China and Japan. 1792.

,, ,, *variega'ta* (variegated). Leaves striped with cream. 1862.

REINWA'RDTIA. (Commemorative of *K. G. K. Reinwardt*, of Leyden Botanic Garden. Nat. ord. Linaceæ.)

Cool stove or greenhouse shrubs of dwarf stature and highly ornamental. Cuttings in sand, in a close case, during spring. Loam, leaf-mould, and sand.

R. tetra'gyna (four-styled). 1–1½. Yellow. Winter. India. 1886.

,, *tri'gyna* (three-styled). 1–1½. Yellow. Winter. India. 1799.

REISSE'KIA. (A commemorative name. Nat. ord. Rhamnaceæ.)

A much-branched stove shrub, climbing by means of tendrils. Cuttings in sand, in bottom-heat. Fibrous loam, peat, and sand.

R. cordifo'lia (heart-leaved). 10. Yellow. Brazil. 1820.

,, *smilaci'na* (Smilax-like). See R. CORDIFOLIA.

RELHA'NIA. (Named after *R. Relhan*, a botanical author. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Greenhouse evergreen shrubs. Cuttings of firm young side-shoots in sand, under a bell-glass, in a cool frame, in June; sandy loam and fibrous peat. Winter temp., 40° to 48°. There are several species beside the following:

R. pu'ngens (pungent). 2. Yellow. September. S. Africa. 1820.

,, *sessiliflo'ra* (stalkless-flowered). 2. Yellow. S. Africa.

,, *squarro'sa* (spreading). 1½. Yellow. May. S. Africa. 1774.

REMI'JIA. (Commemorative of *Remigio*, an Italian doctor. Nat. ord. Rubiaceæ.)

Evergreen stove shrub, a source of quinine. Cuttings in sand in a close case. Fibrous loam, peat, and sand.

R. peduncula'ta (long-stalked). Pale pink. Colombia; Brazil. 1889.

REMUSA'TIA. (Commemorative of *Abel Remusat*, a celebrated physician and versed in Oriental literature. Nat. ord. Araceæ.)

Stove, tuberous, perennial herb. Offsets and divisions. Fibrous loam, lumpy peat or leaf-mould, and sand.

R. vivi'para (viviparous). 2. Green. May. India and Burma. 1817.

RENANTHE'RA. (From *ren*, a kidney, and *anthera*, a pollen bag, or anther; shape of anthers. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monogynia*.)

Stove orchids, grown in pots. See ORCHIDS.

R. annamе'nsis (Annamese). Yellow, spotted with crimson, deep crimson. Annam. 1906.

,, *Arachni'tes* (spider-like). See ARACHNANTHE MOSCHIFERA.

,, *bili'nguis* (two-lipped). See ARACHNANTHE BILINGUIS.

,, *cocci'nea* (scarlet. *Chinese Air-plant*). 8. Scarlet, orange. August. Cochin-China. 1816.

,, *elonga'ta* (elongated). Pale purple. Malaya.

,, *Flo's-aë'ris* (flower-of-the-air). See ARACHNANTHE MOSCHIFERA.

,, *histrio'nica* (stage-playing). Yellow, edged with purple blotches. Malaya. 1878.

,, *hookeria'na* (Hookerian). Yellow and crimson. Borneo. 1879.

,, *imschootia'na* (Imschootian). Deep red, marked with yellow. Assam. 1891.

,, *Lo'wii* (Low's). See ARACHNANTHE LOWII.

,, *matuti'na* (morning). 1. Red, yellow, and purple. December. Java. 1843.

,, ,, *breviflo'ra* (short-flowered). Sepals shorter. Sunda Isles. 1879.

,, *molucca'na* (Moluccan). Red. Amboyna Island. 1846.

,, *rohania'na* (Rohanian). See R. HOOKERIANA.

,, *Sto'riei* (Storie's). Dark orange; lateral sepals and lip fiery crimson. Philippines. 1880.

RENDLE'S TANK SYSTEM of heating was first suggested, we believe, by Mr. Rendle, nurseryman, of Plymouth. A tank of iron or wood, 20 feet long, 5 feet broad, and 6 inches deep, is constructed in the centre of the house, and surrounded by a walk, except at the end, where the boiler is fixed for heating it. The top of the tank is covered with large slabs of slate, cemented together, to prevent the excessive escape of steam. Around this is a frame sufficiently high to retain the bark, in which the pots are plunged. The boiler and tank are filled with water, and this circulates, when the fire is lighted under the former, by means of two pipes, one from the top of the boiler, and the other returning nearer to its bottom. The expense of pipes, and the danger of their freezing, are avoided; the fire only requires to be kept lighted for two hours at night, and again for the same period in the morning; the water, when once heated, retaining its temperature for a long time. In a small house, the apparatus can be constructed for £5,

and in all for less than half the cost of hot-water pipes. The saving in tan and labour is also very great. In some places tan costs 19s. per cart-load, and where it is cheaper, the trouble and litter incident to its employment, and the dangers of loss from fungi and insects, of which it is the peculiarly fertile foster-parent, render it objectionable as a source of heat; and whenever the tan has to be renewed, the trouble and destruction of plants are always great.

"In my new propagating house," says Mr. Rendle, "the tank or cistern is placed in the centre, with a walk surrounding it, so as to enable the propagator with greater ease to attend to the plants, &c.

"On the outside of the house is a fire-shed, in which the boiler is fixed. The tank, made of wood, 1½ or 2 inches thick, which I find the cheapest material (it also prevents the water cooling so fast as it does either in stone or iron), may be lined with lead or zinc. Exactly in the centre of the tank is a partition, serving the double purpose of causing the water to circulate, as well as to support the edges of the slates, an aperture being left in the partition, of about 2 inches in breadth, to allow the water a free passage. The flow-pipe enters near the appendage of the tank, at the mouth of which pipe a piece of perforated copper is placed, as also at the return-pipe, to prevent dirt and sediment from finding their way into the boiler. After everything is properly fixed, the tank is filled with water, which, of course, at the same time fills the boiler. . . . The tank is about 4 inches deep. Across it, and resting on its sides, are placed slate stones about 1½ inch thick, cut square at the edges. These are fastened to each other by Roman cement, or Aberthaw lime, to prevent a superfluity of steam from escaping into the house. . . . Around the edges of the slates a piece of inch board, about 9 inches deep, should be placed to enclose the sawdust, sand, moss, or other plunging material."

A Pinery may also be fitted up with Mr. Rendle's tank beneath the plunging material.

It is described as "a very useful and most desirable structure for the growth of the Pine Apple, with a hollow wall, recommended by all garden architects in preference to a solid wall—the heat or cold being not so readily conducted as through a solid mass of masonry." Mr. Rendle might have added, that hollow walls are also much drier.—*Rendle's Treatise on the Tank System.* See STOVE and HOTBED.

RENEA'LMIA, of Linnæus the younger. (Commemorative of *Paul Renealme*, a French botanist. Nat. ord. Scitaminaceæ. Allied to Alpinia.)

Stove perennial herbs. Divisions in spring. Fibrous loam, leaf-mould, some old cow-dung rubbed up finely, and sand.

R. africa'na (African). Trop. Africa.
„ *bracteo'sa* (large-bracted). W. Ind.
„ *calcara'ta* (spurred). See ALPINIA CALCARATA.
„ *exalta'ta* (tall). 8–20. Scarlet. July. W. Ind. 1820.
„ *jamaice'nsis* (Jamaican). See R. OCCIDENTALIS.
„ *nu'tans* (nodding). See ALPINIA NUTANS.
„ *occidenta'lis* (western). 5–6. White. July. W. Ind. 1793.
„ *racemo'sa* (racemose). 5. White. August. Trop. Amer. 1752.

RENEA'LMIA of R. Brown. (Nat. ord. Iridaceæ. See LIBERTIA.)

R. grandiflo'ra (large-flowered). See LIBERTIA GRANDIFLORA.
„ *paniculata'ta* (panicled). See LIBERTIA PANICULATA.
„ *pulche'lla* (pretty). See LIBERTIA PULCHELLA.

REQUIE'NIA. (Commemorative of *M. Requien*, a French botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. See TEPHROSIA.)

R. obcorda'ta (reversed-heart-*leaved*). See TEPHROSIA OBCORDATA.
„ *sphærospe'rma* (round-seeded). See TEPHROSIA SPHÆROSPERMA.

RESE'DA. Mignonette. (From *resedo*, to calm; supposed virtue for external bruises. Nat. ord. *Weldworts* [Resedaceæ]. Linn. 11-*Dodecandria*, 3-*Trigynia*.)

All by seeds; the half-shrubby kinds also by cuttings; seeds must be sown at different times, according as the bloom is wanted. The beginning and middle of May is early enough to sow in the open border. Though usually treated as annuals, most of the Mignonettes may be grown as under-shrubs or perennials, if they are prevented seeding freely, and kept from frost in winter. We have seen the common Mignonette that had been kept in a pot about eight years, and flowered freely every season. See MIGNONETTE.

R. a'lba (white). 2. White. Europe, &c.
„ *chine'nsis* (China). 2. Yellow, green. June. China. 1819.
„ *glauca* (sea-green). 1. Greenish. Pyrenees.
„ *lu'tea* (yellow). 1–2. Pale greenish-yellow. Europe (Britain). "Base Rocket."
„ *Lu'teola* (little-yellow). 2–3. Greenish-yellow. Europe (Britain); Orient. "Dyer's-weed."
„ *odora'ta* (scented). 1. Green, red. August. 1752. "Mignonette." Origin unknown.
„ „ *frute'scens* (shrubby). 2. August. Egypt. 1752.
„ *Phyteu'ma* (Phyteuma). 1½. Green. Mediterranean region.
„ *suffruticulo'sa* (sub-shrubby). See R. ALBA.
„ *trunca'ta* (abrupt-ended-*leaved*). 1½. Yellow. June. Macedonia; Anatolia. 1836.
„ *virga'ta* (twiggy). 1–2. Green. Spain and Portugal.

RESERVE GARDEN. See NURSERY.

REST. That period when a plant is not growing.

REST-HARROW. *Ono'nis.*

RE'STIO. (From *restio*, a rope-maker; ropes are made of the cord-like twigs in South Africa. Nat. ord. Restiaceæ.)

Greenhouse evergreen, with much-branched shoots, like slender whip-cord or coarse thread. Divisions. Loam, leaf-mould, and sand.

R. subverticilla'tus (sub-whorled). 2–3. Brown. S. Africa.

RESTRE'PIA. (Commemorative of *Joseph E. Restrep*, a South American traveller and naturalist. Nat. ord. Orchidaceæ. Allied to Pleurothallis.)

Stove epiphytical orchids. Divisions at the commencement of growth. Fibre of peat, sphagnum, and plenty of crocks in the pots.

R. antenni'fera (antennæ-bearing) of H. B. & K. Yellow, striped with red-purple. Colombia. 1892.
„ *antenni'fera* (antennæ-bearing) of Lindley. See R. MACULATA.
„ *aspasice'nsium* (friendly). ¼. Deep yellow, spotted with crimson. Venezuela. 1904.
„ *daya'na* (Dayan). Yellow, marked with brownish-purple. Costa Rica. 1875.
„ *e'legans* (elegant). ¼. Yellow, spotted with purple. Venezuela. 1872.
„ *Falkenbe'rgii* (Falkenberg's). Yellow, with white and purple marks. Colombia. 1880.
„ *guttula'ta* (finely-spotted). Whitish, thickly spotted with crimson. Ecuador. 1836.
„ *Lansbe'rgii* (Lansberg's). See R. XANTHOPHTHALMA.
„ *leopardi'na ro'sea* (rosy-leopard-spotted). Lateral sepals white, thickly spotted with rose; the rest lined deep rose. 1904.
„ *macula'ta* (blotched). Yellow, blotched with maroon. Colombia. 1875.
„ *ophioce'phala* (snake's-head). Yellow. Spring. Guatemala and Mexico. 1837.
„ „ *purpu'rea* (purple). Purple.
„ *pandura'ta* (fiddle-shaped). Front of lip whitish, with purple-brown spots. Colombia. 1887.
„ *prore'pens* (creeping-forward). Yellow. Rhizomes creeping in masses. Costa Rica. 1877.
„ *reichenbachia'na* (Reichenbachian). Yellow, spotted with dark purple. Costa Rica. 1875.
„ *sangui'nea* (blood-red). Crimson. Colombia. 1896.
„ *Shuttlewo'rthii* (Shuttleworth's). Andes.
„ *stria'ta* (lined). Yellow, striped with purple. Colombia. 1891.
„ *xanthophtha'lma* (yellow-eyed). Yellow, spotted with purple; centre yellow. Guatemala. 1861.

RESURRECTION PLANTS. *Anasta'tica hierochu'ntica*, *Mesembrya'nthemum Tripo'lium*, and *Selagine'lla lepidophy'lla.*

RETA'MA ALBIFLO'RA. See CYTISUS ALBUS.

RETANILLUM. Peruvian name. Nat. ord. *Rhamnads* [Nat. ord. Celastrineæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Rusbetia.)

Evergreen shrubs. Cuttings of young shoots in sand, under a glass, in summer; sandy loam and fibrous peat. *R. obcorda'ta* requires a warm greenhouse, and *R. Ephe'dra* the protection of a cold pit in winter, or a very sheltered situation out of doors, or against a wall.

R. Ephe'dra (Ephedra-like). 3. Cream. Peru. 1823.
„ *obcorda'ta* (reversed-heart-*leaved*). 2. Yellow. Peru. 1822.

RETARDING requires as much skill as forcing, for as the latter requires the application of all that is suitable to the promotion of a plant's rapid healthy growth, so retarding requires the withholding from it of those contingencies. Thus to retard growth, the lowest temperature, and the least degree of light compatible with healthy growth, must be secured; and to this end plants for succession are often placed on the north side of a wall. See SCREENS.

Then, again, as in the case of raspberries and strawberries, plants are often cut down in the spring, compelling them to form fresh foliage and stems, and thus be productive in the autumn instead of the summer.

The vegetation of many bulbs may be prevented by merely keeping them dry, and, indeed, the withholding the usual supply of water, giving it only in diminished quantities, is necessary in all retarding treatment. To secure the entire resting of bulbs, and of such plants as will bear so low a temperature, the atmosphere of the ice-house is effectual; and to this end it should have a few shelves for the support of boxes or flower-pots. Banks of earth ranging east and west, and facing the north at a very acute angle, are very useful in retarding the early advance to seed in hot weather of spinach, lettuces, &c. Espaliers ranging similarly, and shaded during the whole of March and the two following months, will blossom later and more unfailingly than trees more exposed to the sun in spring. Similar exclusion of heat and light retards the ripening of picked fruit, and if the air be excluded from them, or its oxygen withdrawn, fruit will remain unripened for weeks. To effect this, put a paste formed of lime, sulphate of iron, and water, at the bottom of a wide-mouthed glass-bottle, then a layer of large pebbles to keep the fruit from the paste, then fill the bottle with peaches, apricots, or plums, gathered a few days before they are ripe, cork the bottle tight, and cover the cork with melted resin. They have been thus kept for a month, and summer apples and pears for three months. They ripen when again exposed to the air.

RETI'NIA. The Pine-bud Tortrix Moth (*R. turiona'na*) is very injurious to the buds of the Scotch Fir and other species of Pinus, as well as the Silver Fir, by feeding inside them, and when the terminal bud of the tree is thus destroyed, the tree is ruined owing to the want of a proper leader. The moth lays her eggs in July, chiefly on trees five to fifteen years old. The caterpillars feed in the buds and gnaw their way up the centre of the central bud in autumn, and hibernate there. During April, May, and June they feed again. The caterpillars are purple-brown, with a black head and other markings. The perfect moth hatches out in the July following to repeat her depredations. The average expanse of the fore-wings is three-fourths of an inch, and rusty red or tawny, with silvery markings.

The Pine-shoot Tortrix Moth (*R. buolia'na*) is very similar, but its methods of feeding are different. The female lays her eggs amongst the buds terminating the branches, and the small caterpillars hatch out late in the season, when they gnaw the buds, causing an exudation of resin. Under this and a web of their own weaving they hibernate till the trees commence growing in spring, when they commence feeding on the young shoots. During June they gnaw their way into the shoots, change into the pupa stage, and rest till July. The moth is rather larger than the Pine-bud Tortrix Moth, and reddish-yellow, with silvery spots and wavy lines across the fore-wings.

All shoots that are observed to be curved during June, or turning brown, should be carefully removed, without injury to the rest, dropped in a pail or other close vessel, and burned to prevent the moths reaching the perfect state in July. Future attack will thus be lessened or prevented in proportion to the care with which the injured shoots are collected.

RETINIPHY'LLUM. ● (From *retine*, resin, and *phullon*, a leaf. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Hamiltonia.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a sweet, moist bottom-heat; sandy loam and fibrous peat, with pieces of charcoal. Winter temp., 55° to 60°; summer, 60° to 85°.

R. secundiflo'rum (side-flowering). 10. White. Venezuela. 1839.

RETINO'SPORA. (From *retine*, resin, and *spora*, seed, offspring. Nat. ord. Coniferæ. The proper spelling should have been Retini'spora. Now referred to Cupressus.)

R. du'bia (doubtful). See THUYA OCCIDENTALIS ERICOIDES.
„ *ellwangeria'na* (Ellwangerian). See THUYA OCCIDENTALIS ELLWANGERIANA.
„ *juniperoi'des* (juniper-like). See THUYA ORIENTALIS DECUSSATA.
„ *leptocla'da* (slender-branched). See CUPRESSUS THYOIDES LEPTOCLADA.
„ *obtu'sa* (blunt). See CUPRESSUS OBTUSA.
„ „ *Cri'ppsii* (Cripps's). See CUPRESSUS OBTUSA CRIPPSII.
„ „ *lycopodioi'des* (lycopod-like). See CUPRESSUS OBTUSA LYCOPODIOIDES.
„ „ *variega'ta* (variegated). See CUPRESSUS OBTUSA VARIEGATA.
„ *plumo'sa* (feathery). See CUPRESSUS PISIFERA PLUMOSA.
„ *Sande'ri* (Sander's). Twigs sea-green. A provisional name. Also named *Juniperus Sanderi*. 1899.
„ *squarro'sa* (spreading). See CUPRESSUS PISIFERA SQUARROSA.

RHABDOTHA'MNUS. (From *rhabdos*, a rod or wand, and *thamnos*, a shrub; in allusion to the twiggy branches. Nat. ord. Gesneraceæ.)

Half-hardy or greenhouse shrub. Cuttings in sand under a bell-glass. Loam, leaf-mould, or peat and sand.

R. Sola'ndri (Solander's). 2–4. Orange, striped with brown. New Zealand. 1903.

RHA'MNUS. Buckthorn. (From *rham*, a Celtic word, signifying a tuft of branches, or the Greek, *rhamnos*, a thorn-bush. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse and stove species, by cuttings in sand, under a glass, in summer, and in a cold or close, warm pit respectively; sandy loam and leaf-mould. Hardy species, by seeds, layers, and cuttings, and more especially the latter mode with all the evergreens, which should be taken off in the autumn, and inserted in sandy soil, in a shady border, with hand-lights over them; good garden-soil.

GREENHOUSE EVERGREEN SHRUBS.

R. amygdali'na (almond-like). See R. OLEOIDES.
„ *celtifo'lia* (Celtis-leaved). 20. Green, yellow. May. S. Africa.
„ *crenula'ta* (scolloped). 8. Green, yellow. April. Teneriffe. 1778.
„ *cro'ceus* (saffron). 4. Green, yellow. North-western Amer. 1848.
„ *integrifo'lia* (entire-leaved). 3. Green. Teneriffe. 1822.
„ *prinoi'des* (winter-berry-like). 10. Yellow. June. S. Africa. 1778.
„ *tetrago'na* (four-angled). See CASSINE SCANDENS.
„ *thee'zans* (Theezan). See SAGERETIA THEEZANS.

STOVE EVERGREEN SHRUBS.

R. sphærospe'rma (spherical-seeded). 15. Green, yellow. W. Ind. 1824.
„ *suriname'nsis* (Surinam). 1. Green, yellow. Guiana. 1820.

HARDY DECIDUOUS SHRUBS.

R. alnifo'lia (alder-leaved). 4. Green. May. N. Amer. 1778.
„ *alpi'na* (alpine). 3. Green. May. Switzerland. 1572.

R. argu'ta (acute). China and Japan.
„ *califo'rnica* (Californian). 6. Reddish. California. 1839. "Indian Cherry."
„ „ *hirte'lla* (finely-hairy).
„ „ *tomente'lla* (finely-felted). Leaves covered beneath with bluish-white felt. California. 1902.
„ *carnio'lica* (Carniolian). Carniolia.
„ *carolinia'na* (Carolina). 4. Green. May. N. Amer. 1819.
„ *catha'rtica* (purging). 12. Green, yellow. May. Europe (England); Asia. "Common Buckthorn."
„ „ *hydrie'nsis* (Hydrian). See R. PUMILA.
„ *chloro'phora* (green-bearing). See R. TINCTORIA.
„ *costa'ta* (ribbed). Japan.
„ *crena'ta* (crenate). Japan.
„ *davu'rica* (Davurian). 10. Green, yellow. May. Siberia to China. 1817.
„ *Erythro'xylon* (red-wood). 6. Yellow, green. July. Caucasus, &c. 1823.
„ „ *angusti'ssima* (narrowest-*leaved*). Caucasus.
„ *Fra'ngula* (breaking). 10. White. May. Europe (Britain). "Berry-bearing Alder."
„ „ *angustifo'lia* (narrow-leaved). 10. White. May. Britain.
„ „ *asplenifo'lia* (Asplenium-leaved). Leaves cut.
„ „ *au'reo-variega'ta* (golden-variegated). Some leaves have large yellow blotches. 1907.
„ „ *latifo'lia* (broad-leaved). Leaves broad.
„ *franguloi'des* (Frangula-like). See R. ALNIFOLIA.
„ *hirsu'ta* (hairy). See R. DAVURICA.
„ *hy'brida* (hybrid). 12. Green. Europe.
„ „ *Billa'rdi* (Billard's).
„ *infecto'ria* (dyer's). 6. Green, yellow. June. S. Europe. 1683. "Avignon Berry."
„ *japo'nica* (Japanese). Japan.
„ *lanceola'ta* (spear-head-*leaved*). 12. Green. May. N. Amer. 1812.
„ *latifo'lia* (broad-leaved). 4. Green. July. Azores. 1778.
„ „ *macula'ta* (spotted). 6. Green. July. 1845.
„ *libano'tica* (Lebanon). 4–6. Greenish. Asia Minor; Syria. 1879.
„ *longifo'lia* (long-leaved). 6. Green. N. Amer. 1823.
„ *lycioi'des* (boxthorn-like). 6. Green, yellow. November. Spain. 1752.
„ „ *arragone'nsis* (Arragon). 6. Green, yellow. October. Arragon. 1752.
„ *macrophy'lla* (large-leaved). Greenish. China. 1876.
„ *nepale'nsis* (Nepaulese). 10. Yellow. Himalaya. 1820.
„ *oleifo'lia* (olive-leaved). See R. CALIFORNICA.
„ *oleoi'des* (olive-like). 4. Green, yellow. June. Spain. 1752.
„ *Palla'sii* (Pallas's). Caucasus. 1838.
„ *parvifo'lia* (small-leaved). China.
„ *pu'mila* (dwarf). 2. Green, yellow. July. Mts. of Central, S. and E. Europe. 1752.
„ *puncta'ta* (spotted). Asia Minor, &c.
„ *purpu'rea* (purple). Western Himalaya.
„ *purshia'na* (Pursh's). 6. Green. May. N. Amer. 1826. "Cascara Sagrada."
„ „ *interme'dia* (intermediate). Leaves narrower. California. 1898.
„ *pusi'lla* (weak). See R. PUMILA.
„ *robu'sta* (robust). 10–20. Green. Country unknown. 1879.
„ *rupe'stris* (rock). 2. Green. May. S. Europe. 1752.
„ *saxa'tilis* (rock). 1. Green, yellow. May. Europe. 1752.
„ *spathulæfo'lia* (spatula-leaved). Caucasus. 1838.
„ *tincto'ria* (dyer's). 5. Green, yellow. May. Europe; Asia. 1820.
„ *umbella'ta* (umbelled). See R. CALIFORNICA.
„ *valenti'na* (Valentia). See R. PUMILA.
„ *virga'ta* (twiggy). See R. DAVURICA.
„ *Wulfe'nii* (Wulfen's). See R. PUMILA.

HARDY EVERGREEN SHRUBS.

R. Alate'rnus (*bastard-leaved*-alaternus). 20. Green. May. S. Europe. 1629.
„ „ *angustifo'lia* (narrow-leaved). 20. Green. May. S. Europe. 1629.
„ „ *angustifo'lia variega'ta* (variegated).
„ „ *balea'rica* (Balearic). 20. Green. May. S. Europe.
R. Alate'rnus fo'liis-arge'nteis (silver. Thorn-leaved). 20. Green. May. S. Europe. *fignone*
„ „ *fo'liis-au'reis* (golden-*edged*-leaved). 20. Green. May. S. Europe.
„ „ *hispa'nica* (Spanish). 20. Green. May. S. Europe.
„ „ *macula'ta* (spotted-leaved). 20. Green. May. S. Europe.
„ *buxifo'lia* (box-leaved). 3. Green, yellow. May. Numidia. 1820.
„ *cardioca'rpa* (heart-podded). See R. TINCTORIA.
„ *pube'scens* (downy). See R. INFECTORIA.
„ *Wi'cklia* (Wickle's). See R. CATHARTICA.

RHAPHIDO'PHORA. (From *rhaphis*, a needle, and *phero*, to bear, or *phora*, the act of bearing; in reference to the needle-like bodies of oxalate of lime in the tissues. Nat. ord. Araceæ. Allied to Monstera.)

Evergreen stove plants, climbing by means of aerial roots. Seeds; cuttings in light soil in a close case, with bottom-heat. Fibrous loam and peat, in equal parts, with sand. Useful plants for covering walls, tree trunks, &c., in a moist atmosphere. Winter temp., 60° to 65°; summer, 65° to 90°.

R. decursi'va (running-down). Greenish-yellow. Himalaya. 1859.
„ *lancifo'lia* (lance-leaved). Spathe apricot; spadix white. Khasia. 1874.
„ *Lo'bbii* (Lobb's). Malaya.
„ *Pee'pla* (Peepla). Yellow. India; Malaya.
„ *pertu'sa* (perforated). India and Malaya. 1883.
„ *pinna'ta* (pinnate). See EPIPREMNUM MIRABILE.

RHAPHIDOPHY'LLUM. See RHAPIDOPHYLLUM.

RHAPHIOLE'PIS. See RAPHIOLEPIS.

RHA'PHIS. See RHAPIS.

RHAPHITHA'MNUS. (From *rhaphis*, a needle, and *thamnos*, a shrub; referring to the needle-like spines of some species. Nat. ord. Verbenaceæ.)

A half-hardy greenhouse tree, which proves hardy in the south and west of England, and on walls near London. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand for pot culture.

R. cyanoca'rpus (blue-fruited). 3–14. Lilac; berries blue. Summer. Chili.

RHAPHIDO'SPORA. (From *rhaphis*, a needle, and *sporos*, a seed. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

R. gla'bra (smooth). See JUSTICIA GLABRA.
„ *vesti'ta* (clothed). See NELSONIA CAMPESTRIS.

RHAPIDOPHY'LLUM. (From *rhapis*, and *phu'llon*, a leaf; the leaves resemble those of Rhapis. Nat. ord. Palmaceæ.)

Greenhouse palm. Seeds; suckers. Fibrous loam, peat, and sand.

R. Hy'strix (hedgehog). 3–6. Yellow, or green. September. S. United States. 1765.

RHA'PIS. (From *rhaphis*, a needle; the sharp-pointed leaves. Nat. ord. *Palms* [Palmaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Chamærops.)

Greenhouse Palms. Suckers generally, and by division at the roots; rich, sandy loam; most require the protection of the greenhouse; but some will probably succeed in warm situations out of doors.

R. acau'lis (stemless). See SABAL ADANSONII.
„ *arundina'cea* (reed-*leaved*). See RHAPIDOPHYLLUM HYSTRIX.
„ *a'spera* (rough). Green. May. S. France.
„ *cochinchine'nsis* (Cochin-China). 6–8. Cochin-China.
„ *corda'ta* (heart-*leaved*). Green. May. S. France.
„ *flabellifo'rmis* (fan-shaped). 6. Green. August. China and Japan. 1774.
„ „ *variega'ta* (variegated). Leaves variegated with creamy-yellow. Japan. 1861.
„ *hu'milis* (low). China. 1837.
„ *java'nica* (Javanese). Java.
„ *Kwanwo'rtsik* (Kwanwortsik). See R. FLABELLIFORMIS.
„ *ma'jor* (greater). China. 1889.
„ *Siro'tsik* (Sirotsik). See R. HUMILIS.

RHAPO'NTICUM. (From *rha*, rhubarb, and *ponticus*, Pontic. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. See CENTAUREA.

R. Palla'sii (Pallas's). See CENTAUREA RHAPONTICUM.
,, *pu'lchrum* (pretty). See CENTAUREA PULCHRA.
,, *scario'sum* (membranous). See CENTAUREA RHAPONTICUM.
,, ,, *lyra'tum* (lyre-*leaved*). See CENTAUREA RHAPONTICUM.
,, *uniflo'rum* (one-flowered). See CENTAUREA MONANTHA.

RHA'ZYA. (The Arabian name. Nat. ord. Apocynaceæ.)

Hardy, evergreen, resembling a Periwinkle, but the stems are more erect. Divisions; cuttings in sandy soil, under a hand-light. Ordinary soil.

R. orienta'lis (oriental). Bright blue to dark violet. Greece, &c. 1889.
,, *stri'cta* (erect). Blue. Arabia and Afghanistan.

RHEE'DIA. (Named after *Rheede*, author of the *Hortus Malabaricus*. Nat. ord. *Guttifers* [Guttiferæ]. Linn. 12-*Icosandria*, 3-*Polygynia*.)

Stove evergreen. Cuttings of shoots, rather ripe, in sand, under a bell-glass, and in a moist bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 55°; summer, 60° to 85°.

R. java'nica (Javanese). Java. 1826.
,, *lateriflo'ra* (side-flowering). Trop. Amer.

RHE'UM. Rhubarb. (From *Rha*, the Russian name of the river Wolga, near which the Rhubarb was found. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 9-*Enneandria*, 2-*Trigynia*.)

Hardy herbaceous perennials. Seeds in spring, and division of the plant then, just as the buds begin to swell; deep, rich, loamy soil. See RHUBARB.

R. acumina'tum (long-pointed). 3. Purple. Himalaya. 1851.
,, *Alexa'ndræ* (Queen Alexandra's). 3–4. Pale yellow bracts. June. W. China; Tibet. 1909.
,, *austra'le* (southern). See R. EMODI.
,, *austri'acum* (Austrian). 5. White. May. Austria. 1800.
,, *ca'spicum* (Caspian). See R. TATARICUM.
,, *collinia'num* (Collinian). China. 1883.
,, *compa'ctum* (compact). 3. White, green. May. Tartary. 1758.
,, *cri'spum* (curled). 5. White. May. 1800.
,, *Emo'di* (Mount Emodus). 5–10. White. Himalaya.
,, *fenestra'tum* (windowed). 6. White. May. 1780.
,, *Franzenba'chii* (Franzenbach's). Temperate Asia.
,, *hy'bridum* (hybrid). 3. White, green. May. Asia. 1778.
,, *inopina'tum* (unexpected). 6–12. Red or crimson. Tibet. 1908.
,, *leucorrhi'zum* (white-rooted). Striped. May. Siberia. 1827.
,, *macro'pterum* (large-winged). Origin doubtful.
,, *moorcroftia'num* (Moorcroftian). Himalaya. 1895.
,, *no'bile* (noble). 3–4. Himalaya. 1875.
,, *nu'tans* (nodding-*flowered*). See R. COMPACTUM.
,, *officina'le* (shop). 6–8. Green. Tibet. 1871. "Medicinal Rhubarb."
,, *palma'tum* (hand-*leaved*). 5. White, green. June. China. 1763.
,, ,, *tanghu'ticum* (Tanghutic). Green. N.W. China. 1875.
,, *Picho'nii* (Pichon's). Tibet.
,, *Rhapo'nticum* (Rhapontic). 4. White, green. May. Siberia. 1573. "Garden Rhubarb."
,, *Ri'bes* (currant-*leaved*). 2. White, green. May. Levant. 1724.
,, *rothea'num* (Rothean). Garden origin.
,, *rugo'sum* (wrinkled). Origin doubtful.
,, *sibi'ricum* (Siberian). See R. RHAPONTICUM.
,, *spicifo'rme* (spike-formed). Himalaya.
,, *tata'ricum* (Tartarian). 3. White, green. May. Tartary. 1793.
,, *undula'tum* (wave-*leaved*). 4. White, green. May. Siberia, &c. 1734.
,, *webbia'num* (Webbian). Himalaya.

RHE'XIA. "Deer Grass." (From *rhexis*, a rupture; supposed cure for ruptures. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Hardy herbaceous North American plants, blooming in July. Division and cuttings under a hand-light; peat and loam. Most of the perennials will succeed in a peat-border.

R. Acisanthe'ra (Acisanthera). See ACISANTHERA QUADRATA.
,, *angustifo'lia* (narrow-leaved). See R. LANCEOLATA.
,, *cilio'sa* (hair-fringed). 1. Purple. 1812.
,, *glomera'ta* (clustered). See PTEROLEPIS GLOMERATA.
,, *holoseri'cea* (wholly-silky). See TIBOUCHINA HOLOSERICEA.
,, *lanceola'ta* (lance-shaped). ½. White. 1812.
,, *maria'na* (Maryland). ½. Purple. 1759.
,, ,, *rube'lla* (reddish). ½. Pink. 1823.
,, *vimi'nea* (twiggy). See TIBOUCHINA VIMINEA.
,, *virgi'nica* (Virginian). ½. Purple. 1759.

RHINACA'NTHUS. (From *rhin*, a nose, and *Acanthus*; the corolla has a beak-like upper lip. Nat. ord. Acanthaceæ. Allied to Adhatoda.)

Stove shrub. Cuttings in sand in a close case with bottom-heat. Fibrous loam, leaf-mould, and sand.

R. commu'nis (common). 2. White. June. India; Malaya. 1790. "Ringworm Root."
,, *Nasu'ta* (large-nosed). See R. COMMUNIS.

RHINA'NTHUS. (From *rhin*, a nose, and *anthos*, a flower; the flower is beak-like. Nat. ord. Scrophulariaceæ.)

Hardy annuals, living upon the roots of grass. Seeds. Moist soil amongst grass.

R. Cri'sta-ga'lli (cock's-crest). 1. Yellow, with two blue spots. June to August. Europe (Britain). "Yellow Rattle."
,, *ma'jor* (greater). 1. Orange-yellow. August. Europe (Britain).

RHINCHOGLO'SSUM. See RHYNCHOGLOSSUM.

RHINOPE'TALUM. (From *rhin*, a nose, and *petalon*, a petal; base of the upper sepal. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Referred to Fritillaria.)

R. Kareli'ni (Kareline's). See FRITILLARIA GIBBOSA.

RHIPIDO'PTERIS. (From *rhipis*, a fan, and *pteris*, a fern; formation of the fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

R. bifurca'ta (two-forked). See ACROSTICHUM BIFURCATUM.
,, *fœnicula'cea* (fennel-*leaved*). See ACROSTICHUM FŒNICULACEUM.
,, *pelta'ta* (shield-*leaved*). See ACROSTICHUM PELTATUM.
,, *triparti'ta* (three-parted). See ACROSTICHUM FLABELLATUM TRIPARTITUM.

RHIPO'GONUM. (From *rhipos*, flexible, and *gonos*, a shoot. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Greenhouse, white-flowered, evergreen climbers. Cuttings of side-shoots, when 3 inches in length, taken off close to the stem, in sand, under a bell-glass, in May; fibrous loam, a little peat, sand, and charcoal, and well-drained. Winter temp., 40° to 48°.

R. a'lbum (white). 3. June. Australia. 1820.
,, *parviflo'rum* (small-flowered). See R. SCANDENS.
,, *sca'ndens* (climbing). 2. June. New Zealand. 1820.

RHI'PSALIS. (From *rhips*, a willow-branch; referring to the flexible branches. Nat. ord. *Indian Figs* [Cactaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)

Greenhouse succulents. Cuttings, dried at the base for a few days before inserting in rough gravel or brick-rubbish; sandy loam, brick-rubbish, and leaf-mould. Winter temp., 40° to 55°; summer, 60° to 85°.

R. aculea'ta (prickly). Whitish. Stems 8–10 angled. Argentina. 1892.
,, *a'nceps* (two-edged). Stems flat, yellow-white. Brazil. 1892.
,, *brachia'ta* (forked). See R. SAGLIONIS.
,, *capillifo'rmis* (hair-formed). White. Stems short, slender, drooping. Brazil. 1892.
,, *Cassy'tha* (Cassytha). 1. Yellow. September. W. Ind. 1758.
,, ,, *ro'sea* (rosy).
,, *caverno'sa* (hollow). Stems flat. Brazil; Paraguay. 1890.

R. cereiformis (Cereus-formed). Country unknown.
„ *chloropterа* (green-winged). Yellowish-white. Stems with broad joints. Brazil (?). 1908.
„ *clavata* (club-shaped). White. Stems drooping. Brazil. 1892.
„ *communis* (common). See R. MITTLERI.
„ *comorensis* (Comoroan). Greenish-white. Stems cylindrical, drooping. Comoro Isles. 1892.
„ *confertа* (crowded). Country unknown.
„ *crispata* (crisped). 1. White. December. Brazil. 1829.
„ „ *purpurea* (purple).
„ *dissimilis* (dissimilar). Stems cylindrical. S. Brazil 1890.
„ „ *setulosa* (bristly). Stems 5-angled. Brazil. 1892.
„ *fasciculata* (fascicled). 1. Yellow. W. Ind. 1800.
„ *flocculosa* (woolly-tufted). 1–2. Country unknown.
„ *funalis* (cord-like). 1–3. White. July. S. Amer. 1818.
„ *gibberula* (slightly-bulging). White; berries white. Stems whorled. Brazil. 1892.
„ *gonocarpa* (knee-fruited). White; fruit 4–5 winged. Brazil. 1892.
„ *gracilis* (slender). Whitish. Stems thick; branches slender. Brazil. 1903.
„ *grandiflora* (large-flowered). See R. FUNALIS.
„ *hadrosoma* (thick-jointed). White. Stems round. Brazil. 1897.
„ *hookeriana* (Hookerian). 1. White. August. W. Ind.
„ *Houlletii* (Houllet's). Straw-yellow. Brazil. 1872.
„ *Knightii* (Knight's). Brazil.
„ *madagascariensis* (Madagascar). Greenish. Stems 6–10-angled. Madagascar. 1892.
„ *mesembryanthoides* (Mesembryanthemum-like). ½. White. S. Amer. 1817.
„ *Mittleri* (Mittler's). Rose, white. July to September. Brazil. 1836.
„ *Myosurus* (Myosurus). 4. Yellow, white. July. Brazil. 1828.
„ *Novaesii* (Novæs's). 2. Yellowish-white. Upper joints whorled. Brazil. 1909.
„ *pachyptera* (thick-winged). White. February. W. Ind.
„ *paradoxa* (paradoxical). 3. Yellow, white. September, October. Brazil. 1846.
„ *parasitica* (parasitic). See R. FASCICULATA.
„ *penduliflora* (drooping-flowered). Greenish-yellow, drooping. Stems round. Brazil (?). 1877.
„ *pentaptera* (five-winged). 1–2. White. February. Brazil. 1836.
„ *piloscarpa* (hairy-fruited). Pale yellow, lastly green. Branches round. Brazil. 1907.
„ *platycarpa* (broad-fruited). Brazil.
„ *pulvinigera* (cushion-bearing). White and yellow, green. Stems round. Brazil. 1889.
„ *Regnellii* (Regnell's). White. Stems broad, flat. S. Brazil. 1890.
„ *rhombea* (diamond-shaped). Country unknown.
„ *robusta* (robust). Branches stout, round. S. Brazil. 1896.
„ *Saglionis* (Saglio's). ¾. Greenish-yellow. March. Argentina. 1843.
„ *salicornioides* (Salicornia-like). Yellow. March. Brazil.
„ „ *bambusoides* (Bambusa-like). 6. Orange-yellow or reddish-orange. Stems erect. Brazil. 1892.
„ „ *stricta* (upright). Stems erect.
„ *sarmentacea* (twiggy). White. Argentina. 1858.
„ *Simmleri* (Simmler's). White, tipped red. Stems round. Costa Rica. 1907.
„ *spathulata* (spathulate). Yellow. July. Brazil. 1836.
„ *suarezianа* (Suarezian). Small green. Stems short and also long. Madagascar. 1892.
„ *swartziana* (Swartzian). White. June. W. Ind. 1810.
„ *tetragona* (four-angled). Stems lying down, 4-angled. 1892.
„ *trigona* (three-angled). Brazil.
„ *tucumanensis* (Tucuman). White, tipped rose. Stems round or angular. Argentina. 1892.
„ *virgata* (twiggy). White. Stems round, drooping. Brazil. 1892.
„ *warmingiana* (Warmingian). White. Stems flat or 3–4-angled. Brazil. 1892.

R. Werckleі (Werckle's). Cream-white. Stems bundled, 3–5 ft. long. Costa Rica. 1906.
„ *zanzibarica* (Zanzibar). Like a robust *R. Cassytha*. Zanzibar. 1892.

RHIZOPHORA. Mangrove. (From *rhiza*, a root, and *phoreo*, to bear; the branches send down roots like the Banyan-tree. Nat. ord. *Mangroves* [Rhizophoraceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

Not likely to be much cultivated until we obtain salt-water aquariums in our large tropical houses. The Mangrove flourishes in rich, loamy soil, in thickets, by the side of the ocean, in tropical latitudes, and possesses the striking feature that the seeds vegetate while attached to the plant, and send out a long radicle, which generally reaches the soft mud, while the top puts out leaves; numbers of plants are thus joined together, something in the same way as the Banyan-tree.

R. Mangle (Mangle). 10. Pale yellow. E. Ind. 1820.

RHODAMNIA. (From *rhodamnos*, a flexible branch; in allusion to the slender, twiggy character of the plants. Nat. ord. Myrtaceæ. Allied to Myrtus.)

Greenhouse, evergreen shrubs or small trees. Cuttings in sand, under a hand-light. Fibrous loam, peat, and sand. The one-celled ovary is remarkable in the order.

R. argentea (silvery). 5–10. White. Australia.
„ *trinervia* (three-nerved). 15. White. May. India; Malaya; Australia. 1824.

RHODANTHE. (From *rhodon*, a rose, and *anthos*, a flower. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Referred to Helipterum.)

R. atrosanguinea (dark-blood-red). See HELIPTERUM ATROSANGUINEUM.
„ *maculata* (blotched). See HELIPTERUM MANGLESII MACULATUM.
„ *Manglesii* (Captain Mangle's). See HELIPTERUM MANGLESII.

RHODDON, or **RODDON-TREE.** *Pyrus Aucuparia*.

RHODEA. See RORHDEA.

RHODIOLA ROSEA. See SEDUM ROSEUM.

RHODOCHITON. (From *rhodon*, red, and *chiton*, a tunic or cloak; referring to the large, cloak-like red calyx. Nat. ord. Scrophulariaceæ. Allied to Maurandia.)

A greenhouse, evergreen climber. Seeds; cuttings in sand, under a bell-glass, during late summer. Fibrous loam, leaf-mould, and sand.

R. volubile (twining). 10–12. Blood-red; calyx purple-red. June to August. Mexico. 1833.

RHODODENDRON. Rose Bay. (From *rhodon*, a rose, and *dendron*, a tree; in allusion to the colour of *R. ponticum*. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Seeds in spring, in shallow pans, in sandy peat, and kept in a close, cool frame until the seedlings are fit to be handled, when they should be pricked off into similar soil, and gradually exposed to sun and air; layers, either in spring or autumn; cuttings of young shoots, when the base close to the older wood is getting firm, inserted in silver sand, and placed, at first, in a cold frame, and afterwards in a little bottom-heat; sandy peat is the best; sandy, fibrous loam and clayey loam the next; kitchen-garden soil, and soil of any kind containing or resting upon calcareous matter, the worst. The varieties of the *arboreum*, *campanulatum*, &c., require a little protection to have them in their beauty. See AZALEA for old varieties.

HARDY FALSE AZALEAS (*Azaleastrum*).

R. albiflorum (white-flowered). 2. White. June. N. Western Amer. 1835.
„ „ *plenum* (double). Stamens petaloid. British Columbia. 1907.
„ *ovatum* (egg-shaped). 1½–3. Rose-purple, spotted dark purple. N. China. 1844.
„ „ *album* (white). 1½–3. White. May. N. China. 1844.

HARDY AZALEAS (*Azalea*).

R. Albrechti (Albrecht's). Japan.
„ *arborescens* (tree-like). 10. Red. June. N. Amer. 1818.

R. calendula'ceum (marigold-like). 4. Orange. June. N. Amer. 1806.
„ „ *fla'mmeum* (flame). 4. Red. June. N. Amer. 1812.
„ *dilata'tum* (widened). Rose-purple. June. Japan. 1885.
„ *fla'vum* (yellow). 4–6. Yellow. June. Caucasus, &c. 1793.
„ „ *albiflo'rum* (white-flowered). 6. White. May.
„ „ *a'rdens* (burning). Glowing red.
„ *i'ndicum* (Indian). 4–6. Scarlet. June. China; Japan. 1808. "Indian Azalea." Half-hardy.
„ „ *amæ'num* (lovely). 1–2. Calyx and corolla crimson. April, May. Shanghai, China.
„ „ *amæ'num splе'ndens* (shining). 1–2. Crimson-red.
„ „ *balsaminæflo'rum* (balsam-flowered). 1. Salmon-red, double. Japan. 1848.
„ „ *Caldwe'lli* (Caldwell's).
„ „ *calyciflo'rum* (calyx-flowered).
„ „ *Kæ'mpferi* (Kæmpfer's). Red. June. Japan. 1892. Deciduous.
„ „ *obtu'sum* (blunt). 1½. Red. March. China. 1844.
„ „ *obtu'sum a'lbum* (white). 1½. White. Japan. 1887.
„ *Kæ'mpferi* (Kæmpfer's). See R. INDICUM KÆMPFERI.
„ *ledifo'lium* (Ledum-leaved). 2. White. April. China; Japan. 1824.
„ „ *narcissiflo'rum* (Narcissus-flowered).
„ „ *ple'num purpu'reum* (purple). Purple, double. 1886.
„ „ *van noordtia'num* (Van Noordtian). Flowers larger, of different shape. 1908.
„ *linearifo'lium* (linear-leaved). 1–2. Rose. February, March. Japan. 1869. Half-hardy.
„ *Marie'sii* (Maries's). 3–7. Pale purple. June. Central China. 1907.
„ *mo'lle* (soft). See R. SINENSE.
„ *mucronula'tum* (small-pointed). 2. Pale reddish-purple. Central Asia. 1910.
„ *nudiflo'rum* (naked-flowered). 3. Deep-pink. June. N. Amer. 1734.
„ „ *ca'rneum* (flesh). 4. Flesh-coloured. June. N. Amer. 1734.
„ „ *exi'mium* (choice).
„ „ *ru'brum* (red). 4. Red. June. N. Amer.
„ *obtu'sum* (blunt). See R. INDICUM OBTUSUM.
„ *occidenta'le* (western). White, yellow. California.
„ „ *gracio'sum* (pleasing). White, with yellow blotch, fragrant. 1908.
„ „ *magni'ficum* (magnificent). White, marked yellow, fragrant. 1908.
„ *quinquefo'lium* (five-leaved). Japan.
„ *Rhodo'ra* (Rhodora). 2–4. Rose-purple. April, May. N. Amer. 1767.
„ *rho'mbicum* (diamond-shaped). Japan.
„ *Schlippenba'chii* (Schlippenbach's). 5. Rosy-lilac. June. Manchuria; Japan. 1894.
„ *serpyllifo'lium* (thyme-leaved). 1. White. Japan. 1882.
„ *sine'nse* (Chinese). 3–6. Yellow. May. China and Japan. 1823.
„ *Tschono'skii* (Tschonosk's). Japan.
„ *Vase'yi* (Vasey's). 1–15–18. White to deep rose, dotted with darker spots. Carolina. 1888.
„ „ *a'lbum* (white). 1–6. White.
„ *visco'sum* (clammy). 2–6. White. July. N. Amer. 1734. "Swamp Honeysuckle."
„ „ *glau'cum* (sea-green). 2–4. White. June. N. Amer.
„ *yedoënse* (Yedo). Rose-pink. Japan. 1886.

HARDY RHODODENDRONS (*Eurhodododendron*).

R. adenopo'dium (gland-stalked). 4–10. Pale rose. Central China. 1909. Half-hardy.
„ *arugino'sum* (verdigris). See R. CAMPANULATUM.
„ *afgha'nicum* (Afghan). Afghanistan.
„ *A'nnæ* (Anna's). White. Western China. 1906.
„ *Anthopo'gon* (Anthopogon). 2. Purple. May. Alpine Himalaya; N. Asia. 1820.
„ *arbo'reum Campbe'lliæ* (Mrs. Campbell's). Temperate Himalaya.
„ *aucubæfo'lium* (Aucuba-leaved). Central China.
„ *Augusti'nii* (Augustin's). 4–10. White, pink, and pale purple. Central and Western China. 1905.
R. auricula'tum (auricled). 10–30. Pure white or rosy-pink. Central China. 1903.
„ *benthamia'num* (Benthamian). Purple-violet. Western China. 1907.
„ *blandfordiæflo'rum* (Blandfordia-flowered). See R. CINNABARINUM.
„ *brachyca'rpum* (short-fruited). 4–6. Pale yellow, dotted with green. Japan. 1888.
„ *califo'rnicum* (Californian). Pink. June. California.
„ „ *washingtonia'num* (Washingtonian). 1899.
„ *campanula'tum* (bell-shaped). 4–6. Pale pink. May. Alpine. Himalaya. 1825.
„ „ *a'lbum* (white). White.
„ „ *Batema'ni* (Bateman's). See R. CAMPANULATUM WALLICHII.
„ „ *pi'ctum* (painted).
„ „ *Walli'chii* (Wallich's). Bright pink or rose. Plant robust.
„ *campyloca'rpum* (curved-fruited). 4–6. Yellow. April. Sikkim, &c. 1851.
„ *camtscha'ticum* (Kamtschatka). See R. KAMTSCHATICUM.
„ *catawbie'nse* (Catawba). 4. Purple, spotted with crimson. July. N. Amer. 1809.
„ „ *fastuo'sum* (proud). Lilac, semi-double.
„ *Catesbæ'i* (Catesby's). 4. Purple. May. N. Amer. 1810.
„ *cauca'sicum* (Caucasian). 1. Purple. August. Caucasus. 1803.
„ „ *fla'vidum* (yellow). Straw, spotted with green. Caucasus. 1868.
„ „ *flo're a'lbo* (white-flowered). White.
„ „ *pi'ctum* (painted).
„ „ *strami'neum* (straw-coloured). 2. Straw. April.
„ *Chamæci'stus* (ground-cistus). See RHODOTHAMNUS CHAMÆCISTUS.
„ *chrysa'nthum* (yellow-flowered). ½. Yellow. June. Siberia. 1796.
„ *cilia'tum* (fringed). Red-purple. March. Sikkim, Himalaya.
„ „ *ro'seo-a'lbum* (rosy-white). White, tinged with rose.
„ *cinnabari'num* (cinnabar-red). 3–8. Cinnabar-red. June, July. Sikkim. 1851.
„ „ *pa'llidum* (pale). Pale red.
„ *collettia'num* (Collettian). 1–1½. Pure white. Afghanistan. 1888.
„ *conci'nnum* (neat). 1. Pale yellow, faintly spotted. W. China. 1910.
„ *coombe'nse* (Coombe-Wood). 1. Pale purple. China. 1909.
„ *dau'ricum* (Daurian). 3. Purple. March. Siberia. 1780.
„ „ *atrovi'rens* (dark green). 3. Purple. March. Siberia.
„ „ *sempervi'rens* (evergreen). See R. DAURICUM ATROVIRENS.
„ *deco'rum* (joyous). Yunnan, China.
„ *Delava'yi* (Delavay's). 10–20. Scarlet. May. Yunnan, China. 1904. Half-hardy.
„ *Fa'rreræ* (Mrs. Farrer's). 3. Lilac. March. China. 1829.
„ *ferrugi'neum* (rusty-*leaved*). 1½. Scarlet. June. Switzerland. 1752. "Rose des Alpes."
„ „ *a'lbum* (white). 1. White. June. Pyrenees. 1830.
„ „ *atrococci'neum* (dark-scarlet). Bright red.
„ „ *ere'ctum* (erect). Habit upright.
„ „ *hy'bridum* (hybrid).
„ „ *myrtifo'lium* (myrtle-leaved). Austrian Alps.
„ „ *variega'tum* (variegated). Leaves variegated.
„ *fla'vidum* (yellow). 1½–2. Yellow. W. China. 1910.
„ *Fortu'nei* (Fortune's). 6–12. Rosy. May. China. 1859.
„ *fu'lgens* (shining). 4–6. Rich dark red. April. Nepaul and Sikkim. 1851.
„ *glau'cum* (sea-green). 1–2. Pink. March. Sikkim and Bhotan. 1850.
„ *hale'nse* (Halan). (*R. subferrugineum* × *hirsutum*.) Austrian Alps.
„ *harrovia'num* (Harrowian). 2–3. Reddish or violet-purple, spotted yellow. W. China. 1910.
„ *hirsutifo'rme* (hairy-form). (*R. subferrugineum* × *hirsutum*.) Austrian Alps.
„ *hirsu'tum* (hairy-*leaved*). 1½. Scarlet. June. Switzerland. 1656.

R. hirsu'tum variega'tum (variegated-*leaved*). 1. Scarlet. June. 1800.
„ *hy'bridum* (*Herbert's*-hybrid). Pink. July.
„ *hypoglau'cum* (under-glaucus). Central China.
„ *interme'dium* (intermediate). (*R. ferrugineum* × *hirsutum*.) Tyrol. 1891.
„ *intrica'tum* (intricate). 1–3. Lilac or almost violet. Western China. 1907.
„ *kamtscha'ticum* (Kamtschatka). Purple. July. N. Asia. 1802.
„ *Kei'skei* (Keiske's). 1–2. Rose-purple. Japan. 1895.
„ *Kendri'ckii* (Kendrick's). Scarlet. April. Himalaya. 1859.
„ „ *latifo'lium* (broad-leaved). Scarlet. April. Himalaya. 1859.
„ *Ke'ysii* (Keys's). 3–4. Red, yellow. July. Bhotan. 1851.
„ *la'cteum* (milky). White. W. China. 1909.
„ *lappo'nicum* (Lapland). ½. Crimson. April. Northern and Arctic regions. 1825.
„ *lepido'tum* (scaly). 1. Rose. Temperate and Alpine Himalaya. 1829.
„ „ *chlora'nthum* (green-flowered). 1. Yellow-green, spotted green.
„ „ *obova'tum* (obovate). 1–3. Maroon-purple; anthers orange. Sikkim. 1879.
„ *macrose'palum* (large-sepaled). Rose and purple. Japan. 1870.
„ *ma'ximum* (largest). 20. Pink. July. N. Amer. 1756.
„ „ *a'lbum* (white). 15. White. July New Jersey. 1811.
„ *Metterni'chii* (Metternich's). Rose. May. Japan. 1870.
„ „ *penta'merum* (five-parted).
„ *micra'nthum* (small-flowered). 4–20. White N. and Central China. 1903.
„ *myrtifo'lium* (myrtle-leaved). 2–4. Purple. May. (? *R. hirsutum* × *punctatum*.) 1763.
„ *ni'veum* (snowy). Lilac. Leaves snowy. May. Sikkim. 1850.
„ „ *fu'lvum* (tawny). Deeper purple. Leaves buff beneath. Sikkim. 1885.
„ *orbicula're* (orbicular). 5–10. Rose. Tibet. 1879.
„ *parvifo'lium* (small-leaved). Pale rose. China; Siberia. 1877.
„ *pittosporæfo'lium* (Pittosporum-leaved). Central China.
„ *po'nticum* (Pontic). 12. Purple. May. Spain; Portugal; Asia Minor. 1763.
„ „ *a'lbum* (white). White.
„ „ *cheiranthifo'lium* (wallflower-leaved).
„ „ *daphnoi'des* (Daphne-like).
„ „ *lancifo'lium* (lance-leaved).
„ „ *myrtifo'lium* (myrtle-leaved). See R. MYRTIFOLIUM.
„ „ *obtu'sum* (blunt-*leaved*). 4. Purple. May. Armenia.
„ „ *odora'tum* (sweet-scented). 3. Pink. July. 1820.
„ „ *variega'tum* (variegated). Leaves variegated.
„ *præ'cox* (early). 1–2. Purple. March. (*R. ciliatum* × *dauricum*.) 1868.
„ *primuli'num* (primrose). See R. FLAVIDUM.
„ *Przewa'lskii* (Przewalsky's). White. Kansu, China. 1899.
„ *puncta'tum* (dotted-*leaved*). 4. Pink. July. N. Amer. 1786.
„ „ *ma'jus* (larger). 6. Pink. July.
„ *purpu'reum* (purple). See R. MAXIMUM.
„ *Pu'rshii* (Pursh's). See R. MAXIMUM ALBUM.
„ *racemo'sum* (racemed). ½–2. Rose and white. June, July. Yunnan, China. 1892.
„ „ *ri'gidum* (rigid). 1. Pale rose to dark red, in bunches. Yunnan, China. 1908.
„ *rubigino'sum* (rusty). 4. Pink. June. Yunnan. 1898.
„ *semibarba'tum* (half-bearded). Green-yellow. Japan. 1871.
„ *Smirno'wi* (Smirnow's). Purple. Caucasus. 1891.
„ *Souli'ei* (Soulie's). 3–12. Rose-pink. W. China. 1909.
„ *spinuli'ferum* (small-spine-bearing). Pale orange-yellow, scarlet-red. Yunnan, China. 1910.
„ *Thomso'ni* (Thomson's). 5–10. Deep red. April. Nepaul and Sikkim. 1851.
„ *tortonia'num* (Tortonian). Garden origin.
R. Unge'rni (Ungern's). White, tinted red outside. Caucasus. 1891.
„ *virga'tum* (twiggy). 1–2. Pink. April. Sikkim. 1850.
„ *washingtonia'num* (Washingtonian). See R. CALIFORNICUM WASHINGTONIANUM.
„ *Yodoga'wa* (Yodogawa). Delicate lilac. Japan.
„ *yunnane'nse* (Yunnan). White, spotted with blood-red. Yunnan. 1898.

COOL GREENHOUSE RHODODENDRONS (*Eurhododendron*).

R. arbo'reum (tree). 20–25. Scarlet. May. Himalaya. 1820.
„ „ *a'lbum* (white). White.
„ „ *cinnamo'meum* (cinnamon). 20. Purple. June. Nepaul. 1820.
„ „ *limba'tum* (bordered). Rose, with white throat and blood-red blotch. Sikkim. 1862.
„ „ *nilagi'ricum* (Neilgherrian). Rose, white. May. Neilgherries. 1840.
„ „ *ni'veum* (snowy-*white*). 20. White. March. Nepaul. 1817.
„ „ *Paxto'nii* (Mr. Paxton's). Crimson. May. Khasia. 1837.
„ „ *puni'ceum* (purple). Intense red-scarlet.
„ „ *Rollisso'nii* (Mr. Rollisson's). Crimson. May. Nepaul. 1837.
„ „ *ro'seum* (rosy). 20. Rose. April. Nepaul.
„ „ *sangui'neum* (blood-coloured). 20. Scarlet. April. Nepaul. 1817.
„ *arge'nteum* (silvery). See R. GRANDE.
„ *assa'micum* (Assamese). See R. FORMOSUM.
„ *Auckla'ndii* (Auckland's). See R. GRIFFITHIANUM.
„ *barba'tum* (bearded). 3–60. Blood-red. Himalaya. 1829.
„ „ *Smi'thii* (Smith's). Under surface of leaves scurvy.
„ *Boo'thii* (Booth's). 5–6. Yellow. Himalaya.
„ *calophy'llum* (beautiful-leaved). See R. MADDENI CALOPHYLLUM.
„ *camelliæflo'rum* (Camellia-flowered). 5–6. White. April. Himalaya. 1851.
„ *Champio'næ* (Mrs. Champion's). 7. Pink. April. China. 1851.
„ *charlophy'llum* (paper-leaved). Violet-rose or white. S. China. 1907.
„ *cilii'calyx* (eye-lashed-calyxed). White. Yunnan, China. 1895.
„ *Dalhousiæ* (Lady Dalhousie's). 7. Yellowish-white. March. Sikkim. 1850.
„ *Edgewo'rthii* (Edgeworth's). 3. White. Leaves rusty-woolly beneath. May. Himalaya. 1851.
„ *exi'mium* (choice). See R. FALCONERI EXIMIUM.
„ *Falcone'ri* (Falconer's). 30. White. May. Himalaya. 1850.
„ „ *exi'mium* (choice). 30. White. Himalaya.
„ *Fo'rdii* (Ford's). 10. White. China. 1894.
„ *formo'sum* (beautiful). 5. White. May. Himalaya. 1837. Deciduous.
„ *Gibso'nii* (Gibson's). See R. FORMOSUM.
„ *gra'nde* (grand). 5–30. White. March. Himalaya. 1850.
„ „ *ro'seum* (rosy). Deep red. Sikkim. 1887.
„ *griffithia'num* (Griffithian). 3–6. White, very large. May. Himalaya. 1850.
„ *Hodgso'ni* (Hodgson's). 12–20. Purple. April. Himalaya. 1851.
„ *Hoo'keri* (Hooker's). 12–14. Red. April. Himalaya.
„ *Jenki'nsii* (Jenkins's). See R. MADDENI JENKINSII.
„ *kingia'num* (Kingian). 10–20. Blood-red. Munipur. 1899.
„ *irrora'tum* (sprinkled). 3–4. Creamy-white, tinted rose. China.
„ *lana'tum* (woolly). 20. Yellow-white. June. Himalaya. 1851.
„ *Li'ndleyi* (Lindley's). White. Himalaya. 1864.
„ *longifo'lium* (long-leaved). See R. GRANDE.
„ *Madde'ni* (Major Madden's). 7. Blush. May. Himalaya. 1850.
„ „ *calophy'llum* (beautiful-leaved). 3–6. White. May. Himalaya.
„ „ *Jenki'nsii* (Jenkins's). 6–7. White. Himalaya.
„ „ *longiflo'rum* (long-flowered). Dull rose outside, pale blush within. 1894.
„ „ *obtusifo'lium* (blunt-leaved). Leaves rounded at both ends. Assam. 1908.
„ *mode'stum* (modest). 1–2. Pink, with red spots. Himalaya. 1899.

R. nilagi'ricum (Neilgherrian). See R. ARBOREUM NILAGIRICUM.
„ *Nutta'llii* (Nuttall's). 12–30. White, fragrant Himalaya. 1859.
„ *Oldha'mi* (Oldham's). 2–3. Reddish-salmon. Formosa. 1882.
„ *pe'ndulum* (drooping). 3–4. White. March. Sikkim. 1882.
„ *Ro'ylei* (Royle's). See R. CINNABARINUM.
„ *scabrifo'lium* (rough-leaved). White, tinted with rose. Yunnan, China. 1890.
„ *seto'sum* (bristly). 1. Purple. Nepaul. 1825.
„ *Shephe'rdii* (Shepherd's). Scarlet. Himalaya. 1859.
„ *Smi'thii* (Smith's). See R. BARBATUM SMITHII.
„ *trifio'rum* (three-flowered). 4–6. Greenish-yellow. Sikkim, Himalaya. 1882.
„ *veitchia'num* (Veitchian). 3–4. White. May. Burma. 1857.
„ *Wi'ghtii* (Wight's). 6–14. Pale straw-yellow, fragrant. Himalaya. 1851.
„ *Windso'rii* (Windsor's). See R. ARBOREUM.
„ *zeyla'nicum* (Cingalese). See R. ARBOREUM.

WARM GREENHOUSE OR STOVE RHODODENDRONS.

R. a'lbum (white). 1. Yellow-white or cream. Autumn. Java.
„ *apoa'num* (Apoan). 1–2. Red, tubular. Philippines. 1885.
„ *brookea'num* (Rajah Brooke's). Reddish-salmon. November. Borneo. 1848.
„ „ *gra'cile* (slender). Pale yellow. 1871.
„ *citri'num* (citron). Lemon. May. Java. 1854.
„ *Curti'sii* (Curtis's). See R. MULTICOLOR CURTISII.
„ *gra'cile* (slender). 6. Bright red. Borneo. 1848.
„ *jasminiflo'rum* (jasmine-flowered). 1–2. White, pink. May. Java. 1849.
„ „ *carmina'tum* (carmine). Rich carmine. 1888.
„ „ *ro'seum* (rosy). Soft carmine-rose. Perak. 1894.
„ *java'nicum* (Javanese). 4. Orange, red. All seasons. Java. 1847.
„ „ *tubiflo'rum* (tube-flowered). Orange-red. Sumatra.
„ *Ko'chii* (Koch's). White, tubular. Philippines. 1885.
„ *Lo'bbii* (Lobb's). Deep red or crimson. Borneo. 1869.
„ *longiflo'rum* (long-flowered). 8. Crimson. Borneo. 1848.
„ *malaya'num* (Malayan). Deep red. Sumatra. 1854.
„ *moulmaine'nse* (Moulmein). White. Burma.
„ *multi'color* (many-coloured). Dark crimson or yellow. Sumatra.
„ „ *Curti'sii* (Curtis's). 1884.
„ *retu'sum* (blunt-*leaved*). 1½. Scarlet. May. Java; Sumatra. 1818.
„ *verticilla'tum* (whorl-*leaved*). Reddish. Borneo. 1848.

RHODOLEI'A. (From *rhodon*, a rose, and *leios*, smooth; the coloured bracts, surrounding the head of rose flowers, suggest a rose, while the whole plant is very smooth. Nat. ord. Hamamelidaceæ.)
Greenhouse evergreen shrub with the habit of a Rhododendron. Seeds; layers. Fibrous loam, peat, and sand.
R. Champio'ni (Champion's). Rose. China. 1852.

RHODOMY'RTUS. (From *rhodon*, rose, and *murtos*, the myrtle-tree; in allusion to the colour of the flowers. Nat. ord. Myrtaceæ. Allied to Myrtus.)
Greenhouse evergreen shrubs. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.
R. macroca'rpa (large-fruited). 5–8. Australia.
„ *tomento'sa* (felted). 4–6. Rose or purple. June. India and Malaya. 1776.

RHODO'RA. (From *rhodon*, rose; in allusion to the colour of the blossom, which precedes the foliage. Nat. ord. Ericaceæ. Now referred to Rhododendron.)
R. canade'nsis (Canadian). See RHODODENDRON RHODORA.

RHODO'SPATHA. (From *rhodon*, rose, and *spatha*, or *spathe*, a spathe, which is rose-coloured in some species. Nat. ord. Araceæ.)
A stove evergreen shrub, climbing by means of aerial roots. Cuttings of side branches in sand in a close case, with bottom-heat. Fibrous, lumpy peat, loam, and sand.
R. bla'nda (charming). 3–5. Pale greenish-yellow. Brazil. 1860.

RHODOSPHÆ'RA. (From *rhodon*, rose, and *sphaira*, a ball. Nat. ord. Anacardiaceæ.)
Greenhouse shrub. Cuttings in sand under a bell-glass. Fibrous loam, a little peat, and sand.
R. rhodanthe'ma (red-flowering). Red. Australia.

RHODO'STACHYS. (From *rhodon*, rose, and *stachus*, a spike; the flowers are in dense spikes, and in some cases rose-coloured. Nat. ord. Bromeliaceæ. Allied to Ananas.)
Stove perennial herbs with leathery evergreen foliage. Suckers or offsets. Fibrous loam, lumpy peat, some bits of charcoal, and sand.
R. andi'na (Andean). 1. Rose. June to August. Chili. 1850.
„ *argenti'na* (Argentine). See BROMELIA ARGENTINA.
„ *bi'color* (two-coloured). 1. Rose. Chili. 1851.
„ *littora'lis* (shore). Chili.
„ *pitcairniæfo'lia* (Pitcairnia-leaved). 1–1½. Scarlet or red. Chili. 1868.
„ „ *kirchhoffia'na* (Kirchhoffian). 1–1½. Blue; bracts reddish at base. Chili. 1890.

RHODO'STOMA. (From *rhodon*, a rose, and *stoma*, a mouth; the opening of the tube of corolla. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Palicourea.)
R. gardenioi'des (Gardenia-like). See PALICOUREA GARDENIOIDES.

RHODOTHA'MNUS. (From *rhodon*, a rose, and *thamnos*, a bush or shrub; in reference to the colour of the flowers. Nat. ord. Ericaceæ. Allied to Kalmia.)
A dwarf, branching hardy little bush. Seeds, layers. Peaty soil in sheltered situation.
R. Chamæci'stus (Chamæcistus). ½. Pale rosy-purple. May. Austrian Alps. 1786.
„ *kamtscha'ticus* (Kamtschatkan). See RHODODENDRON KAMTSCHATICUM.

RHODO'TYPOS. (From *rhodon*, a rose, and *tupos*, a shape or form; the flowers resemble a single, white rose. Nat. ord. Rosaceæ. Allied to Kerria.)
A hardy, deciduous shrub. Suckers, layers, or cuttings in a frame or under a hand-light. Ordinary soil.
R. kerrioi'des (Kerria-like). 4–10. White. April, May. Japan. 1866.

RHŒ'ËO. (Possibly a commemorative name. Nat. ord. Commelinaceæ.)
Warm greenhouse, evergreen herb. Cuttings in sand under a bell-glass. Fibrous loam, one-third peat, or leaf-mould, and plenty of sand.
R. di'scolor (two-coloured). 1. White, pink. Leaves purple beneath. Mexico. 1783.
„ „ *co'ncolor* (one-coloured). 1. Leaves wholly green. Mexico. 1868.

RHO'PALA. See ROUPALA.

RHOPALOBLA'STE. (From *rhopalon*, a club, and *blastos*, a sapling. Nat. ord. Palmaceæ. Allied to Ptychosperma.)
Stove palm, with smooth, slender stem. Seeds. Fibrous loam, lumpy peat, and sand.
R. hexa'ndra (six-anthered). Leaves pinnate. Moluccas. 1890.
„ *singapore'nsis* (Singapore). See PTYCHORAPHIS SINGAPORENSIS.

RHOPALOSTI'GMA. See STAUROSTIGMA.

RHOPALO'STYLE. (From *rhopalon*, a club, and *stulos*, a pillar or style; in allusion to the form of the spadix. Nat. ord. Palmaceæ.)
Greenhouse palms with long, pinnate leaves. Seeds. Loam, peat, and sand.
R. Baue'ri (Bauer's). 5–20. White. October. Norfolk Island. 1832.
„ *sa'pida* (savoury). 10–20. Pink. New Zealand. 1827.

RHUBARB. *Rhe'um Rhapo'nticum*, *R. hy'bridum*, *R. undula'tum*, and *R. palma'tum*.
Varieties.—There are several varieties, of which the most preferable are the Tobolsk, Gigantic, Victoria,

Champion, Hawke's Champagne, Dawes' Challenge, The Sutton, and Bucks, or Elford.

The Soil best suited to it is light, rich, deep, unshaded, and moderately moist.

Sowing.—It may be propagated by divisions, but occasionally by seed. Sow soon after it is ripe, in September or October, in drills 3 feet apart, and an inch deep, the plants to remain where raised; for although they will bear removing, yet it always checks and somewhat lessens their growth. When they make their appearance in the spring, thin to 6 or 8 inches asunder, and let the surface of the ground about them be loosened with the hoe. At the close of summer, when it can be determined which are the strongest plants, finally thin to 4 feet, or the Gigantic and Victoria to 6. Break down the flower-stems as often as they are produced. In autumn remove the decayed leaves, and point in a little well-putrefied stable-dung, and earth up the stools. In the spring, hoe the bed, and as the stalks when blanched are much more delicate in taste, require less sugar to be rendered palatable, and are greatly improved in appearance, dig a trench between the rows, and the earth from it place about a foot thick over the stool. This covering must be removed when the cutting ceases, and the plants allowed to grow at liberty. As the earth in wet seasons is apt to induce decay, the covering may be advantageously formed of coal-ashes or drift-sand. Chimney-pots and butter-firkins make good coverings for blanching. Sea-kale pots, with lids, are very handy, because the stalks may be pulled without removing the blanching material.

To obtain Seed.—Two-year-old plants often produce seed, but in their third year always. It must be gathered as soon as ripe, and great care taken that none is scattered over the beds, for the plants thence produced often spring up, and greatly injure the old plants by growing unobserved amongst them.

Forcing.—Plant a single row 3 feet apart in ground that has been trenched two spades deep, and dressed with well-putrefied dung at the time. The forcing may commence in December; first cover either with sea-kale or common garden-pots (twelves), but chimney-pots are still better, the leaf-stalks becoming much longer and finer, and envelope them with fermenting dung. A frame is much less objectionable, formed by driving stakes into the ground on each side of the bed, alternating with the plants. These are to be 3 feet high above ground, and the space between the two rows of stakes 2 feet at the bottom, but approaching each other, and fastened by cross-pieces, so as to be only 15 inches apart at top. To the sides and top stout lathes are fixed, forming a sort of cage, to prevent the dung falling upon the plants.

The dung may be either fresh, or that which has already undergone fermentation, placed all round the frame 18 inches thick, and the top covered with long litter. The temperature in the interior should have a range from 55° to 60°. If it rises higher, two or three large holes made through the top soon correct it.

Rhubarb may be forced without either pots or frame, by merely covering the plants 6 inches deep with light litter, care being taken that the plants are not injured. Where a properly constructed, dark, artificially heated forcing-house exists, all that is necessary is to lift the roots and plant them in leaf-mould or any light soil, in this.

Mr. Knight's mode of forcing is to place in the winter as many plants as necessary in large, deep pots, each pot receiving as many as it can contain, and the interstices entirely filled up by fine, sandy loam, washed in. The tops of the roots are placed on a level with each other, and about an inch below the surface. These being covered with inverted pots of the same size, may be placed in a vinery or hotbed, and on the approach of spring, any time after January, any room or cellar will be sufficiently warm. If copiously supplied with water, the plants vegetate rapidly and vigorously, and each pot will produce three successional cuttings, the first two being the most plentiful. As soon as the third is gathered, the roots may be changed, and those removed replanted in the ground, when they will attain sufficient strength to be forced again in a year's time. If not, it is of little consequence, for year-old roots raised from cuttings, or even seed sown in autumn, are sufficiently strong for use.

Propagation by Division.—Mr. Rogers, a successful cultivator, says, that when the rhubarb is propagated by the root, care must be taken to retain a bud on the crown of each offset, together with a small portion of the root itself, with, if possible, some fibres attached to it. These offsets may be taken from roots of three or four years old without injury to the plant. They may be planted where they are intended to remain, at the same distance and in the same manner as advised for the seedlings.

RHU'S. Sumach. (From *Rhous*, the Greek name of the genus. Nat. ord. *Anacards* [Anacardiaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

Hardy deciduous trees and shrubs, except where otherwise stated. By seeds, layers, and cuttings of roots and shoots; light, fibrous loam.

R. a'lbida (whitish). 6. Green, yellow. N. Africa; Syria. 1823.
„ *Ame'la* (Amela), See R. SEMIALATA.
„ *aroma'tica* (aromatic). See R. CANADENSIS.
„ *atoma'ria* (speckled). See R. VILLOSA.
„ *Bu'cki-Ame'la* (Bucki-Amela). See R. SEMIALATA.
„ *canade'nsis* (Canadian). 8. Yellow. May. N. Amer. 1773.
„ „ *triloba'ta* (three-lobed).
„ *carolinia'na* (Carolinian). See R. GLABRA COCCINEA.
„ *cau'stica* (caustic). See LITHRÆA VENENOSA.
„ *chine'nsis* (Chinese). See R. SEMIALATA.
„ *cocci'nea* (scarlet). See R. GLABRA COCCINEA.
„ *copall'ina* (gum-copal). 6. Green, yellow. August. N. Amer. 1688.
„ „ *exte'nsa* (extended). Fruits shining red. New Jersey. 1907.
„ „ *leuca'ntha* (white-flowered). 4. Whitish. August. N. Amer.
„ *Coria'ria* (Coriaria-*leaved*). 10. Green, yellow. July. Mediterranean region. 1640.
„ *cotinoi'des* (Cotinus-like). 5–10. Green. May, June. S. United States. "Chittam Wood."
„ *Co'tinus* (wild-olive). 6. Pale purple. June. S. Europe. 1656. "Smoke Plant."
„ „ *atropurpu'rea* (dark-purple). Hairs on fruit-stalks becoming purple. "Purple Smoke Plant."
„ „ *pe'ndula* (drooping). Branches drooping. 1885.
„ *cuneifo'lia* (wedge-leaved). S. Africa. Greenhouse.
„ *diversifo'lia* (various-leaved). See R. TOXICODENDRON.
„ *diversi'loba* (various-lobed). See R. TOXICODENDRON.
„ *e'legans* (elegant). See R. GLABRA COCCINEA.
„ *exci'sa* (cut-out). S. Africa. Greenhouse.
„ *gla'bra* (smooth). 8. Green, yellow. August. N. Amer. 1726.
„ „ *cocci'nea* (scarlet). 10. Red. June. N. Amer. 1726.
„ „ *dioi'ca* (dicœcious). 8. Greenish. July. N. Amer.
„ „ *lacinia'ta* (deeply-cut). Leaves twice deeply divided, red in autumn.
„ *insi'gnis* (remarkable). Himalaya.
„ *java'nica* (Javanese). See R. SEMIALATA.
„ *juglandifo'lia* (Juglans-leaved) of Wallich. See R. WALLICHII.
„ *læviga'ta* (smooth). S. Africa. Greenhouse.
„ *lu'cida* (shining) of Aiton. See R. MUCRONATA.
„ *lu'cida* (shining) of Linnæus. 3–6. White. July. S. Africa. 1697. Greenhouse.
„ *Michau'xii* (Michaux's). 2–3. Fruit bright scarlet. S. United States. 1895.
„ *mucrona'ta* (small-pointed). S. Africa.
„ *myria'ntha* (myriad-flowered). Country unknown.
„ *Osbe'ckii* (Osbeck's). 10–20. White. China and Japan. 1867.
„ *oxyaca'ntha* (hawthorn-like). See R. ALBIDA.
„ *pu'mila* (dwarf. *Poisonous*). 1. Green, yellow. July. N. Amer. 1806.
„ *punjabe'nsis* (Punjab). Himalaya.
„ *Radælija'wel* (Radælijawel). See CONNARUS MONOCARPUS.
„ *radi'cans* (rooting). See R. TOXICODENDRON and varieties.
„ *rhodanthe'ma* (red-flowering). See RHODOSPHÆRA RHODANTHEMA.
„ *semiala'ta* (half-winged). 10–40. White. August. Himalaya; China. 1799.
„ „ *Osbe'ckii* (Osbeck's). See R. OSBECKII.
„ „ *purpu'rea* (purple). Young leaves reddish-green. Central China. 1907.
„ *Simo'nii* (Simon's). China. 1866.
„ *si'nica* (Chinese). Flowers small, in large panicles. China. 1908.

R. suave'olens (sweet-smelling). See R. CANADENSIS.
„ *succeda'nea* (substituted). 10–15. Greenish-yellow. June. India; China; Japan. 1768. "Japan Wax." Greenhouse.
„ *sylve'stris* (wood). China and Japan.
„ *thee'zans* (tea). See R. UNDULATA.
„ *Toxicode'ndron* (poison-tree). 3–20. Greenish-yellow. June. N. Amer. 1640. "Poison Oak."
„ „ *microca'rpa* (small-fruited). 2. Green-yellow. June. N. Amer. Climber.
„ „ *volu'bilis* (twining). 3–20. Green-yellow. June. N. Amer. Climber.
„ *trichoca'rpa* (hairy-fruited). 20–25. Greenish. Fruit pale, prickly. Japan. 1897.
„ *typhi'na* (fever). 20. Green, yellow. July. N. Amer. 1629.
„ „ *arbore'scens* (tree-like). 25. Green, yellow. July.
„ „ *filici'na* (fern-like). Leaves 3 ft. long; leaflets incised. 1907.
„ „ *frute'scens* (shrubby). 6. Green, yellow. July.
„ „ *lacinia'ta* (deeply-cut). Leaves much and deeply cut. 1907.
„ *undula'ta* (waved-*leaved*). 5. Whitish-yellow. S. Africa.
„ *venena'ta* (poisonous). 15. Green, yellow. July. E. United States. 1713. "Poison Sumach."
„ *ve'rnix* (varnish). See R. VENENATA.
„ *vernici'fera* (varnish-bearing). 10. Green, yellow. China; Japan. 1823. "Lacquer Tree."
„ „ *columna'ris* (columnar). Branches erect. 1907.
„ *villo'sa* (shaggy). Greenish-yellow. July. Trop. and S. Africa. 1714. Greenhouse.
„ *Walli'chii* (Wallich's). 8–12. Green, yellow. Himalaya.

RHYNCHANTHE'RA. (From *rhunchos*, a snout or beak, and *anthera*, an anther; the anthers are prolonged at the ends. Nat. ord. Melastomaceæ.)
Evergreen, stove shrub. Cuttings of half-mature shoots in sand, in a close case, with bottom-heat. Fibrous loam, lumpy peat, and sand. Winter temp., 55° to 60°; summer, 60° to 80°.
R. grandiflo'ra (large-flowered). 3–6. Dark rose. Guiana and Brazil. 1873.

RHYNCHA'NTHUS. (From *rhunchos*, a beak, and *anthos*, a flower; in allusion to the shape of the flowers. Nat. ord. Scitaminaceæ.)
Perennial stove herbs, with tuberous rootstock. Offsets or divisions of the tubers. Good loam, leaf-mould, some well-decayed manure, and sand.
R. bluthia'nus (Bluthian). 1. Carmine-red; filament white. Burma (?). 1899.
„ *johnia'nus* (Johnian). 5. Yellow; bracts red. Burma. 1907.
„ *longiflo'rus* (long-flowered). 1½. Yellow, tipped green; bracts reddish. July. Burma. 1885.

RHYNCOCA'RPA. (From *rhunchos*, a beak, and *carpos*, a fruit; the fruits are beaked. Nat. ord. Cucurbitaceæ. Now referred to Kedrostis.)
Climbing tuberous-rooted greenhouse herbs, but may be grown as annuals in the open in summer. Seeds. Loam, leaf-mould, and sand, or light, rich soil.
R. fœ'tida (fetid). See KEDROSTIS FŒTIDISSIMA.
„ *fœtidi'ssima* (very-*fetid*). See KEDROSTIS FŒTIDISSIMA.
„ *glomera'ta* (crowded). Greenish. Brazil. 1880.

RHYNCOGLO'SSUM. (From *rhunchos*, a beak, and *glossa*, a tongue; form of the lip of the flower. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Didymocarpus.)
Greenhouse biennial. Seeds in hotbed, in spring, and, after being potted off, flowered in the plant stove or greenhouse; peat and loam, with a little silver sand and leaf-mould.
R. obli'quum (oblique). 1. Blue. July. E. Ind.; Malaya. 1844.
„ *zeyla'nicum* (Ceylon). See R. OBLIQUUM.

RHYNCHOPE'TALUM MONTA'NUM. See LOBELIA RHYNCHOPETALUM.

RHYNCHO'SIA. (From *rhunchos*, a beak; in allusion to the beak-like keel. Nat. ord. Leguminosæ.)
Stove and greenhouse, perennial, twining herbs. Seeds. Loam with a little leaf-mould, and sand.

R. a'lbo-ni'tens (white-shining). See DESMODIUM SCUTATUM.
„ *caribæ'a* (Caribæan). Yellow, brown. September. W. Ind.; Trop. and S. Africa. Greenhouse.
„ *Chryso'scias* (Chrysoscias). Yellow. May. S. Africa. 1871. Greenhouse.
„ *cyanosp'erma* (blue-seeded). Red-purple. July, September. Trop. Asia and Africa.
„ „ *albiflo'ra* (white-flowered). Creamy-white.
„ *gi'bba* (bulging). See R. CARIBÆA.
„ *glandulo'sa* (glandular). 2. Yellow. July. S. Africa. 1825. Greenhouse.
„ *mo'llis* (soft). 3. Yellow. July. Trop. Africa. 1824.
„ *phaseloi'des* (Phaseolus-like). Yellow, purple. June, July. Trop. Amer. 1818.
„ *viola'cea* (violet). See ERIOSEMA VIOLACEUM.

RHYNCHOSPE'RMUM. See TRACHELOSPERMUM.

RHYNCHO'STYLIS. (From *rhunchos*, a beak, and *stulos*, a column; the column is beaked. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Divisions at the commencement of growth. Fibre of peat, sphagnum, some charcoal, and plenty of crocks.
R. cæle'stis (sky-blue). 1. Light blue. Siam.
„ *retu'sa* (blunt). 1. White, pale violet. Trop. Asia. 1820.
„ „ *ma'jus* (larger). White, pink. July. E. Ind. 1839.
„ „ *russellia'na* (Russellian). White, purple. 1886.

RHYNCHO'TECHUM. (Derivation not obvious. Nat. ord. Gesneraceæ. Allied to Besleria.)
Softly, hairy stove or greenhouse subshrubs. Seeds. Cuttings in sand, in heat. Fibrous loam, leaf-mould, and sand.
R. elli'pticum (diamond-shaped). Rose. Himalaya. 1870.
„ *vesti'tum* (clothed). Rose. Himalaya.

RHYTIDOPHY'LLUM. (From *rhutis*, a wrinkle, and *phullon*, a leaf. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Pentarhaphia.)
For culture, see GE'SNERA.
R. auricula'tum (eared). Red, yellow. August. Brazil. 1834.
„ *floribu'ndum* (free-flowering). ½. Crimson. June. Cuba. 1846.
„ *Humbo'ldtii* (Humboldt's). See CAMPANEA HUMBOLDTII.
„ *Oersted'ii* (Oersted's). See CAMPANEA OERSTEDII.
„ *prasina'tum* (leek-green). Brazil.
„ *tigri'dia* (tiger-spotted). See CAMPANEA GRANDIFLORA.
„ *tomento'sum* (felted). 3. Green-yellow, spotted with purple. June to September. W. Ind.

RIBBON GRASS. *Pha'laris arundina'cea variega'ta.*

RIBBON TREE. *Plagia'nthus.*

RI'BES. Currant. (From the Arabic name of a plant. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Hardy deciduous shrubs, except where otherwise stated. Nearly all bloom in April. Seeds, chiefly, for fresh varieties; cuttings of ripened shoots in spring or autumn, in the open ground; good garden-soil. See CURRANT and GOOSEBERRY.
R. acicula're (needle-*spined*). White. Siberia.
„ *acumina'tum* (pointed-*leaved*). See R. GLACIALE.
„ *a'lbidum* (whitish). See R. SANGUINEUM ALBIDUM.
„ *albine'rvium* (white-nerved). See R. RUBRUM.
„ *alpi'num* (alpine). 3. Green. Britain.
„ „ *bacci'ferum* (berry-bearing). 3. Green. Britain.
„ „ *fo'liis au'reis* (golden-leaved). Leaves yellow. 1881.
„ „ *fo'liis-variega'tis* (variegated-leaved). 4. Green. May. Britain.
„ „ *lacinia'tum* (deeply-cut). Leaves deeply cut.
„ „ *pu'milum* (dwarf). 2. Green.
„ „ *ste'rile* (barren). 3. Green. Britain.
„ *america'num* (American). 4. Yellow. N. Amer. 1729.
„ „ *grandiflo'rum* (large-flowered). 4. Yellow. N. Amer.
„ „ *parviflo'rum* (small-flowered). 4. Yellow. N. Amer.

R. ami'ctum (clothed). 2–3. Crimson. California, &c.
,, ,, *crue'ntum* (blood-coloured). 2–3. Crimson. Berries dull red, spring. N.W. Amer. 1906.
,, ,, *hispi'dulum* (bristly). Plant glandular hairy. 1909.
,, ,, *pube'scens* (downy). Plant downy. 1909.
,, *a'tro-purpu'reum* (dark purple). See R. PETRÆUM.
,, *au'reum* (golden). 8. Yellow. May. Missouri. 1812. "Buffalo Currant."
,, ,, *auranti'acum* (orange).
,, ,, *præ'cox* (early). 8. Yellow. N. Amer. 1812.
,, ,, *sero'tinum* (late). 8. Yellow. June. N. Amer. 1812.
,, ,, *tenuiflo'rum* (slender-flowered). 6. Yellow. N.W. Amer. 1812.
,, ,, *tenuiflo'rum fru'ctu lu'teo* (yellow-berried). 6. Yellow.
,, ,, *tenuiflo'rum fru'ctu ni'gro* (black-berried). 6. Yellow.
,, ,, *villo'sum* (shaggy-*leaved*). 8. Yellow. N. Amer. 1812.
,, *bracteo'sum* (large-bracted). Western N. Amer.
,, ,, *flo're fu'sco* (dusky-flowered). Brownish. Western N. Amer. 1906.
,, *carpa'thicum* (Carpathian). See R. PETRÆUM.
,, *ce'reum* (waxy-*leaved*). 2. White. N.W. Amer. 1827.
,, *colorade'nse* (Colorado). Greenish-brown. Berries black. Colorado. 1901. Prostrate.
,, *cruе'ntum* (blood-coloured). See R. AMICTUM CRUENTUM.
,, *Cyno'sbati* (dog-bramble). 4. Green. Eastern United States. 1759.
,, ,, *fru'ctu-acule'to* (prickly-fruited). 4. Purplish. Lake Huron.
,, ,, *fru'ctu-gla'bro* (smooth-fruited). 4. Whitish. Hudson's Bay.
,, *Diaca'ntha* (twin-prickled). 4. Green, yellow. May. Siberia. 1781.
,, ,, *atroru'bens* (dark-red).
,, ,, *melanoca'rpum* (black-fruited).
,, *divarica'tum* (straggling). 7. White, red. N.W. Amer. 1826.
,, *fascicula'tum* (bundled). Japan; China.
,, ,, *Billia'rdii* (Billiard's).
,, ,, *chine'nse* (Chinese).
,, *fla'vum* (yellow). 6. Yellow. N. Amer. 1812.
,, *flo'ridum* (florid). See R. AMERICANUM and varieties.
,, *fra'grans* (fragrant). See R. AUREUM.
,, *Gira'ldii* (Girald's). 2–3. Greenish. Berries red. N. China. 1908.
,, *glacia'le* (frozen). 4. Yellow. Nepaul. 1823.
,, ,, *mi'nus* (lesser). Bush more finely and densely branched. Eastern Tibet. 1900.
,, *glandulo'sum* (glanded) of Ruiz and Pavon. 8. Green, yellow. Chili. 1820.
,, *gordonia'num* (Gordonian). 6. Yellow, red. (*R. sanguineum* × *aureum.*)
,, *gra'cile* (slender). 4. Green, white. N.W. Amer. 1812.
,, *Grossula'ria* (*rough*). 4. Green. Northern Hemisphere (England).
,, ,, *besseria'num* (Besser's). 4. White. Cracow.
,, ,, *bractea'tum* (bracted). 4. Green, white.
,, ,, *himalaya'num* (Himalayan). 4. Green, white. March. Himalayas. 1838.
,, ,, *macroca'rpum* (large-berried). 4. Green, white.
,, ,, *reclina'tum* (reclined). 4. Green, white. Germany. 1781.
,, ,, *spinosi'ssimum* (most-spiny). 4. Green, white. Britain.
,, ,, *subine'rme* (few-prickled). 4. Green, white.
,, ,, *U'va-cri'spa* (smooth-berried). 4. Green, white. Britain.
,, *grossularioi'des* (gooseberry-like). China and Japan.
,, *hetero'trichum* (variable-haired). 2. Purple. Altai. 1837.
,, *himalaye'nse* (Himalayan). Himalaya.
,, *hirte'llum* (finely-hairy). See R. OXYACANTHOIDES.
,, ,, *Purpu'si* (Purpus's). See R. OXYACANTHOIDES PURPUSI.
,, *hudsonia'num* (Hudson's *Bay*). 4. White. Hudson's Bay.
,, *ine'brians* (inebrating). See R. CERFUM.
,, *integrifo'lium* (entire-leaved). 3. Greenish-yellow. Chili. 1880.
,, *japo'nicum* (Japanese). 3. Green. Fruit cherry-red. Japan. 1877.
R. lacu'stre (lake). 4. Yellow, green. N. Amer. 1812.
,, ,, *echina'tum* (hedgehog). See R. LACUSTRE.
,, *laurifo'lium* (laurel-leaved). 1–2. Pale-yellow-green. February. China. 1912. Evergreen.
,, *laxiflo'rum* (lax-flowered). Western United States.
,, *lepta'nthum* (slender-flowered). 3–5. White. Fruit glossy black. Mts. of Colorado. 1903.
,, *Lo'bbii* (Lobb's). 4–6. Dull purple. May. California. 1883.
,, *longeracemo'sum* (long-racemed). Green; racemes 8–12 in. long. Fruit black. Central China. 1903.
,, *macraca'nthum* (large-spined). 4. Green. May.
,, *malva'ceum* (mallow-like). See R. SANGUINEUM MALVACEUM.
,, *Menzie'sii* (Menzies'). 5. Red. May. California. 1830.
,, *microphy'llum* (small-leaved). 5. Red. Mexico.
,, *mogollo'nicum* (Mogollonic). 4–6. Greenish-white. Berries blue-black. S.W. United States. 1907.
,, *multiflo'rum* (many-flowered). 5. Green. Hungary. 1822.
,, *ni'grum* (black). 5. Green. Europe (Britain); N. Asia. "Black Currant."
,, ,, *alta'icum* (Altaic).
,, ,, *ba'cca-vi'ride* (green-berried). 5. Russia.
,, ,, *disse'ctum* (cut). Leaves cut.
,, ,, *fo'liis-variega'tis* (variegated-leaved). 5. Britain.
,, ,, *lacinia'tum* (deeply cut,. Leaves deeply cut.
,, ,, *reticula'tum au'reum* (golden-netted). Leaves netted with yellow.
,, ,, *variega'tum* (variegated). Leaves variegated with white.
,, *ni'veum* (snowy). See R. GRACILE.
,, *opulifo'lium* (guelder-rose-leaved). See R. ALPINUM.
,, *orienta'le* (eastern). 4. Green, yellow. May. Syria. 1824.
,, *oxyacanthoi'des* (hawthorn-like). 3. Green, white. N. Amer. 1763. "American Gooseberry."
,, ,, *Purpu'si* (Purpus's). 2–3. Greenish. Fruit black-red. Colorado. 1899.
,, *petræ'um* (rock). 4. Red. May. Europe (England).
,, *pineto'rum* (pine-woods). Pinkish, yellowish. Berry bristly. Arizona. 1903.
,, *procu'mbens* (trailing). ½. Purple. May. Dahuria. 1804.
,, *prostra'tum* (prostrate). 1½. Yellow. May. N. Amer. 1812.
,, ,, *laxiflo'rum* (loose-flowered). 4. Green, yellow. N. Amer. 1812.
,, *puncta'tum* (dotted-*leaved*). 3. Green, yellow. Chili. 1826. Half-hardy. Evergreen.
,, *resino'sum* (resinous) of Pursh. 3. Yellow, green. N. Amer. 1800.
,, *resino'sum* (resinous) of Sims. See R. ORIENTALE.
,, *ri'gens* (stiff). See R. PROSTRATUM.
,, *robu'stum* (robust). 3–6. Green, pink. Origin unknown.
,, *Rœ'zlii* (Rœzl's). 3–5. Red, white. N.W. Amer. 1879.
,, *rotundifo'lium* (round-leaved). Red. Eastern United States.
,, *ru'brum* (red). 4. Green. Northern Hemisphere (Britain). "Red Currant."
,, ,, *a'lbum* (white). 4. Green. Britain. "White Currant."
,, ,, *ca'rneum* (flesh-coloured-*berried*). 4. Green. Britain.
,, ,, *fo'liis a'lbo-variega'tis* (leaves white). 4. Green.
,, ,, *fo'liis lu'teo-variega'tis* (leaves yellow). 4. Green.
,, ,, *horte'nse* (garden). 4. Green. Britain.
,, ,, *Schlechtenda'lii* (Schlechtendal's). N. Europe.
,, ,, *sibi'ricum* (Siberian). 6. Greenish-yellow. Russia. "Russian Currant."
,, ,, *spica'tum* (spiked). 4. Green. England.
,, ,, *sylve'stre* (wood). 4. Green. Britain.
,, ,, *variega'tum* (striped-*berried*). 4. Green. Austria.
,, *sangui'neum* (bloody). 6. Blood. N.W. Amer. 1826. "Flowering Currant."
,, ,, *a'lbidum* (whitish). White, pale pink.
,, ,, *atroru'bens* (dark red). 6. Dark red. N. Amer.
,, ,, *atrosangui'neum* (dark-blood-red).
,, ,, *flo're ple'no* (double-flowered). Red.
,, ,, *glutino'sum* (clammy). 6. Pale pink. N. Amer.
,, ,, *malva'ceum* (mallow-like). 6. Dark pink. N. Amer.
,, *saxa'tile* (rock). 4. Green. May. Siberia. 1819.
,, *seto'sum* (bristly). 4. Green, white. N. Amer. 1810.

R. spæthia'num (Spæthian). Colorado. 1899.
„ „ *ma'jus* (larger). Leaves and flowers larger, brighter. Mts. of Colorado. 1903.
„ *specio'sum* (showy). 4. Crimson. April, May. California. 1829.
„ *spica'tum* (spiked-*flowered*). See R. RUBRUM SPICATUM.
„ *stenoca'rpum* (narrow-fruited). China.
„ *subvesti'tum* (somewhat clothed). See R. LOBBII.
„ *tenuiflo'rum* (slender-flowered). See R. AUREUM TENUIFLORUM and varieties.
„ *tri'fidum* (three-cleft-*calyxed*). See R. PROSTRATUM.
„ *triflo'rum* (three-flowered). See R. ROTUNDIFOLIUM.
„ *tri'ste* (sad-coloured-*flowered*). 3. Siberia. 1820.
„ *valdivia'num* (Valdivian). Chili.
„ *viburnifo'lium* (Viburnum-leaved). Rosy. Berries red. California. 1906. Evergreen.
„ *villo'sum* (shaggy). Chili.
„ *Vilmori'nii* (Vilmorin's). 5–6. Greenish. Young shoots purple. Tibet. 1909.
„ *viscosi'ssimum* (very clammy). 4. Yellow. N.W. Amer. 1820.
„ *Warscewi'czii* (Warscewicz's). 5–6. Flesh. Berries cherry-red. Siberia; Manchuria. 1904.

RICE. *Ory'za sati'va.*

RICE FLOWER. *Pime'lia.*

RICE PAPER is prepared from the pith of *Fatsia papyrifera.*

RICHARDIA. (Named after *L. C. Richard*, a French botanist. Nat. ord. *Aroids* [Araceæ]. Linn. 7-*Heptandria*, 1-*Monogynia.*)

Better known as *Ca'lla æthio'pica*, or the Arum-plant. Greenhouse herbaceous perennials. Suckers and division of the plants in spring; rich, fibrous loam. Winter temp., 35° to 48°; should be kept dryish for a time before growing, so as to get it to throw up its flowers. Thrives well in a cistern in a greenhouse where there is abundance of light, and in a stream of water during the summer, the pots being plunged within it.

R. æthio'pica (Ethiopian). See R. AFRICANA.
„ *africa'na* (African). 2–3. White. S. Africa. 1731. "Arum Lily."
„ „ *candidi'ssima* (whitest). 2–3. Spathes not rigid. Leaves grey-green. 1901.
„ „ *childsia'na* (Childsian). 1–1½. Pure white. 1903.
„ „ *grandiflo'ra* (large-flowered). 3–3½. White, larger. Leaves dark green. S. Africa. 1901.
„ „ *na'na compa'cta* (dwarf, compact). 1. White.
„ „ *Nicola'i* (Nicola's).
„ „ *albomacula'ta* (white-spotted). White, with black blotch. June. S. Africa. 1859.
„ *aura'ta* (golden). See R. HASTATA.
„ *elliottia'na* (Elliottian). 2–2½. Yellow. Leaves with white spots. S. Africa. 1890.
„ *hasta'ta* (hastate). Yellow, green. S. Africa. 1859.
„ *interme'dia* (intermediate). Dark yellow, with a small black blotch. Petioles marked white and rose. 1903.
„ *Lutwy'chei* (Lutwyche's). See R. HASTATA.
„ *macroca'rpa* (large-fruited). White, green outside. Fruits very large. S. Africa. 1901.
„ *melanoleu'ca* (black-white). 1½. Pale yellow, with maroon base, spadix white. S. Africa. 1869.
„ „ *suffu'sa* (suffused). 2. More robust.
„ *Pentla'ndi* (Pentland's). 2–3. Rich yellow. S. Africa. 1892.
„ *Rehma'nni* (Rehmann's). 1½. White, tinged rose-purple. S. Africa. 1893.
„ „ *cocci'nea* (scarlet). 1½. Spathes scarlet-red. 1906.
„ „ *specio'sa* (showy). 1½. Bright red. S. Africa. 1902.
„ „ *viola'cea* (violet). 1½. Spathes violet-purple.
„ *Sprenge'ri* (Sprenger's). Spathe yellow, broader than any other. Transvaal. 1902.
„ *suffu'sa* (suffused). See R. MELANOLEUCA SUFFUSA.

RICHARDSO'NIA. (Named after *R. Richardson*, an English botanist. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

Stove evergreen. Cuttings of young shoots in sandy soil, and in a moist bottom-heat; fibrous loam and peat, and a little sand and leaf-mould. Winter temp., 48° to 58°; summer, 60° to 80°.

R. pilo'sa (thinly-hairy). 2. White. September. Trop. Amer. 1814. "White Ipecacuanha."
„ *sca'bra* (rough). See R. PILOSA.

RI'CHEA. (Named after *Cl. A. Riche*, an African traveller. Nat. ord. *Epacrids* [Epacridaceæ]. Linn 13-*Polyandria*, 1-*Monogynia.*)

Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a mild, sweet bottom-heat; sandy, fibrous peat, with a few nodules of fibrous loam and charcoal. Winter temp., 55° to 60°; summer, 60° to 88°.

R. fra'grans (fragrant). See RITCHIEA FRAGRANS.
„ *pandanifo'lia* (Pandanus-leaved). 10–20. Tasmania. 1883.
„ *sprengelioi'des* (Sprengelia-like). 3–5. Pale red. June. Tasmania. 1836.

RICINOCA'RPOS. (From *ricinus*, and *carpos*, a fruit; the fruit resembles that of Ricinus. Nat. ord. Euphorbiaceæ.)

Greenhouse evergreen shrub. Cuttings in sand, under a bell-glass. Loam, a little leaf-mould, and sand.

R. rosmarinifo'lius (rosemary-leaved). 5. June. Australia. 1824.

RI'CINUS. Palma Christi. (From *ricinus*, a tick; resemblance in the seeds. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 1-*Monandria.*)

Annuals by seeds in a hotbed; shrubs by cuttings in a hotbed; light, rich soil. The shrubby kinds should have the addition of a little peat. They are all too tender to do much good out of doors, except in summer. The following are all half-hardy annuals, except *li'vidus* and *ru'tilans:*

R. arma'tus (armed). See R. COMMUNIS.
„ *cambodge'nsis* (Cambodgean). See R. COMMUNIS CAMBODGENSIS.
„ *commu'nis* (common). 6. Green. July. Trop. regions. 1548. "Castor Oil Plant."
„ „ *cambodge'nsis* (Cambodgean). Stems and branches blackish. 1887.
„ „ *Gibso'nii* (Gibson's). Leaves dark bronzy-purple.
„ „ *li'vidus* (livid). 8. Purple. Leaves livid. July. S. Africa. 1795.
„ „ *ru'tilans* (red). Reddish-white. August. 1827.
„ *ine'rmis* (unarmed-*capsuled*). See R. COMMUNIS.
„ *Kra'ppa* (Krappa). See R. COMMUNIS.
„ *leucoca'rpus* (white-capsuled). See R. COMMUNIS.
„ *li'vidus* (livid-*leaved*). See R. COMMUNIS LIVIDUS.
„ *macrophy'llus* (large-leaved). White, red. August. 1827.
„ *ma'jor* (larger). See R. COMMUNIS.
„ *ru'tilans* (red-*stalked*). See R. COMMUNIS RUTILANS.
„ *undula'tus* (wavy-*leaved*). See R. COMMUNIS.
„ *zanzibare'nsis* (Zanzibar). Leaves with whitish veins. Seeds larger. E. Trop. Africa. 1894.

RICO'TIA. (Probably a commemorative name. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia.*)

Hardy annual. Seeds; light, sandy soil. Good for belts, knolls, or rock-works.

R. Luna'ria (moonwort-like). Lilac, purple. June. Syria. 1757.

RIDDLING. Another name for sifting.

RIDGING is digging the soil into parallel ridges in such form as to expose it thoroughly to the action either of the atmosphere or of frost.

RIDGING-OUT. Planting out Cucumbers and Pumpkins in the open-ground beds. Ridging, however, should not be confined to the winter, for in summer the extra exposure to the air and heat is highly promotive of vegetation: it impregnates the soil with oxygen, promotes the decay of stubborn vegetable remains, and disturbs predatory vermin. Mr. Barnes says: "I keep all ground, as soon as a crop is done with, well trenched, burying all the refuse I possibly can in a green state, casting the earth into rough ridges, tumbling those ridges over with a strong fork on frosty mornings in winter and spring, and during hot sunny days in summer, continually changing the crops; keeping the hoe at work at all seasons in suitable weather, forking up all odd corners and spare ground without loss of time. By this management, I find the ground is always in good condition and never tired by cropping, some judgment only being exercised in applying such properties again to the soil that have been taken from it, or that are likely to be required by the succeeding crop."

The most effectual mode of ridging is thus described by Mr. Parkins:

Let us consider that a section of the ground is to be trenched 2 feet deep. In the first place the ground is measured out in longitudinal beds 4 feet wide; this done, the top spit of the fifth bed is laid on the first bed, and the second spit of the fifth bed is laid on the third. The first or top spit of the fourth bed is then laid on the third, so that the top soil and subsoil are kept on separate and alternate beds, and may be mixed, reversed, or returned as taken out, at the will of the operator. By this method the advantages are—much greater exposure of surface to the action of the weather; the opportunity of incorporating with the soil any desirable or obtainable manures, and at any desired depth; a thorough blending of the soil to the depth of 2 or 3 feet; and it also facilitates the operation of draining where necessary. It is needless to add, that when the first thrown-out beds are sufficiently pulverised, they are levelled down, and others thrown out in the same manner; the ridges are thrown out and left as rough as possible.

RIGIDE'LLA. (From *rigidus*, stiff; the stiffness of the flower-stalk. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Tigridia.)

Half-hardy bulbs. Offsets in spring; also by seeds in a hotbed; rich, sandy loam and peat; bulbs require to be kept from frost and damp during the winter.

R. fla'mmea (flame-coloured). 5. May. Mexico. 1839.
„ *immacula'ta* (unspotted). 1. Crimson. June. Guatemala. 1839.
„ *ortha'ntha* (straight-flowered). 1½. Crimson. June. Mexico. 1846.

RI'NDERA. (Possibly a commemorative name. Nat. ord. Boraginaceæ. Allied to Cynoglossum.)

Hardy perennial herbs. Seeds; divisions. Ordinary soil.

R. lana'ta (woolly). Asia Minor; Persia.
„ *umbella'ta* (umbelled). 1–2. Reddish-yellow or brown. Hungary; Servia. 1907.

RINGING is cutting away a belt of bark quite down to the wood entirely round a branch. This checks the return of the sap, and aids to make that branch more fruitful, and the fruit on it finer. We have seen it done with the best effect upon the pear and grape-vine. It should be done just previously to the blossoms opening. When first suggested it was called *the Ring of Pomona*. See LIGATURES.

RIOCREU'XIA. (Commemorative of *A. Riocreux*, a botanical artist. Nat. ord. Asclepiadaceæ. Allied to Ceropegia.)

Warm greenhouse climber. Cuttings in sand, with gentle bottom-heat, in spring. Fibrous loam, a little leaf-mould, some finely broken bricks, and sand.

R. torulo'sa (knotted). Pale yellow. S. Africa. 1862.

RIPENING WOOD is one of the principal objects to be aimed at for the production of either flowers or fruit the following year. To effect this, at the end of August, or early in September, superfluous branches should be removed, and shoots stopped, to concentrate the sap, and expose those retained to the full influence of the sun.

RIPO'GONUM. See RHIPOGONUM.

RITCHIE'A. (Commemorative of *Joseph Ritchie*, an African traveller. Nat. ord. Capparidaceæ.)

Stove evergreen shrubs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, a little leaf-mould, and well-decayed cow-manure, and sand.

R. fra'grans (fragrant). 10–15. Creamy-white. June. Trop. Africa. 1795.
„ *polype'tala* (many-petaled). 10. White. Trop. Africa. 1862.

RI'VEA. (Named after *A. de la Rive*, a Genevan botanist. Nat. ord. *Bindweeds* [Convolvulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Ipomœa.)

Stove evergreen twiner. Cuttings of side-shoots, and of the young shoots, several inches in length, as they rise from the roots in spring; or grafting on a free-growing Ipomœa; fibrous loam and rough, sandy peat. Winter temp., 55° to 60°; summer, 60° to 85°.

R. hypocraterifo'rmis (salver-shaped). 20–30. White. E. Ind. 1799.
„ *tiliæfo'lia* (lime-leaved). See ARGYREIA TILIÆFOLIA.
„ *zeyla'nica* (Cingalese). See ARGYREIA POPULIFOLIA.

RIVI'NA. (Named after *A. Q. Rivinus*, a German botanist. Nat. ord. *Phytolaccads* [Phytolaccaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Called *rouge plants* in the West Indies, where the fruit is used as a cosmetic. Stove evergreens. Seeds and cuttings. The flowers are of little beauty; but the racemes of ripe and ripening fruit are very interesting; light soil. Winter temp., 50° to 60°; summer, 60° to 80°.

R. auranti'aca (orange). 2. Green. Berries orange-yellow. S. Amer.
„ *brasilie'nsis* (Brazilian). See R. HUMILIS.
„ *hu'milis* (lowly). 2. White. June. W. Ind. 1699.
„ „ *cane'scens* (hoary). 2. White. June. W. Ind. 1804.
„ „ *læ'vis* (smooth). 2. Pink. May. W. Ind. 1733.
„ *lanceola'ta* (spear-head-*leaved*). See R. HUMILIS.
„ *latifo'lia* (broad-leaved). See MOHLANA LATIFOLIA.
„ *octa'ndra* (eight-stamened). See VILLAMILLA OCTANDRA.
„ *purpura'scens* (purplish). See R. HUMILIS.
„ *tincto'ria* (dyeing). 4. White. May. Caracas. 1830.

ROAN-TREE. *Py'rus Aucupa'ria.*

ROBE'RGIA FRUTE'SCENS. See ROUREA FRUTESCENS.

ROBERTSO'NIA. See SAXIFRAGA.

ROBI'NIA. (Named after *J. Robin*, a French botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Cobbett's Locust-tree is *Robi'nia Pseu'daca'cia*.)

Deciduous, white-flowered trees, from North America, where not otherwise stated. For tender kinds, cuttings of young wood in sand, under a glass. The *Locust-tree*, in all its varieties, by seed sown in autumn, or preserved in the pods, and sown in the spring; by cuttings of the shoots; by cuttings of the roots; by suckers and layers. The finer varieties are generally grafted. The *hi'spida*, or *Rose Acacia*, is a fine object grafted on the *Pseu'daca'cia* standard high, in a sheltered place not much north of London. The finer varieties of *hi'spida*, in cold situations, deserve a place on a conservatory wall, and would be a nice companion to the *Wistaria chine'nsis*, &c.

R. Altaga'na (Altagana). See CARAGANA MICROPHYLLA.
„ *cape'nsis* (Cape). See CALPURNIA ROBINIOIDES.
„ *Caraga'na* (Caragana). See CARAGANA ARBORESCENS.
„ *cocci'nea* (scarlet). See ORMOSIA COCCINEA.
„ *colorade'nsis* (Colorado). 10–20. Rose-white or rose, fragrant. Colorado. 1908.
„ *davu'rica* (Dahurian). 30. May. Dahuria. 1820.
„ *du'bia* (doubtful). 30. White, red. May.
„ *frute'scens* (shrubby). See CARAGANA FRUTESCENS.
„ *grandiflo'ra* (large-flowered). See CARAGANA GRANDIFLORA.
„ *guinee'nsis* (Guinea). 6. Guinea. 1822. Stove evergreen.
„ *Halode'ndrum* (Halodendrum). See HALIMODENDRON ARGENTEUM.
„ *hi'spida* (bristly). 10. Pink. July. 1743. "Rose Acacia."
„ „ *macrophy'lla* (large-leafleted). 10. Red. May.
„ „ *na'na* (dwarf). 1. Pink. June. Carolina.
„ „ *ro'sea* (*upright*. Rose). 10. Red. July.
„ *ine'rmis* (unarmed). See ROBINIA PSEUDACACIA INERMIS.
„ *juba'ta* (maned). See CARAGANA JUBATA.
„ *Kelse'yi* (Kelsey's). 3–10. Rose. June. N. Amer. 1908.
„ *macrophy'lla* (large-leaved). See R. HISPIDA MACROPHYLLA.
„ *mo'llis* (soft). See CARAGANA FRUTESCENS.
„ *monstro'sa* (monstrous). See R. PSEUDACACIA MONSTROSA.
„ *neomexica'na* (New-Mexican). 6–15. Red. Rocky Mountains. 1891.
„ „ *luxu'rians* (luxuriant). 15–20. Red. Racemes compound. Rocky Mountains. 1892.
„ *pe'ndula* (drooping). See ROBINIA PSEUDACACIA PENDULA.
„ *pro'cera* (tall). See ROBINIA PSEUDACACIA PROCERA.
„ *Pseu'daca'cia* (*common*. Bastard Acacia). 40. May. 1640. "Locust," "Acacia."
„ „ *amorphæfo'lia* (Amorpha-leaved). 3. White, red. May.
„ „ *angustifo'lia* (narrow-leaved). Leaflets very narrow. 1889.

R. Pseu'daca'cia au'rea (golden). Leaves yellow.
" " *bessonia'na* (Bessonian). Branches stout in a compact head. 1878.
" " *cri'spa* (curled). 40. June.
" " *decaisnea'na* (Decaisnean). 30. Bright pink. 1863.
" " *decaisnea'na flo're ru'bro* (red-flowered). Rose. 1890.
" " *fastigia'ta* (erect). Branches erect.
" " *flo're-lu'teo* (yellow-flowered). 40. Yellow. May.
" " *iné'rmis* (unarmed). 40. May.
" " *latisi'liqua* (broad-podded). 30. May.
" " *macrophy'lla* (large-leafleted). 30. May.
" " *microphy'lla* (small-leafleted). 30. May.
" " *monophy'lla* (one-leaved). Leaves reduced to one leaflet.
" " *monophy'lla fastigia'ta* (erect). Branches erect.
" " *monophy'lla pe'ndula* (drooping). A weeping variety.
" " *monstro'sa* (monstrous). 30. White, red. May.
" " *pe'ndula* (drooping). 30. Pink. May.
" " *pro'cera* (tall). 30. White, red. May.
" " *semperflo'rens* (ever-flowering). 20. White. Summer.
" " *sophoræfo'lia* (Sophora-leaved). 30. White, red. May.
" " *specta'bilis* (showy). 30. May. France.
" " *stri'cta* (upright). 30. White, red. May.
" " *tortuo'sa* (twisted). 40. May.
" " *ulricia'na* (Ulrician). Branches arching and pendulous. 1900.
" " *umbraculi'fera* (umbrella-bearing). 40. May.
" *purpu'rea* (purple). 15. Purple. July. N. Amer. 1810. Stove evergreen.
" *ro'sea* (rosy). See R. HISPIDA ROSEA.
" *se'pium* (hedge). See LONCHOCARPUS SEPIUM.
" *seri'cea* (silky). See LONCHOCARPUS SERICEUS.
" *sophoræfo'lia* (Sophora-leaved). See R. PSEUDACACIA SOPHORÆFOLIA.
" *squama'ta* (scaly). See BRONGNIARTIA ROBINIOIDES.
" *stri'cta* (upright). See R. PSEUDACACIA STRICTA.
" *tomento'sa* (felted). See CARAGANA FRUTESCENS.
" *triflo'ra* (three-flowered). See HALIMODENDRON ARGENTEUM.
" *vesica'ria* (bladdery). See SESBANIA PLATYCARPA.
" *viola'cea* (violet). See LONCHOCARPUS VIOLACEUS.
" *visco'sa* (clammy). 30. Purple. July. 1797. "Clammy Locust."

ROCAMBOLE (*A'llium Scorodo'prasum*), sometimes called *Spanish Garlic*, has its bulbs or cloves growing in a cluster. The stem bears many bulbs at its summit, which, as well as those of the root, are much milder than Garlic.

It is best *propagated* by the root bulbs, those of the stem being slower in production. Plant either in February, March, or early in April, as well as throughout the autumn, in drills, or by the dibble, in rows 6 inches apart each way, and usually 2 inches within the ground, though the plants would thrive better if grown on the surface, as recommended for the Eschallot. In other respects they are cultivated as directed for Garlic. A very small bed is sufficient for the supply of the largest family.

RO'CHEA. (Named after *La Roche*, a botanical author. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 5-*Pentandria*, 5-*Pentagynia*. Allied to Crassula.)

Greenhouse evergreen succulents, from South Africa. For culture, see CRA'SSULA.

R. albiflo'ra (white-flowered). See CRASSULA ALBIFLORA.
" *bi'color* (two-coloured). See R. ODORATISSIMA.
" *biconve'xa* (doubly-convex). ½. White. July. 1823.
" *capita'ta* (headed). White. July. 1822.
" *cocci'nea* (scarlet). 1. Scarlet. July. 1710.
" " *flo're-a'lbo* (white-flowering). 1. White. July. 1811.
" *cymo'sa* (cymed). See CRASSULA CYMOSA.
" *falca'ta* (sickle-*leaved*). See CRASSULA FALCATA.
" *fla'va* (yellow). See CRASSULA FLAVA.
" *jasmi'nea* (jasmine-like). ½. White. April. 1815.
" *me'dia* (mediate). See R. VERSICOLOR.
" *odorati'ssima* (sweetest-scented). 1. Pink. June. 1793.
" *perfolia'ta* (leaf-stem-pierced). See CRASSULA PERFOLIATA.
" *tiniflo'ra* (Tinus-flowered). White. 1861.
" *versi'color* (changeable-coloured). 2. White. May. 1810.

ROCHE'LIA. (A commemorative name. Nat. ord. Boraginaceæ.)

Hardy perennial herb. Seeds; divisions. Ordinary soil.

R. stellula'ta (starry). ½. Blue. June. Europe. 1799.

ROCK CARROT. *Moni'zia edu'lis.*

ROCK CRESS. *A'rabis.*

ROCK CRESS, PURPLE. *Aubrie'tia deltoi'dea.*

ROCKET. *He'speris matrona'lis.*

ROCKET LARKSPUR. *Delphi'nium Aja'cis.*

ROCK LYCHNIS. *Visca'ria.*

ROCK ROSE. *Ci'stus.*

ROCK TOBACCO. *Primuli'na Taba'cum.*

ROCK-WORK is one of the most difficult things to construct tastefully. If the body of the rock is intended to be raised much above the ground level, a quantity of soil and rubbish should be carried into the centre of the space. This soil, besides serving to support the rock-work, will also form a border for the plants to grow in. Having at hand plenty of large, rough stones, broken bricks, or stony rubbish of any kind or colour, proceed with these to imitate the form of natural rock as nearly as possible. Rough, bold, angular projections and deeply-formed chasms, are the principal features in natural scenery which please us most. A rock, with a flat unbroken surface, whether horizontal or perpendicular, presents too much sameness to be pleasing to the eye; therefore, in imitating nature, the projections should be varied and bold, and unless raggedness and intricacy form principal features in its composition, it will lose much of its effect. If the rock-work be on a large scale, it should not be one continued line, but broken at intervals, in one part lost beneath the surface of the earth, and again rising in another part and resuming its sinuous form.

So far there is little difference between this and the common method of making artificial rock. When, however, every stone has been arranged to suit the eye, the interstices between them are to be filled up with any kind of rough mortar. Of course, fissures, and similar places intended for the plants which are to cover the rock, must be left open, so that the roots may penetrate to the soil beneath the stones. The next operation is to daub the whole mass over with Roman cement. For this purpose the latter should be mixed with water until it is of the consistence of thick paint, in which state it may be applied to the stones with a large painter's brush. The spaces between the stones having been filled with rough mortar prevents the cement from being wasted. The thickness of the latter on the stones need not be more than the eighth of an inch: it will unite the whole into one mass; and rock-work thus constructed is, beyond all comparison, far more natural than that made in the usual way. It has none of that disjointed appearance which usually accompanies rock-work made without cement. After a few months' exposure to the weather, rock-work thus formed (if skilfully made) cannot, without careful examination, be distinguished from a natural mass; it will soon cover all but the most prominent parts. If the cement be of a colour too light, which for some situations may be the case, a little lamp-black or soot may be mixed with it. Care must, however, be taken that no substance which may make the cement more porous is used, otherwise it will peel from the stones after a hard frost. For the benefit of those who are not accustomed to using cement, we may mention that no more should be moistened at once than can be used in a short time. If the cement be good it will quickly harden, and will then be in a manner useless.

In making artificial rock for waterfalls, or other constructions, where the cement may be constantly exposed to the action of the water, the best water-cement should be used. Any preparation that does not quickly indurate under water will, in a short time, be washed away, and leave nothing but the bare stones.—*Whateley.*

RODGE'RSIA. (Commemorative of *Admiral Rodgers* of the U.S. Navy, who was commander of the expedition, when *R. podophylla* was discovered. Nat. ord. Saxifragaceæ. Allied to Saxifraga.)

Hardy perennial herbs. Seeds; divisions. Moist soil, with a quantity of peat or leaf-mould in it.

R. æsculifo'lia (horse-chestnut-leaved). White. China. 1901.
„ *japo'nica* (Japanese). See R. PODOPHYLLA.
„ *pinna'ta* (pinnate). 2–4. Rose. July. 1901.
„ „ *a'lba* (white). 2–4. White. July. 1905.
„ *podophy'lla* (foot-leaved). 2–4. Creamy-white. Japan. 1880. "Rodgers' Bronze Leaf."
„ *sambucifo'lia* (elder-leaved). 2–3. Greenish. Western China. 1906.
„ *tabula'ris* (table-like). 2–3. White. N. China; Corea. 1908.

RODRIGUE'ZIA. (Named after *E. Rodriguez*, a Spanish botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove Brazilian orchids, cultivated in baskets. See ORCHIDS.

R. Ba'rkeri (Barker's). See GOMEZA BARKERI.
„ *Batema'nii* (Bateman's). White; lip mauve. November. Peru.
„ *Bungero'thi* (Bungeroth's). Carmine-rose. Venezuela. 1888.
„ *calople'ctron* (beautiful-spurred). Pale yellow-white. Colombia. 1883.
„ *ca'ndida* (white). 1. White. April. Guiana. 1834.
„ *ca'rnea* (flesh). Pale rose. Colombia. 1844.
„ *cri'spa* (curled). See GOMEZA CRISPA.
„ *deco'ra* (becoming). Pink, white. Autumn. Brazil.
„ „ *pi'cta* (painted). Pink; lip white, spotted purple.
„ *fra'grans* (fragrant). White. May. Brazil. 1850.
„ *Fuerstenbe'rgii* (Fuerstenberg's). 1. Rose; lip white. 1890.
„ *gra'ndis* (grand). See R. BATEMANI.
„ *lanceola'ta* (spear-head-*leaved*). See R. SECUNDA.
„ *laxiflo'ra* (loose-flowered). See GOMEZA CHRYSOSTOMA.
„ *leea'na* (Leean). 1. White, yellow. 1883.
„ „ *pi'cta* (painted). White, striped and spotted with pale purple. 1885.
„ *Lehma'nni* (Lehmann's). Pale yellow-white. Colombia. 1883.
„ *leochili'na* (Leochilus-like). Pale yellow and brown. Costa Rica. 1871.
„ *Linde'ni* (Linden's). See R. PUBESCENS.
„ *lu'teola* (small-yellow). Yellow. 1883.
„ *macula'ta* (spotted). See LEOCHILUS ONCIDIOIDES.
„ *obtusifo'lia* (blunt-leaved). Brazil.
„ *planifo'lia* (flat-leaved). See GOMEZA PLANIFOLIA.
„ *pube'scens* (downy). Pure white. Brazil. 1850.
„ *recu'rva* (curled-back). See GOMEZA RECURVA.
„ *refra'cta* (broken-back). White, flushed with salmon; lip spotted. Brazil.
„ *ri'gida* (rigid). 1. Pale purple, spotted. Brazil. 1838.
„ *secu'nda* (side-*flowering*). ½. Red. July. Trop. Amer. 1820.
„ *stenochi'la* (narrow-lipped). See SCELOCHILUS LINDENII.
„ *suave'olens* (sweet-scented). See GOMEZA FOLIOSA.
„ *venu'sta* (lovely). White. March. Brazil.

ROEBUCK BERRY. *Ru'bus saxa'tilis.*

ROE'LLA. (Named after *G. Roelle*, a Dutch botanist. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse plants, and all but one from South Africa. *Decu'rrens* from seed in a gentle hotbed, in spring, planted out in early summer; *musco'sa* by division; the rest, being evergreen shrubs, by cuttings of the points of the shoots in sand, under a bell-glass; sandy peat and fibrous loam. Winter temp., 40° to 48°.

R. cilia'ta (hair-fringed). 1. White, purple. July. 1774.
„ *decu'rrens* (decurrent). 1. Blue. August. 1787. Annual.
„ *e'legans* (elegant). ½. Purple. February. 1836.
„ *filifo'rmis* (thread-formed). See R. SQUARROSA BERGII.
„ *fruticulo'sa* (small-shrubby). Yellow. July. N. Holland. 1820.
„ *musco'sa* (mossy). ¼. Blue. August. 1802. Herbaceous.
„ *peduncula'ta* (*long*-flower-stalked). See PRISMATOCARPUS PANICULATUS.
„ *squarro'sa* (spreading). ½. White. July. 1787.
„ „ *Be'rgii* (Berg's). Blue. August. 1816.
„ *spica'ta* (spiked). White. August. 1824.

ROEME'RIA. Named after *J. Y. Roemer*, a German botanist. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Allied to Glaucium.)

Hardy annuals. Seeds in the open border, in March or April.

R. hy'brida (hybrid). 2. Purple. May. S. Europe (Britain). "Wind Rose."
„ *refra'cta* (refracted). 1. Violet. June. Tauria. 1823.
„ *vermicula'ta* (worm-like). Red. June. Persia. 1829.

RŒ'PERA AURANTI'ACA. See ZYGOPHYLLUM FRUTICULOSUM BILOBUM.

RŒ'PERA FABAGIFO'LIA and **R. FRUTICULO'SA.** See ZYGOPHYLLUM FRUTICULOSUM.

RŒ'ZLIA GRANADE'NSIS. See MONOCHÆTUM QUADRANGULARE.

ROGATION FLOWER. *Poly'gala vulga'ris.*

ROGE'RIA. (A commemorative name. Nat. ord. Pedaliaceæ.)

A strong-smelling greenhouse herb. Seeds. Loam, leaf-mould and sand.

R. longiflo'ra (long-flowered). 2. Pale purple. July. S. Africa. 1781.

ROGIE'RA. (A commemorative name. Nat. ord. Rubiaceæ. Referred to Rondeletia.)

R. amœ'na (lovely). See RONDELETIA AMŒNA.
„ *corda'ta* (heart-shaped). See RONDELETIA CORDATA.
„ *e'legans* (elegant). See RONDELETIA RŒZLII.
„ *eleganti'ssima* (very-elegant). See RONDELETIA GRATISSIMA.
„ *latifo'lia* (broad-leaved). See RONDELETIA AMŒNA.
„ *macrophy'lla* (large-leaved). See RONDELETIA AMŒNA.
„ *Mene'chma* (Menechma). See RONDELETIA AMŒNA.
„ *Rœ'zlii* (Rœzl's). See RONDELETIA RŒZLII.
„ *versi'color* (changing-coloured). See RONDELETIA AMŒNA.

RO'HDEA. (Commemorative of *M. Rohde*. Nat. ord. Liliaceæ.)

Perennial herb, hardy in the south and other favoured parts. Divisions. Rather moist soil.

R. japo'nica (Japanese). ½–2. White. January to April. Japan. 1783.
„ „ *au'rea* (golden). Leaves with broad yellow bands. 1879.
„ „ *variega'ta* (variegated). Leaves variegated with creamy-white.

ROLLER. This is best made of cast iron, and may be had of four different sizes, viz. with a diameter of 16, 18, 22, or 24 inches. The roller is best used the day after a fall of rain.

ROLLI'NIA. (A commemorative name. Nat. ord. Anonaceæ. Allied to Anona.)

Small evergreen stove tree. Cuttings in sand in a close case with bottom-heat. Loam, a little peat, and sand.

R. muco'sa (mucous). See R. SIEBERI.
„ *Sie'beri* (Sieber's). 12. Yellow, green. Mexico, &c. 1810.

ROMANO'WIA. (Commemorative of *Romanow*, a Russian. Nat. ord. Palmaceæ.)

A stove Palm with pinnate leaves. Seeds. Loam, one-third peat, and sand.

R. Nicola'i (Nicola's). Leaves blackish-brown above, shaded violet beneath. Country not stated. 1899.

ROMANZO'FFIA. (Commemorative of *Count Romanzov*, a Russian. Nat. ord. Hydrophyllaceæ.)

Hardy herbaceous perennial of dwarf stature, suitable for the rockery, requiring a cool, moist situation. Seeds; divisions in spring. Loam, leaf-mould, and sand when grown in pots.

R. sitche'nsis (Sitcha). ½. White. April. Sitcha. 1873. "Sitcha Water-leaf."

RO'MNEYA. (Commemorative of the *Rev. Dr. T. Romney Robinson*, an Irish astronomer. Nat. ord. Papaveraceæ. Allied to Platystemon.)

Subshrubby, evergreen plants, requiring a warm, sheltered situation except in the south and west. Does well in a greenhouse. Seeds; cuttings in sand in a cold frame. Deep, light rich soil.

R. Cou'lteri (Coulter's). 3–5. White. California. 1875.
„ *tricho'calyx* (hairy-calyxed). 3–5. White. California. 1902.

ROMU'LEA. (Commemorative of *Romulus*, the founder of Rome. Nat. ord. Iridaceæ. Allied to Cipura.)

Half-hardy or greenhouse bulbs, many of which can be grown in cold frames. Offsets. Light, rich, sandy soil.

R. bulbocodioi'des (Bulbocodium-like). ½–1. Bright yellow, not striped. S. Africa. 1810.
„ *Bulboco'dium* (Bulbocodium). ½–1. Lilac, with yellow throat. Mediterranean region. 1739. Hardy.
„ „ *py'lia* (gate). ½. Large, white, with yellow throat.
„ „ *subpalu'stre* (submarshy). ½. White at base, lilac upwards.
„ *ca'ndida* (white). White. S. Africa.
„ *Ce'lsii* (Cels's). See R. ROSEA.
„ *chloroleu'ca* (green-white). ½. Whitish, with yellow throat. June. S. Africa. 1825.
„ *clusia'na* (Clusian). ½–1. Bright yellow, tipped with lilac. Spain.
„ *Colu'mnæ* (Columna's). ½. Pale lilac, with yellow throat. England; S. Europe; Azores. Hardy.
„ *crucia'ta* (cross-like). See R. ROSEA.
„ *filifo'lia* (thread-leaved). ½. Yellow. May. S. Africa. 1822.
„ *graci'llima* (very-slender). ½–¾. Pale red-lilac. Namaqualand.
„ *hirsu'ta* (hairy). ½–¾. Red-purple, with bright yellow base. S. Africa.
„ *Leichtli'ni* (Leichtlin's). Gardens.
„ *ligu'stica* (Ligustian). ½–¾. Bright lilac, with yellow throat. Northern Italy.
„ *Linare'sii* (Linares's). ½. Wholly bright lilac. Italy; Greece; Asia Minor.
„ *longifo'lia* (long-leaved). ½. Rose. May. S. Africa. 1758.
„ *Maco'wani* (Macowan's). ½. Bright yellow, paler upwards. S. Africa. 1887. The finest.
„ *monade'lpha* (one-bundled). ½. Coppery, with yellow throat. S. Africa. 1825.
„ *pu'dica* (modest). See R. ROSEA PUDICA.
„ *pulche'lla* (pretty). See R. BULBOCODIUM.
„ *ramiflo'ra* (branch-flowering). 1. Bright lilac, with yellow throat. Mediterranean region. 1825.
„ „ *Parlato'rei* (Parlatore's).
„ *Requie'nii* (Requien's). ½. Wholly deep violet. Corsica.
„ *ro'sea* (rosy). ½. Red-lilac, with yellow throat. S. Africa. 1818.
„ „ *pu'dica* (modest). ½. Red-lilac, with white throat. S. Africa. 1808.
„ „ *specio'sa* (showy). ½. Outer segments with 3–5 dark purple stripes. S. Africa. 1808.
„ *specio'sa* (showy). See R. ROSEA SPECIOSA.
„ *sublu'tea* (somewhat-yellow). ½–¾. Bright yellow, not striped. S. Africa. 1825.
„ *tortuo'sa* (tortuous). ½. Bright yellow, not striped. May. S. Africa. 1822.

RONDELE'TIA. (Named after *W. Rondelet*, a Frenchman. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings of the points of the shoots, getting slightly firm, in sand, under a bell-glass, and in bottom-heat; the glass being raised at night, and in dull weather, to prevent damping; fibrous peat and fibrous loam, with enough of sand, broken pots, and charcoal to insure openness in the soil. Winter temp., 48° to 55°; summer, 60° to 85°.

R. america'na (American). 10. White. August. W. Ind. 1752.
„ *amœ'na* (lovely). 3–4. Pink. March. Mexico. 1838.
„ *ano'mala* (anomalous). See R. STRIGOSA.
„ *Backhou'sei* (Backhouse's). Trop. Amer.
„ *corda'ta* (heart-shaped). White. Guatemala. 1852.
„ *di'scolor* (two-coloured). 6. Red. New Grenada.
„ *eriocа'rpa* (woolly-fruited). Yellow Colombia. 1867.
„ *erythroneu'ra* (red-nerved). Pink. Trop. Amer. 1850.
„ *grati'ssima* (most-grateful). Pink. Mexico. 1866.
„ *hirsu'ta* (hairy). 5. Yellow. July. Jamaica. 1820.
„ *hi'rta* (hairy). 10. Pink. July. Jamaica. 1776.
„ *laviga'ta* (smooth-*leaved*). 12. White. July. W. Ind. 1790.
„ *latifo'lia* (broad-leaved). See R. AMŒNA.
R. laurifo'lia (laurel-leaved). 5. White. July. Jamaica. 1824.
„ *longiflo'ra* (long-flowered). See HINDSIA LONGIFLORA.
„ *odora'ta* (scented). 3. Red. July. W. Ind. 1836.
„ „ *ma'jor* (longer). 3. Scarlet. April. Havannah.
„ *panicula'ta* (panicled). See WENDLANDIA PANICULATA.
„ *racemo'sa* (racemed). 6. White. July. Jamaica. 1820.
„ *Rœ'zlii* (Rœzl's). Rose. Guatemala. 1849.
„ *ro'sea* (rosy). Pink. Colombia. 1859.
„ *specio'sa* (showy). See R. ODORATA.
„ „ *ma'jor* (larger). See R. ODORATA MAJOR.
„ *strigo'sa* (stiffly hairy). Red, yellow. Autumn. Guatemala.
„ *thyrsoi'dea* (thyrsed). 5. White. July. Jamaica. 1819.
„ *tomento'sa* (downy). 6. White. July. Jamaica. 1819.
„ *versi'color* (changeable-coloured). See R. AMŒNA.

RONNBE'RGIA. (Commemorative of *M. Ronnberg*, a director of agriculture, Belgium. Nat. ord. Bromeliaceæ.)

Stove evergreen perennial. Offsets or suckers. Fibrous loam, lumpy peat, bits of charcoal, and sand.

R. columbia'na (Columbian). 1. Dark blue, with white tube. Colombia. 1885.
„ *morrenia'na* (Morrenian). Blue. Colombia. 1874.

ROOTS are either annual, biennial, or perennial; but in all roots, and under any mode of management, the fibrous parts (radiculæ) are strictly annual; they decay as winter approaches, and are produced with the returning vigour of their parent in the spring. Hence the reason that plants are transplanted with most success during the season of their decay; for, as the root almost exclusively imbibes nourishment by the points of these fibres, in proportion as they are injured by the removal so is the plant deprived of the means of support: that sap which is employed in the formation of new fibres would have served to increase the size of other parts.

Roots always travel in the direction where most food is to be obtained; therefore, for carrots and parsnips, let a little manure be turned in with the bottom spit when the ground is trenched for them. So, if it be desirable to prevent the roots of any plant travelling in a certain direction, the soil on that side should be excavated, and the cavity refilled with sand, or some other unfertile earth, whilst the soil on those sides of the plant whither the roots are desired to tend should be made as fertile as is permissible with its habits.

Whatever causes an excessive development of root prevents the production of seed; and *vice versa*, the production of seed, especially in tuberous-rooted plants, reduces the amount of root developed. Thus, frequent transplanting the young plants of the lettuce, broccoli, and cauliflower causes the production of numerous, fibrous roots, and is found effective in preventing the mature plants advancing early to seed.

The early varieties of the potato do not naturally produce seed; but if their tubers are removed as soon as they are formed, these early varieties blossom and bear seed as freely as the later kinds, a fact suggesting many experiments to the cultivator of shy-blooming tuberous-rooted flowers. Again, if the blossoms of these later varieties are plucked off as they appear, the weight of tubers produced will be very materially increased.

ROOT-PRUNING, first adopted as a systematic practice by Mr. Errington, has for its object a check to over-luxuriance. This it does effectually, for such excess of growth arises from the roots imbibing too much food. By pruning, and thus reducing their number, therefore we reduce their imbibing power; and it is found that such pruning checks the production of leaf-buds, and will cause any kind of fruit-tree to produce blossom-buds, provided the tree is healthy, and that its barrenness arises from over-luxuriance. To know what proportion of the roots to cut away, we may suppose the trees thrown into three classes. First, trees of moderate luxuriance; second, those which may be termed robust; third, those of gross habit. To give a further idea, we would say that the first class will make young shoots, on an average, a foot in length; those of the second 2 feet; and the third nearly, or quite, 3 feet: the latter, indeed, frequently burst into lateral or side-shoots from the young shoots of the same season.

From the first class, therefore, we advise the cutting away about a sixth part of the roots; from the second class a fourth part; and from the third class a third part. It must be borne in mind that *the extremities of the roots alone* should be cut off, for while we advocate this mutilation, we equally advocate the preservation of the *surface* roots by every possible means; nay, more than that, we recommend their encouragement by extra appliances of manure to the surface-soil.

RO'PALA. See ROUPALA.

RO'PERA. See RŒPERA and ZYGOPHYLLUM.

RORI'DULA. (From the diminutive of *ros, roris*, dew; meaning the little plant, wet with dew, owing to the glandular hairs upon it. Nat. ord. Droseraceæ. Allied to Dionæa.)

A subshrubby evergreen, with tufts of viscid, glandular leaves at the apex of the branches. Seeds. Loam, peat, some charcoal, and sand. A surfacing of sphagnum would serve to retain the moisture. In a wild state it inhabits moist places on mountains.

R. gorgo'nias (Gorgon). 3–4. Rose or white. S. Africa.

RO'SA. Rose. (From the Celtic *rhod*, red; prevailing colour. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Polygynia*.)

For culture, see ROSE.

R. abyssi'nica (Abyssinian). White. June. Abyssinia.
„ *acicula'ris* (needle-*pricked*). 6. Blush. June. Siberia. 1805.
„ „ *nippone'nsis* (Nippon). Japan.
„ *agre'stis* (field). 2–6. Pink. June. Europe (England).
„ *a'lba* (*single*-white). 4. White. June. S. Europe. 1597.
„ „ *suave'olens* (sweet-scented). Yields Attar of Roses. Eastern Roumelia. 1888.
„ *Albe'rti* (Albert's). Turkestan.
„ *alpi'na* (alpine). 5. Blush. June. Europe. 1683.
„ „ *globo'sa* (globular-*berried*); *hellebori'na* (helleborelike); *hispide'lla* (slightly-bristly); *læ'vis* (smooth); *lagena'ria* (flask-shaped-*berried*); *pilo'sula* (downy-*flower-stalked*); *pimpinellifo'lia* (Pimpinella-leaved); *pyrifo'rmis* (pear-shaped-*berried*); *seto'sa* (bristly-*calyxed*); *sorbine'lla* (sorb-like); *turbina'ta* (top-shaped-*berried*).
„ *alpi'na* × *indica*. 12. Pink. June. "Boursault Rose."
„ *anemonæflo'ra* (anemone-flowered) of Fortune. 8. Pale blush. June. China. 1846.
„ *anserinæfo'lia* (silver-weed-leaved). See R. BEGGERIANA.
„ *arve'nsis* (field). 8. White. July. Europe (Britain). "Ayrshire Rose."
„ „ *Anderso'nii* (Anderson's). Pale flesh. June. Britain.
„ „ *ayrshi'rea* (Ayrshire). See R. ARVENSIS CAPREOLATA.
„ „ *capreola'ta* (roebuck-rambler). 20. White. July. August. Scotland.
„ „ *flo're ple'no* (double-flowered). White.
„ „ *variega'ta* (variegated). White. Leaves variegated.
„ *Ba'nksiæ* (Lady Banks'). 20. White. June. China. 1807. "Banksian Rose."
„ „ *flo're a'lbo ple'no* (double-white-flowered).
„ „ *lu'tea* (yellow). Pale buff. June. China. 1807.
„ *beggeria'na* (Beggerian). 4–6. Small, white. Summer. Asia. 1888.
„ *berberifo'lia* (barberry-leaved). See R. SIMPLICIFOLIA.
„ *bla'nda* (smooth). 1–6. Red. May, June. N. Amer.
„ *Bo'rreri* (Borrer's). See R. CANINA BORRERI.
„ *bourbo'nia* (Bourbon). 8. Purple. June. (*R. indica* × *gallica*.) "Bourbon Rose."
„ *bractea'ta* (bracted). 2–6. White. July. China. 1795. "Macartney Rose."
„ „ *scabriu'scula* (rough-*stemmed*). 2. White. July. China.
„ *bracte'scens* (small-bracted). See R. CANINA CORIIFOLIA.
„ *britze'nsis* (Britzan). 3–6. Pink, fading to white. June. Kurdistan. 1910.
„ *Bruno'nii* (Brown's). See R. MOSCHATA.
„ *byzanti'na* (Byzantine). Yields Attar of Roses Eastern Europe, &c. 1888.
„ *cæ'sia* (grey). See R. CANINA CÆSIA.
R. califo'rnica (Californian). Western N. Amer.
„ „ *flo're ple'no* (double-flowered).
„ *caloca'rpa* (beautiful-fruited). (*R. rugosa* × *indica*.) 1891.
„ *cani'na* (dog, or *hep*). 8. Pale red. June. Britain. "Dog-rose."
„ „ *aciphy'lla* (needle-leaved). 8. Pink. June. Britain.
„ „ *ægypti'aca* (Egyptian). 8. Pink. June. Egypt.
„ „ *borbonia'na* (Bourbon). See R. BOURBONIA.
„ „ *Bo'rreri* (Borrer's). 6. Pale red. June. Britain.
„ „ *cæ'sia* (grey). 6. Pink, white. July. Scotland.
„ „ *coriifo'lia* (leather-leaved). 6. Pink. June. Britain.
„ „ *duma'lis* (bushy). 6. Pink. June. Britain.
„ „ *dumeto'rum* (thicket). 5. Pink. June. Britain.
„ „ *fastigia'ta* (pyramidal). France.
„ „ *fruteto'rum* (coppice). 6. Pink. June. Volhynia. 1818.
„ „ *glauce'scens* (milky-green). 8. June. France.
„ „ *Hetscho'ldi* (Hetschold's). Leaves peculiarly cut. 1889.
„ „ *meratia'na* (Merat's). 8. France.
„ „ *microca'rpa* (small-fruited). France.
„ „ *ni'tens* (shining-*leafleted*). 8. June.
„ „ *nu'da* (naked). 6. Pink. June. Britain.
„ „ *obtusifo'lia* (blunt-leafleted). 8. June.
„ „ *schottia'na* (Schott's). 8. June. Podolia.
„ „ *squarro'sa* (spreading). Germany.
„ „ *surculo'sa* (spriggy). 4. Pink. June. Britain.
„ „ *tau'rica* (Taurian). 6. Red. June. Tauria.
„ *caroli'na* (Carolina). 6. Crimson. June. N. Amer. 1726.
„ „ *nuttallia'na* (Nuttallian).
„ *cauca'sea* (Caucasian). 20. Red. June. Iberia. 1798.
„ *centifo'lia* (hundred-leaved). See R. GALLICA CENTIFOLIA and varieties.
„ *cinnamo'mea* (cinnamon). 6. Pink. May. Europe.
„ *davu'rica* (Dahurian). See R. CINNAMOMEA.
„ *damasce'na* (damask). 3. Pink. June. Syria. 1573. "Damask Rose."
„ „ *trigintipe'tala* (thirty-petaled). Yields Attar of Roses. Eastern Roumelia. 1888.
„ „ *variega'ta* (variegated). Pink, often striped with white. "York and Lancaster Rose."
„ *Dickso'ni* (Dickson's). White. June. Ireland.
„ *donia'na* (Don's). See R. INVOLUTA DONIANA.
„ *dumeto'rum* (thicket). See R. CANINA DUMETORUM.
„ *Dupo'nti* (Dupont's). (*R. gallica* × *moschata*.)
„ *E'cæ* (Eca's). See R. XANTHINA.
„ *Eglante'ria* (Eglanteria) of Linnæus. See R. LUTEA.
„ *Eglante'ria* (Eglanteria) of Miller. See R. RUBIGINOSA.
„ *elymai'tica* (Elymaitian). Persia.
„ *Engelma'nni* (Engelmann's). Fruit oblong. Colorado. 1889.
„ *fedtschenkoa'na* (Fedtschenkoan). Turkestan.
„ *Fendle'ri* (Fendler's). Rose. New Mexico. 1888.
„ *fe'rox* (fierce). 3. Red. July. Caucasus. 1596.
„ „ *ni'tens* (shining). 4. Pale crimson. July. 1822.
„ *foliolo'sa* (many-leafleted). N. Amer. 1890.
„ *Forste'ri* (Forster's). See R. CANINA.
„ *fortunea'na* (Fortunean). Orange-yellow, shaded metallic red. China. 1845. (*R. Banksiæ* × *lævigata*.) "Fortune's Yellow."
„ *fraxinifo'lia* (ash-leaved). See R. BLANDA.
„ *fruteto'rum* (coppice). See R. CANINA FRUTETORUM.
„ *fu'lgida* (shining). Light crimson, semidouble. 1825. "Gloire des Rosomanes."
„ *ga'llica* (French). 2. Pink. June. S. Europe. 1596.
„ „ *A'gatha* (Agatha). Purple.
„ „ *centifo'lia* (hundred-leaved). 3. Pink. June. Caucasus. 1596. "Cabbage Rose."
„ „ *Condito'rum* (founders'). A source of perfume. Asia Minor. 1889.
„ „ *crista'ta* (crested). 3. Pink. June. France. 1833.
„ „ *cu'prea* (copper).
„ „ *inape'rta* (unopened). White, rose. "Vilmorin Rose."
„ „ *incarna'ta* (flesh-coloured).
„ „ *ine'rmis* (unarmed). Purple.
„ „ *ma'xima* (largest).
„ „ *musco'sa* (mossy). 3. White, red. June. "Common Moss Rose."
„ „ *musco'sa-crista'ta* (mossy-crested). 3. White, red. June. France. "Crested Moss Rose."

R. gal'lica na'na (dwarf).
„ „ *parvifo'lia* (small-leaved). 1. Purple. June. Europe.
„ „ *pompo'nia* (pompon). 2. White, red. June. "Pompon or Miniature Provence."
„ „ *provincia'lis* (Provencial). 3–6. White, pink. France. "Provence Rose."
„ „ *pu'mila* (dwarf). 1. Red. June. Austria. 1810. "Wild Shop Rose."
„ „ *Ro'sa-mu'ndi* (rose-of-the-world). See R. GALLICA VERSICOLOR.
„ „ *versi'color* (changeable-coloured). Red and white striped.
„ „ *viola'cea* (violet).
„ *gemina'ta* (twin). (*R. gallica* × *arvensis*.) Europe.
„ *gigante'a* (gigantic). 20–40. Coppery-red passing to white, 3–5 in. across. Burma. 1888.
„ *glutino'sa* (clammy. *Cretan*). 2. Pale blush. June. Candia. 1821.
„ „ *yarmale'nsis* (Yarmalan). 2½. Whitish-red. Asia Minor. 1892.
„ *Godefro'yæ* (Madame Godefroy's). White. Persia. 1886.
„ *gra'cilis* (slender). See R. INVOLUTA GRACILIS.
„ *grandiflo'ra* (large-flowered). See R. SPINOSISSIMA ALTAICA.
„ *gymnoca'rpa* (naked-fruited). 2–4. Red. June. Western N. Amer.
„ „ *pisoca'rpa* (pea-fruited). Bright pink. July. Western N. Amer. 1877.
„ *hackelia'na* (Hackelian). See R. HECKELIANA.
„ *Ha'rdii* (Hardy's). (*R. simplicifolia* × *involucrata*.) 1885.
„ *heckelia'na* (Heckelian). Pink. June. Italy; Greece.
„ *hemisphæ'rica* (hemispherical). 4. Yellow. July. Persia and Asia Minor. 1629.
„ *heterophy'lla* (various-leaved). (*R. rugosa alba* × *lutea*.) 1897.
„ *hibe'rnica* (Irish). 4. Blush. August. Ireland.
„ *hi'spida* (bristly). See R. SPINOSISSIMA HISPIDA.
„ *Hugo'nis* (Hugo's). 3–6. Pale yellow. June, July. W. China. 1905.
„ *hu'milis* (low). Pale blush. Summer. N. Amer.
„ „ *tri'loba* (three-lobed). Blush. Petals three-lobed. 1889.
„ *hy'strix* (hedgehog). See R. LÆVIGATA.
„ *ibe'rica* (Iberian). 6. Pink. June. Iberia. 1820.
„ *i'ndica* (Indian). 20. Red. China. 1789. "China or Monthly Rose."
„ „ *anemonæflo'ra* (Anemone-flowered). See R. ANEMONÆFLORA.
„ „ *caryophy'llea* (clove-scented). Rose.
„ „ *crue'nta* (bloody). Blood-red.
„ „ *flo're ple'no* (double-flowered).
„ „ *fra'grans* (fragrant). Rose, semidouble. "Tea Rose."
„ „ *longifo'lia* (long-*willow*-leaved). 5. Pink. June. China.
„ „ *mi'nima* (smallest). 1. Blush. China. 1810. "Fairy Rose"
„ „ *monstro'sa* (monstrous). 2. Green. Summer. "Green Rose."
„ „ *ni'vea* (white-*double-flowered*). 3. White, red. July. Gardens. 1831.
„ „ *noisettia'na* (Noisette's). See R. NOISETTIANA.
„ „ *ochroleu'ca* (yellowish-white. *Chinese*). 2. Cream. June. China. 1824.
„ „ *odorati'ssima* (sweetest-scented). See R. INDICA FRAGRANS.
„ „ *panno'sa* (ragged). Purple, rose.
„ „ *pu'mila* (dwarf). 1. Pink. July. China.
„ „ *sangui'nea* (blood-coloured). 2–3. Crimson. Summer. 1810. "Crimson China Rose."
„ „ *semperflo'rens* (everflowering). 8–10. Deep crimson. China. 1789. "Everflowering China Rose."
„ *intermé'dia* (intermediate) of Carriere. See R. THYRSIFLORA.
„ *involucra'ta* (involucred). 3. White. July. India. 1808.
„ *involu'ta* (curved-in-*petaled*). 2. Pale red. June. Scotland.
„ „ *donia'na* (Donian). 4. Pink. June. Scotland.
„ „ *donia'na ho'rrida* (spiny). 4. Pink. June.
„ „ *gra'cilis* (slender). 6–8. Pale pink. June. Britain.
R. involu'ta Sabi'ni (Sabine's). 6–8. Red. June. Britain.
„ „ *Wilso'ni* (Wilson's). 3. Dark pink. June. Britain.
„ *Iwa'ra* (Iwara). White. Japan. 1861. (*R. rugosa* × *multiflora*.)
„ *Ja'ckii* (Jack's). White. July. Corea. 1910. Habit procumbent.
„ *Jundzi'llii* (Jundzill's). Europe.
„ *kamtscha'tica* (Kamtschatka). See R. RUGOSA KAMCHATICA.
„ *Klu'kii* (Kluk's. *Sweet-briar*). See R. RUBIGINOSA.
„ *læviga'ta* (smooth). 5. White. June. China. 1759. "Cherokee Rose."
„ „ *Ane'mone* (Anemone). 8–12. Pink, 3–4 in. across. (*R. lævigata* × *indica* (?).) 1901.
„ *lawrancea'na* (Miss Lawrance's). See R. INDICA MINIMA.
„ *la'xa* (loose). 3. White, pale yellow. July. Siberia.
„ *leschenaultia'na* (Leschenaultian). 60. Violet. June. India.
„ *Li'ndleyi* (Dr. Lindley's). See R. VIRGINIANA.
„ *Lu'ciæ* (Lucia's). See R. WICHURAIANA.
„ *lu'cida* (bright-*leaved*). See R. VIRGINIANA.
„ *lu'tea* (*single*-yellow). 3. Yellow. June. Orient. 1596. "Austrian Briar," or "Austrian Yellow."
„ „ *bi'color* (two-coloured). 3. Reddish-copper above, yellow beneath. June. 1596. "Austrian Copper Rose."
„ „ *puni'cea* (scarlet). See R. LUTEA BICOLOR.
„ „ *subru'bra* (*petals* reddish above). 4. Yellow, red. June.
„ *lute'scens* (yellowish). See R. SPINOSISSIMA HISPIDA.
„ *macra'ntha* (large-flowered). 2–6. Flesh, single. July. Europe. (*R. gallica* × *canina*.)
„ *macrophy'lla* (large-leaved). 6. Red. Himalaya; China.
„ „ *ru'bro-stami'nea* (red-stamened). Filaments red; anthers orange. China. 1904.
„ *maja'lis* (May. *Hog*). See R. CINNAMOMEA.
„ *Ma'lyi* (Maly's). Tyrol. (*R. alpina* × *spinosissima* (?).)
„ *micra'ntha* (small-flowered. *Sweet-briar*). Pale red. June. Europe (Britain).
„ *microca'rpa* (small-fruited). 10. White. July. China. 1822.
„ *microphy'lla* (small-leaved). 3. Blush. September. China. 1828.
„ „ *a'lba* (white-*flowered*). 3. White.
„ „ *flo're ple'no* (double-flowered).
„ *minutifo'lia* (minute-leaved). Pink or white. California. 1888.
„ *mo'llis* (soft). 6. Red. June. Europe (Britain). 1818.
„ *monta'na* (mountain). 4–6. Rose to white. Summer. Europe.
„ *Montezu'mæ* (Montezuma's). 3. Pale red. June. Mexico. 1825.
„ *moscha'ta* (musk). 12. White. August. S. Europe to India. 1596. "Musk Rose."
„ „ *flo're ple'no* (double-flowered).
„ „ *Pissa'rti* (Pissard's). 15–20. White. Persia. 1880.
„ *Moye'sii* (Moyes's). 4–10. Ruby-red. June, July. W. China. 1906.
„ *multiflo'ra* (many-flowered). 12. Red. June. China. 1822.
„ „ *Boursau'ltii* (Boursault's). See R. ALPINA × INDICA.
„ „ *ca'rnea* (flesh). Red. June. China. 1822.
„ „ *flo're ple'no* (double-flowered). White, double. July.
„ „ *Grevi'llei* (Greville's). 20. Purple. June. China. 1824. "Seven Sisters Rose."
„ „ *himala'yica* (Himalayan). 20–30. White, with yellow anthers.
„ „ *hupehe'nsis* (Hupeh). Pale rose, in large bunches. Central China. 1907.
„ „ *ni'vea* (snowy). 20. White, tinted pink.
„ „ *platyphy'lla* (broad-leaved). See R. MULTIFLORA GREVILLEI.
„ „ *russellia'na* (Russell's).
„ *multiflo'ra* × *indica*. White or pink. "Polyantha Rose."
„ *multiflo'ra* × *moscha'ta*. Pure white. July. 1886. Syn. *R. polyantha grandiflora*.
„ *myriaca'ntha* (myriad-spined). See R. SPINOSISSIMA MYRIACANTHA.

R. ni'tida (glossy-*leaved*). 2. Red. July. N. Amer. 1807.
„ *noisettia'na* (Noisettian). 3. Red. (*R. indica* × *moschata.*) "Noisette Rose."
„ *nutka'na* (Nutkan). 4–6. Pale to deep red. June. N. Amer. 1888. "Wasatch Rose."
„ *omi'sssa* (omitted). 3–5. Rose. Europe (Britain). 1888.
„ *orienta'lis* (oriental). Rose. June. Asia Minor; Persia.
„ *oxyaca'ntha* (sharp-spined). See R. SPINOSISSIMA.
„ *parvifl'ora* (small-flowered. *Carolina*). 2. Flesh. July. Garden origin. 1724. "Rose de Meaux."
„ *penduli'na* (drooping). 5. White, pink. June. Europe. 1816. (*R. spinosissima* × *alpina.*)
„ *pernetia'na* (Pernetian). Orange-yellow to reddish gold and red. July. (*R. lutea Persian Yellow* × *Antoine Ducher.*) 1900.
„ *phœni'cea* (purple). White. June. Cilicia; Syria. 1888.
„ *pimpinellifo'lia* (Pimpinella-leaved). See R. SPINOSISSIMA.
„ *pisoca'rpa* (pea-fruited). R. GYMNOCARPA PISOCARPA.
„ *Pissa'rdi* (Pissard's). See R. MOSCHATA PISSARTI.
„ *platyphy'lla* (broad-leaved). See R. MULTIFLORA GREVILLEI.
„ *polya'ntha* (many-flowered) of Sieb. and Zucc. See R. MULTIFLORA.
„ *pomi'fera* (apple-bearing). 3–6. Red. June to September. Europe. 1886. "Apple Rose."
„ *prati'ncola* (meadow-dwelling). 1½. Pink or rose. June. United States.
„ „ *a'lba* (white). 1½. White. June. United States. 1910.
„ *provincia'lis* (Provencial). See R. GALLICA PROVINCIALIS.
„ *pulche'lla* (neat). 2. Red. June. 1824.
„ *Ra'pa* (turnip). See R. VIRGINIANA FLORE PLENO.
„ *re'pens* (creeping). See R. ARVENSIS.
„ *reve'rsa* (reversed). See R. PENDULINA.
„ *rube'lla* (small-red). 2–4. Pale to deep red. June. Europe.
„ *rubifo'lia* (bramble-leaved). See R. SETIGERA.
„ „ *fenestra'ta* (windowed). See R. SETIGERA FENESTRATA.
„ *rubigino'sa* (rusty). 5. Pink. June. Europe (Britain). "Sweet Brier or Eglantine." *Aculeati'ssima* (very prickly); *flexuo'sa* (flexible-*branched*); *grandiflo'ra* (large-flowered). 4. *Lyo'nii* (Lyon's); *ma'jor* (greater); *nemora'lis* (grove); *parvifo'lia* (small-leafieted); *pu'bera* (downy); *rotundifo'lia* (round-leaved). Germany. *Umbella'ta* (umbelled). Germany. *Vaillantia'na* (Vaillant's). White.
„ *rubrifo'lia* (red-leaved). 6. Red. June. Mountains of Europe. 1814.
„ „ *hispi'dula* (bristly-*flower-stalked*). Red. June. 1822.
„ „ *ine'rmis* (unarmed). Purple. June. Switzerland.
„ „ *pinnati'fida* (leaflet-like-cut-*sepaled*). Purple. June. Switzerland.
„ „ *redou'tea* (Redoutean). 3. Pale red. June.
„ *ru'ga* (wrinkled). 10–20. Pale flesh. July, August. (*R. arvensis* × *indica.*)
„ *rugo'sa* (wrinkled). 4–6. Red. June to August. Japan. 1845.
„ „ *a'lba* (white). 4–6. White. June to August. 1876.
„ „ *caloca'rpa* (beautiful-fruited).
„ „ *fimbria'ta* (fringed). White or pink, fringed, double. 1890.
„ „ *flo're ple'no* (double-flowered).
„ „ *floribu'nda* (free-flowering).
„ „ *kamcha'tica* (Kamtschatkan). 3. Red. July. Kamtschatka. 1791.
„ *rugo'sa* × *General Jacqueminot* (Mrs. Anthony Waterer).
„ *Sabi'ni* (Sabine's). See R. INVOLUTA SABINI.
„ „ *gra'cilis* (slender). See R. INVOLUTA GRACILIS.
„ *sa'ncta* (sacred). Europe.
„ *sanguisorbifo'lia* (burnet-leaved). See R. SPINOSISSIMA.
„ *sarmenta'cea* (twiggy). See R. CANINA DUMALIS.
„ *semperflo'rens* (ever-blowing). See R. INDICA SEMPERFLORENS.
„ *sempervi'rens* (evergreen). 20. White. June. S. Europe. 1629.
„ „ *leschenaultia'na* (Leschenault's). See R. LESCHENAULTIANA.

R. se'pium (hedge). See R. AGRESTIS.
„ *Seraphi'ni* (Seraphin's). 1–1½. Bright rose. June. Corsica; Sardinia, Sicily, &c. 1894. First flowered. 1900.
„ *seri'cea* (silky). 5–10. White, 4-petaled. May, June. India. 1822.
„ „ *pteraca'ntha* (thorn-winged). 5–10. White. May, June. Central China. 1905.
„ *seti'gera* (bristle-bearing). 10–20. Rose, fading white. June. N. Amer. "Prairie Rose."
„ „ *fenestra'ta* (windowed). 4. Flesh. June. N. Amer.
„ *Shera'rdi* (Sherard's). See R. TOMENTOSA SHERARDI.
„ *simplicifo'lia* (simple-leaved). 1–2. Bright yellow, with five crimson spots. June. Orient. 1790.
„ *si'nica* (Chinese). See R. LÆVIGATA.
„ *souliea'na* (Souliean). 4–8. White. July. W. China. 1904.
„ *spinosi'ssima* (spiniest). 2. White, red. June. Europe (Britain); Siberia. "Scotch or Burnet Rose."
„ „ *alta'ica* (Altaic). 3–4. White. May. Siberia. 1818.
„ „ *arge'ntea* (silvery). 3–4. White. May.
„ „ *flo're lu'teo ple'no* (double-yellow-flowered).
„ „ *fu'lgens* (shining).
„ „ *Harriso'ni* (Harrison's). 3–4. Soft golden-yellow. 1830.
„ „ *hi'spida* (bristly). 3–4. Pale yellow. May, June. 1780.
„ „ *lu'tea* (yellow). 2–4. Single yellow. May.
„ „ *myriaca'ntha* (myriad-spined). 1–3. White. May. France. 1820.
„ „ *penicilla'ta* (pencilled).
„ „ *pi'cta* (painted).
„ „ *ru'bra* (red).
„ „ *venulo'sa* (veiny).
„ *spinulifo'lia* (prickly-leaved). Switzerland.
„ *stylo'sa* (long-styled). 3–6. White. June. Europe (England).
„ „ *evani'da* (vanishing). 5–8. Pink. June, July. England.
„ „ *sy'styla* (united-styled). 6. Pink. June. Britain.
„ *suave'olens* (sweet-scented). See R. RUBIGINOSA.
„ *sua'vis* (sweet). 4. Purple. June. 1818.
„ *sulphu'rea* (sulphur). See R. HEMISPHÆRICA.
„ *Sweginzo'wi* (Sweginzow's). 4–5. Rose. June. China, probably. 1910.
„ *sylve'stris* (wood). See R. TOMENTOSA SYLVESTRIS.
„ *sy'styla* (clustered-styled). See R. STYLOSA SYSTYLA.
„ *tau'rica* (Taurian). See R. CANINA TAURICA.
„ *thyrsiflo'ra* (thyrse-flowered). White. June. Japan. 1868.
„ *tomento'sa* (downy-*leaved*). 6. Red, white. June. Europe (Britain).
„ „ *scabriu'scula* (rather-rough). 6. Pink. June. Britain.
„ „ *Shera'rdi* (Sherard's). 6. Pink. June. Britain.
„ „ *sylve'stris* (wood). 6–8. Red. June. Britain.
„ *turbina'ta* (top-shaped-*calyxed*). 5. Red. June. Europe. 1629.
„ „ *francofurta'na* (Frankfort). 5. Rose, purple. June. Frankfort.
„ „ *orbessa'nea* (Orbessean). 4. Rose-coloured. June.
„ *villo'sa* (shaggy). See R. MOLLIS.
„ „ *pomi'fera* (apple-bearing). See R. POMIFERA.
„ „ *resino'sa* (resinous). See R. POMIFERA.
„ *virginia'na* (Virginian). 4. Red or rose. July. Eastern United States. 1724.
„ „ *a'lba* (white). White.
„ „ *flo're ple'no* (double-flowered). 3–4. Rose, double July. Eastern United States.
„ *watsonia'na* (Watsonian). Japan. 1890.
„ *webbia'na* (Webbian). 5. Pink. June. Himalaya.
„ *wichuraia'na* (Wichuraian). White. July. Japan. 1891. Habit prostrate.
„ „ *ru'bra* (red). Red. July. (*R. wichuraiana* × *Crimson Rambler.*) 1901.
„ *Willmo'ttiæ* (Miss Willmott's). 5–10. Rose-lilac or rose-purple. W. China. 1907.
„ *Wilso'ni* (Wilson's). See R. INVOLUTA WILSONI.
„ *Woo'dsii* (Wood's). 3. Pink. May. N. Amer.
„ *xanthi'na* (yellow). Yellow. June to August. Persia; Afghanistan, &c.
„ *yedoe'nsis* (Yedo). Pink, small, numerous. June, July. Japan. 1908.

ROSANO'WIA. (Commemorative of *Serge Rosanow*. Nat. ord. Gesneraceæ. Now referred to Sinningia, but not yet described under that genus.)

For culture see SINNINGIA, mostly known in gardens as Gloxinias.

R. conspi'cua (conspicuous). 1. Yellow, purple. Brazil. 1868.
„ *hy'brida* (hybrid). 1. Yellow, purple. Gardens. 1885.
„ *orna'ta* (adorned). 1. Rose, white, yellowish. (*Sinningia conspicua* × *speciosa*.) 1882.

ROSCHE'RIA. (Commemorative of *M. Roscher*. Nat. ord. Palmaceæ.)

A stove Palm. Seeds. Fibrous loam, peat, and sand.

R. melanocha'tes (black-haired). 20–25. Mascarene Islands. 1871.

ROSCO'EA. (Named after *Mr. Roscoe*, the founder of the Liverpool Botanic Garden. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)

Stove herbaceous perennials, all but one purple-flowered. Division in spring; sandy loam and leaf-mould. Winter temp., 48° to 55°; summer, 60° to 75°.

R. capita'ta (headed). 1. July. Nepaul. 1819.
„ *ela'tior* (taller). See CAUTLEA LUTEA.
„ *gra'cilis* (slender). See CAUTLEA LUTEA.
„ *lu'tea* (yellow). See CAUTLEA LUTEA.
„ *purpu'rea* (purple). 1. July. India. 1820.
„ *sikkime'nsis* (Sikkim). See R. PURPUREA.
„ *spica'ta* (spiked). See CAUTLEA SPICATA.

ROSE. *Ro'sa.*

Propagation.—Most kinds of roses can be propagated by cuttings. By this method we only obtain dwarfs; yet, as many sorts do best on their own roots, the China and Tea-scented for instance, for these we must adopt cuttings. The best time for making the cuttings is in April.

Cuttings in Pots.—The most convenient-sized pots are 5 inches across; fill them with moderately rich, light earth, press it firmly down, then fill the pots quite up to the rim with silver sand, or with finely sifted river sand; give a gentle watering from a fine-rosed watering-pot, then cut the cuttings into lengths of about 4 inches, remove all the leaves except those belonging to the top buds, make the cut very smooth across, just under the lowest bud; the cutting is then ready to be planted. Have a small stick about as thick as a quill, and thrust it into the soil just the depth of the cutting, so as to leave the top bud out; close the earth firmly to the bottom of the cutting with the stick; place the cuttings close to the edge of the pots, with the leaves of all pointing inwards; then close up the holes with a little of the sand, and give a gentle watering. The best situation to place the pots in is a pit, with hand-glasses over them. If you have not that convenience, plunge the pots in coal-ashes on a shady border, covering them with hand-glasses. Shift into larger pots as they require.

Cuttings in the Open Ground.—Choose a shady border, next a low wall or hedge—the latter to be close-clipped with the garden-shears. Let the soil be well dug and chopped small, and the surface raked very fine; then pour some water upon it, and let it stand a day, to become moderately dry again. Prepare the cuttings as above directed, and always expose the cuttings as little as possible to the sun and air; they may be preserved fresh by having a little damp moss or hay at hand to cover them with as soon as they are prepared. When a sufficient number are ready, open a trench with a small spade at the end of the border. Chop the side of the trench furthest from you straight down just a sufficient depth to leave the topmost bud and leaf out of the soil; then place the cuttings against this upright bank about 3 inches apart. When the row is filled with cuttings, with your spade put the soil against the cuttings, and with your foot tread it firmly to them. Take great care that the soil is quite close and firm around each. Then fill up level with the top of the row of cuttings another portion of soil, until there is a bank of earth 6 inches distant from the first row. Chop down the outermost edge of the soil, so as to leave another upright bank to set the second row of cuttings against, and so proceed from row to row, till you have filled the space set apart for this purpose. Examine a few of them occasionally after about six weeks, and if they are rooted, lift them carefully with a trowel or small spade, and either pot them or plant them out in rows in a more open situation. By the autumn following they will be nice plants, and may be planted in the situation where they are to grow and flower.

By Suckers.—Roses send up many suckers annually, which may be taken up in autumn, winter, or early spring, with some rootlets attached; and the strongest may be planted out finally, and the weakest in the nursery for a year or two longer. They will readily grow, and will most of them produce flowers the following summer. When rose-trees have grown into large bushes, with many suckers, the whole may be taken up and slipped, or divided into separate plants. The Moss and some others furnish suckers but sparingly.

By Layers.—To obtain shoots for layering, a quantity of rose-trees should be planted for stools, which, being headed down low, will throw out shoots abundantly, near the ground, in summer, for layering in autumn or winter following. (See LAYERING.) They will be rooted by next autumn, and fit for transplantation in nursery rows, though sometimes the moss rose and some others require two years before they are tolerably well rooted; but of these sorts you may also try layers of the shoots of the year, layered in summer, any time in June. They will probably root a little the same season. The layers of all the sorts, after being properly rooted, should be taken up in autumn and planted in the nursery, to have one or two years' growth.

By Budding.—See BUDDING and GRAFTING.

Soil and Situation.—The best soil is a rather strong loam; the deeper it is the better. It should be well-drained. Such land as will grow good wheat or good hops will grow fine roses. Next, it should be rich to grow them fine: if not already so, it ought to have thoroughly decayed dung added to it. A portion of superphosphate of lime (bones dissolved in oil of vitriol) will be of great benefit to them—a manure that may be had of any respectable manure-dealer. The rose-garden ought to open to the south and east, but be sheltered from the north and north-west winds. Tall beech or horn-beam hedges are the best shelter against gales blowing from those points. Roses should not be planted so near trees as to be overhung by them, as the drip from the trees will prevent them from thriving, and injure the flowers.

Planting.—The best season is the early part of November. They will succeed tolerably even to the middle of March, but not so well as in the autumn. If you have to procure them from a distant nursery, and they are some time out of the ground, make a puddle of earth and water of nearly the consistence of paint. Dip the roots in this puddle, and plant them immediately. Should the border intended for the rose be long and narrow, plant the tallest standards in the back row, the next size in the second, and the half-standards in the third, and the dwarfs in the front row.

Autumn Pruning: Summer Roses.—Provence, including the Moss Rose.—These require to be pruned to three or four eyes, according to the strength of the shoots. *Damask.*—These require to be pruned according to the strength of the growth of the different varieties. *Madam Hardy*, for instance, is a strong grower, and ought to be left with shoots of six eyes. *White Damask.*—This species should be pruned similarly to the Damask. *Gallica, or French.*—Some of these are very strong growers, and must be cut accordingly. Some shoots, in good soil, will grow 3 or 4 feet long. Those shoots are often pithy and green, and ought to be cut clean out, and the rest shortened to 1 foot or 18 inches, according to their strength. *Hybrid, Provence.*—They grow naturally in compact heads and many branches, and should be pruned by thinning out about one-third of the shoots, and shortening the rest to six or eight eyes. *Hybrid, Chinese.*—The strong growers, *Brennus* for instance, must be cut to eight or nine eyes; whilst the *Beauty of Billard* is a weak grower, and should be cut to two or three eyes, and half the shoots entirely cut away. *Scotch.*—All that these require is to have half of the shoots thinned out, and those that are left cut to half their length. *Climbing.*—These require a different mode of pruning to all other roses. We shall describe it as the spur system. Train in young shoots during the summer; in the autumn shorten those shoots one-fourth of their length—that is, supposing the shoot is 4 feet long, cut 1 foot of it off,

and so reduce it to 3 feet, and in the same proportion for longer shoots. The shoots will then, during the summer, produce side-shoots; these are the spurs. In the month of March following, take the shoots off the trellis walls or pillars, prune the spurs into two or three eyes, and then tie or nail them up again neatly to the supporters.

Autumn Pruning: Autumn Roses.—Macartney.—The *Macartney* rose itself requires very little pruning; but the *Maria Leonidas* requires pruning freely, shortening the strong shoots to eight or nine eyes, and the weak ones to three or four. *Damask Perpetuals* and *Hybrid Perpetuals* are mostly weak growers, and should be cut into four or five eyes, and a third of the shoots cut clean away. *Bourbons* and *Noisettes* are middling growers, and should be pruned moderately; strong shoots to be cut to five or six eyes, and the weak ones to three or four. *China and Tea-scented.*—Most of these are rather tender; consequently, the wood does not ripen to any length. They should, therefore, be pruned close. If they are planted against a wall they may be pruned longer, as the wood then becomes firmer and better ripened. Prune those in the open air, both standards and dwarfs, to two or three eyes, those on walls to six or seven, in proportion to their strength.

Summer Pruning.—It often happens, where the roses are growing in good ground, that some of them produce branches that grow so strong and fast as to rob the rest of their due support. These branches are what the French call *gourmands*, which may be Englished *gluttons*. Only stop these at first, and wait until the autumn before you cut them clean off. When the rose-trees throw out a great number of shoots equally strong, and they appear to be crowded, prune away about one-third of them, but do not shorten any of the others, as that will cause them to send out a quantity of small, weak shoots, which will injure the flowers the following season.

Roses in Pots.—Procure some pots that are well cleaned, or, what is better still, quite new; and 24's are a very convenient size to commence with. Worked roses are preferable, for pot purposes, to those grown on their own roots; therefore select such as are dwarf only, and worked close to the collar, so that when the rose is potted the stem is scarcely visible. Tea, China, and Bourbon, or their hybrids, are better suited for forcing and pot plants than Noisette and Hybrid perpetuals; the two last-named class of roses growing to greater perfection in the open air. Amongst *Tea Roses* select *Saffrano, Devoniensis, Comte de Paris, Niphetos,* and *Princess Clementine. Mrs. Bosanquet, Duchess of Kent,* with a few others, amongst *Chinas; Souvenir de la Malmaison, Leveson Gower,* and *Dupetit Thouars,* amongst *Bourbons.* Of the above *Souvenir de la Malmaison* is unrivalled as a pot rose. Having selected plants, lose no time; but before the roots have got dry, pot them (having first pruned the strong roots) in a mixture of half yellow loam, and the rest old cow-dung, leaf-mould, and sand in equal parts; but a greater proportion of loam may be added with advantage, should the rose to be potted be a Bourbon or Hybrid perpetual. The plants being potted in October, place them on ashes under a north wall, in some sheltered part of the garden, until the frosts compel to put them in cold pits, keeping them, since their being repotted, as dry as can be to prevent growth, but not sufficiently so to cause the plants to flag, or their roots to get quite dry. Then, about the commencement of December, prune all that you intend bringing into the greenhouse in the early part of January, for blooming in May and June, and stimulate them gently by applying water at a temperature a few degrees warmer than the atmosphere of the pit where they still are, so as when they are introduced into the greenhouse at the commencement of January, at a medium temperature of 45°, they are just beginning to push strongly. About the commencement of February a little more heat is to be given, and weak liquid-manure is applied about twice a week, which is strengthened as the plants increase in vigour and have their buds well set. About this time syringing overhead with lukewarm water, or steaming, may occasionally be had recourse to, as it tends to give strength to the plants, and keeps away the aphis and other enemies. Lastly, when the shoots are sufficiently long for the purpose, they are to be gently brought down to the sides of the pot, or staked to such places as they are intended to occupy, so as when the plants are ready for the show, these appliances may be removed, and the plant still preserve a round and uniform appearance. It is necessary at all times, when the temperature is at 50° or above, to give as much air as possible; and this may even be done when a gentle fire is going.

Diseases.—See EXTRAVASATED SAP, GREEN CENTRE, MILDEW, and ROSE RUST.

Insects.—See APHIS, ANISOPIA, and TORTRIX.

ROSE ACACIA. *Robi'nia hi'spida.*

ROSE APPLE. *Euge'nia Ja'mbos.*

ROSE BAY. *Epilo'bium angustifo'lium.*

ROSE CAMPION. *Ly'chnis dioi'ca.*

ROSEMARY. *Rosmari'nus officina'lis.*

Varieties.—There are three varieties—the green, golden-striped, and silver-striped. The first is in general cultivation.

Soil.—It thrives best on a poor, light soil mixed with old mortar, or other calcareous matters. In such, or when the plants are self-raised on an old wall, they will bear our severest winters; but in a rich soil they lose much of their aromatic nature, and perish in frost. For the green variety, the situation may be open; but the other two, being tender, require to be planted beneath a south wall, or in pots, to be sheltered in winter.

Propagation is by cuttings and rooted slips during any of the spring months, or by layers in the summer; but the finest plants are raised by seed. By layers is the best mode of propagating the gold and silver-striped varieties. Sow in March, or early in April, in drills ½ inch deep and 6 inches apart. The rooted slips, and the cuttings of the young shoots, must be from 5 to 7 inches long, and planted in a shady border, in rows 8 or 10 inches apart, previously removing the leaves from the lower two-thirds of their length. Layers may be formed by cutting young branches half through on their under-side, and pegging them down an inch or two below the surface: they become established plants by autumn. Water must be applied abundantly at the time of planting, and occasionally afterwards until established.

ROSE OF HEAVEN. *Ly'chnis Cœli-ro'sa.*

ROSE OF JERICHO. *Anasta'tica.*

ROSE OF THE WORLD. *Came'llia japo'nica Ro'sa mu'ndi.*

ROSE ROOT. *Se'dum ro'seum.*

ROSE RUST AND BRAND. (*Phragmidium subcorticatum.*) In some gardens and in some seasons hardy, hybrid roses more especially get attacked with this fungoid disease, but no variety, probably, is immune from attack. All three stages of the fungus occur on the same varieties of Rose. In early summer orange-coloured blotches appear on the leaves and shoots, this being the æcidiospore stage of the fungus. It is followed by deeper coloured blotches later in summer, this being the uredospore stage. The blotches may grow into each other, forming larger blotches, more or less covering the whole leaflet; while those on the shoots may attain a length of one inch, often causing them to become bent or curved. The winter or resting stage (teleutospore) of the fungus makes its appearance in autumn, in the form of minute black specks projecting from the under surface of the leaves. This is known as Rose Brand. The teleutospore is linear, shortly tailed at the apex, and seven to eight celled. It is the most difficult stage of the fungus to destroy.

Autumn is a good time to take stern measures for the eradication of the fungus. All affected leaves on the Roses, and all fallen leaves, should be gathered and burned to get rid of the resting spores, and so prevent attack in the summer following. In spring, when the leaves commence to expand, spray the bushes with sulphide of potassium, at the rate of one ounce to three gallons of water. Orange patches on the shoots should be sponged with methylated spirits and water, half and half. Wild roses in the neighbourhood, affected with rust, should also be sprayed to prevent fresh infection in the garden.

ROSE SNOWBALL-TREE. *Vibu'rnum O'pulus ste'rile.*

ROSMARI'NUS. Rosemary. (From *ros,* dew, and *marinus,* of the sea; maritime plants. Nat. ord. *Lip-worts* [Labiatæ]. Linn. *2-Diandria, 1-Monogynia.*)

Hardy evergreens, purple-flowered, and natives of Mediterranean regions. See ROSEMARY.

R. officina'lis (shop). 4. February. 1548.
" " *fo'liis-arge'nteis* (silver-leaved). 4. March. 1548.
" " *fo'liis-au'reis* (golden-leaved). 12. February. 1548.
" " *latifo'lius* (broad-leaved). 12. February. 1548.
" " *prostra'tus* (prostrate). March. 1906. Habit prostrate.

ROSTELLE'RA. See MALLOTUS.

ROTATION OF CROPS. There are three circumstances to be regarded in regulating the order in which crops should follow each other: 1. Each crop should be as dissimilar as possible from its predecessor. 2. The exuviæ of the preceding crop should not be offensive to its successor. 3. A spindle-rooted crop should succeed a fibrous-rooted crop, or *vice versa*.

RO'THIA. (Named after *A. W. Roth*, a German botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelpia*, 6-*Decandria*.)

Hardy trailing annual. Seeds in a warm border, in April.

R. trifolia'ta (three-leafleted). 2. Sulphur, red. July. India; Australia. 1820.

ROTHMA'NNIA LONGIFLO'RA. See RANDIA MACULATA.

ROTTLE'RA. See MALLOTUS.

ROUGE PLANT. *Rivi'na tincto'ria.*

ROU'PALA. (From *roupala*, the Guianan name. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen, fine foliage shrubs, from Guiana, except where otherwise stated. Cuttings of ripe shoots in sand, under a bell-glass, not hurried, but freed from damp, and placed in bottom-heat after a few weeks; fibrous loam and sandy peat. Winter temp., 45° to 48°; a rather sheltered place in summer.

R. au'rea (golden). See R. POHLII.
" *boissieria'na* (Boissierian). Yellow. Colombia. 1853.
" *complica'ta* (complicated). 6–8. Trop. Amer. 1853.
" *corcovade'nsis* (Corcovadan). See R. POHLII.
" *crena'ta* (round-toothed). S. Amer.
" *denta'ta* (tooth-*leaved*). 10. Green. June. 1802.
" *e'legans* (elegant). Brazil.
" *heterophy'lla* (various-leaved). Brazil. 1863.
" *macrophy'lla* (large-leaved). Brazil. 1863.
" *me'dia* (mediate). 10. May. 1823.
" *monta'na* (mountain). See R. MEDIA.
" *ni'tida* (shining). Pale yellow. 1821.
" *obova'ta* (reverse-egg-shaped). 10–25. Colombia. 1855.
" *Po'hlii* (Pohl's). Orange-red. Stem and leaf-stalks golden-haired. Brazil.
" *Poortma'nni* (Poortmann's). Red. Plant reddish-brown haired. 1883.
" *sessilifo'lia* (stalkless-leaved). See PANOPSIS HAMELLÆFOLIA.
" *Ski'nneri* (Skinner's). Gardens.
" *vervaine'na* (Vervainean). Gardens.

ROUPE'LLIA. (Commemorative of the *Roupell* family, patrons of botany and horticulture. Nat. ord. Apocynaceæ.)

A climbing stove shrub, with fragrant flowers. Cuttings in sand, in a close case, with bottom-heat. Peat and loam, both fibrous, and sand.

R. gra'ta (grateful). White, tinted pink. May. Trop. Africa.

ROU'REA. (Probably a commemorative name. Nat. ord. Connaraceæ.)

Stove, evergreen shrubs. Cuttings in sand, in bottom-heat. Loam, peat, and sand.

R. frute'scens (shrubby). 3–6. White. Guiana. 1823.
" *fu'lgens* (shining). Singapore.

ROWAN TREE. *Py'rus Aucupa'ria.*

ROXBU'RGHIA. (Named after *Dr. Roxburgh*, once director of the Botanic Garden, Calcutta. Nat. ord. *Roxburghworts* [Roxburghiaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Now referred to Stemona.)

R. gloriosoi'des (Gloriosa-like). See STEMONA TUBEROSA.
" *viridiflo'ra* (green-flowered). See STEMONA TUBEROSA.

ROYAL BAY. *Lau'rus no'bilis.*

ROYAL FERN. *Osmu'nda rega'lis.*

ROY'DSIA. (Commemorative of *Sir John Royds*, a judge of Bengal. Nat. ord. Capparidaceæ.)

A free-flowering, sweet-scented stove shrub. Cuttings in sand, in bottom-heat, and kept close. Fibrous loam, leaf-mould, and plenty of sand.

R. suave'olens (sweet-smelling). Calyx dull red; stamens yellow. Winter. Himalaya.

ROYE'NA. (Named after *A. Van Royen*, a Dutch botanist. Nat. ord. *Ebenads* [Ebenaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Allied to Diospyros.)

Greenhouse evergreen shrubs, from South Africa, all but one white-flowered. Cuttings of half-ripe shoots in sand, under a bell-glass, in April or May; sandy loam and fibrous peat. Winter temp., 40° to 48°; summer, 60° to 75°.

R. gla'bra (smooth). 4. September. 1731.
" *hirsu'ta* (hairy-*leaved*). 7. Purple. July. 1752.
" *latifo'lia* (broad-leaved). 5. June. 1816.
" *lu'cida* (shining-*leaved*). 4. May. 1690.
" *myrtifo'lia* (myrtle-leaved). See R. GLABRA.
" *pa'llens* (pale). S. Africa.
" *pube'scens* (downy). See R. PALLENS.
" *villo'sa* (shaggy). S. Africa.

ROY'LEA. (Named after *Professor Royle*, King's College, London. Nat. ord. *Labiates* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Ballota.)

Greenhouse evergreen shrub. Cuttings of young shoots in spring, in sandy soil, with a bell-glass over them; sandy loam and leaf-mould. Winter temp., 40° to 48°.

R. e'legans (elegant). 2. Purple. July. Nepaul. 1824.

RUBE'NTIA. (From *rubens*, red, the participle of *rubeo*, to be red; it applies to the red wood. Nat. ord. Tiliaceæ. Now referred to Elæodendron.)

R. angustifo'lia (narrow-leaved). See ELÆODENDRON ORIENTALE.
" *olivi'na* (olive-like). See ELÆODENDRON ORIENTALE.

RU'BIA. Madder. (From *ruber*, red; the colour of the roots. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Half-hardy species, from cuttings in spring, under a hand-light, and peat and loam; the others are herbaceous plants, propagated by division of the roots, and flourishing in any good garden-soil; from *tincto'rum* madder is obtained.

HALF-HARDY EVERGREENS.

R. angustifo'lia (narrow-leaved). 2. Pale yellow. July. Spain. 1772.
" *sple'ndens* (shining). See R. PEREGRINA.

HARDY HERBACEOUS.

R. ala'ta (winged). See R. CORDIFOLIA.
" *chine'nsis* (Chinese). See R. CORDIFOLIA.
" *cordifo'lia* (heart-leaved). ¾. White. July. Siberia. 1783.
" *peregri'na* (alien). 1–2. Yellow. July. Europe (England). "Wild Madder."
" *sikkime'nsis* (Sikkim). Himalaya.
" *tincto'rum* (dyer's). 4. Yellow. July. S. Europe. 1596. "Dyer's Madder."

RU'BUS. Bramble. (From the Celtic *rub*, red; colour of the fruit of some of the species. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*.)

Generally by suckers; frequently by cuttings; also by seeds for species, and obtaining new varieties; also easily obtained by pegging down the points of the shoots in the soil; deep, rich, loamy soil.

GREENHOUSE EVERGREENS.

R. ape'talus (petalless). 6. Purple. July. Isle of France. 1823. Stove.
" *austra'lis* (southern). 3–6. White or pink. June. New Zealand. "Tataramoa." Nearly hardy on a wall.
" *elli'pticus* (diamond-shaped). 10. White. India. 1827.

R. floribu'ndus (free-flowering). Ecuador.
„ *jamaice'nsis* (Jamaica). 6. Jamaica. 1822.
„ *moluccа'nus* (Moluccas). 3. Red. July. India; Malaya. 1810.
„ *parvifo'lius* (small-leaved). 2. Pink. August. China. 1818.
„ *pinna'tus* (leafleted). See R. ROSÆFOLIUS.
„ *racemo'sus* (racemed). India.
„ *refle'xus* (bent-back). 3. Red. July. China. 1817.
„ „ *a'lbo-macula'tus* (white-blotched). See R. REFLEXUS PICTUS.
„ „ *pi'ctus* (painted). 1903.
„ *ro'ridus* (dewy-*glanded*). August. Madagascar. 1831.
„ *rosæfo'lius* (rose-leaved). 3. August. Mauritius. 1811.
„ „ *corona'rius* (garland). 3. August. Mauritius. 1811.
„ *rugo'sus* (wrinkly). See R. MOLUCCANUS.
„ *sanguinole'ntus* (blood-red). 4. Red. Isle of France. 1824.
„ *schmidelioï'des* (Schmidelia-like). See R. AUSTRALIS.

HARDY EVERGREENS.

R. abru'ptus (abrupt). See R. ULMIFOLIUS.
„ *arge'nteus* (silvery). 6–10. Pink. July. Europe (Britain).
„ *bambusa'rum* (bamboo-like). 10–12. Fruit black, edible. Central China. 1903. Trailer.
„ *carpinifo'lius* (hornbeam-leaved). 10. White. July. Britain.
„ *di'scolor* (two-coloured). See R. ULMIFOLIUS.
„ *echina'tus* (hedgehog). 8. White. June. Britain.
„ *Eglante'ria* (Eglantine). See R. ROSÆFOLIUS.
„ *flagelliflo'rus* (whip-flowered). 6–8. White. July. Central China. 1907.
„ *flagellifo'rmis* (whip-formed). See R. FLAGELLIFLORUS.
„ *hy'strix* (hedgehog). 4–8. Pink. July. Europe (Britain).
„ *japo'nicus* (Japanese). White. Japan. 1852.
„ „ *tri'color* (three-coloured). Young leaves pink, older variegated with white. 1894.
„ *leightonia'nus* (Leighton's). 10. July. England.
„ *Lejeu'nii* (Lejeune's). July. Channel Isles.
„ *Li'ngua* (tongue-*leaved*). 10. July. Europe.
„ *pube'scens* (downy). 4–8. White. July. Europe (Britain).
„ *Ra'dula* (raspberry-like). 8. August. Britain.
„ „ *ru'dis* (rude). See R. RUDIS.
„ „ *hy'strix* (porcupine). See R. HYSTRIX.
„ *rotundifo'lius* (round-leaved). See R. ELLIPTICUS.
„ *ru'dis* (rude). 4–8. Pink. July. Europe (Britain).
„ *sylva'ticus* (wood). 4–8. White. July. Europe (Britain).
„ *ulmifo'lius* (elm-leaved). 4–12. Pink to bright red. July to September. Europe (Britain). "Common Bramble."
„ „ *flo're ple'no* (double-flowered). 10. Pink, double. July. Britain. "Daisy-flowered Bramble."
„ „ *fo'liis variega'tis* (variegated-leaved).
„ „ *iné'rmis* (unarmed). 10. Pink. Stems without prickles. July. Britain.
„ „ *leucoca'rpus* (white-fruited). 10. Fruit white. July. Britain.
„ „ *tau'ricus* (Taurian). 10. Pinkish. July. Europe.
„ *villicau'lis* (hairy-stemmed). July. Europe (England).
„ „ *arge'nteus* (silvery-*leaved*). See R. ARGENTEUS.
„ „ *pube'scens* (downy). See R. PUBESCENS.
„ „ *sylva'ticus* (wood). See R. SYLVATICUS.
„ „ *té'nuis* (slender). See R. CÆSIUS.

HARDY HERBACEOUS.

R. acau'lis (stemless). See R. ARCTICUS.
„ *a'rcticus* (arctic). ½. Rose. June. Northern and arctic regions. 1802.
„ *Chamæmo'rus* (Ground-Mulberry). ½. White. May. Northern and arctic regions (Britain). "Cloudberry," "Averine," "Avan."
„ *Daliba'rda* (Dalibarda). ½. White. May, June. N. Amer. 1768.
„ *saxa'tilis* (rock). 1. White. June, July. North temperate and arctic regions (Britain).
„ *stella'tus* (starred). ½. June. N. Amer. 1824.

HARDY DECIDUOUS.

R. adeno'phorus (gland-bearing). Rose. July. China. 1910.
„ *affi'nis* (related). 8. White. July. Britain.
„ „ *bracteo'sus* (*broad*-bracted). 8. White. August. Britain.
„ *agre'stis* (field). 6. White. June. Hungary. 1820.
„ *america'nus* (American). See R. TRIFLORUS.
„ *apicula'tus* (small-pointed). 6. June. Europe. 1818.
„ *argu'tus* (sharp-*toothed*). See R. VILLOSUS.
„ *Arrhe'nii* (Arrhen's). July. Europe.
„ *a'sper* (rough) of D. Don. See R. ROSÆFOLIUS.
„ *balfouria'nus* (Balfourian). 10. Lilac or white. June, July. Europe (Britain).
„ *Bella'rdii* (Bellard's). White. July. Europe (Britain).
„ *bifio'rus* (two-flowered). May. Nepaul. 1818.
„ *Bloxa'mii* (Bloxam's). White or pinkish. July. Europe (Britain).
„ *boræa'nus* (Boræan). Purplish-red. July. Europe (Britain).
„ *Bo'rreri* (Borrer's). White or pinkish. July. Europe (Britain).
„ *cæ'sius* (grey). 2. White. June. Europe (Britain). "Dewberry."
„ „ *fo'liis-variega'tis* (variegated-leaved). 2. White. June. Britain.
„ *calva'tus* (bald). White or pinkish. July. England.
„ *canade'nsis* (Canadian). 3. White. June. N. Amer. 1811. "Low Blackberry."
„ *cane'scens* (hoary). See R. TOMENTOSUS.
„ *chroöse'palus* (colour-sepaled). Petals none. Sepals pinkish inside. July. Central China. 1903.
„ *cinero'sus* (grey). Pinkish. July. Britain.
„ *Colema'ni* (Coleman's). Pink or white. July. Europe (Britain).
„ *corchorifo'lius* (Corchorus-leaved). White. Fruit red, large. Central and W. China. 1910.
„ *cordifo'lius* (heart-leaved). See R. RHAMNIFOLIUS.
„ *corea'nus* (Corean). 6. Rose or purple. China; Corea. 1908.
„ *corylifo'lius* (hazel-leaved). 10. White. July. Europe (Britain).
„ „ *ca'nus* (hoary). 10. White. July. Britain.
„ „ *glandulo'sus* (glandulous-*petaled*). See R. GLANDULOSUS.
„ *cratægifo'lius* (Cratægus-leaved). White. N.E. Asia; Japan.
„ *cuneifo'lius* (wedge-leaved) of Mercer. July. Europe.
„ *cuneifo'lius* (wedge-leaved) of Pursh. 3. White. June. N. Amer. 1811.
„ *delicio'sus* (delicious). 3–6. White, large. May, June. Rocky Mountains. 1870.
„ *di'stans* (distant). See R. LASIOCARPUS.
„ *diversifo'lius* (diverse-leaved). See R. DUMETORUM DIVERSIFOLIUS.
„ *dumeto'rum* (thicket). 8. White. August. Britain.
„ „ *diversifo'lius* (diverse-leaved). 8. White. June, July. Britain.
„ „ *fe'rox* (fierce). 8. White. June, July. Europe (Britain).
„ *dumnonie'nsis* (Dumnonian). 6–8. White. July. Britain.
„ *echina'tus* (hedgehog). 5–10. Pink. July. Europe (Britain).
„ *erythri'nus* (red). See R. ARGENTEUS.
„ *exseca'tus* (cut-away). July. Europe.
„ *fastigia'tus* (tapering). See R. FISSUS.
„ *fi'ssus* (cleft). 3. White. July. Europe (Britain).
„ *flagella'ris* (rod). See R. CANADENSIS.
„ *foliolo'sus* (small-leafy). 6. White. June. Nepaul. 1818.
„ *folio'sus* (leafy). 5–10. Pink or white. July. Europe (Britain).
„ *frutico'sus* (shrubby). See R. ULMIFOLIUS and varieties.
„ *fu'sco-a'ter* (brownish-black). Bright red. July, August. Europe (England).
„ *fu'scus* (dusky). White or pinkish. July. Europe (England).
„ *glandulo'sus* (glanded). 10. July. Europe (Britain). 1816.
„ *He'nryi* (Henry's). Leaves dark green above, felted beneath. Central China. 1904.
„ *hi'rtus* (hairy). 10. August. Hungary (Britain). 1816.

R. hi'spidus (bristly). 3. August. N. Amer. 1768.
„ *ho'rridus* (horrid). See R. DUMETORUM FEROX.
„ *hupehe'nsis* (Hupeh). Flowers 3–7 in a raceme. Central China. 1910.
„ *ichange'nsis* (Ichang). Flowers small. Fruit red. Leaves with metallic lustre. Central China. 1910.
„ *ida'us* (Mount-Ida). 4–6. White. May, June. Europe (Britain). W. Asia. "Raspberry."
„ „ *microphy'llus* (small-leaved). 3. May. Britain.
„ *illecebro'sus* (illustrious). 1–2. White. Fruit deep red. July. Japan. "Strawberry-Raspberry."
„ *imbrica'tus* (overlapping). 3–5. White or pink. July. Europe (England).
„ *inci'sus* (incised). 5. Snow-white. Japan; China. 1904.
„ *innomina'tus* (unrenowned). 6–8. Flowers in panicles. Fruit orange-red. Central China. 1905.
„ *insula'ris* (insular). Pink or white. Scandinavia.
„ *irena'us* (pacific). Leaves nearly circular, white felted beneath. Central China. 1903.
„ *Koehle'ri* (Koehler's). 8. August. Europe (Britain).
„ *kœhnea'nus* (Kœhnean). See R. INNOMINATUS.
„ *kuntzea'nus* (Kuntzean). See R. INNOMINATUS.
„ *lacinia'tus* (jag-*leaved*). 12. White, red. August. "Cut-leaved Bramble."
„ „ *e'legans* (elegant).
„ *lambertia'nus* (Lambertian). Whitish. Leaves coloured in autumn. China. 1910.
„ *lanugino'sus* (woolly). 10. June. Siberia. 1820.
„ *lasioca'rpus* (woolly-fruited). 5–10. White or red. July. India; Malaya. 1818.
„ „ *pauciflo'rus* (few-flowered). 8. Deep pink. 1825.
„ *lasio'stylus* (woolly-styled). China.
„ *lentigino'sus* (freckled). Pinkish. July. England.
„ *leucode'rmis* (white-skinned). White. Stems powdery, white. N.W. Amer.
„ *leuco'stachys* (white-spiked). 10. Pink or white. July. Europe (Britain).
„ *lindleya'nus* (Lindleyan). Pure white. July. Europe (Britain).
„ *linkia'nus* (Link's). 10. August. Europe. 1821.
„ *longithy'rsiger* (long-thyrse-bearing). White. July. England.
„ *macrophy'llus* (large-leaved). 8. Pink or white. June. Europe (Britain).
„ „ *Schlechtenda'lii* (Schlechtendal's). 10. White or pink. July. Europe (Britain).
„ *macroste'mon* (long-stamened). Germany.
„ *melanola'sius* (black-wool). Similar to the Raspberry. N.W. Amer. 1894.
„ *Me'nkei* (Menke's). 8. July. Germany. 1816.
„ *me'rcicus* (Mercican). White or pinkish. July. England.
„ *mi'cans* (glittering). Pinkish or white. July. Europe (Britain).
„ *micra'nthus* (small-flowered). See R. LASIOCARPUS.
„ *Millspau'ghi* (Millspaugh's). A spineless bramble. Fruit edible. N. Amer. 1892.
„ *morifo'lius* (mulberry-leaved). July. Japan.
„ *mucrona'tus* (small-pointed). Pinkish. July. Europe (Britain).
„ *muta'bilis* (changeable). White. July. Europe (England).
„ *negle'ctus* (neglected). United States.
„ *ni'tidus* (shining). 3. Pink. July, August. Europe (Britain).
„ *nu'tans* (nodding). 1–2. White. June. Himalaya. 1850.
„ *nutka'nus* (Nootka-Sound). 4. White. August. N. Amer. 1826. "Salmon-berry."
„ *occidenta'lis* (western). 5. May. N. Amer. 1696. "Thimble-berry."
„ *odora'tus* (sweet-scented). 7. Purplish-rose. June. N. Amer. 1800. "Purple-flowering Raspberry."
„ *omeie'nsis* (Mount Omei). Purple. W. China. 1909.
„ *opa'cus* (opaque). 3–6. White. July. Europe (Britain).
„ *pa'llidus* (pale). August. Britain.
„ *palma'tus* (hand-shaped). Flowers solitary. Leaves 5–6-lobed. China; Japan. 1901.
„ *Parke'ri* (Parker's). Leaves velvety dull green. China. 1908.
„ *parvifo'lius* (small-leaved). 1–2. Red. China; Japan. 1818.
„ *pauciflo'rus* (few-flowered). See R. LASIOCARPUS PAUCIFLORUS.
R. peda'tus (pedate). White. July. N.W. Amer. 1903.
„ *phœnicola'sius* (purple-wool). 4–12. Pale pink. June, July. Japan. 1877. "Wineberry."
„ *pilea'tus* (capped). Central China.
„ *Playfai'rii* (Playfair's). Fruit black. S.E. China. 1910.
„ *plica'tus* (plaited). 10. August. Britain.
„ *polytri'chius* (many-haired). White. Fruit bright red. W. China. 1910.
„ *pulche'rrimus* (fairest). 6–10. Pink. July. Europe (Britain).
„ *Purcha'si* (Purchas's). Pink. July. Britain.
„ *Ra'dula* (Radula). 6–8. Pinkish. July. Europe (Britain).
„ *ramo'sus* (branched). 5–8. White or pinkish. July. Britain.
„ *rhamnifo'lius* (buckthorn-leaved). 10. July. Britain.
„ „ *flo're ple'no* (double-flowered).
„ *rhena'nus* (Rhenan). Europe.
„ *rubricau'lis* (red-stemmed). See R. APICULATUS.
„ *sa'nctus* (holy). 8. Pink. June. Palestine. 1823.
„ *sca'ber* (rough). White. July. Europe (Britain).
„ *Schlechtenda'hlii* (Schlechtendahl's). See R. MACROPHYLLUS SCHLECHTENDALII.
„ *Schleiche'ri* (Schleicher's). 8. June. Germany. 1818.
„ *seto'sus* (bristly-*stemmed*). See R. HISPIDUS.
„ *silva'ticus* (wood). White or pinkish. July. Europe (Britain).
„ *si'mplex* (simple). White. Fruit orange-red. Central China. 1910.
„ *sorbifo'lius* (Sorbus-leaved). Leaves pinnate like Sorbus. China.
„ *specta'bilis* (showy). 4. Dark red. May. Columbia. 1827.
„ *Sprenge'lii* (Sprengel's). 10. Pink. August. Europe (Britain). 1823.
„ *strigo'sus* (short-bristled). 3. June. N. Amer. "Wild Red Raspberry."
„ *subere'ctus* (sub-upright). 4. August. Europe (Britain).
„ *thyrsiflo'rus* (thyrse-flowered). July. Europe.
„ *thy'rsiger* (thyrse-bearing). Pinkish. July. Britain.
„ *thyrsoi'deus* (thyrse-like). 6–8. White or pale pink. July, August. Europe (Britain).
„ „ *flo're ple'no* (double-flowered). 6–8. White. July, August.
„ *tiliæfo'lius* (lime-leaved). 6. June. Europe. 1819.
„ *tomento'sus* (woolly). 10. August. Europe. 1818.
„ *tri'fidus* (three-lobed). 3–8. Rose. July. Japan. 1888.
„ *triflo'rus* (three-flowered). 6–12. June. Arctic Amer.
„ *trivia'lis* (common). Fruits black. July. United States. 1889. "Low Bush Blackberry."
„ *ursi'nus* (bear). White. Fruit black. N. Amer. 1888.
„ *Vei'tchi* (Veitch's). 3–6. Rosy-purple. Fruit globose, red. W. China. 1909.
„ *villicau'lis* (woolly-stemmed). 6–10. Pale pink or white. July. Europe (Britain).
„ „ *Se'lmeri* (Selmer's). 6–10. Bright pink. July. Europe (Britain).
„ *villo'sus* (shaggy). 3. White. August. N. Amer. 1777. "High Blackberry."
„ „ *flo're ple'no* (double-flowered).
„ *xanthoca'rpus* (yellow-fruited). ½–1½. White. Fruit yellow. N. China. 1892.

RU'CKIA ELLEMEE'TI. See RHODOSTACHYS ANDINA.

RUDBE'CKIA. (Named after *O. Rudbeck*, a Swedish botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*.)

Hardy herbaceous, yellow-flowered perennials, from North America, except where otherwise mentioned. Seeds and division of the plant in spring; common garden-soil; *napifo'lia* requires the protection of the cold pit in winter.

R. amplexicau'lis (stem-clasping). 3. July. 1793.
„ „ *mi'nor* (smaller). Leaves entire.
„ *amplexifo'lia*. See R. AMPLEXICAULIS.
„ *angustifo'lia* (narrow-leaved). See HELIANTHUS ANGUSTIFOLIUS.
„ *aspe'rrima* (roughest). 3. Red, white. September. 1832.
„ *bi'color* (two-coloured). 2. Golden-yellow, with brown zone. August.
„ *columna'ris* (columnar). See LEPACHYS COLUMNARIS.

R. conspi'cua (conspicuous). See R. HIRTA CONSPICUA.
„ *digita'ta* (hand-*leaved*). See R. LACINIATA ANGUSTIFOLIA.
„ *Drummo'ndii* (Drummond's). Orange. August. 1836.
„ *fu'lgida* (bright). 3. July. 1760.
„ „ *compa'cta* (compact). Dwarf and compact. 1908.
„ „ *varia'bilis* (variable). Yellow and brown; disc purple. 1906.
„ *grandiflo'ra* (large-flowered). 3½. August, September. 1830.
„ *hi'rta* (hairy). 2. August. 1714.
„ „ *conspi'cua* (conspicuous). 1½. Orange-yellow; disc black. 1902.
„ „ *vomere'nsis* (Vomeran). Canary-yellow to golden-yellow. 1904.
„ *lacinia'ta* (jagged-*leaved*). 6. August. 1640.
„ „ *angustifo'lia* (narrow-leaved). 6. August. 1759.
„ *laviga'ta* (smooth). 3. July. 1812.
„ *ma'xima* (largest). 4–8. Pale yellow. August. Texas.
„ *moscha'ta* (musky). Yellow. August, September.
„ *napifo'lia* (turnip-leaved). 2. July. Mexico. 1824.
„ *Newma'ni* (Newman's). See R. SPECIOSA.
„ *pa'llida* (pale). See ECHINACEA ANGUSTIFOLIA.
„ *pinna'ta* (leafleted). See LEPACHYS PINNATA.
„ *purpu'rea* (purple). See ECHINACEA PURPUREA.
„ *Ra'dula* (raspberry-*leaved*). See HELIANTHUS RADULA.
„ *sero'tina* (late). See ECHINACEA PURPUREA.
„ *specio'sa* (showy). 1½–3. Golden-yellow; disc black. July to September.
„ *subtomento'sa* (rather-downy). 3. August. 1802.
„ *tomento'sa* (felted). See R. SUBTOMENTOSA.
„ *tri'loba* (three-lobed). 4. August. 1699.

RU'DGEA. (Commemorative of *E. Rudge*. Nat. ord. Rubiaceæ.)

Stove evergreen shrubs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, one-third peat, and sand.

R. hostmannia'na (Hostmannian). Guiana.
„ *macrophy'lla* (large-leaved). 1½. Creamy-white. Brazil. 1867.
„ *nivo'sa* (snowy). 2–3. White. Brazil. 1866.

RUDO'LPHIA. (Named after *W. Rudolph*, a Prussian botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Erythrina.)

Stove evergreen twiners, with scarlet flowers, from Tropical America. Young side-shoots in sand, under a bell-glass, in a moist, sweet bottom-heat; fibrous loam, sandy peat, and a little charcoal. Winter temp., 48° to 60°; summer, 60° to 80°.

R. du'bia (doubtful). See CENTROSEMA HASTATUM.
„ *portorice'nsis* (Porto-Rico). See R. VOLUBILIS.
„ *ro'sea* (rosy). 6. 1826.
„ *volu'bilis* (twining). July. 1800.

RUE, or **HERB GRACE.** (*Ru'ta grave'olens.*) Thrives best in a poor, clayey loam, mixed with calcareous rubbish, in an open situation. It is propagated by slips and cuttings as well as from seeds, the first two modes being usually practised as being the most easy. It may be planted or sown at any time during the spring. The seed in drills 6 inches apart, and ¼ inch deep. The rooted slips, or cuttings, may be planted on a poor, shady border, and watered occasionally until taken root. In the autumn the plants may be removed. During their after-growth they must be kept pruned in a shrubby form, and never be allowed to produce seed.

RUE'LLIA. (Named after *J. Ruelle*, a French botanist. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

All blue-flowered, except where otherwise mentioned. Cuttings of the young shoots in spring or summer, in light, sandy soil, in a sweet hotbed; fibrous loam, leaf-mould, and peat. Winter temp., 48° to 58°; summer, 60° to 85°.

Greenhouse Herbaceous.

R. biflo'ra (two-flowered). 2. July. Carolina. 1765.
„ *la'ctea* (milky). 2. Pale violet. July. Mexico. 1796.
„ *stre'pens* (rattling). 2. July. N. Amer. 1726.

Stove Evergreens.

R. acuta'ngula (acute-angled). Bright scarlet, with yellow throat. May. Brazil.
„ *affi'nis* (allied). See R. SPECIOSA.
„ *amæ'na* (lovely). 2–3. Bright scarlet. S. Amer. 1880.
„ *anisophy'lla* (unequal-leaved). See STROBILANTHES ANISOPHYLLUS.
„ *austra'lis* (southern). 2. Blue. July. Australia. 1824.
„ *Baiki'ei* (Baikie's). 3. Scarlet. Autumn. Trop. Africa. 1858.
„ *barlerioi'des* (Barleria-like). See PETALIDIUM BARLERIOIDES.
„ *Blu'mei* (Blume's). Java.
„ *bractea'ta* (large-bracted). See PETALIDIUM BARLERIOIDES.
„ *ce'rnua* (drooping). 1. July. E. Ind. 1816.
„ *cilia'ta* (eye-lashed). 2. Purple. July. India; Burma. 1806.
„ *ciliatiflo'ra* (eye-lashed-flowered). Purple, blue. September. Argentina. 1838.
„ *cilio'sa* (eye-lashed). 1. Blue. July. N. Amer. 1824.
„ *clandesti'na* (hidden). See R. OBTUSA.
„ *coromandelia'na* (Coromandelian). See ASYSTASIA CORONANDELIANA.
„ *crista'ta* (crested). See APHELANDRA CRISTATA.
„ *depe'ndens* (hanging-down). See RUNGIA PARVIFLORA.
„ *devosia'na* (Devosian). White. Leaves purple beneath. Brazil. 1877.
„ „ *grillia'na* (Grillian). Garden variety. 1888.
„ *Dipteraca'nthus* (Dipteracanthus). Mexico.
„ *e'legans* (elegant). See R. FORMOSA.
„ *fœ'tida* (fetid). See R. RUBICAULIS.
„ *formo'sa* (handsome). 2. Scarlet. August. Brazil 1808.
„ *fu'lgida* (bright). 2. Scarlet. July. Colombia. 1804.
„ *glomera'ta* (crowded). See STROBILANTHES GLOMERATUS.
„ *He'rbsti* (Herbst's). Brazil.
„ *hi'rta* (hairy). See HEMIGRAPHIS HIRTA.
„ *infundibulifo'rmis* (funnel-shaped). See CROSSANDRA UNDULÆFOLIA.
„ *intru'sa* (intruded). See ASYSTASIA COROMANDELIANA.
„ *lilaci'na* (lilac). See R. SOLITARIA.
„ *longiflo'ra* (long-flowered). Purplish-lilac. October.
„ *longifo'lia* (long-leaved). 2. Scarlet. July. Guiana. 1820.
„ *lorentzia'na* (Lorentzian). Violet-blue. Uruguay. 1902.
„ *macra'ntha* (large-flowered). 1½–2. Rose-purple, large. Brazil. 1881.
„ *macrophy'lla* (large-leaved). 3. Scarlet. June. Trop. Amer. 1840.
„ *makoya'na* (Makoyan). Carmine-rose. Leaves veined with white, purple beneath. Brazil. 1895.
„ *obli'qua* (oblique). See ASYSTASIA COROMANDELIANA.
„ *oblongifo'lia* (oblong-leaved). See CALOPHANES OBLONGIFOLIUS.
„ *obtu'sa* (blunt). 2. Blue. July. Colombia. 1728.
„ *ocymoi'des* (basil-like). See R. PATULA.
„ *ova'ta* (egg-shaped). 2. Blue. July. Mexico. 1800.
„ *panicula'ta* (panicled). 3. Purple. August. Trop. Amer. 1768.
„ *pa'tula* (spreading). 1½. Soft violet. July. India; Burma. 1774.
„ *Pea'rcei* (Pearce's). Scarlet. Bolivia. 1867.
„ *pi'cta* (painted). 1. June. Domingo. 1826.
„ *pilo'sa* (thinly-hairy). 2–3. Blue. July. S. Africa. 1823.
„ *Porte'llæ* (Portella's). 1. Rosy-pink. S. Brazil. 1879.
„ *pube'scens* (downy). See R. PILOSA.
„ *pulche'lla* (pretty). See R. RUBICAULIS.
„ *purdiea'na* (Purdie's). Crimson. March. Colombia. 1845.
„ *ri'ngens* (gaping). See HYGROPHILA ANGUSTIFOLIA.
„ *ro'sea* (rosy) of Martius. Rosy-pink. Brazil. 1818.
„ *ro'sea* (rosy) of Hemsley. Rose. Mexico. 1878.
„ *rubicau'lis* (red-stemmed). 1–2. Blue. July. Mexico. 1823.
„ *sabinia'na* (Sabinian). See STROBILANTHES SABINIANUS.
„ *salicifo'lia* (willow-leaved). See HYGROPHILA ANGUSTIFOLIA.
„ *solita'ria* (solitary). 3. Lilac. October. Brazil. 1844.

R. specio'sa (showy). Scarlet. August. Brazil. 1859.
„ *supe'rba* (superb). Gardens.
„ *tetrago'na* (four-angled). 2. June. Brazil. 1824.
„ *tubero'sa* (tuberous). 2. July. Central Amer.; W. Ind. 1752.
„ *undula'ta* (waved). 2. E. Ind. 1824.
„ *viola'cea* (violet). ½. Violet. July. Guiana. 1820.

RUINS are a class of buildings beautiful as objects, expressive as characters, and peculiarly calculated to connect with their appendages into elegant groups: they may be accommodated with ease to irregularity of ground, and their disorder is improved by it; they may be intimately blended with trees and with thickets, and the interruption is an advantage, for imperfection and obscurity are their properties, and to carry the imagination to something greater than is seen, their effect.

RUI'ZIA. (Named after *H. Ruiz*, co-author with Pavon of the *Floræ Peruvianæ et Chilensis*. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 8-*Polygynia*. Allied to Dombeya.)

Stove, white-flowered evergreens, from the Isle of Bourbon. Cuttings of half-ripened side-shoots in summer, in sandy soil, under a bell-glass, but raised at night, and in a mild hotbed; sandy loam and fibrous peat. Winter temp., 50° to 55°; summer, 60° to 80°.

R. loba'ta (lobed-*leaved*). 6. 1816.
„ *varia'bilis* (variable-*leaved*). 6. May. 1792.

RULI'NGIA. (Commemorative of *John Philip Ruling*, a writer on plants. Nat. ord. Sterculiaceæ.)

Greenhouse shrubs. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.

R. corylifo'lia (hazel-leaved) of R. Graham. 2. White. April. Australia.
„ *corylifo'lia* (hazel-leaved) of Steudel. See R. PARVIFLORA.
„ *hermanniæfo'lia* (Hermannia-leaved). 2–4. White. July. Australia. 1818.
„ *panno'sa* (rag-like). 2–3. White. June. Australia. 1780.
„ *parvifo'ra* (small-flowered). 1. White. Australia. 1868.

RU'MEX. Dock. (An old Latin name. Nat. ord. Polygonaceæ.)

Hardy herbs, mostly weeds, but *R. Acetosa* is the common Sorrel. The others mentioned here are used in a similar way, perhaps, more often in France than in this country. Seeds; divisions. Ordinary soil.

R. Aceto'sa (sour). 2. Green. June. Europe (Britain). "Sorrel."
„ *alpi'nus* (alpine). 2–4. Green. July, August. Europe. "Monk's Rhubarb."
„ *Patie'ntia* (patience). 2–3. Green. July. S. Europe. "Herb Patience," "Patience Dock."
„ *scuta'tus* (shield-like). 1–1½. Green. July. Europe. "French Sorrel."

RUN. A plant advancing to seed is said by gardeners to have *run*. Also, when the dark colouring of a carnation, or other flower, becomes confused or clouded with a lighter ground colour, they say it is *a run flower*. Abundance of moisture and a rich soil promote the development of leaves, and, consequently, check running, or producing seed. A suitably fertile soil also preserves the colours of a flower pure and distinct; over-fertility or poverty of soil will equally cause the colours to run.

RUNCINATE, or **LION-TOOTHED,** describes the edge of a leaf cut into transverse sharp-pointed segments, pointing backwards, as in the leaf of the Dandelion.

RU'NGIA. (Commemorative of *F. F. Rungia*, a German. Nat. ord. Acanthaceæ.)

Stove evergreens. Cuttings in sand in a case, kept close and warm. Fibrous loam, leaf-mould, and a little sand.

R. eriosta'chya (woolly-spiked). 2. White and yellow. Upper Guinea. 1905.
„ *parvifo'ra* (small-flowered). 1½. Blue. June. India; Burma. 1798.

RU'PALA. See ROUPALA.

RU'SCUS. Butcher's Broom. (From *bruscus*, derived from the Celtic *brus*, box, and *kelen*, holly; Box Holly, or Butcher's Broom. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy evergreen shrubs. Suckers, and dividing the roots; any common, rich soil. *Andro'gynus* is a greenhouse evergreen climber, and, like the rest of the Butcher's Brooms, retains the singularity of producing its flowers and fruits on flattened, leaf-like branchlets.

R. aculea'tus (prickly). 1. Green. May. England.
„ „ *angustifo'lius* (narrow-leaved). Branchlets narrow.
„ „ *la'xus* (loose). 1. Green. April. Portugal.
„ „ *rotundifo'lius* (round-leaved). 1. Green. March.
„ *andro'gynus* (hermaphrodite). See SEMELE ANDROGYNA.
„ *Hypoglo'ssum* (*tongue*-under-tongue). 1. Pale yellow. May. Italy. 1596.
„ *Hypophy'llum* (*leaf*-under-leaf). 1. Green. June. Italy. 1640.
„ „ *trifolia'tus* (three-leafleted). See R. TRIFOLIATUS.
„ *latifo'lius* (broad-leaved). See SEMELE ANDROGYNA.
„ *racemo'sus* (racemed). See DANAË LAURUS.
„ *trifolia'tus* (three-leafleted). 2. Green. Greece.

RUSH. *Ju'ncus.*

RUSH BROOM. *Vimina'ria.*

RUSH FERN. *Schiza'a.*

RUSH, FLOWERING. *Bu'tomus.*

RUSH LILY. *Sisyri'nchium.*

RUSSE'LIA. (Named after *Dr. Russel*, author of a *Natural History of Aleppo*. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove, red-flowered evergreens, from Mexico. Cuttings in sandy soil, in heat; also frequently by suckers. If a large branch is allowed to lie along the ground in a warm, moist place, plenty of plants will be made from its twigs rooting; sandy loam, peat, and leaf-mould. Winter temp., 45° to 55°; summer, 60° to 85°.

R. eleganti'ssima (most-elegant). Gardens.
„ *floribu'nda* (bundle-flowered). See R. ROTUNDIFOLIA.
„ *ju'ncea* (rushy-*branched*). 3. July. 1833.
„ *Lemoi'nei* (Lemoine's). *R. juncea* × *sarmentosa*. 1897.
„ *multiflo'ra* (many-flowered). See R. SARMENTOSA.
„ *rotundifo'lia* (round-leaved). 4. June. 1824.
„ *sarmento'sa* (twiggy). 4. July. Trop. Amer. 1812.
„ *ternifo'lia* (three-leafleted). See R. SARMENTOSA.

RUST. A disease of the berries of the grape. It appears in the form of a rough, rusty appearance of their skins, which have, in fact, become thick and hardened. Some think it arises from the berries being handled, or the hair of the head touching them; but the disease is often too general to admit of this topical explanation. We believe it to arise from an over-heating and sudden reduction of temperature of the vinery whilst the grapes were young, and thus tending to force them to a premature rapidity of growth. Any excessive pressure upon the cuticle, whether from within or without, causes its thickening.

RUSTIC STRUCTURES are pleasing in recluse portions of the pleasure-ground, if this style be confined to the formation of either a seat or a cottage; but it is ridiculous, if complicated, and elegant forms are constructed of rude materials. Thus we have seen a flower-box, intended to be Etruscan in its outlines, formed of split hazel stakes—a combination of the rude and the refined, giving rise to separate trains of ideas totally unassociable.

RU'TA. Rue. (From *rus*, to flow; from some reputed medicinal virtue. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Seeds in spring; also by cuttings under a hand-light in sandy soil, in a shady place, in summer. They flourish best in a deep, sandy loam, with limy rubbish mixed. See RUE.

R. albiflo'ra (white-flowered). See BŒNNINGHAUSENIA ALBIFLORA.
„ *angustifo'lia* (narrow-leaved). See R. CHALEPENSIS.
„ *bracteo'sa* (large-bracted). 2–3. Pale yellow. Summer. Mediterranean region. 1772.
„ *chalepe'nsis* (Chalepan). 2. Pale yellow. Summer. Mediterranean region. 1722.
„ *divarica'ta* (loosely-spreading). 2. Pale yellow. Summer. S. Europe.

R. grave'olens (strong-scented). 3. Yellow, green. August. S. Europe. 1752. "Common Rue."
,, ,, *variega'ta* (variegated). Leaves blotched with white.
,, *linifo'lia* (flax-leaved). 2. Yellow. September. Spain; N. Africa.
,, ,, *grandiflo'ra* (large-flowered). See R. SUAVEOLENS.
,, *macrophy'lla* (large-leaved). 2–3. Yellow. Summer. N. Africa.
,, *patavi'na* (Paduan). 1. Yellow. June. S. Europe. 1819. "Padua Rue."
,, *suave'olens* (sweet-smelling). 2. Yellow. Summer. Russia; Thrace.

RU'TTYA. (A commemorative name. Nat. ord. Acanthaceæ.)
A subshrubby greenhouse evergreen. Cuttings in spring, in sand, under a bell-glass, with gentle heat. Fibrous loam, leaf-mould, and sand.
R. ova'ta (egg-shaped). 2. Purple. S. Africa.

RUY'SCHIA. (Named after *F. Ruysch*, a Dutch botanist. Nat. ord. *Marcgraviads* [Ternströmiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen. Cuttings of firm shoots in sand, under a glass, in a hotbed; fibrous loam and leaf-mould. Winter temp., 55° to 60°; summer, 60° to 85°.
R. clusiefo'lia (Clusia-leaved). 4. Purple. May. Trop. Amer. 1823.
,, *Sourou'bea* (Souroubea). Guiana.

RYA'NIA. (Named after *Dr. Ryan*. Nat. ord. *Bixads* [Bixaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
Stove evergreen. Cuttings of ripened shoots in sand, in summer, in a hotbed, and under a bell-glass; fibrous peat and sandy loam. Usual stove temperatures.
R. specio'sa (showy). 10. Cream. August. Trop. Amer. 1823.

RYSSO'PTERYS. (From *rhussos*, wrinkled, and *pterux*, a plume, a wing; the wing of the fruit is wrinkled. Nat. ord. Malpighiaceæ.)
Stove twiner. Cuttings of short, half-ripe side-shoots in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
R. microste'ma (small-ribbed). White. August. Philippines; Java. 1820.

RYTIDOPHY'LLUM. See RHYTIDOPHYLLUM.

S

SA'BAL. (Probably the South American name of one of the species. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*.)
Stove, green-flowered Palms. By suckers; light, rich loam. Winter temp., 55° to 60°; summer, 60° to 88°.
S. Adanso'ni (Adanson's). 6. July. S. United States. 1810.
,, *blackburma'na* (Blackburn's). 6. W. Ind. 1825. "Fan Palm," "Thatch Palm."
,, ,, *no'bilis* (noble). 1888.
,, *cærule'scens* (bluish). Colombia. 1875.
,, *filamento'sa* (thready). Jamaica.
,, *glauce'scens* (sea-green). Trinidad. 1825.
,, *graminifo'lia* (grass-leaved). 6. S. Amer. 1825.
,, *ma'jor* (greater).
,, *mauritiæfo'rmis* (Mauritia-like). 50–60. W. Ind. 1860.
,, *mexica'na* (Mexican). 15–20. Mexico. 1834.
,, *mi'nor* (smaller). See S. ADANSONI.
,, *Palme'tto* (small palm). 6. Georgia. 1825. "Palmetto Palm."
,, *Sanfo'rdi* (Sanford's). Florida.
,, *serrula'ta* (finely-sawed). See BRAHEA SERRULATA.
,, *umbraculi'fera* (umbrella-bearing). See S. BLACKBURNIANA.
,, *Woodfo'rdii* (Woodford's). Trinidad. 1836.

SABBA'TIA. (Named after *L. Sabbati*, an Italian botanist. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Hardy biennials, except *panicula'ta*, and all from North America. Seeds in a shady, moist border; or if in pots, treated as alpines, having a saucer of water under them; the perennial by division in spring.

S. angula'ris (angle-*stemmed*). ½. Purple. July. 1826.
,, *calyco'sa* (*leafy*-calyxed). 1. Dark red. July. 1812.
,, *campe'stris* (field). 1. Lilac. July. 1855.
,, *chloroi'des* (Chlora-like). ½. Red. July. 1817.
,, *gra'cilis* (slender). 1. Rose. July.
,, *panicula'ta* (panicled). 1½. White. May. 1817. Perennial.
,, *stella'ris* (star-*flowered*). Brown, yellow. June. 1827.

SABICE'A. (From *sabisabi*, the Indian name. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Hamelia.)
Stove, white-flowered, evergreen climbers. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy loam, fibrous peat, with silver sand and charcoal. Winter temp., 55° to 60°; summer, 60° to 88°.
S. a'spera (rough). Guinea. 1824.
,, *hi'rta* (hairy). See S. ASPERA.

SABI'NEA. (Commemorative of *Joseph Sabine*, F.R.S., a secretary of the Horticultural Society of London. Nat. ord. Leguminosæ.)
Evergreen, stove shrubs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, a little peat, and sand.
S. cardina'lis (scarlet). Glowing scarlet. W. Ind.
,, *flo'rida* (flowery). Rose-pink. W. Ind.

SA'CCHARUM. Sugar Cane. (From *soukar*, its Arabic name. Nat. ord. *Grasses* [Gramineæ]. Linn. 3-*Triandria*, 2-*Digynia*.)
Stove herbaceous perennials. Suckers chiefly; cuttings taken from shoots that start from the joints; rich, loamy soil. Winter temp., 55° to 60°; summer, 60° to 90°, and moist atmosphere.
S. ægypti'acum (Egyptian). See S. SPONTANEUM.
,, *arundina'cea* (reed-like). 10–15. July. India; China. 1822.
,, *Mu'nja* (Munja). 8–10. Benares. 1805.
,, *officina'rum* (shop). 12. India. 1597. "Common Sugar Cane."
,, ,, *viola'ceum* (violet). Stems plum-purple. W. Ind. 1824.
,, *pro'cerum* (tall). See S. ARUNDINACEUM.
,, *sine'nse* (Chinese). See S. OFFICINARUM.
,, *sponta'neum* (spontaneous). Panicle silvery, like Pampas Grass. Tropics of Old World. 1866.

SA'CCIA. (Commemorative of *Dr. Sacc*, of Cochabamba, Bolivia. Nat. ord. Convolvulaceæ.)
Evergreen stove shrub. Seeds. Cuttings in sand in a close case, with bottom-heat. Fibrous loam, peat, and sand.
S. e'legans (elegant). 5–6. Lilac. Cochabamba, Bolivia. 1889.

SACCOLA'BIUM. (From *saccus*, a bag, and *labium*, a lip; bagged labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids, grown in baskets. See ORCHIDS.
S. acutifo'lium (acute-leaved). ½. Yellow, red. Himalaya. 1837.
,, *ampulla'ceum* (flask-formed). ½. Rose. August. Sylhet. 1839.
,, *belli'num* (pretty). Straw, with brown blotches; lip white, with mauve-purple blotches. Burma. 1884.
,, *Berkele'yi* (Berkeley's). White, amethyst. Burma (?). 1883.
,, *bigi'bbum* (two-bulged). Yellow. Autumn. Burma. 1868.
,, *bivitta'tum* (two-striped). Yellowish, with two purple-brown stripes; lip white. E. Ind. 1890.
,, *Blu'mei* (Blume's). See RHYNCHOSTYLIS RETUSA.
,, *borne'nse* (Bornean). Ochre-cinnamon. Borneo. 1881.
,, *bucco'sum* (distended). Yellowish, speckled brown. Himalaya; Burma. 1871.
,, *calceola're* (slipper-shaped). Yellow, spotted with red. India. 1837.
,, *calo'pterum* (beautiful-winged). Magenta-crimson. New Guinea. 1899.
,, *carina'tum* (keeled). See S. PAPILLOSUM.
,, *ceri'num* (waxy). Orange; spur apricot. Sunda Isles. 1888.
,, *cœle'ste* (sky-blue). See RHYNCHOSTYLIS CŒLESTIS.
,, *compre'ssum* (compressed). Cream-white. Manilla.

S. curvifo'lium (curved-leaved). 1. Cinnabar-red. May. N. Ind.
„ „ *fla'vum* (yellow). Yellow. Burma.
„ *dasypo'gon* (thick-beard). Yellow; lip white, marked purple. Nepaul. 1908.
„ *densiflo'rum* (crowded-flowered). See CLEISOSTOMA SPICATUM.
„ „ *pa'llidum* (pale). Manilla. 1837.
„ *denticula'tum* (toothed). See S. ACUTIFOLIUM.
„ *di'ves* (rich). Yellow. India. 1875.
„ *fle'xum* (bent). Red. New Guinea. 1882.
„ *fra'grans* (fragrant). White; lip purple. Fragrant. Burma. 1882.
„ *furca'tum* (forked). White, spotted with rose. India.
„ *gemma'tum* (budded). Purple. May. Sylhet. 1837.
„ *gigante'um* (gigantic). White, spotted with amethyst; lip pale violet. Burma. 1864.
„ „ *illu'stre* (illustrious). Spots of a deeper, richer colour; lip violet-purple. Cochin-China. 1884.
„ „ *petotia'num* (Petotian). Large dull white. Cochin-China. 1886.
„ „ *Regnie'ri* (Regnier's). Flowers 1½ in. across. Cambodia. 1889.
„ *gra'cile* (graceful). Small white, numerous. Ceylon. 1904.
„ *Græ'fei* (Græff's). Dark purple. Fiji. 1881.
„ *gurwa'licum* (Gurwalian). White, spotted; lip amethyst. N. India. 1879.
„ *gutta'tum* (spotted-*flowered*). See RHYNCHOSTYLIS RETUSA.
„ „ *ma'jus* (large-*flowered*). See RHYNCHOSTYLIS RETUSA MAJOR.
„ *hainane'nse* (Hainan). ½. Small, white and purple. Hainan. 1895.
„ *harrisonia'num* (Harrisonian). See S. VIOLACEUM HARRISONIANUM.
„ *hendersonia'num* (Hendersonian). Rose; lip white. Borneo. 1875.
„ *Hutto'ni* (Hutton's). Rose; lip amethyst. Java. 1867.
„ *lana'tum* (woolly). Yellow, purple. July. Burma. 1849.
„ *littora'le* (shore). Malacca. 1881.
„ *longicalcara'tum* (long-spurred). ½. Small pinkish-purple. Burma. 1894.
„ *macrosta'chyum* (large-spiked). See RHYNCHOSTYLIS RETUSA.
„ *micra'nthum* (small-flowered). Violet. July. N. India. 1837.
„ *Mi'mus* (mime). Rose-purple, tipped green. South Sea Islands. 1878.
„ *minia'tum* (vermilion). ½. Vermilion. May. Java. 1846.
„ „ *citri'num* (lemon). Lemon, with darker centre. Philippines. 1884.
„ *moorea'num* (Moorean). ½–¾. Pink, tipped green. New Guinea. 1893.
„ *ochra'ceum* (pale-reddish-yellow). Yellow, red. May. Ceylon. 1838.
„ *papillo'sum* (nippled). 1. Green. India. 1824.
„ *Pe'chei* (Peche's). Ochraceous, with red spots; lip yellow, spotted red. Burma. 1887.
„ *penangia'num* (Penang). ½. Light yellow, whitish, purple. Malaya. 1909.
„ *platycalcara'tum* (flat-spurred). ½. Yellow, spotted brown, whitish, green. Burma. 1909.
„ *Pumi'lio* (pigmy). Yellow; lip white, with purple apex. Himalaya. 1875.
„ *præmo'rsum* (bitten-*leaved*). See RHYNCHOSTYLIS RETUSA.
„ *retu'sum* (depressed-ended). See RHYNCHOSTYLIS RETUSA.
„ *rube'scens* (reddish). ½. Rose-purple. Annam. 1906.
„ *ru'brum* (red). See S. AMPULLACEUM.
„ *ru'brum* (red) of Lindley. See S. CURVIFOLIUM.
„ *smeea'num* (Smean). White, with mauve veins; lip white, mauve. 1887.
„ *specio'sum* (showy). See AËRIDES MACULOSUM.
„ *Turne'ri* (Turner's). Lilac, with purple spots. India. 1878.
„ *viola'ceum* (violet). White, spotted with mauve; lip mauve. Philippines. 1839.
„ „ *harrisonia'num* (Harrisonian). Pure white, fragrant. Philippines. 1864.
„ *wightia'num* (Wightian). See AËRIDES RADICOSUM.
„ *wittea'num* (Wittean). 2. Orange, with reddish spots; lip white, purple. Java. 1883.

SACCOLO'MA E'LEGANS. See DAVALLIA ELEGANS.

SACCOPE'TALUM. (From *saccos*, a bag, and *petalon*, a petal; the three inner petals are pouched or boat-shaped at the base. Nat. ord. Anonaceæ. Allied to Miliusa.)

Evergreen stove shrub. Cuttings in sand in a close frame, with bottom-heat. Loam, peat, and sand.

S. tomento'sum (felted). 6. Brown. India. 1822.

SACRED BEAN. *Nelu'mbium specio'sum* and *Nymphæ'a Lo'tus.*

SADDLE GRAFTING. See GRAFTING.

SADDLE-TREE. *Liriode'ndron tulipi'ferum.*

SADLE'RIA. (Commemorative of *Joseph Sadler*, Professor of Botany at Pesth. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove fern. See FERNS FOR CULTURE.

S. cyatheoi'des (Cyathea-like). 4½–7½. Sandwich Islands; Sumatra. 1877.

SAD TREE. *Nycta'nthes A'rbor-tri'stis.*

SAFFLOWER. *Ca'rthamus.*

SAFFRON. *Cro'cus sati'vus.*

SAFFRON, MEADOW. *Co'lchicum.*

SAFFRON THISTLE. *Ca'rthamus tincto'rius.*

SAGE. *Sa'lvia officina'lis.*

Varieties.—The Common Green; Wormwood; Green, with variegated leaves; Red, with variegated leaves; Painted, or Parti-coloured; Spanish, or Lavender-leaved; and Red.

Soil and Situation.—A dry, moderately fertile soil is best suited to their growth, in a sheltered situation.

Propagation: by Cuttings.—These may be either of the preceding or same year's growth; if of the first, plant in April; if of the latter, not until the close of May or middle of June. The shoots of the same year are usually employed, as they more readily emit roots, and assume a free growth. The outward and most robust shoots should be chosen, and cut from 5 to 7 inches in length. All but the top leaves being removed, insert by the dibble almost down to these, in rows 6 inches apart each way, in a shady border, and during moist weather, otherwise water must be given immediately, and repeated occasionally, until they have taken root.

By Seed.—Sow in April, in a bed of rich, light earth, in drills ¼ inch deep, and 6 inches apart. When 2 or 3 inches high, thin the plants to half a foot apart, and those removed prick out at a similar distance. In the autumn or succeeding spring, as the plants are strong or weak, remove them to their final stations.

After-culture.—The decayed flower-stalks, stunted branches, &c., remove in early winter and spring, and the soil of the beds slightly turn over. When the plants have continued two or three years, a little dry, well-putrefied dung may be turned in during early spring. Attention to the mode of gathering has an influence in keeping the plants healthy and vigorous. The tops ought never to be cropped too close, so as to render the branches naked or stumpy.

SAGE, JERUSALEM. *Phlo'mis frutico'sa.*

SAGE, WILD. *Tarchona'nthus camphora'tus.*

SAGE, WOOD. *Teu'crium Scorodo'nia.*

SAGE'NIA. (From *sagu*, the Malay name of some Palms, which this genus resembles in miniature. Nat. ord. *Ferns*. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Nephrodium.)

S. calca'rea (chalky). See NEPHRODIUM CALCARATUM.
„ *cicula'ria* (Cicuta-like). See NEPHRODIUM CICUTARIUM.
„ *coaduna'ta* (united). 4. June. Ceylon. 1845.
„ *interme'dia* (intermediate). See NEPHRODIUM INTERMEDIUM.
„ *irregula'ris* (irregular). See NEPHRODIUM IRREGULARE.
„ *lawrencea'na* (Lawrencean). See NEPHRODIUM LAWRENCEANUM.
„ *mamillo'sa* (nippled). See NEPHRODIUM MAMILLOSUM.
„ *platyphy'lla* (broad-leaved). 3. June. Ceylon. 1845.

SAGE OF BETHLEHEM. *Pulmona'ria officina'lis.*

SAGERE'TIA. (Commemorative of *M. Sageret*, a French agriculturist. Nat. ord. Rhamnaceæ.)
Stove shrubs with pale green flowers. Cuttings in sand in a close, warm case. Fibrous loam, peat, and sand.
S. hamo'sa (hooked). Green. India and China.
„ *thee'zans* (tea-like). 2. Green. May. India; Burma; China.

SAGE ROSE. *Ci'stus.*

SAGI'NA. Pearl-wort. (From *sagina*, fatness; presumed nourishing qualities for sheep. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 4-*Tetrandria*, 3-*Trigynia*.)
Insignificant weeds, except *procu'mbens*, one of the prettiest of our alpine plants, which makes a close carpet on the ground, spreading far and wide, and has starry, white flowers. It is not more than half an inch high.
S. Boy'dii (Boyd's). ½. White. Scotland.
„ *gla'bra* (smooth). ½. White. Europe.
„ „ *pili'fera* (hair-bearing). ½. White.
„ „ *pili'fera au'rea* (golden). Leaves yellow. Used in carpet bedding.
„ *Linnæ'i* (Linnæus'). ½. White. Northern and arctic regions.
„ *procu'mbens* (lying-down). ½. White. Summer. North temperate regions (Britain).
„ „ *flo're ple'no* (double-flowered). ½. Double white. Frequent on Leith Hill, Surrey.
„ *saxa'tilis* (rock). See S. LINNÆI.

SAGITTA'RIA. Arrow-head. (From *sagitta*, an arrow; the leaves of some resemble an arrow-head. Nat. ord. *Alismads* [Alismaceæ]. Linn. 21-*Monœcia*, 9-*Polyandria*.)
White-flowered aquatics. Division of the plant in spring; rich, loamy soil. The greenhouse and stove kinds in an aquarium, or in vessels duly supplied with water.

STOVE AQUATICS.

S. acutifo'lia (pointed-leaved). See S. PUGIONIFORMIS.
„ *angustifo'lia* (narrow-leaved). See S. LANCIFOLIA.
„ *montevide'nsis* (Montevidean). 2–3. White, with three black blotches. Argentina. 1883.
„ *obtusifo'lia* (blunt-leaved). See LIMNOPHYTON OBTUSIFOLIUM.
„ *pugionifo'rmis* (dagger-formed). 1. June. Guiana. 1816.

GREENHOUSE AQUATICS.

S. donia'na (Don's). See S. SAGITTIFOLIA.
„ *grami'nea* (grass-*leaved*). 1½. July. Carolina. 1812.
„ *hasta'ta* (halbert-*leaved*). See S. SAGITTIFOLIA.
„ *heterophy'lla* (various-leaved). 1. July. N. Amer. 1822.
„ *lancifo'lia* (spear-head-leaved). 1½. June. W. Ind. 1787.
„ *obtu'sa* (blunt-*leaved*). See S. SAGITTIFOLIA.
„ *sine'nsis* (Chinese). See S. SAGITTIFOLIA.

HARDY AQUATICS.

S. falca'ta (sickle-*leaved*). See S. LANCIFOLIA.
„ *japo'nica* (Japanese). See S. VARIABILIS.
„ „ *flo're ple'no* (double-flowered). See S. VARIABILIS FLORE PLENO.
„ *latifo'lia* (broad-leaved). See S. SAGITTIFOLIA.
„ *macrophy'lla* (large-leaved). 2–3. White. Mexico. 1905.
„ *na'tans* (floating). 1. July. Carolina. 1812.
„ *ri'gida* (stiff-*leaved*). 1½. June. N. Amer. 1806.
„ *sagittifo'lia* (arrow-leaved). 2. July. Europe; Asia; N. Amer. (England). "Arrow Leaf."
„ „ *flo're-ple'no* (double-flowered). 1½. July.
„ *varia'bilis* (variable). 1½–2. White. June, July. N. Amer.
„ „ *flo're ple'no* (double-flowered). White, double. June, July.

SAGO PALM. *Metro'xylon Sa'gu.*

SAGRÆ'A. (Named after *R. de la Sagra*, a Spaniard. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Miconia.)
Stove evergreen shrubs. Cuttings of stubby young side-shoots in spring; sandy peat and fibrous loam, with a little charcoal, and sufficient silver sand to keep the soil open. Winter temp., 48° to 60°; summer, 60° to 88°. The following are the best:
S. hirsu'ta (hairy). See OSSÆA HIRSUTA.
„ *microphy'lla* (small-leaved). See OSSÆA MICROPHYLLA.
„ *sessilifo'ra* (stalkless-flowered). 1. Red. April. Guiana. 1793.
„ *umbro'sa* (shady). 6. Red. March. W. Ind. 1824.

SAGUE'RUS. See ARENGA.

SA'GUS. Sago Palm. (From *sagu*, the Malay name. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*.)
S. Palma-Pinus (pine-palm). See RAPHIA GÆRTNERI.
„ *peduncula'ta* (*long*-flower-stalked). See RAPHIA PEDUNCULATA.
„ *Ru'ffia* (Ruffia). See RAPHIA PEDUNCULATA.
„ *Ru'mphii* (Rumphius's). See METROXYLON SAGU.
„ *tædi'gera* (pine-torch-bearing). See RAPHIA VINIFERA.
„ *vini'fera* (wine-bearing). See RAPHIA VINIFERA.

ST. ANDREW'S CROSS. *A'scyrum hypericoi'des.*

ST. BARBARA'S HERB. *Barba'a vulga'ris.*

ST. BARNABY'S THISTLE. *Centau'rea solstitia'lis.*

ST. BERNARD'S LILY. *Anthe'ricum Lilia'go.*

ST. DABEOC'S HEATH. *Daboë'cia polifo'lia.*

SAINTFOIN. *Ono'brychis viciæfo'lia.*

ST. GEORGE'S HERB. *Valeria'na officina'lis.*

ST. JOHN'S BREAD. *Cerato'nia Si'liqua*

ST. JOHN'S WORT. *Hype'ricum.*

ST. JOSEPH'S LILY. *Li'lium ca'ndidum.*

ST. MARTIN'S FLOWER. *Alstræme'ria pu'lchra.*

ST. MARTIN'S HERB. *Sauvage'sia ere'cta.*

ST. MARY'S WOOD. *Calophy'llum inophy'llum.*

ST. PATRICK'S CABBAGE. *Saxi'fraga umbro'sa.*

SAINTPAU'LIA. (Commemorative of *Saint Paul*, the Apostle. Nat. ord. Gesneraceæ.)
A dwarf stove herb of great beauty. Seeds; leaf cuttings and divisions. Fibrous loam and leaf-mould in equal parts, with sand to make it porous.
S. iona'ntha (violet-flowered). ½. Violet-blue; anthers yellow. Usumbara Mts., E. Africa.
„ „ *albe'scens* (whitish). ½. White, tinted with blush-pink. 1899.
„ „ *variega'ta* (variegated). Leaves variegated with pale yellow, turning to white. 1903.

ST. PETER'S WORT. *Hype'ricum A'scyron*, and *Symphorica'rpus.*

SALA'CIA. (Named after *Salacia*, the wife of Neptune, of ancient mythology. Nat. ord. Celastraceæ.)
Tall stove shrubs or small trees. Cuttings of mature wood in sand, in a close, warm case. Fibrous loam, a little peat or leaf-mould, and sand.
S. elli'ptica (elliptic). 12. Yellow, green. Brazil. 1818.
„ *macrophy'lla* (large-leaved). 10. Greenish-yellow. Java.
„ *panicula'ta* (panicled). 12. Yellow, green. Brazil. 1818.
„ *prinoi'des* (Prinus-like). 6–10. Green-yellow. June. E. Ind. 1820.
„ *pyrifo'rmis* (pear-shaped). 5. Green-yellow. June. Trop. Africa. 1825.
„ *Roxbu'rghii* (Roxburgh's). 4. Orange. June. India. 1822.

SALAD BURNET. *Pote'rium Sanguiso'rba.*

SALADING. See the following: American Cress, Beet Root, Borage, Burnet, Celeriac, Celery, Chervil, Corn Salad, Cress, Dandelion, Endive, Finochio, Garden Rocket, Horse-radish, Lettuce, Mint, Mustard, Onions, Purslane, Radishes, Rape, Scurvy Grass, Succory, Water Cress, Wood Sorrel.

SALEP. *O'rchis.*

SALISBU'RIA. Maiden-hair-tree. (Named after *R. A. Salisbury*, an English botanist. Nat. ord. *Conifers*

[*Coniferæ*]. Linn. 21-*Monœcia*, 9-*Polyandria*. See GINKGO.)

S. adiantifo'lia (maiden-hair-leaved). See GINKGO BILOBA.

SALI'SIA, of Lindley. (Named after the *Countess de Salis*. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia*, 3-*Triandria*. Now referred to Kunzea.)

S. pulche'lla (pretty). See KUNZEA SERICEA.

SALISIA, of Regel. See GLOXINIA.

SA'LIX. Willow. (From the Celtic *sal*, near, and *lis*, water; place of growth. Nat. ord. *Willowworts* [Salicaceæ]. Linn. 22-*Diœcia*, 2-*Diandria*.)

Cuttings of ripened shoots, which merely require to be inserted in the soil in the autumn; moist soil, inclining to the marshy, suits them best; very dwarf shrubs, propagating with more difficulty, should be struck in summer under a hand-light.

GREENHOUSE DECIDUOUS.

S. bonplandia'na (Bonpland's). Mexico. 1829. Re-introduced 1908.
„ *canarie'nsis* (Canary). Canaries.
„ *cape'nsis* (Cape). April. S Africa. 1816.
„ *gariepi'na* (Gariepan). See S. CAPENSIS.
„ *humboldtia'na* (Humboldt's). 10 Peru. 1823. Evergreen.
„ „ *fastigia'ta* (upright). Tree pyramidal. Peru. 1896.
„ *Sa'fsaf* (Safsaf). N. and Trop. Africa. 1907. Introduced to Italy many years ago.
„ *tetraspe'rma* (four-seeded). 20. E. Ind. 1796.

HARDY DECIDUOUS.

S. acumina'ta (pointed-*leaved*). See S. SMITHIANA ACUMINATA.
„ *acutifo'lia* (sharp-leaved). See S. DAPHNOIDES ACUTIFOLIA.
„ *adenophy'lla* (glandular-leaved). Labrador.
„ *ægypti'aca* (Egyptian). See S. SAFSAF.
„ *alaternoi'des* (Alaternus-like). See S. NIGRICANS.
„ *a'lba* (white). 40–80. April. Europe (Britain).
„ „ *argе'ntea* (silvery). Leaves silvery-white on both sides.
„ „ *britze'nsis* (Britzan). Bark bright orange-red. 1879.
„ „ *cæru'lea* (blue). 40–90. May. Britain.
„ „ *cæru'lea pe'ndula* (drooping-blue).
„ „ *cri'spa* (curled-*leaved*). England.
„ „ *vitelli'na* (yolk-of-egg-coloured). Bark yellow, or yellow and red. "Golden Willow," "Golden Osier."
„ „ *vitelli'na pe'ndula no'va* (new-drooping-yellow). "Weeping Golden Willow."
„ *albe'scens* (whitish). See S. NIGRICANS.
„ *alnifo'lia* (alder-leaved). April. Europe. 1830.
„ *alpi'gena* (alpine-begot). Tyrol, &c.
„ *amania'na* (Amanian). See S. NIGRICANS.
„ *ambi'gua* (doubtful). 20. April. Europe (Britain).
„ „ *ma'jor* (greater). 5. April. England.
„ „ *undula'ta* (wavy-*leaved*). April. England.
„ *amplexicau'lis* (stem-clasping). See S. PURPUREA AMPLEXICAULIS.
„ *amygdali'na* (almond-*leaved*). See S. TRIANDRA AMYGDALINA.
„ *andersonia'na* (Anderson's). See S. NIGRICANS ANDERSONIANA.
„ *angusta'ta* (narrow-*leaved*). See S. CORDATA.
„ *angustifo'lia* (narrow-leaved). 3. April. Caspian. 1825.
„ *ansonia'na* (Ansonian). See S. NIGRICANS ANSONIANA.
„ *aqua'tica* (water). See S. CINEREA AQUATICA.
„ *Arbu'scula* (little-tree). ½–3. April. Europe (Scotland); N. Asia.
„ „ *carina'ta* (keeled). 3. April. Leaves folded along the middle. Scotland.
„ „ *prunifo'lia* (plum-leaved). 3. April. Scotland.
„ „ *vacciniifo'lia* (bilberry-leaved). 2. April. Scotland.
„ „ *venulo'sa* (veiny). 2. April. Scotland.
„ *a'rctica* (arctic). 3. Arctic regions. 1811.
„ *arena'ria* (sand). See S. LAPPONUM.
„ *a'tro-purpu'rea* (dark-purple-*branched*). See S. NIGRICANS ATROPURPUREA.
„ *a'tro-vi'rens* (dark green). See S. NIGRICANS ATROVIRENS.
S. auri'ta (eared). 2. April. Europe (Britain); Asia.
„ *austra'lis* (southern). See S. CINEREA.
„ *babylo'nica* (Babylonian). 30–50. May. Japan. 1730. "Weeping Willow."
„ „ *annula'ris* (ringlet). 40. March.
„ „ *cri'spa* (curled-*leaved*). See S. BABYLONICA ANNULARIS.
„ „ *Napoleo'na* (Napoleon's). See S. BABYLONICA.
„ „ *ra'mulis au'reis* (golden-branched). Bark of twigs yellow.
„ „ *Salamo'ni* (Salamon's). Leaves longer.
„ *Bake'ri* (Baker's). 20–40. N. Amer. 1908.
„ *balsami'fera* (balsam-bearing). 4–10. Eastern N. Amer. 1888.
„ *basfordia'na* (Basfordian). See S. FRAGILIS BASFORDIANA.
„ *berberifo'lia* (berberry-leaved). May. Siberia. 1824.
„ *bi'color* (two-coloured). See S. PHYLICIFOLIA.
„ *borreria'na* (Borrer's). See S. PHYLICIFOLIA BORRERIANA.
„ *brachy'stachys* (short-spiked). 10. March. N. Amer. 1811.
„ *cæ'sia* (grey). 3. May. S. Europe. 1824.
„ *califo'rnica* (Californian). 1. California. 1887.
„ *ca'ndida* (white). 10. April. N. Amer. 1811. "Sage Willow."
„ *candi'dula* (small-white). See S. NIGRICANS.
„ *cane'scens* (hoary). See S. OLEÆFOLIA.
„ *ca'prea* (goat). 30. April. Europe (Britain). "Common Sallow," "Goat Willow."
„ „ *pe'ndula* (drooping). March. "Kilmarnock Weeping Willow."
„ „ *sphacela'ta* (withered). 2. April. Scotland.
„ *carina'ta* (keel-*leaved*). See S. ARBUSCULA CARINATA.
„ *carpinifo'lia* (hornbeam-leaved). See S. NIGRICANS CARPINIFOLIA.
„ *cerasifo'lia* (cherry-leaved). See S. NIGRICANS.
„ *ce'rnua* (drooping). Europe (Scotland). Hybrid.
„ *chlorophy'lla* (green-leaved). ½. N. Amer. 1888.
„ *chrysa'nthos* (golden-flowered). See S. LANATA.
„ *cine'rea* (grey). 3–20. March, April. Europe (Britain), N. and W. Asia.
„ „ *aqua'tica* (aquatic). 3–15. March, April. Britain.
„ „ *Mede'mii* (Medem's). 10. February, March.
„ „ *tri'color* (three-coloured). Leaves variegated.
„ *clethræfo'lia* (Clethra-leaved). See S. NIGRICANS.
„ *commuta'ta* (changed). North-western United States.
„ *confo'rmis* (uniform-*leaved*). See S. SMITHIANA.
„ *coni'fera* (cone-bearing). 10. June. N. Amer. 1820.
„ *corda'ta* (heart-*leaved*). 6. April. N. Amer. 1811.
„ „ *glaucophy'lla* (sea-green-leaved). Leaves glaucous.
„ „ *ri'gida* (rigid). Leaves elliptic-lanceolate, stiff. New England to Virginia. 1829.
„ „ *seri'cea* (silky). Leaves silky.
„ „ *vesti'ta* (clothed). Leaves woolly.
„ *cordifo'lia* (heart-leaved). See S. ARCTICA.
„ *coria'cea* (leathery-*leaved*). 8. April. Switzerland. 1825.
„ *coru'scans* (glittering). See S. GLABRA.
„ *cotinifo'lia* (Cotinus-leaved). See S. NIGRICANS COTINIFOLIA.
„ *Cotte'ti* (Cottet's). ½. Tyrol.
„ *crassifo'lia* (thick-leaved). See S. NIGRICANS.
„ *crowea'na* (Crowe's). See S. PHYLICIFOLIA CROWEANA.
„ *cuspida'ta* (short-pointed). 3–12. May. Europe (England).
„ *Cutle'ri* (Cutler's). ½. April. N. Amer. 1811.
„ *cydoniæfo'lia* (quince-leaved). See S. NIGRICANS.
„ *damasce'na* (damson-*leaved*). See P. NIGRICANS DAMASCENA.
„ *daphnoi'des* (Daphne-like). April. Switzerland. 1820.
„ „ *acutifo'lia* (acute-leaved). 3–15. February, March. Caspian Sea. 1823.
„ *davallia'na* (Davall's). See S. PHYLICIFOLIA.
„ *deci'piens* (deceptive). 8. May. Europe (England).
„ *decu'mbens* (lying-down). May. Switzerland. 1823.
„ *dicksonia'na* (Dickson's). See S. PHYLICIFOLIA DICKSONIANA.
„ *di'scolor* (two-coloured). 8. April. N. Amer. 1811.
„ *donia'na* (Don's). 6. April. Europe (Scotland).
„ *du'ra* (hardy). See S. NIGRICANS.
„ *elæagnoi'des* (Elæagnus-*leaved*). See S. GLAUCA.
„ *eleganti'ssima* (very elegant). 10–15. Origin uncertain. 1898.
„ *Erdinge'ri* (Erdinger's). Europe.
„ *eria'ntha* (woolly-flowered). See S. HASTATA.

S. fagifo'lia (beech-leaved). See S. SILESIACA.
,, *falca'ta* (sickle-*leaved*). See S. NIGRA FALCATA.
,, *ferrugi'nea* (rusty-*leaved*). See S. SMITHIANA FERRUGINEA.
,, *finmarchica* (Finmark). See S. MYRTILLOIDES.
,, *fi'rma* (firm-*leaved*). See S. NIGRICANS FIRMA.
,, *foliolo'sa* (leafy). 6. April. Lapland. 1818.
,, *forbesia'na* (Forbes's). See S. PHYLICIFOLIA.
,, *forbya'na* (Forby's). See S. RUBRA FORBYANA.
,, *formo'sa* (elegant). See S. ARBUSCULA.
,, *forsteria'na* (Forster's). See S. NIGRICANS FORSTERIANA.
,, *fra'gilis* (brittle). 15. April. Europe (Britain); N. and W. Asia. "Crack Willow."
,, ,, *basfordia'na* (Basfordian). Bark bright orange, or red on the top twigs. 1882.
,, ,, *latifo'lia* (broad-leaved). May. Leaves longer and broader than in the type. Europe. 1825.
,, *fu'sca* (brown). See S. REPENS and varieties.
,, *fusca'ta* (brown-*stemmed*). See S. PETIOLARIS.
,, *gemina'ta* (twin-*cathined*). See S. SMITHIANA.
,, *gla'bra* (smooth). 3. April. Europe. 1818.
,, *glabra'ta* (smooth). April. Switzerland. 1824.
,, *glau'ca* (milky-green). 2. July. Alpine and arctic northern hemisphere.
,, *gracili'styla* (slender-styled). 5–10. April. Japan. 1897.
,, *Gra'hami* (Graham's). ½. April. Scotland.
,, *gri'sea* (grizzly). 6. April. Pennsylvania. 1820.
,, *grisone'nsis* (Grison). See S. NIGRICANS GRISONENSIS.
,, *grisophy'lla* (grey-leaved). See S. NIGRICANS.
,, *Hankenso'nii* (Hankenson's). 10–20. Natural hybrid. New York. 1908.
,, *hasta'ta* (halbert-*leaved*). 15. May. Lapland. 1780.
,, ,, *malifo'lia* (apple-leaved). See S. HASTATA.
,, ,, *serrula'ta* (saw-edged). See S. HASTATA.
,, *He'lix* (helix). See S. RUBRA HELIX.
,, *helve'tica* (Swiss). See S. NIGRICANS HELVETICA.
,, *herba'cea* (herbaceous). ½. June. Europe (Britain).
,, *hetera'ndra* (various-stamened). 3–6. Caucasus. 1908.
,, *heterophy'lla* (various-leaved). April. Switzerland. 1823.
,, *hexa'ndra* (six-stamened). 25–30. May. Europe (England).
,, *hippophaifo'lia* (Hippophaë-leaved). April. Europe (England). 1823.
,, *hi'rta* (hairy-*branched*). See S. NIGRICANS HIRTA.
,, *hoffmannia'na* (Hoffmanian). See S. TRIANDRA HOFFMANNIANA.
,, *holoseri'cea* (velvety). See S. SMITHIANA VELUTINA.
,, *hookeria'na* (Hookerian). N. Amer.
,, *houstonia'na* (Houston's). See S. NIGRA.
,, *hoyeria'na* (Hoyerian). See S. PYROLIFOLIA HOYERIANA.
,, *hu'milis* (lowly). 1½. April. N. Amer. 1820. "Prairie Willow."
,, *inca'na* (hoary). April. Austria. 1821.
,, *incane'scens* (whitish-*leaved*). See S. CINEREA.
,, *Jacqui'nii* (Jacquin's). See S. MYRSINITES JACQUINIANA.
,, *japo'nica* (Japanese). Japan.
,, ,, *Lavalle'ei* (Lavalle's).
,, *kitaibelia'na* (Kitaibel's). See S. RETUSA.
,, *lacu'stris* (lake). See S. NIGRICANS LACUSTRIS.
,, *lambertia'na* (Lambert's). See S. PURPUREA LAMBERTIANA.
,, *lana'ta* (woolly). 2. May. Europe (Scotland).
,, *Lappo'num* (Lapland). 2. May. Europe (Britain). 1812.
,, ,, *helve'tica* (Helvetian). 1–4. April. Switzerland. 1824.
,, *lasia'ndra* (woolly-stamened). Western United States.
,, ,, *lancifo'lia* (lance-leaved). Leaves 6–10 in. long. California. 1887.
,, *latifo'lia* (broad-leaved). See S. NIGRICANS LATIFOLIA.
,, *lauri'na* (laurel-like). 8. April. Europe (Britain).
,, *laxiflo'ra* (loose-flowered). See S. PHYLICIFOLIA LAXIFLORA.
,, *leucophy'lla* (white-leaved). See S. LAPPONUM.
,, *linea'ris* (narrow-*leaved*). See S. INCANA.
,, *lispo'clados* (smooth-branched). May. Caucasus. 1908.
,, *li'vida* (livid). 1. May. Lapland. 1820.
,, *longifo'lia* (long-leaved). April. N. Amer. 1819.
S. lu'cida (shining). 8. May. N. Amer. 1811. "Shining Willow."
,, *lute'scens* (yellowish). 3–6. March, April. Europe (Britain).
,, *Lyo'nii* (Lyon's). Switzerland.
,, *macrostipula'cea* (large-stipuled). See S. NIGRICANS.
,, *Medwede'wii* (Medwedew's). 5–10. May. Caucasus. 1908.
,, *mespilifo'lia* (medlar-leaved). See S. NIGRICANS.
,, *meyeria'na* (Meyer's). See S. PENTANDRA.
,, *michelia'na* (Michel's). See S. SMITHIANA.
,, *molli'ssima* (softest). 20. April. Europe.
,, *monspelie'nsis* (Montpelier). See S. FRAGILIS LATIFOLIA.
,, *monta'na* (mountain). See S. NIGRICANS.
,, *muehlenbergia'na* (Muehlenberg's). See S. TRISTIS.
,, *multifo'rmis* (many-formed). 1½–2. May, June. Europe. 1824.
,, *muri'na* (mouse-like). April. Switzerland. 1824.
,, *muta'bilis* (changeable). March. Switzerland. 1824.
,, *myricoi'des* (gale-like). See S. CORDATA.
,, *Myrsini'tes* (Myrsine-like). 3. May. Northern hemisphere (Scotland).
,, ,, *jacquinia'na* (Jacquinian). 2. April. Austria. 1818.
,, ,, *latifo'lia* (broad-leaved). ½. June. Scotland.
,, *myrtiloi'des* (myrtle-like). 2. May. Sweden. 1772.
,, ,, *pedicella'ris* (long-stalked). 3. March. N. Amer. 1811.
,, *nervo'sa* (*large*-nerved). See S. NIGRICANS.
,, *Nicholso'ni* (Nicholson's). 3–4. N. Amer.
,, ,, *purpura'scens* (purplish). 3–4. Young leaves purple. 1889.
,, *ni'gra* (black). 20. May. N. Amer. 1811. "Black Willow."
,, ,, *falca'ta* (sickle-shaped). 4. April. N. Amer. 1811.
,, *ni'gricans* (blackish). 10. April. Europe (Britain).
,, ,, *andersonia'na* (Andersonian). 3–4. April. Scotland.
,, ,, *ansonia'na* (Ansonian). March. Switzerland. 1827.
,, ,, *atropurpu'rea* (dark-purple). April. Switzerland. 1824.
,, ,, *atrovi'rens* (dark-green). May. Switzerland. 1824.
,, ,, *austra'lis* (southern). April. Switzerland. 1824.
,, ,, *carpinifo'lia* (Hornbeam-leaved). April. Germany. 1824.
,, ,, *cotinifo'lia* (Cotinus-leaved). 2. March, April. Britain.
,, ,, *damasce'na* (damson-leaved). 12. April. Scotland.
,, ,, *fi'rma* (firm). 3–5. March, April.
,, ,, *forsteria'na* (Forsterian). 10. April. Scotland.
,, ,, *grisone'nsis* (Grison). 10–15. April. Switzerland. 1824.
,, ,, *helve'tica* (Helvetian). 10–14. April. Switzerland. 1824.
,, ,, *hi'rta* (hairy). 10–15. April. England.
,, ,, *lacu'stris* (lake). 3–4. March. Switzerland. 1824.
,, ,, *menthifo'lia* (mint-leaved). 5. April.
,, ,, *moabi'tica* (moabitic). 3. Leaves finely fringed. 1893.
,, ,, *ni'tens* (shining). 10. April. Scotland.
,, ,, *petræ'a* (rock). 3–7. April. Britain.
,, ,, *prunifo'lia* (plum-leaved). 3. April. Scotland.
,, ,, *pyrifo'lia* (pear-leaved). April. Switzerland. 1824.
,, ,, *rivula'ris* (rivulet). May. Switzerland. 1824.
,, ,, *rotundifo'lia* (round-leaved). 10–15. April. Switzerland. 1824.
,, ,, *rupe'stris* (rock). 1–3. April. Scotland.
,, ,, *schleicheria'na* (Schleicherian). April. Switzerland. 1824.
,, ,, *stre'pida* (crackling). April. Switzerland. 1820.
,, ,, *styla'ris* (long-styled). 3–4. April.
,, ,, *vallesi'aca* (Vallesian). 3. March. Switzerland.
,, ,, *vaude'nsis* (Vaudois). 3–4. March. Switzerland. 1824.
,, ,, *viburnoi'des* (Viburnum-like). 3–5. March, April.
,, *obova'ta* (reversed-egg-*leaved*). May. N. Amer.
,, *obtusifo'lia* (blunt-leaved). April. Lapland. 1818.
,, *oleæfo'lia* (olive-leaved). April. Europe. 1823.

S. oleifo'lia (olive-leaved). See S. CINEREA.
„ *o'xica* (Oxican). 30–60. Leaves large, glaucous. Central Asia. 1908.
„ *pa'llida* (pale). See S. OLEÆFOLIA.
„ *paludo'sa* (marsh). See S. AURITA.
„ *panno'sa* (cloth-*leaved*). See S. NIGRICANS.
„ *pa'tens* (spreading). See S. PHYLICIFOLIA PATENS.
„ *pa'tula* (spreading). April. Italy. 1818.
„ *Pauli'næ* (Paulina's). 1–1½. April. Fimberthal, N.W. Tyrol.
„ *pedicella'ris* (*long*-flower-stalked). 3. March. N. Amer. 1811. See S. MYRTILLOIDES PEDICELLARIS.
„ *pennsylva'nica* (Pennyslvanian). See S. PETIOLARIS.
„ *penta'ndra* (five-stamened). 15. April. Europe (Britain). "Bay-leaved Willow."
„ „ *hermaphrodi'tica* (hermaphrodite). 15. March. Britain.
„ *pe'rsica* (Persian). 25–40. Persia; Bokhara. 1908.
„ *persicifo'lia* (peach-leaved). See S. FRAGILIS.
„ *petiola'ris* (leaf-stalked). 10–20. April. N. Amer. 1811.
„ „ *seri'cea* (silky). 10–20. April. N. Amer. "Silky Willow."
„ *petræ'a* (rock). See S. NIGRICANS PETRÆA.
„ *phillyreifo'lia* (Phillyrea-leaved). See S. PHYLICIFOLIA PHILLYREIFOLIA.
„ *phylicifo'lia* (Phylica-leaved). 3–15. March, April. N. and Central Europe (Britain). "Tea-leaved Willow."
„ „ *borreria'na* (Borrerian). 8. May. Scotland.
„ „ *crowea'na* (Crowean). 8. April. Scotland.
„ „ *dicksonia'na* (Dicksonian). 1. April. Scotland.
„ „ *laxiflo'ra* (loose-flowered). 12. April. Scotland.
„ „ *pa'tens* (spreading). 3–4. April, May.
„ „ *phillyreifo'lia* (Phillyrea-leaved). 5. April, May. Scotland.
„ „ *radi'cans* (rooting). 1–2. May. Scotland.
„ „ *tenuifo'lia* (thin-leaved). 2. May. Britain.
„ „ *tenu'ior* (more-slender). 5–15. May. Scotland.
„ „ *tetra'pla* (four-fold). 4. April. Scotland.
„ „ *weigelia'na* (Weigelian). 8–10. April, May. Britain.
„ *planifo'lia* (flat-leaved). 2. Labrador. 1811.
„ *pola'ris* (polar). 1. Lapland. 1820.
„ *pomera'nica* (Pomeranian). See S. DAPHNOIDES.
„ *pontedera'na* (Pontedera's). 3. May. Switzerland. 1821.
„ *prinoi'des* (Prinus-like). See S. BRACHYSTACHYS.
„ *procu'mbens* (lying-down). See S. MYRSINITES LATIFOLIA.
„ *propi'nqua* (nearly-related). See S. PHYLICIFOLIA.
„ *proteæfo'lia* (Protea-leaved). See S. AMBIGUA.
„ *prunifo'lia* (plum-leaved). See S. ARBUSCULA PRUNIFOLIA.
„ *purpu'rea* (purple). 8. March. Europe (England).
„ „ *amplexicau'lis* (stem-clasping). Orient. 1891.
„ „ *lambertia'na* (Lambertian). Leaves oblong, often cuneate. England.
„ „ *pe'ndula* (drooping). March. England. "American Weeping Willow."
„ „ *scharfenberge'nsis* (Scharfenbergan). 3–5. A dense, twiggy, slender, upright bush. 1893.
„ *purshia'na* (Pursh's). See S. NIGRA.
„ *pyrena'ica* (Pyrenean). 1. May. Pyrenees. 1823.
„ „ *cilia'ta* (hair-fringed). 1. May. Pyrenees.
„ *pyrifo'lia* (pear-leaved) of Anderson. Rocky Mountains.
„ *pyrifo'lia* (pear-leaved) of Schleicher. See S. NIGRICANS PYRIFOLIA.
„ *pyrolifo'lia* (Pyrola-leaved) *hoyeria'na* (Hoyerian). A weeping willow. British Columbia. 1889.
„ *radi'cans* (rooting). See S. PHYLICIFOLIA RADICANS.
„ *ramifu'sa* (spreading-branched). See S. PHYLICIFOLIA.
„ *recurva'ta* (curled-back-*flowered*). See S. HUMILIS.
„ *refle'xa* (bent-back-*calyxed*). See S. NIGRICANS.
„ *re'pens* (creeping). ½–1. April. Europe (Britain); N. Asia.
„ „ *arge'ntea* (silvery). 1. April. Britain. Makes a weeping willow when grafted.
„ „ *fu'sca* (dusky). 1. April. Britain.
„ „ *subalpi'na* (subalpine). April. Switzerland. 1820.
„ *reticula'ta* (netted). ½. June. Arctic and alpine regions of northern hemisphere (Britain).
„ *retu'sa* (blunt-*leaved*). ½. May. Europe. 1673.
„ „ *serpyllifo'lia* (thyme-leaved). ½. April, May. Switzerland. 1818.

S. ri'gida (stiff). See S. CORDATA RIGIDA.
„ *rivula'ris* (river). See S. NIGRICANS RIVULARIS.
„ *rosmarinifo'lia* (rosemary-leaved). 2. April. Europe (Britain).
„ *rostra'ta* (beaked). N. Amer.
„ *rotunda'ta* (round-*leaved*). See S. NIGRICANS ROTUNDIFOLIA.
„ *rotundifo'lia* (round-leaved). N.W. Amer.
„ *ru'bra* (red. *Osier*). 8. April. Europe (Britain).
„ „ *forbya'na* (Forbyan). 8–20. April. England.
„ „ *He'lix* (Helix). 10. March. Britain.
„ *rupe'stris* (*silky*-rock). See S. NIGRICANS RUPESTRIS.
„ *russellia'na* (Russell's). See S. FRAGILIS.
„ *Sadle'ri* (Sadler's). 1. April. Scotland.
„ *salviæfo'lia* (sage-leaved). See S. OLEÆFOLIA.
„ *sangui'nea* (blood-red). See S. FRAGILIS BASFORDIANA.
„ *schleicheria'na* (Schleicher's). See S. NIGRICANS SCHLEICHERIANA.
„ *schraderia'na* (Schrader's). See S. PHYLICIFOLIA.
„ *septentriona'lis* (northern). See S. NIGRICANS.
„ *seri'cea* (silky) of Villiers. See S. GLAUCA.
„ *serpyllifo'lia* (thyme-leaved). See S. RETUSA SERPYLLIFOLIA.
„ *sieboldia'na* (Sieboldian). Japan.
„ *silesi'aca* (Silesian). 6. May. Silesia. 1816.
„ „ *cauca'sica* (Caucasian).
„ „ *subca'prea* (like-caprea).
„ *smithia'na* (Smith's). 20. April. Europe (Britain).
„ „ *acumina'ta* (long-pointed). 10–20. April. Britain.
„ „ *ferrugi'nea* (rusty). 3–12. April. Britain.
„ „ *veluti'na* (velvety). 5–12. April. Britain.
„ *sobri'na* (cousin-german). ½. April, May. Europe (Scotland).
„ *so'rdida* (mean). April. Switzerland (Britain). 1824.
„ *spathula'ta* (spatulate). See S. AMBIGUA.
„ *sphacela'ta* (withered-*pointed*). See S. CAPREA SPHACELATA.
„ *spu'ria* (spurious). 1–2. April, May. Europe (Scotland).
„ *starkea'na* (Stark's). See S. LIVIDA.
„ *stipula'ris* (stipuled). 6. March. England.
„ *stre'pida* (creaking). See S. NIGRICANS STREPIDA.
„ *stuartia'na* (Stuart's). See S. LAPPONUM.
„ *subalpi'na* (subalpine) of Forbes. See S. REPENS SUBALPINA.
„ *tenuifo'lia* (thin-leaved). See S. PHYLICIFOLIA TENUIFOLIA.
„ *tenu'ior* (slenderer). See S. PHYLICIFOLIA TENUIOR.
„ *tetra'ndra* (four-stamened). April. Europe.
„ *tetra'pla* (four-fold). See S. PHYLICIFOLIA TETRAPLA.
„ *Tomi'nii* (Tomin's). 20. May. W. Asia. 1908.
„ *Trevira'ni* (Treviranus's). See S. UNDULATA.
„ *tria'ndra* (three-stamened). 30. July. Europe (Britain).
„ „ *amygdali'na* (almond-leaved). 8–15. April, May. Leaves broad-based.
„ „ *hoffmannia'na* (Hoffmannian). 3–18. April, May. Leaves short, green.
„ „ *hoppea'na* (Hoppe's). 30. May. Austria. 1820.
„ „ *villarsia'na* (Villarsian). 6–14. April, May. France. 1818.
„ *tri'stis* (dark-*leaved*). 4. April. N. Amer. 1765.
„ *ulmifo'lia* (elm-leaved). See S. NIGRICANS.
„ *undula'ta* (waved-*leaved*). 30. April. Europe.
„ „ *lanceola'ta* (spear-head-*leaved*). 30. April. England.
„ *U'va-u'rsi* (bearberry-like). See S. CUTLERI.
„ *vacciniifo'lia* (bilberry-leaved). See S. ARBUSCULA VACCINIIFOLIA.
„ *Vaude'nsis* (Vaudois). See S. NIGRICANS VAUDENSIS.
„ *veluti'na* (velvety). See S. SMITHIANA VELUTINA.
„ *versi'color* (various-coloured). See S. REPENS.
„ *villarsia'na* (Villars's). See S. TRIANDRA VILLARSIANA.
„ *villo'sa* (shaggy). See S. NIGRICANS.
„ *vimina'lis* (twiggy). 12. April. Europe (Britain); N. Asia. "Common Osier."
„ *vire'scens* (greenish-*leaved*). See S. HIPPOPHAIFOLIA.
„ *virga'ta* (twiggy). See S. MULTIFORMIS.
„ *vi'ridis* (green). 30–40. May. Europe (Britain).
„ *vitelli'na* (yellow-*branched*). See S. ALBA VITELLINA.
„ *waldsteinia'na* (Waldstein's). See S. ARBUSCULA.
„ *wardia'na* (wardian). 5–10. April. Britain.
„ *weigelia'na* (Weigel's). See S. PHYLICIFOLIA WEIGELIANA.
„ *willdenovia'na* (Willdenow's). See S. NIGRICANS.

S. woolgaria'na (Woolgar's). See S. PURPUREA LAMBERTIANA.
„ *wulfenia'na* (Wulfen's). See S. GLABRA.

SALLOW. Species of Salix, of which *S. ca'prea* is the Common Sallow. Others are *S. cine'rea*, *S. auri'ta*, *S. ni'gricans*, and *S. phylicifo'lia*.

SALLOW THORN. *Hippo'phaë*.

SA'LMEA. (Named after the *Prince Salm Dyck*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Spilanthes.)
Stove evergreen twiners. Cuttings of firm, stubby side-shoots in sand, under a bell-glass, in bottom-heat; rich, fibrous loam. Winter temp., 48° to 58°; summer, 60° to 85°.
S. Eupato'ria (Eupatorium-like). White. April. W. Ind. 1815.
„ „ *sca'ndens* (climbing). 6. Yellow. June. Vera Cruz. 1820.
„ *gra'ndiceps* (large-headed). See S. EUPATORIA.
„ *hirsu'ta* (hairy). 6. Yellow. August. Jamaica. 1823.
„ *sca'ndens* (climbing). See S. EUPATORIA SCANDENS.

SA'LMIA LAUCHEA'NA. See CARLUDOVICA LAUCHEANA.

SALMON BERRY. *Ru'bus nutka'nus* and *R. specta'bilis*.

SALPIA'NTHUS. (From *salpinx*, a tube, or trumpet, and *anthos*, a flower; referring to the coloured calyx, which is tubular in all the plants in this order. Nat. ord. *Nyctagos* [Nyctaginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to other genera.)
S. fra'grans (sweet-scented). See PEUMUS BOLDUS.
„ *lanceola'ta* (spear-head-*leaved*). See BOLDOA LANCEOLATA.
„ *purpura'scens* (purplish). See CRYPTOCARPUS GLOBOSUS.

SALPICHLÆ'NA. (From *salpinx*, a tube, and *chlaina*, a cloak; the covering of the spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
S. volu'bilis (twining). See BLECHNUM VOLUBILE.

SALPI'CHROA. (From *salpinx*, a tube, and *chroa*, colour; coloured tube. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass; peat and loam. Winter temp., 45° to 50°.
S. glandulo'sa (glandulous). Yellow. July. Peru. 1844.

SALPIGLO'SSIS. (From *salpinx*, a tube, and *glossa*, a tongue; refers to the style in the tube of the flower. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Annuals and biennials, from South America; do best when sown in autumn and spring, for early spring and summer blooming. *Strami'nea*, sown in spring in a gentle hotbed, will bloom freely in summer and autumn in the greenhouse; rich, light soil.
S. atropurpu'rea (dark-purple). See S. SINUATA ATROPURPUREA.
„ *au'rea* (golden). See S. SINUATA AUREA.
„ *barclaya'na* (Barclayan). See S. SINUATA BARCLAYANA.
„ *cocci'nea* (scarlet). See S. SINUATA COCCINEA.
„ *integrifo'lia* (entire-leaved) of Bot. Mag. See PETUNIA VIOLACEA.
„ *integrifo'lia* (entire-leaved) of Loddiges. Argentina.
„ *linea'ris* (linear). 1. Yellow, purple. August. Argentina. 1832.
„ *pi'cta* (painted). See S. STRAMINEA PICTA.
„ *sinua'ta* (scolloped). 1. Purple. August. Chili. 1824. Annual.
„ „ *atropurpu'rea* (dark-purple). 1½. Dark purple. August.
„ „ *au'rea* (golden). 1–1½. Bright yellow. August.
„ „ *barclaya'na* (Barclayan). 1–1½. August.
„ „ *cocci'nea* (scarlet). 1–1½. Scarlet. August.
„ *strami'nea* (straw-coloured). 1½. Red, white. July. Chili. Annual.
„ „ *pi'cta* (painted). 1–2. Variegated. July. 1820.

SALPIGO'PHORA. (From *salpinx*, a tube, and *phoreo*, to bear; in allusion to the long tube of the flower. Nat. ord. Bignoniaceæ.)
Evergreen, greenhouse shrub. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.
S. chiloe'nsis (Chilian). Crimson. Chili. 1862.

SALPI'NGA. (From *salpinx*, a tube; the calyx is tubular. Nat. ord. Melastomaceæ.)
Erect, branching stove herb. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, lumpy peat, leaf-mould, and sand.
S. margarita'cea (pearly). ½–1. Leaves spotted with white. N. Brazil. 1862.

SALPIXA'NTHA. (From *salpinx*, a tube, and *anthos*, a flower. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. See GEISSOMERIA.)
S. cocci'nea (scarlet). See GEISSOMERIA COCCINEA.

SALSIFY. *Tragopo'gon porrifo'lius*.
Soil.—Light and moderately fertile. At the time of sowing trench it, turning in a little manure with the bottom-spit only.
Sow in March and April, in an open situation, in shallow drills, 9 inches asunder, scatter the seeds thinly, and cover them ½ inch deep. When the plants are 2 or 3 inches high, thin to 10 inches asunder. During very dry weather water occasionally very plentifully, and if half an ounce of guano is added to each gallon of water it will be very beneficial. They will have large roots by September or October, when you begin taking them up for use; and in November, when the leaves begin to decay, a quantity may be preserved in sand for use in time of severe frost; but those left in the ground will not be injured. In spring, when those remaining in the ground begin to vegetate, the shoots, when a few inches high, may be cut for use as asparagus, being excellent when quite young and tender. Suffer a few plants to run up to stalk every spring to produce seed. The best mode of cooking the roots is to boil and mash them, form them into cakes, and fry them in butter. The flavour is that of oyster patties.

SALTS. Saline manures are generally beneficial, and often essential. They ought to be put on in very small quantities, and frequently, during the time of the plant's growth.
Common Salt.—Chloride of sodium, applied in the spring at the rate of twenty bushels per acre, has been found very beneficial to asparagus, broad beans, lettuces, onions, carrots, parsnips, potatoes, and beets. Indeed, its properties are so generally useful, not only as promoting fertility, but as destroying slugs, &c., that it is a good plan to sow the whole garden every March with this manure, at the rate above specified. The flower-garden is included in this recommendation; for some of the best practical gardeners recommend it for the stock, hyacinth, amaryllis, ixia, anemone, colchicum, narcissus, ranunculus, &c.; and in the fruit-garden it has been found beneficial to almost every one of its tenants, especially the cherry and apple. On lawns and walks it helps to drive away worms, and to destroy moss.
Ammonia.—The salts of ammonia are highly stimulating, and afford, by their ready decomposition, abundant food to plants. The dungs of animals are fertilising exactly in proportion to the amount of ammonia in them. The only care required is not to apply them too abundantly. Half an ounce to each gallon of water, given at the most twice a week, is a good recipe for all the ammoniacal salts. The ammoniacal gas liquor, at the rate of one pint to two gallons of water, is highly beneficial to all plants grown for their leaves.
Chalk (Carbonate of Lime) may be applied in large quantities, twenty or thirty tons per acre, to render a light siliceous soil more retentive, or a heavy soil more open. Its basis, lime, enters into the composition of most plants in some state of combination. If the chalk is to be burnt into lime before it is applied, care should be taken that it does not contain, like some of the Yorkshire chalks, a large proportion of carbonate of magnesia. Magnesia remains long in a caustic state, and has been found injurious to the plants to which it has been applied.
Chloride of Lime gradually gives out a portion of its chlorine, and is converted into muriate of lime, a salt absorbing moisture from the air, which can hardly exist in any soil, however light, without keeping it moist; and its nauseous odour may be found to keep off the attacks of the fly and other vermin. A solution containing one

ounce in five gallons of water is said to destroy the aphis and the caterpillar, if poured over the trees they infest.

Gas Lime is a hydro-sulphuret of lime, with a little ammonia. It is an excellent manure, especially to cabbages, turnips, cauliflowers, and broccoli, dug in at the time of planting or sowing. If sown over the surface at the time of inserting the crop, at the rate of twenty bushels per acre, it will effectually drive away the turnip-fly, slug, &c.

Gypsum, or Plaster of Paris, is sulphate of lime. It has been found very useful as a top-dressing to lawns, and dug in for turnips and potatoes. Three hundred-weight per acre is abundance.

Nitrates of Potash (Saltpetre), and of *Soda* (Cubic Petre), have been found beneficial to carrots, cabbages, and lawns. One pound to a square rod of ground is a sufficient quantity. Both these nitrates have been found beneficial to potatoes in Scotland. Mr. Murray says, that from 1810 down to the present time he has been in the habit of watering pinks and carnations with solutions of these two nitrates, and the benefit has been uniform and eminent in promoting their luxuriance.

They have also been given in solution with great benefit to chrysanthemums, lettuces, celery, fuchsias, and dahlias: one pound to twelve gallons of water. Nitrate of soda destroys slugs.

Phosphate of Lime.—See BONES.

Superphosphate of Lime.—Chrysanthemums were much increased in vigour when watered with a solution of this salt in the Chiswick Garden, at the end of July. It is thought, if the application had been made earlier, the benefit would have been still more marked.

SALT-TREE. *Halimode'ndron argo'nteum.*

SALTWORT. *Sa'lsola Ka'li.*

SALTWORT, BLACK. *Glau'x mari'tima.*

SALVADO'RA. (Commemorative of *J. Salvador*, a Spanish botanist. Nat. ord. Salvadoraceæ.)

Evergreen stove tree of small stature. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, a little peat, and sand.

S. i'ndica (Indian). See S. PERSICA.
„ *pe'rsica* (Persian). White. June. Orient; India; N. Africa. 1850. "Mustard Tree."
„ *wightia'na* (Wightian). See S. PERSICA.

SA'LVIA. Sage. (From *salvo*, to save; medicinal qualities. Nat. ord. *Lipworts* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Annuals and biennials, seeds in the open border; herbaceous perennials, by division at the roots in spring; shrubs, by cuttings inserted firmly in the ground in autumn or spring, like the common Sage; greenhouse and stove species, by cuttings of the young shoots at all seasons except winter, only the stove kinds like a little heat; rich, light, good soil. See CLARY and SAGE.

STOVE ANNUALS.

S. lanceola'ta (spear-head-*leaved*). 1. Blue. July. N.W. Amer.; Mexico. 1813.
„ *micra'ntha* (small-flowered). See S. TENELLA.
„ *rhombifo'lia* (diamond-leaved). Blue. Peru. 1827.
„ *tene'lla* (slender). Blue. June. Trop. Amer. 1821.

HARDY BIENNIALS AND ANNUALS.

S. Æthio'pis (Ethiopian). 3. White. May. S. Europe. 1570.
„ *byzanti'na* (Turkey). 1. Blue. July. Turkey. 1825.
„ *ceratophyl'la* (buckhorn-leaved). 2. Yellow. July. Persia. 1699.
„ *ceratophylloi'des* (buckhorn-leaved-like). 1. Yellow. July. Egypt. 1771.
„ *Columba'riæ* (Columbaria-like). ½–2. Bright blue. July. N.W. Amer.
„ *ero'sa* (bitten-*leaved*). See S. VERBENACA.
„ *fœ'tida* (fetid). 3. White. July. Morocco. 1796.
„ *folio'sa* (leafy). See S. RHOMBIFOLIA.
„ *hirsu'ta* (hairy). 1. Blue. May. Mexico. 1801. Annual.
„ *hispa'nica* (Spanish). 1½. Blue. July. Trop. Amer. 1739. Annual.
„ *Hormi'num* (Horminum). 1½. Purple. June. S. Europe. 1596. Annual. "Horminum Clary."
S. Hormi'num ru'bra (red-*topped*). 1½. Red. July. S. Europe. 1596.
„ „ *viola'cea* (violet-*topped*). 1½. Purple. June. S. Europe. 1596.
„ *nepetifo'lia* (cat-mint-leaved). See S. HIRSUTA.
„ *nilo'tica* (Nile). 1. Blue. July. Egypt. 1780.
„ *phlomoi'des* (Phlomis-like). 2. Blue. May. Spain. 1805.
„ *pinna'ta* (leafleted). 1. Purple. July. Levant. 1731.
„ *rhombifo'lia* (diamond-leaved). 1½. Blue. All seasons. Peru. Greenhouse biennial.
„ *Scla'rea* (clary). 4. White, purple. August. S. Europe. 1562.
„ *simsia'na* (Simsian). See S. SCLAREA.
„ *spino'sa* (thorny-*calyxed*). 1. White. June. Arabia, &c. 1789.
„ *tingita'na* (Tangier). See S. FŒTIDA.
„ *vi'ridis* (green-*topped*). 1½. Blue. July. Italy. 1759. Annual.

GREENHOUSE AND STOVE EVERGREENS.

S. adglu'tinans (clammy). Scarlet. June. Mexico. 1827.
„ *africa'na* (African). 2. Violet. May. S. Africa. 1731.
„ *a'lbo-cæru'lea* (blue-white). White, blue. Mexico. 1857.
„ *amethysti'na* (amethyst-coloured). 2. Blue. August. Colombia. 1817. Stove.
„ *au'rea* (golden). 3. Blue. July. S. Africa. 1731.
„ *auri'ta* (eared-*leaved*). 2. Lilac, yellow. May. S. Africa. 1795.
„ *Bethe'lii* (Bethel's). See S. INVOLUCRATA BETHELII.
„ *bolivia'na* (Bolivian). Scarlet. Bolivia. 1856.
„ *brasilie'nis* (Brazilian). See S. SPLENDENS.
„ *camphora'ta* (camphor-smelling). Rose. S. Amer. 1872.
„ *canarie'nsis* (Canary). 4. Purple. July. Canaries. 1697.
„ *chamædryoi'des* (germander-like). 1½. Blue. July. Mexico. 1795.
„ *confertiflo'ra* (crowded-flowered). 3. Red. August. Rio Janeiro. 1838. Stove.
„ *cre'tica* (Cretan). ½. Violet. June. Crete. 1760.
„ *cya'nea* (blue). 2–3. Small sky-blue. Winter. Central Amer. 1907.
„ *dasya'ntha* (thick-flowered). Scarlet. Colombia. 1859.
„ *denta'ta* (tooth-*leaved*). ½. White. December. S. Africa. 1774.
„ *di'scolor* (two-coloured). 2–3. Deep violet. Peru. 1883.
„ *dolichosta'chya* (long-spiked). 6. Scarlet. August. Mexico. 1820.
„ *e'legans* (elegant). 4. Cream. July. Mexico. 1820.
„ *flocculo'sa verticilla'ta pauciflo'ra* (few-flowered). Rich red, white. Andes of Quito. 1890.
„ *formo'sa* (beautiful). See S. LEONUROIDES.
„ *fu'lgens* (brilliant). 5. Scarlet. July. Mexico. 1829.
„ *gesneræflo'ra* (Gesnera-flowered). 3. Scarlet. March. Colombia. 1846. Stove.
„ *Gre'ggii* (Gregg's). 2–3. Light carmine; lip darker. September. New Mexico. 1885.
„ *Hee'rii* (Heer's). 1½–2. Scarlet. Peru. 1855.
„ *incarna'ta* (flesh-coloured). See S. ELEGANS.
„ *involucra'ta* (involucred). 2. Red. August. Mexico. 1824. Stove.
„ „ *Bethe'llii* (Bethell's). Bright crimson. 1881. Seedling.
„ „ *deschampsia'na* (Deschampsian). 2–3. Rose. 1869.
„ *lamifo'lia* (Lamium-leaved). 2. Blue. July. W. Ind. 1821.
„ *leonuroi'des* (Leonurus-like). 4. Scarlet. June. Peru. 1783.
„ *macrosta'chya* (large-spiked). 6. Blue. Ecuador. 1894.
„ *me'ntiens* (deceiving). Pale rose; calyx and bracts crimson. Brazil. 1870.
„ *mexica'na mi'nor* (smaller-Mexican). See S. DISCOLOR.
„ *occidenta'lis* (western). 1½. White. July. Jamaica. 1824. Stove.
„ *odora'ta* (sweet-scented). See S. CANDIDISSIMA.

S. panicula'ta (panicled). 6. Violet. July. S. Africa. 1758.
„ *pa'tens* (spreading). 10. Blue. September. Mexico. 1838.
„ *petiola'ris* (long-stalked). Colombia.
„ *phœni'cea* (purple). Magenta-carmine. Ecuador. 1890.
„ *pri'nceps* (chief). 5–7. Crimson-rose. Winter. Mexico. 1907.
„ *rosæfo'lia* (rose-leaved). Purple. July. Levant. 1827.
„ *rube'scens* (reddish). See S. BOLIVIANA.
„ *runcina'ta* (runcinate-*leaved*). 2. Blue. July. S. Africa. 1774.
„ *ru'tilans* (red). 1½–3. Scarlet. Winter. 1873. "Apple-scented Sage."
„ *sca'bra* (scaly). 2. Blue. June. S. Africa. 1774.
„ *Se'ssei* (Sesse's). Mexico.
„ *sple'ndens* (splendid). 3. Scarlet. Autumn. Brazil. 1822.
„ „ *Brua'nti* (Bruant's). Brighter scarlet. Plant dwarfer.
„ „ *compa'cta* (compact). 1–1½. Scarlet. Various seasons.
„ *strictiflo'ra* (erect-flowered). 3. Brown, red. December. Peru. 1831. Stove.
„ *tri'color* (three-coloured). White, scarlet. Mexico. 1856.

GREENHOUSE HERBACEOUS.

S. amari'ssima (bitterest). 2. Blue. August. Mexico. 1803.
„ *angustifo'lia* (narrow-leaved). 2. Blue. May. Mexico. 1816.
„ *azu'rea* (azure blue). 2–3. Bright blue. Autumn. N. Amer. 1806.
„ „ *grandiflo'ra* (large-flowered). 2–3. Deep blue, larger. Autumn. Mexico. 1873.
„ *cacaliæfo'lia* (Cacalia-leaved). 2–3. Blue. June. Mexico. 1858.
„ *cæ'sia* (grey). See S. POLYSTACHYA.
„ *cocci'nea* (scarlet-*flowered*). 2. Scarlet. July. N. Amer. 1772.
„ „ *ma'jor* (larger). Flowers larger.
„ „ *pseu'do-cocci'nea* (false-scarlet). 2. Scarlet. July. N. Amer. 1797.
„ *cœlesti'na* (sky-blue). 3–4. Blue or lilac-blue. Mexico. 1878.
„ *deserto'rum* (desert). 2½. Blue. October. Siberia. 1829.
„ *Goudo'tii* (Goudot's). 2. Purple. Colombia. 1870.
„ *Gra'hami* (Graham's). 4. Purple, blue. September. Mexico. 1829.
„ *Hove'yi* (Hovey's). See S. IANTHINA.
„ *ia'nthina* (violet). Purple. Mexico. 1847.
„ *lantanifo'lia* (Lantana-leaved) of gardens. See S. GOUDOTII.
„ *leuca'ntha* (white-flowered). 2. White. Mexico. 1825.
„ *mexica'na* (Mexican). 2. Scarlet. June. Mexico. 1824. Stove.
„ *nu'bia* (Nubian). 2. Blue. June. Abyssinia. 1784.
„ *obtu'sa* (blunt). 1½. Carmine. Mexico. 1861.
„ *oppositiflo'ra* (opposite-flowered). Orange, red. November. Ecuador. 1847. Stove.
„ *Pitche'ri* (Pitcher's). See S. AZUREA GRANDIFLORA.
„ *polysta'chya* (many-spiked). 3. Blue. October. Mexico. 1813.
„ *præ'cox* (early-*flowering*). Purple. March. Africa. 1826.
„ *pulche'lla* (pretty). 2. Scarlet. December. S. Amer. 1821.
„ *purpu'rea* (purple). 2½. Purple. June. Mexico. 1825.
„ *rectiflo'ra* (straight-flowered). Scarlet. June. Mexico. 1844.
„ *ri'ngens* (gaping). 2. Blue. July. Levant. 1827.
„ *Rœ'zlii* (Rœzl's). 2. Bright scarlet. Mexico. 1861.
„ *rugo'sa* (wrinkled-*leaved*). 2. White, red. July. S. Africa. 1775.
„ *scapifo'rmis* (scape-formed). 1–1½. Pale blue. Formosa, Japan. 1888.
„ *schiedea'na* (Schiedean). 1. Blue. Mexico. 1896.
„ *Schimpe'ri* (Schimper's). 2–3. White. Abyssinia. 1875.
S. sero'tina (late-*flowering*). 1½. Blue. August. Ohio. 1803.
„ *tubi'fera* (tube-bearing). 3. Red. August. Mexico. 1824.
„ *tubiflo'ra* (tube-flowered). 4. Scarlet. June. Peru. 1820.
„ *tubifo'rmis* (tube-shaped). See S. RECTIFLORA.

HARDY EVERGREENS.

S. calyci'na (*large*-calyxed). 1. Pink. August. Greece. 1823.
„ *hablitzia'na* (Hablitz's). White, red. August. Tauria. 1759.
„ *interru'pta* (interrupted-*leaved*). 4. White. July. Morocco. 1790.
„ *lavandulæfo'lia* (lavender-leaved). Blue. March. Spain. 1597.
„ *officina'lis* (shop). 1. Blue. June. S. Europe. 1597. "Common Sage."
„ „ *au'rea* (golden). Plant dwarf. Leaves yellow. 1879.
„ „ *ru'bra* (red). Leaves and stems red. 1879.
„ „ *tenu'ior* (slenderer). 1. Blue. June. Spain. 1597.
„ „ *variega'ta* (variegated). 1. Blue. June. S. Europe. 1597.
„ *pomi'fera* (apple-bearing). 2. Blue. July. Candia. 1699.
„ *scorodoniæfo'lia* (wood-sage-leaved). 2. White. July. Mexico. 1825.

HARDY HERBACEOUS.

S. algerie'nsis (Algerian). N. Africa.
„ *arge'ntea* (silvery). 3. Yellow. June. Mediterranean region. 1759.
„ *aspera'ta* (rough). 2. White. July. Himalaya.
„ *austri'aca* (Austrian). 1. Cream. June. Austria. 1776.
„ *Barrelie'ri* (Barrelier's). See S. INAMŒNA.
„ *Becke'ri* (Becker's). Caucasus.
„ *bi'color* (two-coloured). 2. Red, white. June. Barbary. 1793.
„ *bractea'ta* (*long*-bracted). 3. Purple. March. Asia Minor. 1821.
„ *ca'dmica* (Cadmican). Asia Minor.
„ *Candela'brum* (chandelier). 2–3. White, purple. July, August. Spain.
„ *candidi'ssima* (whitest). 2. White. July. Armenia. 1804.
„ *cane'scens* (hoary). 2. Purple. July. Caucasus.
„ *cardua'cea* (thistle-*leaved*). 1½. Purple. California Proper. July.
„ *chiona'ntha* (snowy-flowered). White. Asia Minor.
„ *clandesti'na* (clandestine). ¾. Blue. June. Europe. 1739.
„ „ *multi'fida* (many-cleft). ¼. Blue. April. Europe. 1822.
„ *compre'ssa* (compressed). 2. White. May. Persia; Afghanistan. 1822.
„ *crassifo'lia* (thick-leaved). 2. Blue. June. S. Europe. 1804.
„ *di'chroa* (two-coloured). See S. BICOLOR.
„ *dise'rmas* (two-glumed). 2. White. July. Syria. 1773.
„ *farina'cea* (mealy). 2–3. Blue, white. Summer. Texas; Mexico. 1847.
„ *Forsko'hlii* (Forskohl's). 1½. Blue. July. Levant. 1800.
„ *glutino'sa* (glutinous). 3. Yellow. July. S. Europe; Orient. 1769. "Jupiter's Distaff."
„ *grandiflo'ra* (large-flowered). 2. Blue. July. Asia Minor. 1816.
„ *hi'ans* (gaping). 1. Blue. June. Cashmere. 1839.
„ *Hydra'ngea* (Hydrangea). Persia.
„ *inamœ'na* (unlovely). 3. Blue. April. Spain. 1821.
„ *i'ndica* (Indian). 3. Blue. June. India. 1731.
„ *japo'nica* (Japanese). Japan.
„ *limba'ta* (bordered). Asia Minor; Persia. 1838.
„ *linkia'na* (Link's). See S. PILANTHA.
„ *lusita'nica* (Portuguese). 1½. Blue. June. Spain. 1819.
„ *lyra'ta* (lyre-*leaved*). 1. Purplish. June. N. Amer. 1828.

S. moorcroftia'na (Moorcroft's). 3. Pale blue. Himalaya.
„ *napifo'lia* (rape-leaved). 2. Dark blue. June. Italy. 1776.
„ *nubi'cola* (cloud-dwelling). 2–3. Yellow. October. Himalaya. 1823.
„ *nu'tans* (nodding). 2. Violet. July. S. Europe. 1780.
„ *obova'ta* (obversely-egg-shaped). See S. LYRATA.
„ *pila'ntha* (hairy-flowered). Blue. July. Levant. 1823.
„ *porphyra'ntha* (purple-flowered) and *S. porphyra'ta* (purple). See S. RŒMERIANA.
„ *prate'nsis* (meadow). 4. Violet. May. Europe (England).
„ „ *Baumgarte'nii* (Baumgarten's). 3. Blue-purple. July, August.
„ *prunelloi'des* (self-heal-like). ½. Blue. June. Mexico. 1838.
„ „ *purpu'rea* (purple). Purple-red. 1890. Annual.
„ *Przewa'lskii* (Przewalsky's). 3. Purple. China. 1901.
„ *pseu'do-cocci'nea* (bastard-scarlet). See S. COCCINEA PSEUDO-COCCINEA.
„ *pyrena'ica* (Pyrenean). 4. Blue. July. Pyrenees. 1824.
„ *Re'gla* (Regla). 5. Scarlet. July. Mexico. 1739.
„ *regelia'na* (Regelian). Caucasus.
„ *rœmeria'na* (Rœmerian). 2. Crimson. July to September. Texas; Mexico. 1852.
„ *scabiosæfo'lia* (scabious-leaved). 1. White. August. Peru. 1818.
„ *sclarœoi'des* (clary-like). Violet. July. S. Europe. 1804.
„ *Sibtho'rpii* (Sibthorp's). See S. VIRGATA.
„ *Soulie'ei* (Soulie's). 2. Delicate blue. Western China. 1907.
„ *sylve'stris* (wood). 2. Purple, violet. August. Europe; N. Asia. 1759. "Wood Sage."
„ *syri'aca* (Syrian). 1½. White. July. Levant. 1759.
„ *taraxacifo'lia* (dandelion-leaved). Pink and pale yellow. Morocco. 1872.
„ *tiliæfo'lia* (lime-tree-leaved). 2–4. Blue. July. Mexico. 1793.
„ *tri'loba* (three-lobed). 2. Red. June. E. Europe. 1596.
„ *turkesta'nica* (Turkestan). 2½. White, tinged rose. Turkestan. 1905.
„ *urticifo'lia* (nettle-leaved). 3. Blue. June. N. Amer. 1799.
„ *verbascifo'lia* (mullein-leaved). 3. White. May. Asia Minor; Persia. 1823.
„ *Verbena'ca* (vervain-like). 2. Violet. August. Europe (Britain); Orient. "Vervain Sage."
„ „ *oblongifo'lia* (oblong-leaved). 1½. Blue. September. Europe. 1820.
„ „ *rube'lla* (small-red). 1–2. Red-purple.
„ *versi'color* (parti-coloured). 1½. Blue, white. July. Spain. 1822.
„ *verticilla'ta* (whorl-*flowered*). 3. Blue. August. S. Europe; Orient. 1628.
„ *virga'ta* (twiggy). 4. White. September. S.E. Europe; Orient. 1758.
„ *visco'sa* (clammy). 1½. Violet. May. Europe. 1773.

SALVI'NIA. (Commemorative of *Antonio Maria Salvini*, a Professor at Florence. Nat. ord. Marsiliaceæ.)

A flowerless, floating aquatic herb, for a tank or tub in a stove or warm greenhouse. It produces three rows of leaves on the branching stems, two rows of which are sea-green, leafy, and float on the water, while the third row consists of very deeply divided fibres that resemble roots, and passing down into the water serve the purpose of roots. The plant grows freely in summer, but in autumn forms ball-like fruits, containing spores, amongst the root-like fibres. When this takes place some soil must be placed in the bottom of a deep pan and covered with water. When the sediment has settled, some of the fruiting Salvinia must be placed on the water, so that when the leaves die away the spores may fall to the bottom amongst the soil. Keep the pan full of water all winter, and in spring the spores will germinate and the young plants rise to the surface.

S. na'tans (floating). Europe; India.

SA'MARA PENTA'NDRA. See MYRSINE PENTANDRA.

SAMBU'CUS. Elder-tree. (From *sambuca*, a musical instrument, made of elder-wood. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

Hardy plants, and all white-flowered, except where otherwise mentioned. Generally by cuttings of ripened wood, either of one or several years of age. Common, rich, light soil.

HARDY HERBACEOUS.

S. chine'nsis (Chinese). See S. JAVANICA.
„ *E'bulus* (dwarf). 3. White, red. June. Europe (Britain). "Ground Elder."
„ „ *Gau'tschii* (Gautsch's). India. 1890.
„ *hu'milis* (lowly). See S. EBULUS.
„ *java'nica* (Javanese). 4. Trop. Asia. 1823.

HARDY DECIDUOUS SHRUBS.

S. canade'nsis (Canada). 6. July. N. Amer. 1761.
„ „ *delicati'ssima* (very delicate). Leaves bright golden-yellow. 1907.
„ *glau'ca* (sea-green). Western United States.
„ „ *prepartu'riens* (early-flowering). 1878.
„ *melanoca'rpa* (black-fruited). Western N. Amer.
„ *mexica'na* (Mexican). California, Arizona, &c.
„ *ni'gra* (black-*fruited*). 15. June. Europe (Britain). "Common Elder."
„ „ *au'reo-margina'ta* (golden-margined). Leaves with yellow edge.
„ „ *au'reo-variega'ta* (golden-variegated). Leaves variegated with yellow. Britain.
„ „ *fo'liis au'reis* (golden-leaved). Leaves bright yellow. "Golden Elder."
„ „ *lacinia'ta* (cut). 25. June. Britain. "Parsley-leaved Elder."
„ „ *lacinia'ta au'rea* (cut-yellow-*striped*). 25. June. 1848.
„ „ *leucoca'rpa* (white-berried). 25. June. Britain.
„ „ *monstro'sa* (monstrous-*striped-barked*). 25. June. Britain.
„ „ *na'na* (dwarf). 3. A globose bush. 1907.
„ „ *pe'ndula* (drooping). "Weeping Elder."
„ „ *pulverule'nta* (powdered). 10. June. Britain.
„ „ *pyramida'lis* (pyramidal). "Upright Elder." 1884.
„ „ *rotundifo'lia* (roundish-leaved). 25. June. Britain.
„ „ *variega'ta* (variegated). Leaves variegated with silvery-white.
„ „ *vire'scens* (greenish). 25. June. Britain.
„ *pu'bens* (downy). See S. RACEMOSA PUBESCENS.
„ *racemo'sa* (racemed). 12. Green, yellow. May. Northern Hemisphere. 1596. "Red-berried Elder."
„ „ *arbore'scens* (tree). Leaves larger. Rocky Mountains. 1888.
„ „ *flave'scens* (yellowish). 12. Yellow, green. May. S. Europe. 1596.
„ „ *fo'liis au'reis* (golden-leaved). Leaves yellow.
„ „ *plumo'sa* (plumy). Leaves deeply cut. 1886.
„ „ *plumo'sa au'rea* (golden). Leaves golden, deeply cut. 1896.
„ „ *pube'scens* (downy). 6. N. Amer. 1812.
„ „ *pube'scens ma'xima* (largest). Apparently *S. canade'nsis*. 1898.
„ „ *purpu'rea* (purple). 12. Purple. May. S. Europe. 1596.
„ „ *rosæflo'ra* (rose-flowered). 1869.
„ „ *serratifo'lia* (serrate-leaved). Leaflets narrower and less deeply cut than *S. racemo'sa plumo'sa*. 1886.
„ „ *tenuifo'lia* (slender-leaved). Leaves cut into linear segments.
„ *thunbergia'na* (Thunbergian). Japan.

SAMBUL PLANT. See SUMBUL.

SA'MOLUS. Brookweed. (From the Celtic *sau*, salutary, and *mos*, a pig; meaning pigs'-food. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

White-flowered herbaceous perennials. Division of the plant in spring; sandy loam and peat. *S. Valera'ndi* and *S. repens* are hardy; the others require to be kept moist in the greenhouse or pit in winter.

S. campanuloi'des (Campanula-like). See S. POROSUS.
„ *littora'lis* (sea-side). See S. REPENS.
„ *poro'sus* (porous). 1. July. S. Africa. 1816.

S. re'pens (creeping). ½. August. Australia; New Zealand. 1806.
„ *Valera'ndi* (Valerandi's). ½. July. Temperate regions (Britain). "Common Brookweed."
„ „ *america'nus* (American). N. Amer.

SAMPHIRE. See CRITHMUM MARITIMUM.

SA'MYDA. (Greek name of the birch, which they resemble. Nat. ord. *Samyds* [Samydaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Stove, white-flowered, evergreen shrubs. Cuttings of shoots nearly ripe in sand, under a bell-glass, and placed in bottom-heat, in summer; fibrous loam, and sandy, fibrous peat. Winter temp., 50° to 60°; summer, 60° to 85°.

S. glabra'ta (smooth). 6. August. W. Ind. 1800.
„ *macroca'rpa* (large-fruited). July. Mexico. 1826.
„ *macrophy'lla* (large-leaved). See CASEARIA VIRIDIFLORA.
„ *ro'sea* (rosy). See S. SERRULATA.
„ *serrula'ta* (toothed-*leaved*). 3. July. W. Ind. 1723.
„ *spinulo'sa* (finely-spiny). See S. GLABRATA.
„ *viridiflo'ra* (green-flowered). See CASEARIA VIRIDIFLORA.

SANCHE'ZIA. (Commemorative of *Josef Sanchez*, a Spanish Professor of Botany. Nat. ord. Acanthaceæ.)

Stove perennial herbs or sub-shrubs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.

S. longiflo'ra (long-flowered). Vinous-purple. April. Ecuador. 1866.
„ *no'bilis* (noble). 2–3. Yellow; bracts red. Ecuador. 1866.
„ „ *glaucophy'lla* (sea-green-leaved). Leaves sea-green, striped white or yellow. 1869.
„ „ *variega'ta* (variegated). See S. NOBILIS GLAUCOPHYLLA.
„ *parvibractea'ta* (small-bracted). 2. Yellow. Trop. Amer. 1908.

SANDAL WOOD. *Sa'ntalum a'lbum.*

SAND-BOX-TREE. *Hu'ra cre'pitans.*

SANDERSO'NIA. (Commemorative of *J. Sanderson*, of Natal. Nat. ord. Liliaceæ.)

Mild stove or intermediate house tuberous herb. Seeds and offsets. Fibrous loam, a little peat, and sand.

S. aurantia'aca (orange). 1½–2. Orange. Natal. 1852.

SAND LEEK. *A'llium Scorodo'prasum.*

SAND MYRTLE. *Leiophy'llum buxifo'lium.*

SANDO'RICUM. (Derived from *Santoor*, the native Malay name. Nat. ord. Meliaceæ.)

A stove evergreen tree. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

S. i'ndicum (Indian). 5–60. Yellow. Trop. Asia. 1820.

SAND PEAR. *Py'rus sine'nsis.*

SAND VERBENA. *Abro'nia.*

SAND WOOD. *Bremontie'ra Ammo'xylon.*

SANDWORT. *Arena'ria.*

SANGUINAIRE PLANT. *Parony'chia arge'ntea.*

SANGUINA'RIA. Puccoon. (From *sanguis*, blood; their red juice. Nat. ord. *Poppyworts* [Papaveraceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Hardy, tuberous, white-flowered perennial, from North America. Division of the roots, or by seeds in spring; light, loamy soil.

S. canade'nsis (Canadian). ½. March. N. Amer. 1680. "Bloodroot."
„ *grandiflo'ra* (large-flowered). See S. CANADENSIS.

SANGUISO'RBA. Burnet. (From *sanguis*, blood, and *sorbeo*, to absorb; supposed an active vulnerary. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Now referred to Poterium.)

Hardy herbaceous perennials. Division of the roots, and by seeds in spring; common garden soil. See BURNET.

S. alpi'na (alpine). See POTERIUM ALPINUM.
„ *Anderso'nii* (Anderson's). See POTERIUM ANDERSONII.
S. canade'nsis (Canadian). See POTERIUM CANADENSE.
„ *ca'rnea* (flesh-coloured). See POTERIUM OFFICINALE CARNEUM.
„ *maurita'nica* (Mauritanian). See POTERIUM VERRUCOSUM.
„ *me'dia* (middle). See POTERIUM CANADENSE MEDIUM.
„ *negle'cta* (neglected). See POTERIUM OFFICINALE NEGLECTUM.
„ *officina'lis* (shop). See POTERIUM OFFICINALE.
„ „ *auricula'ta* (eared). See POTERIUM OFFICINALE AURICULATUM.
„ *præ'cox* (early-*flowering*). See POTERIUM OFFICINALE PRÆCOX.
„ *tenuifo'lia* (fine-leaved). See POTERIUM TENUIFOLIUM.

SANICLE, Bear's Ear. *Cortu'sa.*

SANICLE, WOOD. *Sani'cula europæ'a.*

SANSEVIE'RIA. (Named after *Sansevier*, a Swedish botanist. Nat. ord. *Bloodroots* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Ophiopogon.)

Stove herbaceous perennials, white-flowered, except where otherwise mentioned. Suckers in spring, or when obtainable, and division of the plant. Most of them require a plant-stove, or a warm greenhouse, to grow them well, and these tender ones must have little water when in a comparatively dormant state in winter; light, fibrous loam and vegetable mould.

S. arbore'scens (tree-like). 3½. E. Trop. Africa. 1903.
„ *au'reo-variega'ta* (golden-variegated). Leaves with two creamy-white bands. Zanzibar. 1887.
„ *ca'rnea* (flesh-coloured). See REINECKIA CARNEA.
„ *Co'rnui* (Cornu's). Leaves a little striped at the base. 1903.
„ *cyli'ndrica* (cylindrical). 3. Greenish-yellow. August. Trop. Africa. 1856.
„ *Ehrenbe'rgii* (Ehrenberg's). Trop. Africa.
„ *ensifo'lia* (sword-leaved). See S. ZEYLANICA.
„ *fascia'ta* (fasciated). 2½. Leaves striped and edged brown. Congo. 1903.
„ *fulvocı'ncta* (tawny-edged). See S. THYRSIFLORA.
„ *glau'ca* (milky-green). See S. GUINEENSIS.
„ *glau'ca* (sea-green). Leaves glaucous, not striped. Cochin-China. 1903.
„ *grandicu'spis* (large-pointed). 3. Trop. Africa (?).
„ *gra'ndis* (grand). 3–4. Leaves with dark green bands. Trop. Africa. 1903.
„ *guinee'nsis* (Guinea). 2. Green. September. Guinea. 1790.
„ *java'nica* (Javanese). See S. GUINEENSIS.
„ *Ki'rkii* (Kirk's). 9. White. Zanzibar. 1893.
„ *lætevi'rens* (lively-green). See S. GUINEENSIS.
„ *lanugino'sa* (woolly). 2. E. Ind.
„ *Laure'ntii* (Laurent's). 2½. Leaves with pale green transverse zones. Congo Free State. 1904.
„ *libe'rica* (Liberian). 3. Leaves bordered ivory-white. W. Trop. Africa. 1903.
„ *longiflo'ra* (long-flowered). 2. July. Trop. Africa. 1824.
„ *meta'llica* (metallic). Leaves with a metallic tint and few markings. Trop. Africa. 1903.
„ *polyphy'lla* (many-leaved). See S. GUINEENSIS.
„ *pu'mila* (dwarf). See S. ZEYLANICA.
„ *roxburghia'na* (Roxburghian). India.
„ *sessiliflo'ra* (stalkless-flowered). See REINECKIA CARNEA.
„ *spica'ta* (spiked). See S. THYRSIFLORA.
„ *stenophy'lla* (narrow-leaved). See S. ZEYLANICA.
„ *Stu'ckyi* (Stucky's). Leaves cylindric. E. Africa. 1903.
„ *subspica'ta* (sub-spiked). Flowers longer than in *S. thyrsiflo'ra*. Leaves spotless. S. Africa. 1889.
„ *sulca'ta* (furrowed). Trop. Africa.
„ *thyrsiflo'ra* (thyrse-flowered). 1–2. S. Africa. 1790.
„ *zanziba'rica* (Zanzibar). Leaves without furrows. Zanzibar. 1903.
„ *zebri'na* (zebra-striped). See S. GUINEENSIS.
„ *zeyla'nica* (Ceylon). 2. White, green. September. Ceylon. 1731.

SA'NTALUM. Sandal Wood. (From the Persian *sandul*, signifying useful. Nat. ord. *Sandalworts* [Santalaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Stove evergreens. Cuttings of firm young shoots in sand, under a bell-glass, in heat; sandy, fibrous loam and peat, with nodules of charcoal. Winter temp., 50° to 55°; summer, 60° to 85°.

S. a'lbum (white-*wooded*). 10–15. Purple. E. Ind. 1804.
„ „ *myrtifo'lium* (myrtle-leaved). 4. Red. E. Ind. 1804.
„ *obtusifo'lium* (blunt-leaved). 5. Red. Australia. 1823.

SANTOLI'NA. Lavender Cotton. (From *sanctus*, holy, and *linum*, flax; refers to fancied medicinal qualities. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy, yellow-flowered evergreens. Cuttings in autumn or spring, in a shady place; common soil.

S. alpi'na (alpine). See ANTHEMIS MONTANA.
„ *anthemoi'des* (Anthemis-like). See ANTHEMIS CRETICA.
„ *cane'scens* (hoary). See S. ROSMARINIFOLIA.
„ *Chamæcypari'ssus* (ground-cypress). 2. July. S. Europe. 1570.
„ „ *inca'na* (hoary). Dwarf and silvery.
„ „ *squarro'sa* (spreading). Flower-heads smaller than peas.
„ „ *tomento'sa* (felted). Flower-heads larger than peas, mealy.
„ *crithmifo'lia* (Crithmum-leaved). ½. August. Macedonia. 1817.
„ *ere'cta* (erect). See LASIOSPERMUM PEDUNCULARE.
„ *eriospe'rma* (woolly-seeded). See LASIOSPERMUM PEDUNCULARE.
„ *pectina'ta* (comb-*leaved*). See S. ROSMARINIFOLIA.
„ *ri'gida* (rigid). See ANTHEMIS CRETICA.
„ *rosmarinifo'lia* (rosemary-leaved). 2. August. Spain and Portugal. 1683.
„ *squarro'sa* (spreading). See S. CHAMÆCYPARISSUS SQUARROSA.
„ *vi'ridis* (*dark*-green). 2. July. S. Europe. 1727.

SANVITA'LIA. (Named after a Spaniard, *Sanvitali*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Hardy annual. Seeds in a slight hotbed, in March, or in the open ground at the end of April. A trailing annual, well-fitted for edgings.

S. procu'mbens (trailing). 1. Yellow. July. Mexico. 1798.
„ „ *villo'sa* (shaggy). See S. PROCUMBENS.

SAOUARI or **SUWARROW NUT.** *Caryo'car nuci'ferum*.

SAP. The fluid which permeates the tissues of plants is termed the sap. There is a general ascending current from the roots to the leaves, and consisting of water, with various mineral ingredients of plant food in a state of solution. By far the greater part of water ascending from the roots is transpired or given off by the leaves into the air. A smaller portion is retained by the protoplasm of living and working cells, and used for the conversion of starch into sugar or other elaborated plant foods, which are draughted off to the growing points of stems and branches, or downwards by the bast tissues, or sieve tubes, to extend the root-system as well as thicken the trunk or stem.

SAPI'NDUS. (From *sapo*, soap, and *indus*, Indian. The mucilaginous outer coat of the seeds is used as soap in America. Nat. ord. Sapindaceæ.)

Stove evergreen trees. Seeds in heat; cuttings in sand or sandy soil in a close case, with bottom-heat.

S. acumina'tus (long-pointed). See S. MUKOROSSI.
„ *Danu'ra* (Danura). 5–8. White, red. India; Burma. 1820.
„ *Drummo'ndii* (Drummond's). 50. White. S. United States, &c. 1907.
„ *Mukoro'ssi* (Mukoross'). Trop. Asia.
„ *Sapona'ria* (Saponaria). 6. April. S. United States. 1810. "Soap Berry."

SAPODILLA or **SAPOTILLA PLUM.** *A'chras Sapo'ta*.

SAPONA'RIA. Soapwort. (From *sapo*, soap; the bruised leaves of *S. officinalis* form a lather like soap. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Allied to Silene.)

S. cala'brica and *ocymoi'des* are two of the prettiest flower-garden plants in this order. Seeds of the annuals in open border, in April; division of the perennials, and cuttings of the points of the shoots, in a sandy soil, under a hand-light; sandy loam, with a little peat or decayed vegetable earth. *Ocymoi'des* and several other trailing kinds are pretty hanging over knolls or rockworks.

HARDY ANNUALS.

S. cala'brica (Calabrian). ½. Rose. August. Calabria. 1830.
„ *cerastioi'des* (Cerastium-like). ½. Pink. Russia. 1835.
„ *glutino'sa* (clammy). 1. Pink. June. Tauria. 1817. Biennial.
„ *multiflo'ra* (many-flowered). See S. CALABRICA.
„ *orienta'lis* (eastern). 1. Pink. July. Levant. 1732.
„ *perfolia'ta* (leaf-stem-pierced). See S. VACCARIA.
„ *po'rrigens* (stretching). See GYPSOPHILA PORRIGENS.
„ *Vacca'ria* (cow-herb). 2. Red. July. Europe, &c. 1596.
„ *visco'sa* (clammy). 1. Armenia. 1836.

HARDY HERBACEOUS.

S. bellidifo'lia (daisy-leaved). ½. Red. July. Central Europe to Greece. 1825.
„ *Boissie'ri* (Bolsier's). ½. Pink. June. Gardens.
„ *cæspito'sa* (turfy). ½. Red. July. Pyrenees. 1820.
„ *depre'ssa* (depressed). Large purplish. Sicily. 1906.
„ *e'legans* (elegant). See S. CÆSPITOSA.
„ *illy'rica* (Illyrian). See TUNICA ILLYRICA.
„ *lu'tea* (yellow). ½. Yellow. July. Switzerland. 1804.
„ *ocymoi'des* (basil-like). ½. Pink. June. S. Europe. 1768.
„ *officina'lis* (shop). 2. Pink. July. Europe (England).
„ „ *flo're ple'no* (double-flowered).
„ „ *hy'brida* (hybrid). Pink. England.
„ *prostra'ta* (lying-flat). Rose. July. Asia Minor. 1824.
„ *pulvina'ris* (cushion). ½. Bright rose. Asia Minor; Syria. 1906.
„ *Sunderma'nni* (Sundermann's). Flowers larger, more numerous than *S. bellidifolia*.
„ *Weinma'nni* (Weinmann's). Pale purple. Gardens. 1906.

SAPO'TA A'CHRAS. See ACHRAS SAPOTA.

SAPPAN WOOD. *Cæsalpi'nia Sa'ppan*.

SAPROPHYTE. Plants which derive the whole of their food from the dead matter of other plants are termed saprophytes. The common mushroom, fairy ring mushroom, and many other mushrooms and toadstools are examples. Mildew of various plants, and Mistletoe, are examples of parasites which get their food, or part of it, from living plants.

SA'RACA. (Derived from *Sarac*, the native name. Nat. ord. Leguminosæ.)

Evergreen stove trees. Cuttings of mature wood, in sand, in a close case, with bottom-heat. Fibrous loam, peat, and a little sand.

S. caulifo'ra (stem-flowering). Malacca.
„ *Crawfo'rdii* (Crawford's). Scarlet. Garden origin.
„ *declina'ta* (declining). Yellow-orange. Sumatra.
„ *i'ndica* (Indian). 10–20. Orange. June to August. India; Malaya. 1796.
„ *tria'ndra* (three-stamened). 10–20. Orange. Burma; Malaya. 1820.

SARA'CHA. (Commemorative of *Isidore Saracha*, a Spanish monk. Nat. ord. Solanaceæ.)

Greenhouse or nearly hardy herbs. Seeds in a cold frame in spring or later in the open border. Well-drained soil.

S. Jaltoma'ta (Jaltomata). Mexico.
„ *procu'mbens* (procumbent). Yellow. June to September. Peru.
„ *stapelioi'des* (Stapelia-like). 2. Yellow, red-brown. June to September. N.W. Amer. 1865.
„ *umbella'ta* (umbelled). 2–3. Creamy-white. June. Peru. 1822.
„ *visco'sa* (clammy). Yellow. June to September. Peru; Chili.

SARCA'NTHUS. (From *sarx*, flesh, and *anthos*, a flower; substance of the flowers. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, grown in baskets. See ORCHIDS.

S. arieti'nus (ram-like). Pale green, rose and yellow. Assam. 1869.
„ *auricula'tus* (auricled). Greenish-white, lined with purple. 1895.
„ *belo'phorus* (dart-bearing). Ochre, striped with purple-brown. 1883.
„ *chryso'melas* (golden-black). Pale yellow, blackish-purple. Burma. 1869.
„ *cro'ceus* (saffron-coloured). Saffron. Manilla. 1837.
„ *erina'ceus* (woolly). White, rose. Burma. 1867.
„ *filifo'rmis* (thread-like-*leaved*). Brown, yellow. July. Himalaya. 1842.
„ *fle'xus* (bent). Yellow-brown, yellow. Borneo. 1881.
„ *formosa'nus* (Formosan). Formosa, Japan.
„ *gutta'tus* (spotted). See RHYNCHOSTYLIS RETUSA.
„ *hincksia'nus* (Hincksian). Green, with three red stripes on each segment. 1878.
„ *hongkonge'nsis* (Hong-Kong). 1. Pale lilac, bright purple. Hong-Kong. 1898.
„ *infla'tus* (inflated). Green, with two brown stripes; spur inflated. Annam. 1906.
„ *inse'ctifer* (insect-bearing). N. India.
„ *la'xus* (loose). White, purple. Burma. 1865.
„ *lendya'nus* (Lendyan). Green, purple, orange, with purple lines. Saigon. 1884.
„ *ma'crodon* (large-toothed). Yellow, purple. India. 1872.
„ *mira'bilis* (wonderful). 1½. Yellowish; spur purple. Burma (?). 1878.
„ *oxyphy'llus* (sharp-leaved). China. 1837.
„ *pa'llidus* (pale-*flowered*). White. September. N. India. 1840.
„ *panicula'tus* (panicled). 2½. Yellow, brown. China.
„ *Pari'shii* (Parish's). Yellow; lip rose. Burma. 1861.
„ *præmo'rsus* (bitten). See SACCOLABIUM PAPILLOSUM.
„ *pugionifo'rmis* (dagger-formed). Trop. Asia.
„ *rostra'tus* (beaked). 1. Orange, brown. April. China. 1824.
„ *striola'tus* (finely-striped). Orange. Philippines. 1882.
„ *succi'sus* (lopped-off). 1. Green. June. China. 1824.
„ *teretifo'lius* (cylindric-leaved). 1½. Green, brown. May. China. 1819.
„ *Williamso'nii* (Williamson's). Amethyst. India. 1865.

SARCOCAU'LON. (From *sarx*, flesh, and *kaulos*, a stem; the stems are fleshy. Nat. ord. Geraniaceæ.)

Greenhouse shrubby plants. Cuttings in sand, under a bell-glass. Fibrous loam, one-third of leaf-mould, with plenty of sand, and kept rather dry in winter.

S. Burma'nni (Burmann's). 1. Purple. May. S. Africa. 1800.
„ *L'Heritie'ri* (L'Heritier's). 1. Purple. May. S. Africa. 1790.
„ *Paterso'nii* (Paterson's). 2½. Purple. May. S. Africa. 1827.

SARCOCE'PHALUS. Guinea Peach. (From *sarx*, flesh, and *kephale*, a head; shape and substance of the fruit. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cuttings in spring, in bottom-heat, under a glass. Stove evergreens, requiring a high, moist temperature when growing; sandy loam, fibrous peat, with a little rough charcoal, and good drainage. Winter temp., 55° to 60°; summer, 60° to 88°.

S. corda'tus (heart-shaped). 10. Yellow. May. Trop. Asia and Australia. 1820.
„ *escule'ntus* (eatable). 15. Pink. July. Sierra Leone. 1822. "Negro Peach."

SARCOCHI'LUS. (From *sarx*, flesh, and *cheilos*, a lip; fleshy labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, grown on blocks. See ORCHIDS.

S. Berkele'yi (Berkeley's). 1. Cream, spotted with amethyst. Andaman Islands. 1882.
„ *bornee'nsis* (Bornean). Yellowish; lip spotted. Borneo. 1892.
„ *Calce'olus* (slippered). White. Manilla. 1844.
„ *cochinchine'nsis* (Cochin-Chinese). Yellow. Cochin-China. 1876.
„ *crassifo'lius* (thick-leaved). Small, yellow. 1894. Stem climbing.
S. cro'ceus (reddish-yellow). White, orange. Manilla.
„ *falca'tus* (sickle-*leaved*). White. April. Australia. 1821.
„ *Fitzgera'ldi* (Fitzgerald's). White, rose. New South Wales. 1877.
„ *Freema'nii* (Freeman's). Yellow, brown. Assam. 1877.
„ *hainane'nsis* (Hainan). Light yellow. Hainan. 1896.
„ *Hartma'nni* (Hartmann's). White, spotted with red. Queensland. 1877.
„ *indusia'tus* (indusiate). Pale yellow, spotted with red; lip white. Sunda Isles. 1886.
„ *iono'smus* (violet-scented). Yellow, brown, red. Philippines. 1844.
„ *lilaci'nus* (lilac). Pale rose-lilac. Malaya. 1901.
„ *luni'ferus* (crescent-bearing). Pale yellow, white, brown. N. India; Burma. 1868.
„ *Moo'rei* (Moore's). 1. Light yellow, with numerous brown blotches. Solomon Islands. 1880.
„ *musco'sus* (mossy). Yellow and purple. Andaman Isles. 1893.
„ *muricula'tus* (finely-warted). ¾. Ochre, barred purple; lip white. India. 1881.
„ *obtu'sus* (blunt). Rose. April. Java. 1844.
„ *oliva'ceus* (olive). Purplish-brown; lip white, with red lines. Australia.
„ *pa'llidus* (pale). Pale yellow. Malaya.
„ *parviflo'rus* (small-flowered). 1. Pale green, white. September. Australia. 1828.
„ *purpu'reus* (purple). Rose; lip rose-crimson. India.
„ *rubrice'ntrum* (red-spurred). White, with red centre; lip banded with red. Australia. 1880.
„ *sillemia'nus* (Sillemian). Milk-white, pale yellow; lip striped purple. Burma (?). 1882.
„ *te'res* (round). White, violet, purple. Java.
„ *unguicula'tus* (clawed). White, red, yellow. Philippines. 1846.

SARCOCO'CCA. (From *sarx*, flesh, and *kokkos*, a berry; the fruits being fleshy. Nat. ord. Euphorbiaceæ.)

Greenhouse, half-hardy or hardy evergreen shrubs of small stature. Cuttings in sand under a bell-glass in the greenhouse, or the hardy species in a cold frame. Ordinary soil, even in shade.

S. coria'cea (leathery). See S. PRUNIFORMIS.
„ *hookeria'na* (Hookerian). See S. PRUNIFORMIS.
„ *hu'milis* (low). 1–1½. Leaves bright green, leathery. Western China. 1911.
„ *prunifo'rmis* (plum-formed). 4. White, or pale yellow. June. India; Malaya. 1820.
„ „ *latifo'lia* (broad-leaved). Leaves broader.
„ *ruscifo'lia* (Ruscus-leaved). 1–2. White, fragrant. Fruits blue. China. 1908.
„ *salı'gna* (willow-like). See S. PRUNIFORMIS.
„ „ *coria'cea* (leathery). See S. PRUNIFORMIS.
„ „ *latifo'lia* (broad-leaved). See S. PRUNIFORMIS LATIFOLIA.
„ *trine'rvia* (three-nerved). See S. PRUNIFORMIS.
„ *zeyla'nica* (Cingalese). See S. PRUNIFORMIS.
„ *Zollinge'ri* (Zollinger's). See S. PRUNIFORMIS.

SARCOCO'LLA. (From *sarx*, flesh, and *kolla* or *kolle*, glue; in reference to the sticky matter exuded by some, the original or typical species. Nat. ord. Penæaceæ.)

Greenhouse evergreen shrubs. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.

S. fuca'ta (dusky). See S. SQUAMOSA.
„ *imbrica'ta* (overlapping). 1½–2. Pink. S. Africa. 1824.
„ *Linnæ'i* (Linnæus'). 1½. Red. June. S. Africa. 1825.
„ *squamo'sa* (scaly). 1–1½. Red. June. S. Africa. 1787.

SARCOGLO'TTIS. (From *sarx*, flesh, and *glottis*, a tongue; shape of the labellum. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Spiranthes.)

S. diure'tica (diuretic). See SPIRANTHES DIURETICA.
„ *Esse'ri* (Esser's). See SPIRANTHES ESSERI.

SARCO'LOBUS. (From *sarx*, flesh, and *lobos*, a pod; seed-vessel fleshy. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Allied to Pergularia.)

Stove evergreen twiners. Cuttings of short, firm side-shoots any time in summer, in sandy soil, under a bell-

glass, and in a brisk bottom-heat; fibrous loam and peat, with a small quantity of charcoal, dried leaf-mould, and silver sand. Winter temp., 50° to 55°; summer, 60° to 88°.

S. carina'tus (keeled). 16. Green, yellow. India; Burma. 1823.
„ *globo'sus* (globe-*fruited*). 16. White. India; Malaya. 1823.

SARCOPO'DIUM. (From *sarx*, flesh, and *pous, podos*, a foot; the stalks or foot-stalks are fleshy. Nat. ord. Orchidaceæ. Now referred to Bulbophyllum.)

S. Chei'ri (Cheiri). See BULBOPHYLLUM CHEIRI.
„ *Dea'rei* (Deare's). See BULBOPHYLLUM DEAREI.
„ *godseffia'num* (Godseffian). See BULBOPHYLLUM DEAREI GODSEFFIANUM.
„ *Lo'bbii* (Lobb's). See BULBOPHYLLUM LOBBII.
„ *macra'nthum* (large-flowered). See BULBOPHYLLUM MACRANTHUM.
„ *pilea'tum* (capped). See BULBOPHYLLUM PILEATUM.
„ *psittacoglo'ssum* (parrot-tongued). See BULBOPHYLLUM PSITTACOGLOSSUM.

SARCOSTE'MMA. (From *sarx*, flesh, and *stemma*, a crown; fleshy flower-head. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Stove evergreen twiners. Cuttings of the points of shoots in sand, under a bell-glass, and in bottom-heat; but care must be taken to raise the glass often, to prevent damping; sandy peat and fibrous loam, a small portion of charcoal, leaf-mould, and sand. Winter temp., 45° to 55°; summer, 60° to 80°.

S. austra'le (southern). Australia.
„ *brevisti'gma* (short-stigma). 6. White. July. India; Burma. 1731.
„ *brunonia'num* (Brownian). Yellow. India. 1872.
„ *campanula'tum* (bell-*flowered*). 6. Yellow, brown. September. Peru. 1844.
„ *swartzia'num* (Swartz's). See PHILIBERTIA VIMINALIS.
„ *vimina'le* (twiggy) of R. Brown. Trop. Africa.
„ *vimina'le* (twiggy) of Wallich. See S. BREVISTIGMA.

SARGE'NTIA ARICO'CCA. See PSEUDOPHŒNIX SARGENTI.

SARMIE'NTA. (Commemorative of *Mart. Sarmiento*, a Spanish botanist. Nat. ord. Gesneraceæ. Allied to Mitraria.)

A small, trailing, evergreen shrub, best grown upon a fibrous, moisture-holding piece of Tree Fern stem. Cuttings in sand, under a bell-glass; seeds. Peat, sphagnum, and pieces of charcoal in a small pan, suspended near the glass, but shaded from direct sunshine, in a cool, moist greenhouse; or on a Tree Fern stem as above.

S. re'pens (creeping). Scarlet. Summer. Chili. 1862.
„ *sca'ndens* (climbing). See S. REPENS.

SAROTHA'MNUS SCOPA'RIUS. See CYTISUS SCOPARIUS.

SAROTHA'MNUS SCOPA'RIUS ANDREA'NUS. See CYTISUS SCOPARIUS ANDREANUS.

SARRACE'NIA. Side-saddle Flower. (Named after *Dr. Sarrasin*, a French physician. Nat. ord. *Sarraceniads* [Sarraceniaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Half-hardy herbaceous perennials, from North America. Division in spring; fibrous peat and chopped sphagnum-moss; a pit or frame will be necessary for their cultivation, to keep them from frost in winter, and to afford them a close, humid atmosphere in summer.

S. atropurpu'rea (dark-purple). See S. FLAVA ATROPURPUREA.
„ *atrosangui'nea* (dark-blood-red). See S. FLAVA ATROPURPUREA.
„ *Catesbæ'i* (Catesby's). See S. FLAVA CATESBÆI.
„ *crispa'ta* (crisped). White. N. Amer. 1879. Supposed natural hybrid.
„ *Drummo'ndii* (Drummond's). 2. Purple. June. 1829.
„ „ *a'lba* (white). Pitchers netted with white.
„ „ *ru'bra* (red). Pitchers netted with red.
„ *Filde'sii* (Fildes'). See S. FLAVA FILDESII.
„ *fla'va* (*yellow*). 2. Yellow. June. 1752. "Trumpet Leaf."
S. fla'va atropurpu'rea (dark-purple). Lid of pitcher with red veins, becoming deep blood-red. N. Amer. 1879.
„ „ *Catesbæ'i* (Catesby's). Pitchers with red veins.
„ „ *Filde'sii* (Fildes'). Lid of pitchers with deep purple netting.
„ „ *gigante'a* (giant). Yellow. Lid of pitchers red-veined; pitchers nearly 3 ft. high. 1905.
„ „ *limba'ta* (bordered). Lid of pitchers bordered with brown-crimson.
„ „ *ma'jor* (greater). Flower larger, yellow. Pitchers 2–2½ ft. high. 1904.
„ „ *ma'xima* (greatest). Pitchers very large, pale green.
„ „ *orna'ta* (adorned). Yellow. Pitchers with purple-red netting. S. United States. 1880.
„ „ *pi'cta* (painted). See S. FLAVA CATESBÆI.
„ *mi'nor* (smaller). See S. SWEETII.
„ *porphyroneu'ra* (purple-nerved). Pitchers netted with purple. 1882.
„ *psittaci'na* (parrot-headed). Pitchers red-veined; lids parrot-headed. N. Amer. 1866.
„ *purpu'rea* (purple). 1. Purple. June. 1640.
„ *ru'bra* (red). 1. Purple. June. 1786.
„ „ *acumina'ta* (long-pointed). Pitchers veined with crimson. 1884.
„ *undula'ta* (wavy). See S. DRUMMONDII.
„ *variola'ris* (pimpled). 1. Yellow. June. 1803.

Garden hybrids of the above are very numerous.

SA'SSAFRAS. (From *Sassafras*, the Spanish for Saxifrage; because supposed to have similar medicinal properties. Nat. ord. Lauraceæ.)

Hardy deciduous tree. Seeds; cuttings in sandy soil in a cold frame, shaded from bright sun, and kept moist. Any well-drained soil. A kind of beer is made from the young shoots in Virginia; and oil, extracted from the fruits, is used by perfumers.

S. officina'le (shop). 10–30. Greenish-yellow. April. United States. 1633. "Sassafras Tree."

SASSAFRAS, CALIFORNIAN. *Umbellula'ria californi'ca.*

SASSAFRAS, SWAMP. *Magno'lia glau'ca.*

SASSAFRAS, TASMANIAN. *Atherospe'rma moscha'tum.*

SASSAFRAS TREE. *Sa'ssafras officina'le.*

SATIN FLOWER. *Sisyri'nchium.*

SATIN MOTH. *Li'paris.*

SATINWOOD TREE. *Chloro'xylon Swiete'nia.*

SATURE'IA. Savory. (From the Arabic *sattar*, applied to labiates. Nat. ord. *Labiates* or *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Seeds and divisions in spring; common, sandy loam. See SAVORY.

HARDY HERBACEOUS, &c.

S. approxima'ta (crowded). See MICROMERIA APPROXIMATA.
„ *capita'ta* (headed). See THYMUS CAPITATUS.
„ *conge'sta* (crowded). See MICROMERIA GRÆCA DENSIFLORA.
„ *græ'ca* (Greek). See MICROMERIA GRÆCA.
„ *hirsu'ta* (hairy). See MICROMERIA JULIANA.
„ *horte'nsis* (garden). 1½. Pink. July. Italy. 1562. Annual. "Summer Savory."
„ *julia'na* (Julian). See MICROMERIA JULIANA.
„ *mo'llis* (soft). ½. White. July. Teneriffe. 1829.
„ *monta'na* (mountain). 1½. Purple. June. S. Europe. 1562. "Winter Savory."
„ „ *illy'rica* (Illyrian). A very dwarf form.
„ *pygmæ'a* (pigmy). See S. MONTANA ILLYRICA.
„ *rupe'stris* (rock). See MICROMERIA RUPESTRIS.

HARDY EVERGREENS.

S. mu'tica (awned). June. Caucasus. 1836.
„ *nervo'sa* (nerved). See MICROMERIA NERVOSA.
„ *spino'sa* (spiny). White. May. Crete. 1827.
„ *Thy'mbra* (Thymbra). 1. Purple. June. Mediterranean region. 1640.
„ *virga'ta* (twiggy). See MICROMERIA JULIANA.
„ *virginia'na* (Virginian). See PYCNANTHEMUM LANCEOLATUM.

SATY'RIUM. (From *satyrus*, a satyr; supposed aphrodisiacal properties. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Terrestrial orchids, from South Africa except where otherwise stated; less difficult to cultivate than their allies. We have flowered some of them planted out in a cold frame with Ixias and other Cape Irids. Division of the roots as fresh growth is commencing; fibrous loam and turfy peat, well drained. Winter temp., 40° to 45°; summer, 55° to 75°.

S. au'reum (golden). See S. CORIIFOLIUM.
„ *ca'ndidum* (white). White. September. 1836.
„ *ca'rneum* (flesh-coloured). 1½. Pink. June. 1797.
„ *chrysosta'chyum* (golden-spiked). See S. CORIIFOLIUM.
„ *cilia'tum* (eye-lashed). See S. NEPALENSE.
„ *coriifo'lium* (leather-leaved). 1. Yellow. October. 1786.
„ *cuculla'tum* (hooded). See S. CORIIFOLIUM.
„ *ere'ctum* (erect). 1½. Yellow. February. 1800.
„ *folio'sum* (leafy). See S. HALLACKII.
„ *Halla'ckii* (Hallack's). Purple. July. 1828.
„ *margina'tum* (margined). ¼. June. 1789.
„ *membrana'ceum* (membranous). 1. Deep red. 1889.
„ *milita're* (military). See S. SPHÆROCARPUM.
„ *nepale'nse* (Nepaulese). 1. Rose-pink. Himalaya. 1882.
„ *papillo'sum* (nippled). See S. ERECTUM.
„ *parvifio'rum* (small-flowered). See S. MARGINATUM.
„ *pri'nceps* (chief). S. Africa.
„ *pustula'tum* (pimpled). See S. ERECTUM.
„ *sphæroca'rpum* (spherical-fruited). 1. White, with red spots and lines.
„ *wightia'num* (Wightian). See S. NEPALENSE.

SAUCERS are shallow vessels, made without any opening in the bottom, and are intended to hold the water that runs through flower-pots. Porous earthenware saucers may be used in greenhouses and conservatories to prevent the water from running over the floor; but in dwelling-houses they must be glazed, otherwise the moisture will soak through and spoil the furniture, even although no water is standing in them. Glazed and hard-burned saucers are now obtainable in many patterns, plain and ornamental. Coloured china and stoneware pots in many ornamental patterns are also obtainable, and the ordinary pots, placed inside them, are completely hidden. If water stands in these pots or saucers, after an hour or two, as a result of watering, it should be emptied out to let air get to the roots of the plants.

SAUNDE'RSIA. (Commemorative of *W. Wilson Saunders*, F.L.S., an enthusiastic collector and cultivator of rare plants. Nat. ord. Orchidaceæ.)

Stove epiphytical orchid. Offsets or divisions. Fibre of peat, sphagnum, and potsherds.

S. mira'bilis (wonderful). Greenish-white, suffused with yellow and purple. Brazil.

SAUNDERS WOOD. *Pterocа'rpus santali'nus.*

SAURAU'JA. (Named after *Sauraujo*, a Portuguese botanist. Nat. ord. *Ternströmiads* [Ternströmiaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*. Allied to Hibbertia.)

Stove evergreen, white-flowered trees and shrubs. Cuttings of ripe shoots in sand, under a bell-glass, in heat, in spring; fibrous loam and sandy peat. Winter temp., 50° to 55°; summer, 60° to 80°.

S. exce'lsa (tall). 50. Caracas. 1820.
„ *Griffi'thii* (Griffith's). Assam.
„ *lanceola'ta* (lance-shaped). Leaves spiny, bright green. Java. 1882.
„ *macrophy'lla* (large-leaved). Mexico. 1844.
„ *nepaule'nsis* (Nepaulese). 30. August. Nepaul. 1824.
„ *sarapique'nsis* (Sarapiquan). Costa Rica. 1866.
„ *specta'bilis* (showy). 10. July. Bolivia. 1838.

SAUROGLO'SSUM. (From *saura*, a lizard, and *glossa*, a tongue; resemblance to the tongue of that reptile. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Spiranthes.)

S. ela'tum (tall). See SPIRANTHES ELATA.

SAURO'MATUM. (From *saura*, a lizard; in allusion to the spotting on the spathe. Nat. ord. Araceæ. Allied to Arum.)

Tuberous rooted stove herbs, but *S. gutta'tum* may be grown in warm borders, close to a wall, in the more favoured parts of the British Isles. Offsets. Fibrous loam, peat, and plenty of sand.

S. a'sperum (rough). See DRACONTIUM ASPERUM.
„ *bre'vipes* (short-stalked). Spathes numerous, crowded, pale-purple tinted. Himalaya. 1903.
„ *gutta'tum* (spotted). 1–1½. Green, spotted with maroon-purple. May. North-western India. 1815.
„ *peda'tum* (pedate). See S. GUTTATUM.
„ *puncta'tum* (spotted). See S. GUTTATUM.
„ *veno'sum* (veiny). See S. GUTTATUM.

SAU'ROPUS. (From *saura*, a lizard, and *pous*, a foot; application of the name not obvious. Nat. ord. Euphorbiaceæ.)

Stove shrub. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

S. a'lbicans (whitish). India; Malaya.
„ „ *gardneria'nus* (Gardnerian). Leaves with a grey central blotch. India; Malaya. 1861.

SAURU'RUS. (From *saura*, a lizard, and *oura*, a tail; flowers in a long, tail-like spike. Nat. ord. Piperaceæ.)

Hardy perennial herbs, thriving under marshy or aquatic conditions, or in pots, dipping into water. Seeds; divisions. Loam, peat, and a little sand.

S. ce'rnuus (nodding). 1–2. White; spike nodding. June to September. N. Amer. 1759. "Lizard's Tail."
„ *chine'nsis* (Chinese). 1½. White. Summer. China. 1819.
„ *Lourei'ri* (Loureiro's). 2. White. Summer. China; Japan.
„ *lu'cidus* (shining). See S. CERNUUS.

SAUSSU'REA. (Named after *H. B. de Saussure*, a Swiss botanist. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Jurinea.)

Hardy herbaceous perennials, and purple-blossomed, except where otherwise mentioned. Seeds and divisions of the plant in spring; common garden soil.

S. affi'nis (related). Trop. Asia.
„ *ala'ta* (winged). See S. JAPONICA.
„ *albe'scens* (whitish). 2. Purple. July. Himalaya. 1837.
„ *alpi'na* (alpine). ¼. July. Northern and arctic regions (Britain).
„ *ama'ra* (bitter). 1½. July. Siberia. 1820.
„ *angustifo'lia* (narrow-leaved). See S. ALPINA.
„ *ca'ndicans* (whitish). 3. Purple. July. Himalaya. 1820.
„ *crassifo'lia* (thick-leaved). July. Siberia. 1824.
„ *di'scolor* (two-coloured). 1. July. Switzerland. 1818.
„ „ *lapathifo'lia* (Lapathum-leaved). 1. July. Europe. 1816.
„ *e'legans* (elegant). Rose. July. Altaic Siberia. 1820.
„ *elonga'ta* (lengthened). 2. July. Siberia. 1820.
„ *Gmeli'ni* (Gmelin's). See SERRATULA GMELINI.
„ *hypoleu'ca* (white-beneath). 2. Purple. July. Himalaya.
„ *japo'nica* (Japanese). 2. Red. July. Japan. 1818.
„ *lacinia'ta* (jagged-*leaved*). June. Siberia. 1827.
„ *La'ppa* (Lappa). July. Himalaya.
„ *liatroi'des* (Liatris-like). See S. PYCNOCEPHALA.
„ *lyra'ta* (lyre-*leaved*). 2. Red. July. Siberia. 1827.
„ *Maximowi'czii* (Maximowicz's). July. Japan.
„ *pulche'lla* (pretty). See S. JAPONICA.
„ *pycnoce'phala* (dense-headed). 2. July. Altaic Siberia. 1827.
„ *pygmæ'a* (pigmy). 1. July. Austria. 1816.
„ *ri'gida* (stiff). July. Siberia. 1827.
„ *runcina'ta* (runcinate). 2. Red. July. Siberia. 1819.
„ *Russo'wii* (Russow's). Turkestan.
„ *salicifo'lia* (willow-leaved). 2. Red. July. Siberia. 1796.
„ *sa'lsa* (salt). 1½. Red. July. Caucasus. 1816.
„ *serra'ta* (toothed-*leaved*). July. Europe. 1816.
„ *so'rdida* (dirty). Altaic Siberia.
„ *Ya'kla* (Yakla). Himalaya.

SAUVAGE'SIA. Named after *F. B. de Sauvages*, a French botanist. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Pretty, tender, violet-looking annuals. Seeds in spring, in a hotbed, pricked out, and potted, and then flowered in the plant-stove or warm greenhouse.

S. ere'cta (upright). 1. Pink. May. Trop. Amer. and Africa. 1820.
„ *geminiflo'ra* (twin-flowered). See S. ERECTA.
„ *nu'tans* (nodding). See S. ERECTA.

SAVANNAH FLOWER. *Echi'tes subere'cta.*

SAVIN. *Juni'perus Sabi'na.*

SAVORY. *Satureia monta'na.* Winter or Perennial Savory. *S. horte'nsis,* Summer or Annual Savory.

They may be sown in the open ground at the latter end of March or in April, in a light, rich soil; thin the seedlings moderately, and they may either remain where sown, or may be transplanted. Of the Winter Savory, when the seedlings are about 2 inches high, it is eligible to plant out a quantity of the strongest in moist weather, in nursery rows, 6 inches asunder, to remain till September or spring following, then to be transplanted with balls where they are finally to remain, in rows a foot asunder. When designed to have the Winter or Summer Savory remain where sown, the seeds may be in shallow drills, either in beds, or along the edge of any bed or border by way of an edging.

By Slips.—In the spring, or early part of summer, the Winter Savory may be increased by slips or cuttings of the young shoots or branches, 5 or 6 inches long; plant them with a dibble, in any shady border, in rows 6 inches asunder, giving occasional waterings, and they will be well rooted by September, when they may be transplanted.

SAVOY. *Bra'ssica olera'cea bulla'ta.*

Varieties.—Yellow, for autumn; Dwarf and Green, and two sub-varieties of these, the Round and the Oval; Large Green, very hardy. These for winter-standing crops.

Sow at the close of February, the plants of which are ready for pricking out in April, and for final planting at the end of May, for use in early autumn; the sowing to be repeated about the middle of March, the plants to be pricked out in May, for planting in June, to supply the table in autumn and early winter. The main crops must be sown in April and early May, to prick out and plant, after similar intervals, for production in winter and spring.

Planting.—The plants of the first crops should be set out 2 feet apart each way, but the winter-standing crops are better at 2 feet by 18 inches. Water abundantly, if the weather is dry, until the plants are well established.

To save Seed.—Such plants must be selected of the several varieties as are most true to their particular characteristics, and as are not the first to run. These, in open weather, from early in November to the close of February, plant entirely up to the head, in rows 2½ feet each way, each variety as far from the other as possible. They ripen their seed in July and August.

SAW-FLY. See ATHALIA and HYLOTOMA.

SAWS for garden-pruning must have a double row of teeth, to obviate the tendency to nip, or buckle, that the dampness of green wood and the leverage of the branch occasion. One with a very narrow blade, and one with a handle 6 feet long, will be found convenient. The face of the wound made by a saw should always be cut smooth with the knife, otherwise the wet lodging on its rough surface occasions decay. See BILL.

SAWWORT. *Serra'tula.*

SAXEGO'THEA. (Commemorative of *H.R.H. Prince Albert.* Nat. ord. Coniferæ.)

A nearly hardy evergreen Conifer. Seeds. Well-drained soil.

S. conspi'cua (conspicuous). 30. June. Southern Chili. 1845. "Prince Albert's Yew."

SAXI'FRAGA. Saxifrage. (From *saxum,* a stone, and *frango,* to break; supposed power in that disease. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria,* 2-*Digynia.*)

Seeds, and especially divisions in spring, unless for annuals; sandy loam; the tenderest will repay for a little leaf-mould or peat; suited best for the fronts of borders, the stumps of trees, and for knolls and rockworks.

HARDY ANNUALS, &c.

S. controve'rsa (contrary-turned). ½. White. May. S. Europe. 1824.
„ *hedera'cea* (ivy-*leaved*). ½. Yellow. July. Levant. 1752.
„ *huetia'na* (Huetian). ½–½. Yellow. Summer. Kurdistan. 1880. Annual or biennial.
„ *irri'gua* (watered). 1. White. June. Tauria. 1817. Biennial.
„ *petræ'a* (rock). ½. White. April. S. Europe. 1732.
„ „ *Bla'vii* (Dr. Blau's). ½. White. Much branched. Bosnia.
„ *Sibtho'rpii* (Sibthorp's). ½–½. Yellow. Summer. Greece.
„ *tridactyli'tes* (three-fingered). ½–½. White. April. Europe (Britain); Asia; N. Amer.

HARDY HERBACEOUS PERENNIALS.

S. adeno'phora (gland-bearing). See S. EXARATA ORIENTALIS.
„ *adsce'ndens* (ascending). ½. White. May. Europe, &c. 1752.
„ *æstiva'lis* (summer). See S. PUNCTATA.
„ *affi'nis* (kindred). See S. SPONHEMICA AFFINIS.
„ *afgha'nica* (Afghan) of gardens. See S. STRACHEYI ALBA.
„ *aizoi'des* (Aizoon-like). ½. Yellow. July. Northern and arctic regions (Britain).
„ „ *auranti'aca* (orange). Densely spotted with deep orange.
„ *Aizo'on* (Aizoon). 1. White. May, June. Northern and arctic regions. 1731.
„ „ *balca'na* (Balkan). 1. Rose, heavily spotted with red. Leaves green.
„ „ *carinthi'aca* (Carinthian). 1. White, spotless. May, June.
„ „ *cartilagi'nea* (cartilaginous). See S. CARTILAGINEA.
„ „ *Churchi'llii* (Churchill's).
„ „ *cultra'ta* (coulter-shaped).
„ „ *flave'scens* (yellowish). Pale yellow, fading to cream.
„ „ *Gaudi'ni* (Gaudin's).
„ „ *incrusta'ta* (incrusted).
„ „ *glacia'lis* (glacial).
„ „ *inta'cta* (spotless). 1. White, green. May, June. Tyrol.
„ „ *la gravea'na* (La Gravean). Dauphiné.
„ „ *lu'tea* (yellow). Soft yellow, fading to cream or pale lemon, spotless. May, June. 1907.
„ „ *Ma'lyi* (Maly's).
„ „ *mi'nor* (smaller). ½. White, with crimson specks on middle. May, June. Alps.
„ „ *nota'ta* (marked). ½–1. White. May, June.
„ „ *parado'xa* (paradoxical). 1. Leaves long, narrow, silver-edged.
„ „ *parvifl'ora* (small-flowered). 1. White. May. Alps.
„ „ *pectina'ta* (comb-like). 1. White. May, June.
„ „ *punctati'ssima* (much-spotted). ½. White, richly spotted deep rose, large. Rosenlaui Glacier. 1910.
„ „ *re'cta* (straight). 1. White, green. May, June. Alps of Europe.
„ „ *robu'sta* (robust.
„ „ *ro'sea* (rosy). 1. Bright pink or rosy-pink. May, June. 1907.
„ „ *rosula'ris* (rosetted). 1. White. Leaves incurved. May, June.
„ „ *sempervivoi'des* (Sempervivum-like).
„ „ *stabia'na* (Stabian).
„ „ *sturmia'na* (Sturmian).
„ *ajugifo'lia* (bugle-leaved). 1. June. Pyrenees. 1770.
„ *alti'fida* (deep-cleft). 1.
„ *ambi'gua* (ambiguous). Natural hybrid between *S. media* and *S. aretioides.* Pyrenees. 1908.
„ *Andre'wsii* (Andrews'). ½–1½. White, thickly spotted with purple. Garden origin. 1848.
„ *androsa'cea* (Androsace-*leaved*). 1. May. Austria. 1792.
„ *angulo'sa* (angular). See S. ROTUNDIFOLIA GLANDULOSA.
„ *aphy'lla* (leafless). ½–1½. Yellow. June, July. Europe.
„ „ *leptophy'lla* (slender-leaved).

S. apicula'ta (finely-pointed). ½. Pale yellow. March, April. Gardens. 1887.
„ „ *a'lba* (white). ½. White, or pale cream. March, April. 1909.
„ *aqua'tica* (aquatic). 1–1½. White. June, July. Europe. 1884.
„ *arachnoi'dea* (spider-web-like). Citron-yellow. June, July. Switzerland. Prostrate.
„ *aretioi'des* (Aretia-like). ½. Yellow. June. Pyrenees. 1826.
„ „ *primuli'na* (primrose-like). ½. Primrose. June.
„ *argu'ta* (sharp-notched). See S. PUNCTATA.
„ *a'spera* (rough). ½. Cream. June. Switzerland. 1752.
„ „ *bryoi'des* (moss-like). ½. Cream. June. Switzerland. 1752.
„ *atla'ntica* (Atlantic). ½–½. White, fragrant. Europe; N. Africa. 1895.
„ *atropurpu'rea* (dark-purple). See S. MUSCOIDES ATROPURPUREA.
„ *autumna'lis* (autumnal). See S. AIZOIDES.
„ *axilla'ris* (axillary). See S. AJUGIFOLIA.
„ *biflo'ra* (two-flowered). ½. Purple. May. Switzerland. 1820.
„ *biterna'ta* (twice-ternate). ½. White. June, July. Spain.
„ *Bo'ryi* (Bory's). ½–½. White. April, May. Greece.
„ *Bo'ydii* (Boyd's). ½. Yellow. March, April. Gardens. 1890.
„ „ *a'lba* (white). ½. White. March, April. Gardens.
„ *bronchia'lis* (throat). ½. Cream. May. Siberia. 1819.
„ „ *cherlerioi'des* (Cherleria-like). ½. Cream. May. Habit dense.
„ „ *confe'rta* (crowded). ½. Cream, crowded. May.
„ *brunonia'na* (Brownian). ½. Yellow. June. Himalaya. 1907. Stolons crimson.
„ *bryoi'des* (Bryum-like). See S. ASPERA BRYOIDES.
„ *bulbi'fera* (bulb-bearing). ½. June. S. Europe. 1819.
„ *Burna'tii* (Burnat's). 1. White. June. Natural hybrid, *S. Aizoon* × *cochlearis*. Maritime Alps. 1908.
„ *burseria'na* (Burser's). ½. White. March, April. Carniola. 1826.
„ „ *macra'ntha* (large-flowered). ½. White. March, April.
„ „ *ma'gna* (great). ½. White, larger. March, April. 1910. Plant densely tufted.
„ „ *ma'jor* (greater). ½. White, larger. March, April. Austrian Alps. 1880.
„ „ *Vande'llii* (Vandell's). See S. VANDELLII.
„ *ca'sia* (grey). ½. White. May. Switzerland. 1752.
„ *cæspito'sa* (tufted). ½. Cream. May. Northern and arctic regions (Wales, Scotland).
„ „ *compa'cta* (compact). See S. DECIPIENS GROENLANDICA.
„ „ *hi'rta* (hairy). ½–½. White.
„ „ *incurvifo'lia* (incurved-leaved). ½. White. May. Ireland.
„ *calyciflo'ra* (calyx-flowering). See S. MEDIA.
„ *Campo'sii* (Campos's) of Hooker f. See S. WALLACEI.
„ *capilla'ris* (hair-like). See S. GEUM CAPILLARIS.
„ *capi'llipes* (hair-stalked). See S. CUNEIFOLIA SUBINTEGRA.
„ *carolinia'na* (Carolinian). See S. EROSA.
„ *cartilagi'nea* (cartilaginous). ½–1. White. June, July. Caucasus, &c.
„ *catalau'nica* (Catalonian). 1. White. June, July. Northern Spain.
„ *ceratophy'lla* (horn-leaved). See S. TRIFURCATA CERATOPHYLLA.
„ *ce'rnua* (drooping). ½. July. Northern and arctic regions (Scotland).
„ *chine'nsis* (Chinese). See S. SARMENTOSA.
„ *cilia'ris* (eye-lashed). See S. MIXTA.
„ *cilia'ta* (eye-lashed) of Lindley. See S. STRACHEYI.
„ *cilia'ta* (eye-lashed) of Royle. 1. White, pink. April, May. Himalaya. 1843.
„ *citri'na* (citron). ½. Citron-yellow. June, July. Switzerland.
„ *Clu'sii* (Clusius') of Gouan. ½–½. White, yellow, red. June, July. Europe. 1882.
„ „ *propagi'nea* (offspring). White. July, August. 1881.
„ *Clu'sii* (Clusius') of Kunze. See S. LEUCANTHEMIFOLIA.

S. cochlea'ris (shell-like). ½. White. June. S. Europe. 1883.
„ „ *ma'jor* (larger). A larger-leaved form.
„ „ *mi'nor* (smaller). ½–½. White. Rosettes very small.
„ *compa'cta* (compact). See S. VALDENSIS.
„ *condensa'ta* (dense). See S. SPONHEMICA.
„ *coni'fera* (cone-bearing). ½–½. June, July. Spain.
„ *corbarie'nsis* (Corbarian). Very similar to *S. geranioi'des*. Pyrenees. 1899.
„ *cordifo'lia* (heart-leaved). 1. Purple. April. Siberia. 1779.
„ *co'rsica* (Corsican). See S. GLAUCESCENS.
„ *cortusæfo'lia* (Cortusa-leaved). 1. White. September, October. Japan. 1883.
„ *Cotyle'don* (Cotyledon). ½. June. Alps, Europe. 1596.
„ „ *pyramida'lis* (pyramidal). 2–3. White. June. 1859.
„ *Cotyle'don* (Cotyledon) of Tenore. See S. MARGINATA.
„ *crassifo'lia* (thick-leaved). 1. Purple. April. Siberia. 1765.
„ „ *cordifo'lia* (heart-leaved). See S. CORDIFOLIA.
„ *crusta'ta* (shelly-*edged*). ½. June. Switzerland. 1800.
„ *cunea'ta* (wedge-shaped). ½–1. White. April, May. Spain. 1902.
„ *cuneifo'lia* (wedge-leaved). ½. May. Switzerland, 1768.
„ „ *apenni'na* (Apennine). See S. CUNEIFOLIA SUBINTEGRA.
„ „ *davu'rica* (Dahurian). ½. June. Siberia. 1809.
„ „ *infundibulifo'rmis* (funnel-formed). ½. White. May.
„ „ *multicau'lis* (many-stemmed). ½. White. May. Leaves very narrow.
„ „ *subi'ntegra* (nearly-entire). ½. White. May. Leaves slightly notched or entire.
„ *cuneifo'lia* (wedge-leaved) of Cavanilles. See S. CUNEATA.
„ *cuscutæfo'rmis* (Cuscata-formed). ½–½. White, rose. June. Japan. 1815.
„ *Cymbala'ria* (Cymbalaria) of Sibthorp and Smith. See S. SIBTHORPII.
„ *davu'rica* (Dahurian). ½–½. N. Asia; N. Amer.
„ *deci'piens* (deceptive). ½. May. Europe (Wales).
„ „ *groenla'ndica* (Greenland). ½. White. May, June. Britain; Iceland; Greenland.
„ „ *quinque'fida* (five-cut). ½. White. May, June.
„ „ *Steinma'nni* (Steinmann's). ½. White. May, June.
„ „ *Sternbe'rgii* (Sternberg's). ½. White. May, June.
„ *denuda'ta* (stripped). See S. DECIPIENS.
„ *depre'ssa* (depressed). See S. ANDROSACEA.
„ *diapensioi'des* (Diapensia-like). ½. April. Switzerland. 1825.
„ *diversifo'lia* (diverse-leaved). 1. Yellow. June, July. Himalaya. 1882.
„ „ *folia'ta* (leafy). 1. Yellow. June, July. Leaves olive-green, with silvery veins. 1912.
„ *ela'tior* (taller). See S. HOSTII.
„ *e'legans* (elegant). See S. GEUM ELEGANS.
„ *elonga'ta* (elongated). See S. DECIPIENS STERNBERGII.
„ *elonge'lla* (longish-*stalked*). See S. SPONHEMICA.
„ *Engle'ri* (Engler's). Natural hybrid, *S. Aizoon* × *cuneifolia*.
„ *ero'sa* (gnawed). 1. White, yellow. May. Carolina. 1812.
„ „ *hirsu'ta* (hairy). 1. White, yellow. June. N. Amer. 1800.
„ *euhypnoi'des gemmi'fera* (bud-bearing, moss-like). See S. HYPNOIDES.
„ *exara'ta* (engraved). ½. Cream. May. S. Europe. 1800.
„ „ *nervo'sa* (nerved). 1. Milk-white. Stems woody. May, June. Spain.
„ „ *orienta'lis* (oriental). 1. White. Densely tufted. May, June. Greece; Pontus.
„ *Facchi'ni* (Facchin's). See S. PLANIFOLIA FACCHINI.
„ *Ferdina'ndi-Cobu'rgi* (Ferdinand-Coburg's). ½. Rich yellow. May. Macedonia. 1904.
„ *ferrugi'nea* (rusty). See S. LEUCANTHEMIFOLIA.
„ *flagella'ris* (whip-like). ½. Yellow. May, June. Northern and arctic regions. 1851.
„ *florule'nta* (flowering-slowly) of Moretti. 1. Lilac. S. Europe. 1872.

S. florule'nta (flowering-slowly) of Schott. See S. LINGULATA LANTOSCANA.
„ *Forbe'sii* (Forbes'). N. Amer.
„ *Forste'ri* (Forster's). ½. White. May, June. Tyrol.
„ *Fortu'nei* (Fortune's). 1. White. September, October. China. 1863. Half-hardy.
„ *Frederi'ci-Augu'sti* (Frederic-Augustus's). See S. POROPHYLLA.
„ *gemmi'fera* (bud-bearing). See S. HYPNOIDES.
„ *gemmi'para* (bud-bearing). ⅛–½. White; anthers orange. Yunnan, China. 1907.
„ *geranioi'des* (crane's-bill-like). ½. April. Pyrenees. 1770.
„ „ *irri'gua* (irrigated). See S. IRRIGUA.
„ *Ge'um* (Geum). 1. June. Western Europe (Ireland).
„ „ *capilla'ris* (hair-like). ½. Pink, spotted. May, June.
„ „ *Colvi'llei* (Colville's). 1. White, spotted. May, June.
„ „ *crena'ta* (scolloped). 1. May.
„ „ *denta'ta* (toothed). 1. May. Ireland.
„ „ *e'legans* (elegant). ½. Pink, spotted. May, June. Ireland.
„ „ *poli'ta* (polished). 1. May. Ireland.
„ „ *serra'ta* (sawed). ½–1. Pink, spotted. May, June.
„ *gibralta'rica* (Gibraltar). ½. White. May, June. Southern Spain.
„ *glauce'scens* (sea-green). 1. White. Leaves sea-green. Spain; Portugal.
„ *globuli'fera* (globe-bearing). ½. White. May, June. Western Mediterranean region. 1895.
„ *gra'cilis* (graceful). See S. PUNCTATA.
„ *granate'nsis* (Granadan). See S. GLOBULIFERA.
„ *granula'ta* (grain-*rooted*). 1. May. Europe (Britain). "Meadow Saxifrage."
„ „ *ple'na* (double-*flowered*). 1. May.
„ *Griseba'chii* (Grisebach's). ½–1. Purple-crimson. March, April. Albania; Macedonia. 1903.
„ *groenla'ndica* (Greenland). See S. DECIPIENS GROENLANDICA.
„ *guthrie'na* (Guthriean). See S. ANDREWSII.
„ *Hausma'nni* (Hausmann's). Natural hybrid, *S. subaizoides* × *mutata*. Europe.
„ *Hawo'rthii* (Haworth's). May. Europe.
„ *hetera'ntha* (various-flowered). See S. MERTENSIANA.
„ *heucherifo'lia* (Heuchera-leaved) of Kerner. See S. ROTUNDIFOLIA FONTICOLA.
„ *hibe'rnica* (Hibernian). See S. DECIPIENS STERNBERGII.
„ *hieracifo'lia* (hawkweed-leaved). 1½. May. Northern and arctic regions. 1789.
„ *Hi'rculus* (Hirculus). ½. Yellow. August. Northern and arctic regions (England).
„ „ *grandiflo'ra* (large-flowered). ½–1. Yellow, 1 in. across.
„ *hirsu'ta* (hairy). 1. Flesh. May. Western Europe (Ireland).
„ „ *denta'ta* (toothed).
„ „ *gra'cilis* (graceful). Ireland.
„ „ *sphæroi'dea* (globe-like). 1. Flesh. May. Pyrenees.
„ *hi'rta* (hairy). See S. DECIPIENS STERNBERGII.
„ „ *affi'nis* (allied). See S. SPONHEMICA AFFINIS.
„ *Ho'stii* (Host's). 1. White, spotted with purple. May. Europe.
„ *Huguení'ni* (Huguenin's). ½. White. June. Eastern Switzerland.
„ *hy'brida* (hybrid). ½. June. Piedmont. 1810.
„ *hypnoi'des* (moss-like). ½. May. Europe (Britain). "Dovedale Moss."
„ „ *angustifo'lia* (narrow-leaved). ½. May. Scotland.
„ „ *Ki'ngii* (King's). ½. White. May.
„ „ *pulche'lla* (pretty). ½. May. Scotland.
„ „ *Schrade'ri* (Schrader's). ½. Pure white. May. 1825.
„ „ *variega'ta* (variegated). ½. White. May.
„ „ *vire'scens* (greenish). ½. Greenish. May.
„ „ *visco'sa* (clammy). ½. May. Scotland.
„ „ *whilla'vii* (Whitlav's). ½. White. May.
„ *imbrica'ta* (overlapping). ½. White; anthers violet. May, June. Himalaya. 1843.
„ *incurvifo'lia* (incurved-leaved). See S. CÆSPITOSA INCURVIFOLIA.
„ *inta'cta* (untouched). See S. AIZOON and varieties.
„ *integrifo'lia* (entire-leaved). ½–1. White. June. N. Amer.

S. interme'dia (intermediate). 1. July. 1808.
„ *interme'dia* (intermediate). Intermediate between *S. Grisebachii* and *Stribnryi*. 1909.
„ *iratia'na* (Iratian). ½. White; veins purple. June, July. Pyrenees.
„ *irri'gua* (irrigated). 1. White. June. Asia Minor. 1817.
„ *juniperifo'lia* (juniper-leaved). ½. Yellow. June, July. Caucasus.
„ *juniperi'na* (juniper-like). See S. JUNIPERIFOLIA.
„ *kolenatia'na* (Kolenatian). 1. Pink. May, June. Asia Minor.
„ *Ko'tschyi* (Kotschy's) of Boissier. ½. Yellow. April. May. Asia Minor. 1873.
„ *Ko'tschyi* (Kotschy's) of Hooker f. See S. LUTEOPURPUREA.
„ *la'ctea* (milky). ½–1. Creamy-white. June. Siberia.
„ *lætevi'rens* (lively-green). See S. SPONHEMICA LÆTEVIRENS.
„ *læ'vis* (smooth). ½. August. Caucasus.
„ *lanceola'ta* (spear-*bracted*). ½. May. Europe. 1800.
„ „ *obtu'sa* (blunt). ½. May. Europe. 1820.
„ *lantosca'na* (Lantoscan). See S. LINGULATA LANTOSCANA.
„ *lanugino'sa* (woolly). Himalaya.
„ *Lapeyrou'sei* (Lapeyrouse's). See S. LUTEO-PURPUREA.
„ *lasiophy'lla* (woolly-leaved). See S. ROTUNDIFOLIA GLANDULOSA.
„ *latepetiola'ta* (broad-petioled). ½–1. White. April to September. Spain. 1887. Biennial.
„ *leptophy'lla* (fine-leaved). See S. HYPNOIDES.
„ *leucanthemifo'lia* (stock-leaved). ½. June. N.W. Amer. 1812.
„ *leucanthemifo'lia* (stock-leaved) of Lapeyrouse. See S. CLUSII.
„ *ligula'ta* (strap-*leaved*). Pink. February to April. Himalaya. 1821.
„ „ *a'lba* (white). 1. White. March, April.
„ „ *cilia'ta* (eye-lashed). See S. CILIATA.
„ „ *compa'cta* (compact). 1. Pink. February to April.
„ „ *na'na* (dwarf). ½. Pink. February to April.
„ „ *specio'sa* (showy). 1. Purple. March, April.
„ *lilaci'na* (lilac). ½. Pale lilac, with purple centre. April, May. Western Himalaya. 1904.
„ *lingula'ta* (tongue-*leaved*). 1½. June. S. Europe. 1821.
„ „ *austra'lis* (southern). 1. White. May, June.
„ „ *catalau'nica* (Catalonian). See S. CATALAUNICA.
„ „ *cochlea'ris* (shell-shaped). See S. COCHLEARIS.
„ „ *lantosca'na* (Lantosquan). ½–1. White. May, June. Maritime Alps. 1881.
„ „ *me'dia* (intermediate). 1½. June. Carniola. 1800.
„ *longifo'lia* (long-leaved). 1–3. White, speckled with red. July. Pyrenees.
„ *lu'tea* (yellow). See S. HIRCULUS.
„ *lu'teo-purpu'rea* (yellow-purple) of gardens. See S. APICULATA.
„ *lu'teo-purpu'rea* (yellow-purple) of Lapeyrouse. ½. Yellow; sepals purple. May. Pyrenees. 1873.
„ *lu'teo-vi'ridis* (yellow-green). ½. Yellow; sepals green. May. Transsylvania.
„ *macnabia'na* (Macnabian). 1–2. White, spotted with crimson. Garden origin. 1893.
„ *macrope'tala* (large-petaled). ⅓. Deep lilac. S. Europe. 1888.
„ *ma'dida* (marshy). 1. White. September, October. Japan. 1909.
„ *margina'ta* (margined). ½. White, large. May, June. Central Italy. 1883.
„ *mawea'na* (Mawean). ½. White. May, June. Morocco. 1871.
„ *me'dia* (intermediate) of Gouan. ½. Deep purple. May, June. Pyrenees. 1880.
„ „ *Frederi'ci-Augu'sti* (Frederick-Augustus') of gardens. See S. APICULATA.
„ *me'dia* (intermediate) of Sibthorp. See S. POROPHYLLA.
„ *mela'na* (blackened). See S. IRATIANA.
„ *mertensia'na* (Mertensian). ½. Pink. April. North-western Amer.
„ *micra'ntha* (small-flowered). ½–1. White. June, July. Himalaya.
„ *Mile'sii* (Miles's). 1. Pure white. April, May. Himalaya. 1882.
„ *mi'nor* (smaller). Country unknown. 1869.

S. mi'xta (mixed). ½–¾. Milk-white, with purple veins. June, July. Pyrenees.
„ *montavonie'nsis* (Montavonian). White; calyx and stamens red. 1890.
„ *moscha'ta* (musky) of Smith. See S. MUSCOIDES PYGMÆA.
„ *moscha'ta* (musky) of Wulfeni. See S. MUSCOIDES MOSCHATA.
„ *muscoi'des* (moss-like) of Allioni. See S. PLANIFOLIA.
„ *muscoi'des* (moss-like) of Wulfeni. ¼. Pale yellow. May. Europe; Asia Minor. 1819.
„ „ *Allio'nii* (Allioni's). ½–¾. White. April, May. Switzerland.
„ „ *atropurpu'rea* (dark-purple). ¼. Rose-purple to crimson-purple. April, May.
„ „ *linea'ta* (lined). See S. MUSCOIDES RHEI.
„ „ *moscha'ta* (musky). ¼. Yellow-green, or yellow. April, May.
„ „ *pygmæ'a* (pigmy). ½. Greenish-yellow. April, May.
„ „ *Rhe'i* (Rhe's). ¼. White, shaded pink. April to June.
„ *muta'ta* (changed). ½. Red-brown or yellow. June. Switzerland. 1779.
„ „ *demi'ssa* (drooping). Transsylvania.
„ *niva'lis* (snowy). ¼. June. Northern and arctic regions (Britain).
„ *nudicau'lis* (naked-stemmed). ½. May. N.W. Amer.
„ *odontophy'lla* (toothed-leaved). ½–¾. White. July. Himalaya.
„ *oppositifo'lia* (opposite-leaved). ½. Purple. March. Northern and arctic regions (Britain).
„ „ *a'lba* (white). ½. White. March, April.
„ „ *amphi'bia* (amphibious). ½. A marsh-loving variety.
„ „ *blepharophy'lla* (eye-lashed-leaved). ½. Purple.
„ „ *cocci'nea* (scarlet). ½. Deep, bright red-purple. 1906.
„ „ *grandifo'ra* (large-flowered). ½. Flowers large.
„ „ *la'tina* (Latin). ½. Vivid purple. Robust variety. Italy. 1910.
„ „ *lyonæfo'lia* (Lyonia-leaved).
„ „ *ma'jor* (larger). ½. Flowers larger than the type.
„ „ *mi'nor* (smaller). ½. A small-flowered variety.
„ „ *pa'llida* (pale). ½. Pale purple. 1888.
„ „ *pyrena'ica* (Pyrenean). ½. Purple, large.
„ „ *pyrena'ica ma'xima* (largest). ½. Purple, very large. 1884.
„ „ *pyrena'ica ru'bra* (red). ½. Deep red-purple.
„ „ *pyrena'ica sple'ndens* (splendid). ½. Shining red-purple. 1884.
„ „ *pyrena'ica supe'rba* (superb). See S. OPPOSITIFOLIA PYRENAICA MAXIMA.
„ „ *rudolphia'na* (Rudolphian). ½. Purple. Plant small leaved, very dense.
„ „ *specio'sa* (showy). ½. Pale rose, very large; petals 6–8. 1910.
„ *pa'llida* (pale). ½–¾. Milk-white; ovary purple. May to July. Himalaya. 1885.
„ *panicula'ta* (panicled). See S. GERANIOIDES.
„ *parnassifo'lia* (Parnassus-leaved). See S. DIVERSIFOLIA.
„ *pa'tens* (spreading). See S. VALDENSIS.
„ *pectina'ta* (comb-like) of Pursh. See SPIRÆA PECTINATA.
„ *pectina'ta* (comb-like) of Schott, Nym, and Kotschy. See S. AIZOON PECTINATA.
„ *pedati'fida* (double-lobe-cleft). ½. May. Southern France.
„ *pedemonta'na* (Piedmontese). May. Piedmont. 1824.
„ „ *cervico'rnis* (stag's-horn). ½–¾. White. Leaves more acute. Corsica; Sardinia.
„ „ *cymo'sa* (cymose). See S. PEDEMONTANA.
„ *pelta'ta* (shield-like). 1–2. Pale rose. April. California. 1873. "Umbrella Plant."
„ *pennsylva'nica* (Pennsylvanian). 1½. Green, yellow. May. N. Amer. 1732.
„ „ *gla'bra* (smooth). 2. Green, yellow. May. N. Amer. 1732.
„ *pentada'ctylis* (five-fingered). ¼. May. Pyrenees. 1815.
„ *perdu'rans* (enduring). ½. White. March, April. Eastern Europe.
„ *planifo'lia* (flat-leaved). ½–⅔. Yellowish-white to dark purple. June, July. Europe.
„ „ *Facchi'ni* (Facchin's). ½–⅔. Dark purple.

S. platype'tala (broad-petaled). See S. SPONHEMICA PLATYPETALA.
„ *poli'ta* (polished). See S. GEUM POLITA.
„ *porophy'lla* (pore-leaved). ½–¾. Purple. May, June. S. Europe.
„ *Proby'nii* (Probyn's). See S. COCHLEARIS MINOR.
„ *propagi'nea* (offspring). See S. CLUSII PROPAGINEA.
„ *Pro'stii* (Prost's). ½. White. May. Spain.
„ *Pseu'do-cæ'sia* (false-grey). See S. ROCHELIANA.
„ *Pseu'do-Forste'ri* (false-Forster's). White. Leaves wedge-shaped.
„ *Pseu'do-sa'ncta* (false-sacred). ¼. Yellow. Leaves dark green. Thrace.
„ *pube'scens* (downy). Europe.
„ *pulche'lla* (pretty). See S. EXARATA.
„ *puncta'ta* (spotted). ½–¾. White, spotless. May. Siberia; N. Amer. 1821.
„ *purpura'scens* (purple). ½–1. Vinous red-purple. April, May. Himalaya. 1850.
„ *purpu'rea* (purple). See S. RETUSA.
„ *pygmæ'a* (pigmy). See S. MUSCOIDES PYGMÆA.
„ *pyramida'lis* (pyramidal). See S. COTYLEDON PYRAMIDALIS.
„ *pyrena'ica* (Pyrenean) of Scopoli. See S. ANDROSACEA.
„ *pyrena'ica* (Pyrenean) of Villars. See S. MUSCOIDES.
„ *pyrolæfo'lia* (Pyrola-leaved). See LEPTARRHENA AMPLEXIFOLIA.
„ *quinque'fida* (five-cleft). See S. SPONHEMICA.
„ *refle'xa* (reflexed). ½. White, with two purple spots on the base of the petals. N. Amer.
„ *Rege'li* (Regel's). ½. Yellow, orange-brown. June, July. Switzerland.
„ *retu'sa* (bitten-off). ½. Purple. May. S. Europe. 1826.
„ *rivula'ris* (brook). ½. June. Northern and arctic regions (Scotland).
„ *rochelia'na* (Rochelian). ½. White. April. Eastern Europe.
„ „ *coriophy'lla* (leather-leaved). ½. White.
„ *ro'sea* (rosy). See S. BIFLORA.
„ *rotundifo'lia* (round-leaved). 1. White, red. May. Europe. 1596.
„ „ *fonti'cola* (fountain-loving). 1. White, densely spotted purple above the middle. Hungary.
„ „ *glandulo'sa* (glandular). 1–2. White, spotted purple. Stem glandular downy. Italy.
„ „ *heucherifo'lia* (Heuchera-leaved). 1–1½. Purple, with spots. South-eastern Europe.
„ „ *repa'nda* (wavy-*edged*). 1. May. Caucasus. 1800.
„ *rupe'stris* (rock). See S. PETRÆA.
„ *sa'ncta* (sacred). ½. Yellow. March, April. Macedonia. 1882.
„ *sarmento'sa* (trailing). 1. June. China. 1771.
„ „ *cuscutæfo'rmis* (dodder-formed). See S. CUSCUTÆFORMIS.
„ „ *tri'color* (three-coloured). Leaves variegated with cream, rose, red, and flesh. 1881.
„ *sca'rdica* (Mt. Scardus). ½. White; flowers 3–11. March, April. Balkan Peninsula. 1908.
„ „ *obtu'sa* (blunt). ½. Flowers 1–3. White. March, April. 1905.
„ *Schmi'dtii* (Schmidt's). 1. Rose. Himalaya. 1878. Does not seem to differ from *S. ligulata*.
„ *Schrade'ri* (Schrader's). See S. HYPNOIDES SCHRADERI.
„ *sedoi'des* (Sedum-like). ½. Yellow. May. Europe. 1820.
„ *Seguie'ri* (Seguier's). ½. Yellow. June, July. Europe.
„ *semipube'scens* (slightly-downy). See S. PENNSYLVANICA.
„ *seti'gera* (bristle-bearing). See S. FLAGELLARIS.
„ *sibi'rica* (Siberian). ½. July. Siberia. 1802.
„ *spathula'ta* (spathulate). 2–3. White. June. Mt. Atlas; Algiers.
„ *spica'ta* (spiked). See S. PUNCTATA.
„ *sponhe'mica* (Sponhemian). ½. White. May, June. Europe (Britain).
„ „ *affi'nis* (allied). ½. White; petals inrolled at the edges.
„ „ *hi'rta* (hairy). ½. White. More hairy.
„ „ *lætevi'rens* (bright-green). ½. White. May, June. Scotland.
„ „ *platype'tala* (broad-petaled). ½. White. May June. Scotland.
„ *squarro'sa* (spreading). ½. White. May, June. Europe.

S. stella'ris (starry). ½. June. Northern and arctic regions (Britain).
„ „ *dissi'milis* (dissimilar). ½. June. Scotland.
„ „ *Schleiche'ri* (Schleicher's). Switzerland. 1819.
„ *stelleria'na* (Stellerian). See S. BRONCHIALIS CHERLERIOIDES.
„ *stenoglo'ssa* (narrow-tongued). Europe.
„ *Sternbe'rgii* (Sternberg's). See S. DECIPIENS STERNBERGII.
„ *stoloni'fera* (stolon-bearing). See S. SARMENTOSA.
„ *Stra'cheyi* (Strachey's). 1. Pink and white. April, May. Himalaya. 1851.
„ „ *a'lba* (white). 1. White. April, May. Himalaya.
„ „ *albiflo'ra pube'scens* (white-flowered-downy). 1. White. 1884.
„ *Stri'bnryi* (Stribnry's). ½. Red. Flower-stems drooping and branched. Bulgaria. 1909.
„ *taygе'tea* (Taygetan) of gardens. ½–1. White. May, June. Gardens. 1793.
„ *tellimoi'des* (Tellima-like). 1–2. Pale yellow. June, July. Japan. 1880.
„ *tene'lla* (delicate). ½. July. Corinthia. 1819.
„ *te'nera* (tender). See S. ANDROSACEA.
„ *thysano'des* (coarse-fringed-*leaved*). See S. CILIATA.
„ *tombeane'nsis* (Tombean). ½. White. April, May. Tyrol; Lombardy. 1888.
„ *transsylva'nica* (Transsylvanian). See S. MUTATA DEMISSA.
„ *tricuspida'ta* (three-pointed). May. Northern and arctic regions. 1824.
„ *tridenta'ta* (three-toothed). See S. HYPNOIDES.
„ *trifurca'ta* (three-forked). ½–1. White. May, June. Northern Spain. 1804. "Stag's-horn Rockfoil."
„ „ *ceratophy'lla* (horn-leaved). ½. White. May, June. Spain. 1804.
„ *tyrole'nsis* (Tyrolese). ½. White. April, May. Tyrol.
„ *umbro'sa* (shady). 1. Flesh. May. Western Europe (Britain). "London Pride," "St. Patrick's Cabbage."
„ „ *ogilvia'na* (Ogilvy's). 1. Pink, spotted with red-purple. May, June.
„ „ *puncta'ta* (dotted-*flowered*). 1. May. Ireland.
„ „ *serratifo'lia* (saw-leaved). May. Ireland.
„ *uniflo'ra* (one-flowered). See S. APHYLLA.
„ *valde'nsis* (Valdan) of Decandolle. ½. White. May. S. Europe.
„ *valde'nsis* (Valdan) of gardens. See S. COCHLEARIS MINOR.
„ *Vande'llii* (Vandell's). ½–¾. White. April, May. S. Europe.
„ *virginie'nsis* (Virginian). ½. May. N. Amer. 1790.
„ „ *flo're ple'no* (double-flowered). ½. White, double.
„ *visco'sa* (clammy). ½. May.
„ *vochine'nsis* (Vochinan). ½. White. May, June. Europe.
„ *Walla'cei* (Wallace's). ½. White. May to July. Gardens. 1882.
„ *Wettstei'nii* (Wettstein's). Europe.
„ *willkommia'na* (Willkommian). See S. EXARATA NERVOSA.
„ *Zimmete'ri* (Zimmeter's). ½. White. May, June. Europe.

SAXOFRIDERI'CIA. (Commemorative of *Frederick Augustus*, King of Saxony. Nat. ord. Rapateaceæ.)

Stove herbs of a robust character, with fleshy root-stock and requiring much water. Seeds; divisions or offsets. Fibrous loam and peat. A very moist atmosphere is necessary. Winter temp., 60° to 65°; summer, 70° to 90°.

S. subcorda'ta (somewhat-heart-shaped). 1–3. Brownish. Brazil. 1873.

SCABIO'SA. Scabious. (From *scabies*, the itch; said to cure the disorder. Nat. ord. *Teaselworts* [Dipsaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Hardy annuals and hardy herbaceous perennials. Seeds and divisions in spring; common garden soil.

ANNUALS.

S. atropurpu'rea (dark-purple). 1–2. Purple-brown. July. S. Europe, &c. 1629. "Sweet Scabious."
„ „ *a'lba* (white). 2. White. July. S. Europe. 1629.
„ „ *ca'rnea* (flesh). 3. Flesh. July. S. Europe. 1629.
„ „ *proli'fera* (proliferous). 3. Purple. July. S. Europe. 1629.
S. atropurpu'rea ro'sea (rose). 3. Red. July. S. Europe. 1629.
„ „ *variega'ta* (variegated). 3. Variegated. July. S. Europe. 1629.
„ *brachia'ta* (armed). 1½. Red. S. Europe; Asia Minor. 1826.
„ *legione'nsis* (Leon). 1½. Pink. July. Spain. 1820.
„ *lyra'ta* (lyrate). See S. SICULA.
„ *mari'tima* (maritime). 3. Purple or white. July. Mediterranean region. 1683.
„ *micra'ntha* (small-flowered). 1½. Pink. July. Eastern Europe; Caucasus. 1823.
„ *monspelie'nsis* (Montpelier). See S. STELLATA.
„ *negle'cta* (neglected). 1½. Red. June. Italy. 1825.
„ *palæsti'na* (Palestine) of D. Dietr. See S. BRACHIATA.
„ *palæsti'na* (Palestine). 1. Citron. July. Asia Minor; Syria. 1771.
„ *pectina'ta* (comb-like). 1½. Violet. July. Arabia. 1824.
„ *proli'fera* (proliferous). 1. Yellow. July. Syria. Cyprus. 1683.
„ *rota'ta* (wheel-shaped). 1½. Pink. July. Asia Minor; Persia. 1823.
„ *saxa'tilis* (rock). 1½. Pink. July. Spain. 1827.
„ *si'cula* (Sicilian). 1. Pink. July. S. Europe; Asia Minor. 1783.
„ *stella'ta* (starry). 1½. Blue. July. Western Mediterranean region. 1596.

HARDY PERENNIALS.

S. africa'na (African). 6. White. August. S. Africa. 1690. Greenhouse shrub.
„ *alpi'na* (alpine). See CEPHALARIA ALPINA.
„ *amæ'na* (lovely). Purple. June. Asia Minor; Persia.
„ *arve'nsis* (field). 2. Bluish-lilac or mauve. Summer. Europe (Britain). "Clodweed."
„ „ *flo're a'lbo* (white-flowered). 2. White. July. Britain.
„ *austra'lis* (southern). 1½. Purple. June. S. Europe. 1820.
„ *banna'tica* (Bannatic). 3. Pink. July. Bannat. 1802.
„ „ *a'lba* (white). 3. White. July. Gardens.
„ *candollea'na* (Candollean). Himalaya.
„ *capilla'ta* (long-haired). See S. GRAMUNTIA.
„ *carpa'tica* (Carpathian). See S. ARVENSIS FLORE ALBO.
„ *cauca'sica* (Caucasian). 1–2. Very pale blue. June, July. Causasus, &c. 1803.
„ „ *e'legans* (elegant). 1–2. Blue, 2½ in across.
„ „ *heterophy'lla* (various-leaved). 1–2. Pale purple, large.
„ *ceratophy'lla* (horn-leaved). See S COLUMBARIA.
„ *colli'na* (hill). 2. White. June. Bohemia. 1820.
„ *Columba'ria* (pigeon-coloured). 1. Light blue. July. Europe (Britain).
„ *commuta'ta* (changed). See S. COLUMBARIA.
„ *conna'ta* (joined). See S. CAUCASICA.
„ *coronopifo'lia* (buckhorn-leaved). See S. CRENATA.
„ *correvonia'na* (Correvonian). ½–¾. Pale yellow. Abkhasia, Transcaucasia. 1892.
„ *crena'ta* (notched). 2. Flesh. August. Mediterranean region. 1825.
„ *cre'tica* (Cretan). 1. Purple. June. Crete; Sicily. 1596. Greenhouse evergreen shrub.
„ *dicho'toma* (forked). 1. Pink. July. Sicily. 1804.
„ *dipsacifo'lia* (teasel-leaved). See S. SYLVATICA.
„ *e'legans* (elegant). See S. CAUCASICA.
„ *Fische'ri* (Fischer's). Dahuria.
„ *fumarioi'des* (Fumaria-like). Hungary.
„ *graminifo'lia* (grass-leaved). 1. Blue. July. S. Europe. 1683.
„ *gramu'ntia* (Gramont). 1. Light blue. July. Mediterranean region. 1596.
„ *holoseri'cea* (wholly-silky). 1. Blue. July. S. Europe. 1818.
„ *inca'na* (hoary). See S. SUAVEOLENS.
„ *integrifo'lia* (entire-leaved). Greece; Asia Minor.
„ *interme'dia* (intermediate). See S. LUSITANICA.
„ *isete'nsis* (Isetsk). 1. White or pink. July. Caucasus; N. Asia. 1801.
„ *japo'nica* (Japanese). 3. Lavender-blue. Summer. Japan. 1903.
„ *lancifo'lia* (lance-leaved). Algeria.
„ *leuca'ntha* (white-flowered). See CEPHALARIA LEUCANTHA.

S. leucophy'lla (white-leaved). Central Europe.
„ *longifo'lia* (long-leaved). Europe.
„ *lu'cida* (shining). 2. Blue. Europe. 1800.
„ „ *no'rica* (Norican). Carinthia.
„ *lusita'nica* (Portuguese). 1½. Blue. July. Europe. 1824.
„ *lu'tea* (yellow). 2. Yellow. June. Russia. 1820.
„ *macedo'nica* (Macedonian). Greece.
„ *magnifi'ca* (magnificent). Macedonia.
„ *mo'llis* (soft). See S. GRAMUNTIA.
„ *ni'tens* (shining). June. Azores. 1779.
„ *ochroleu'ca* (yellow-white). 1. Yellow. July. Europe, &c. 1517.
„ *orienta'lis* (oriental). Orient.
„ *paucise'ta* (few-bristled). See S. GRAMUNTIA.
„ *Pina'rdi* (Pinard's). Orient.
„ *plumo'sa* (plumy). Greece, &c.
„ *Po'rtæ* (Porta's). Europe.
„ *Pteroce'phala* (winged-head). ½. Purple. July. Greece.
„ *pube'scens* (downy). See S. COLLINA.
„ *pyrena'ica* (Pyrenean). 1. Purple. July. S. Europe. 1819.
„ *rupe'stris* (rock). See S. ISETENSIS.
„ *rutæfo'lia* (rue-leaved). 1. Scarlet. July. Western Mediterranean region. 1804.
„ *Salce'di* (Salced's). 1. White. June. Spain. 1823.
„ *Scopo'lii* (Scopol's). 2. Straw. July. S. Europe. 1819.
„ *seti'fera* (bristle-bearing). 2. White. July. S. Europe. 1826.
„ *silenifo'lia* (Silene-leaved). 1½. Red. July. Europe. 1826.
„ *specio'sa* (showy). Himalaya.
„ *stri'cta* (upright). See S. LUCIDA.
„ *suave'olens* (sweet-smelling). 1. Red. July. Europe; Asia Minor. 1826.
„ *Succi'sa* (bitten). 1–2. Blue. July. Europe (Britain). "Devil's-bit Scabious."
„ *sylva'tica* (wood). 2. White. June. Europe; Caucasus. 1818.
„ *syri'aca* (Syrian). See CEPHALARIA SYRIACA.
„ *tata'rica* (Tatarian). See CEPHALARIA TATARICA.
„ *transsylva'nica* (Transsylvanian). See CEPHALARIA TRANSSYLVANICA.
„ *triniæfo'lia* (Trinia-leaved). Greece; Rumelia.
„ *ucra'nica* (Ukrainic). 1. Light yellow. July. Europe; Asia Minor. 1713.
„ *urceola'ta* (urn-shaped). See S. RUTÆFOLIA.
„ *vesti'na* (clothed). Europe.
„ *webbia'na* (Webbian). See S. OCHROLEUCA.

SCÆVA. Hawk Fly. Of this genus there are several species, of which the most common are *S. ribesii* and *S. pyrastri*. Wherever aphides are abundant, whether on the cabbage, hop, or elsewhere, there is a fleshy-green maggot. This is the larva of a hawk-fly, and should be left undisturbed, as it is a voracious destroyer of plant-lice.

SCÆVOLA. (From *scæva*, the left hand; form of the corolla. Nat. ord. *Goodeniads* [Goodeniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Divisions and cuttings of young shoots; the tender species in heat; the greenhouse in a cold pit, under a bell-glass; sandy loam and turfy peat; the usual greenhouse and stove treatment.

STOVE EVERGREENS.

S. ivæfo'lia (Iva-leaved). White. August. Trinidad. 1820.
„ *Koeni'gii* (Koenig's). 2. Pale red or white. August. Tropics. 1810.
„ *Tacca'da* (Taccada). See S. KOENIGII.

GREENHOUSE HERBACEOUS.

S. alterna'ta (alternate-*leaved*). Purple. June. Swan River. 1844.
„ *anchusæfo'lia* (Anchusa-leaved). Blue. May. Swan River.
„ *attenua'ta* (thin-*leaved*). 2. Pale blue. June. Swan River. 1844.
„ *crassifo'lia* (thick-leaved). 3. White. September. Australia. 1805.
„ *cuneifo'rmis* (wedge-shaped). 1½. Blue. Australia. 1824.
S. fascicula'ta (bundled). August. Swan River.
„ *hi'spida* (bristly). 2. Lilac. July. Australia. 1827.
„ *microca'rpa* (small-fruited). 1½. Violet. July. N.S. Wales. 1790.
„ *multiflo'ra* (many-flowered). See S. NITIDA.
„ *ni'tida* (shining). Blue. July. Australia. 1840.
„ *pilo'sa* (thinly-hairy). 2. Blue. May. Australia.
„ *platyphy'lla* (broad-leaved). 2. White. May. Australia. 1841.
„ *suave'olens* (sweet-scented). 2. Blue. August. N.S. Wales. 1793.

SCALE, or **SCALY FERN.** *Asple'nium Ce'terach.*

SCALE INSECTS. These belong to the family Coccideæ, and to the class Homoptera. They are named scale insects from the scaly covering that protects the female. The larvæ or young are oval, active insects, with six legs, antennæ, and a long beak, which they insert in the stems or leaves, after they find a suitable situation, and when they have done this, the females settle down for life. Their legs and antennæ disappear, while the body grows larger and assumes a more rounded shape, but this varies with the species. When they settle down for life the body gets covered by a scale, excreted by the insect itself in the Coccinæ and Lecaninæ, or by the cast skins of the larvæ, together with an excretion in Diaspinæ. The male insect is an entirely different form of insect, with a slender body, two long antennæ, two delicate wings, and usually two slender filaments at the tail, but no mouth, so that it cannot do damage to plants. In some species, winged and wingless males occur, but in all cases they are scarce, and seldom seen.

Scale insects are very numerous in species, even in Britain. Many of them live on wild plants, on hardy trees and shrubs, including many that are planted for ornament or cultivated for their fruits. Though closely allied to aphides, they do not increase so fast, because they usually produce only one brood a year. They often prove very destructive, however, owing to their numbers, when allowed to multiply without check. With their long beaks they suck the juices of the plants they infest and thereby weaken or eventually kill them.

Some of the more common are Peach Scale (*Lecanium Persicæ*) on peach and plum trees; Apple Mussel Scale (*Mytilaspis pomorum*) on the trunk and branches of apple trees; Pear Oyster Scale (*Diaspis ostreæformis*) on pear trees; Camellia Scale (*Aspidiotus Camelliæ*) on Camellias; *A. palmarum*, on palms and cycads; *Diaspis Rosæ*, on roses; *Lecanium Hesperidum* on oranges; and *Dactylopius adonidum*, on a great variety of greenhouse plants.

Remedies that have been employed with greater or less success against these pests are numerous, but some of the most effective are kerosene and paraffin emulsions, kerosene solution, say one gill to five gallons of water, and strong solutions of common and soft soaps in water, say four ounces to the gallon. A good recipe for kerosene emulsion for scale consists of two gallons of kerosene, half a pound of common soap or soft soap, and one gallon of water. These are churned with a syringe till they form a creamy paint, and one part of the emulsion is diluted with nine parts of cold water.

SCALLION. See CIBOUL.

SCAMMONY. *Convo'lvulus Scammo'nia.*

SCAPHOSE'PALUM. (From *skaphe*, a boat or tube, and *sepalon*, a sepal; in allusion to the shape of the lateral sepals. Nat. ord. Orchidaceæ.)

Cool house, epiphytical orchids. Divisions. Fibre of peat, sphagnum, charcoal nodules, and crocks.

S. anchori'ferum (anchor-bearing). Purple ochre, with purple spots. Costa Rica. 1884.
„ *antenni'ferum* (antennæ-bearing). 1½. Greenish-yellow, lined with brown. 1890.
„ *bre've* (short). Yellow, with purple spots. British Guiana. 1883.
„ *gibbero'sum* (bulging). Dark red, with green tails. Colombia. 1876.
„ *microda'ctylum* (small-fingered). ½. Greenish-yellow and brown. 1893.
„ *ochtho'des* (warty). Colombia.
„ *pulvina're* (cushioned). Olive-green; tails purplish. Colombia. 1880.

S. puncta'tum (spotted). Pale green, spotted purple-brown. Colombia. 1888.
„ *swertiæfo'lium* (Swertia-leaved). Ochre-brown, purple. Colombia. 1880.

SCAPHYGLO'TTIS. (From *skaphe*, a boat or tub, and *glotta*, a tongue. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Divisions. Fibre of peat, sphagnum, and potsherds.
S. a'lba (white). ½. White. Country unknown. 1908.
„ *cogniauvia'na* (Cogniauxian). ½. Greenish-yellow. Brazil. 1905.
„ *Kiena'stii* (Kienast's). Brownish-green. Mexico. 1877.
„ *stella'ta* (starry). Violet. Guiana.
„ *viola'cea* (violet). Violet. Guiana.

SCARES are but very inefficient protections for fruits, as birds soon sit on the very branches which bear the maulkin. To frighten them effectually, it is best to employ boys for the short time scaring is required. Over seed-beds a net is the best protection; but threads tightened across the beds are very effectual.

SCARLET RUNNER. *Phaseolus multiflo'rus.*

SCELOCHI'LUS. (From *skelos*, a leg or shank, and *cheilos*, a lip; the lip is stalked. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Divisions when growth is commencing. Fibre of peat, sphagnum, and crocks in small pots, pans, or baskets.
S. carina'tus (keeled). ½. Sepals yellow; petals and lip purple and white. S. Amer. 1895.
„ *Linde'nii* (Linden's). Yellow, red. July. Venezuela.
„ *Otto'nis* (Otto's). Yellow, red. July. Venezuela. 1841.
„ *stenochi'lus* (narrow-lipped). See S. Lindenii.
„ *variega'tus* (variegated). ½. Whitish, lined with purple. Colombia.

SCHÆFFE'RIA. (Commemorative of *J. C. Schæffer*, a German naturalist. Nat. ord. Celastraceæ.)
Stove evergreen shrubs. Cuttings in sandy soil, in a close case, with bottom-heat. Loam, peat, and sand.
S. frute'scens (shrubby). 8–10. White. August. N. Amer.; W. Ind. 1793. "Crabwood."
„ *lateriflo'ra* (side-flowering). 8. White. St. Domingo. 1820.

SCHAUE'RIA. (Commemorative of *John Konrad Schauer*, a German. Nat. ord. Acanthaceæ.)
Subshrubby stove evergreen plants. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, a little peat or leaf-mould, and sand.
S. calyco'tricha (calyx-haired). 1–2. Yellow. February. Brazil. 1824.
„ *flavi'coma* (yellow-haired). 1–2. Yellow. Winter. Brazil. 1883.

SCHEE'LEA. (Commemorative of *Herr Scheele*, a noted German chemist. Nat. ord. Palmaceæ.)
Stove palms. Seeds. Loam, one-third peat, and sand.
S. exce'lsa (lofty). 40–50. Colombia. 1826.
„ *imperia'lis* (imperial). 40. Colombia. 1875.
„ *insi'gnis* (remarkable). 40–50. Brazil.
„ *kewe'nsis* (Kew). 25. Bright purple, small. Trop. Amer. 1897.
„ *u'nguis* (*clawed*). 5–10.

SCHEE'RIA. (In honour of *F. Scheer, Esq.* Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Now referred to Achimenes.)
S. lana'ta (woolly). See Achimenes lanata.
„ *mexica'na* (Mexican). See Achimenes Scheerii.

SCHEFFLERA. (A commemorative name. Nat. ord. Araliaceæ.)
Greenhouse evergreen shrub. Cuttings of ripe wood under a bell-glass. Loam, peat, and sand.
S. digita'ta (fingered). Green. New Zealand.

SCHELHA'MMERA. (Named after *C. C. Schelhammer*, a professor at Jena. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Uvularia.)
Greenhouse, purple-flowered, herbaceous perennials, from Australia. Divisions; sandy loam and fibrous peat; a cool greenhouse or a cold pit in winter.

S. multiflo'ra (many-flowered). 1½. 1824.
„ *undula'ta* (wavy-*leaved*). ½. June. 1824.

SCHELLO'LEPIS. (From *skellos*, distorted, and *lepis*, a scale. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Polypodium.)
S. amœ'na (lovely). See Polypodium amœnum.
„ *verruco'sa* (warted). See Polypodium verrucosum.

SCHI'MA. (Apparently from *schizo*, to split or cleave; the valves of the capsule are split down the middle. Nat. ord. Ternströmiaceæ.)
Stove, evergreen tree. Cuttings of mature wood in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
S. Noro'nhæ (Noronha's). 15–20. White. Malaya. 1824.
„ *supe'rba* (superb). See S. Noronhæ.

SCHI'NUS. (The Greek name for *Pista'chia lenti'scus*. Nat. ord. *Terebinths* [Anacardiaceæ]. Linn. 22-*Dioecia*, 9-*Decandria*.)
Greenhouse, green-flowered evergreens. Cuttings of ripe shoots in sand, under a bell-glass, and in a mild heat, in spring; loam and peat. Winter temp., 45°; summer, 60° to 75°.
S. denta'tus (toothed). 10–20. White. June. Sandwich Islands. 1795.
„ *depe'ndens* (hanging-down). 10–20. Green, white, or yellow. Brazil. 1790.
„ *latifo'lius* (broad-leaved). 20. Yellowish. June. Chili. 1830.
„ *Mo'lle* (Molle). 20. August. Trop. Amer. 1597. "Pepper-Tree."
„ *terebinthifo'lius* (Terebinthus-leaved). 20. Brazil. 1829.
„ *virga'tus* (twiggy). 8. June. Lima. 1822.

SCHISMATOGLO'TTIS. (From *schisma, schismatos*, a separation; alluding to the early falling away of the spathe. Nat. ord. Araceæ.)
Stove perennial herbs with ornamental foliage. Divisions. Fibrous loam, lumpy peat, leaf-mould, and sand. Atmospheric moisture and shade are necessary.
S. crispa'ta (crisped). Leaves dark green, with a median grey band. Borneo. 1881.
„ *deco'ra* (becoming). Leaves thickly blotched with silver-grey. Borneo. 1884.
„ *latifo'lia* (broad-leaved). See S. rupestris.
„ *Lava'llei* (Lavalle's). Leaves bright green, blotched with grey. Malaya. 1881.
„ „ *immacula'ta* (spotless). Leaves bright green, spotless; purple beneath. Java. 1882.
„ „ *lansbergia'na* (Lansbergian). See S. Lavallei immaculata.
„ „ *purpu'rea* (purple). Leaves blotched with grey, purple beneath. Sumatra. 1882.
„ *longi'spatha* (long-spathed). Leaves feathered with light grey along the middle. Borneo. 1881.
„ *neoguinee'nsis* (New Guinean). Leaves with yellow-green blotches. New Guinea. 1879.
„ *pi'cta* (painted). Leaves feathered with grey along the middle. Java. 1864.
„ *pictura'ta* (pictured). Malaya.
„ *pu'lchra* (beautiful). Leaves sea-green above, with silvery spots. Borneo. 1884.
„ *rupe'stris* (rock). Java. 1882.
„ *siame'nsis* (Siamese). Leaves shining green, spotted with white. Siam. 1885.
„ *variega'ta* (variegated). See S. neoguineensis.

SCHIVERE'CKIA. (Named after *A. Schiureck*, a Russian botanist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Now referred to Alyssum.)
S. podo'lica (Podolian). See Alyssum podolicum.

SCHIZÆ'A. (From *schizo*, to cleave, or cut; the appearance of the fan-like fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Brown-spored Ferns. See Ferns.

Greenhouse Ferns.

S. bi'fida (twice-cut). ½. June. Australia and New Zealand. 1822.
„ *pusi'lla* (small). ½. June. N. Amer.
„ *rupe'stris* (rock). ½. June. Temperate Australia. 1822.

STOVE FERNS.

S. dicho'toma (dichotomous). 1–2½. Tropics and subtropics.
„ *digita'ta* (fingered). 1–1½. Himalaya to Ceylon; Malaya.
„ *e'legans* (elegant). ¾. June. Trinidad. 1819.
„ *malacca'na* (Malaccan). ½–¾. April. Philippines; Malaya.
„ *penicilla'ta* (pencilled). See S. PENNULA.
„ *pe'nnula* (slightly-pinnate). 1. June. W. Ind. to Rio Janeiro. 1816.
„ *propi'nqua* (related). See S. MALACCANA.

SCHIZA'NDRA. (From *schizo*, to cut, and *aner*, the male organ; split stamens. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 21-*Monœcia*, 5-*Pentandria*.)

Cuttings of ripe shoots in sand, under a bell-glass, and kept only a little higher than the temperature of a cold pit or greenhouse; sandy, fibrous loam, and a little leaf-mould. Winter temp., 40° to 45°. *S. cocci'nea* lived several years against a wall at Chiswick.

S. cocci'nea (scarlet-*flowered*). Scarlet. June. N. Amer. 1806.
„ *chine'nsis* (Chinese). 20. Pale rose or pink. Summer. China; Japan. 1860.
„ „ *ru'bra* (red). 15–20. Copper-red. N. China. 1907.
„ *hancea'na* (Hancean). Green, scarlet. S. China. 1855.
„ *He'nryi* (Dr. Henry's). White. Fruits fleshy, edible. Central China. 1905.
„ *marmora'ta* (marbled). Borneo. 1860. Stove climber.
„ *propi'nqua* (near-related). 5–8. Pale yellow. July. Himalaya. 1828.

SCHIZA'NTHUS. Butterfly Flower. (From *schizo*, to cut, and *anthos*, a flower; the petals cut into fringes. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Seeds in autumn, to be kept in a greenhouse, for early blooming; seeds in a slight hotbed, in March, for successive blooming in pots, and early blooming out of doors; seed in the open air in the end of April. Beautiful annuals, fitted either for pot or border culture; rich, light, fibrous loam; when kept over the winter, the soil should be poor, and the plants near the glass.

S. ca'ndidus (whitish). 2. White. Chili. 1843.
„ *evansia'nus* (Evansian). A doubtful species. 1841.
„ *Gra'hami* (Graham's). 2. Variegated. August. Chili. 1831.
„ „ *lilaci'nus* (lilac). Lilac, golden-yellow. 1887.
„ *Hoo'keri* (Hooker's). 2. Rose, lilac. August. Chili. 1828.
„ *inca'nus* (hoary). See S. RETUSUS.
„ *pinnati'fidus* (leaflet-cut). See S. PINNATUS.
„ *pinna'tus* (leafleted). 2. White, purple. August. Chili. 1822.
„ „ *hu'milis* (dwarf). 1. Crimson. July. Valparaiso. 1831.
„ „ *viola'ceus* (violet). 3. Purple. July. Chili. 1853.
„ *po'rrigens* (spreading-*stalked*). See S. PINNATUS.
„ *Prie'stii* (Priest's). See S. PINNATUS.
„ *retu'sus* (bitten-off-*petaled*). 2. Variegated. August. Chili and Peru. 1831.
„ „ *trimacula'tus* (three-blotched). Purple-crimson, with three golden-yellow spots. 1906.
„ *viola'ceus* (violet). See S. PINNATUS VIOLACEUS.

SCHIZO'BASIS. (From *schizo*, to cut, and *basis*, the base; in allusion to the separation of the old flower from the receptacle. Nat. ord. Liliaceæ.)

Greenhouse bulb. Seeds and offsets. Loam, leaf-mould, and plenty of sand.

S. intrica'ta (intricate). ¾. White, green. S. Africa. 1875.

SCHIZOCÆ'NA. (From *schizo*, to cut, and *kainos*, unusual. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

S. Bruno'nis (Brown's). See CYATHEA BRUNONIS.
„ *sinua'ta* (scolloped). See CYATHEA SINUATA.

SCHIZOCA'SIA. (From *schizo*, to cleave, and *casia*; to distinguish it from Colocasia and Alocasia. Nat. ord. Araceæ. Now referred to Alocasia.)

S. Po'rtei (Porte's). See ALOCASIA PORTEI.
„ *Regnie'ri* (Regnier's). See ALOCASIA REGNIERI.

SCHIZOCO'DON. (From *schizo*, to cut, and *codon*, a bell; the bell-shaped flowers are deeply cut. Nat. ord. Diapensiaceæ.)

A dwarf, hardy, evergreen alpine of great beauty for the rockery. Divisions in spring. Loam, with some peat and sand, shaded from noon onwards.

S. soldanelloi'des (Soldanella-like). ¼. Deep rose, shading to blush white at the fringed margin. Japan. 1892.

SCHIZOLO'BIUM. (From *schizo*, to split, and *lobos*, a pod; in allusion to the leathery outer coat of the pod splitting away from the thin interior membrane. Nat. ord. Leguminosæ.)

Stove evergreen tree. Seeds; cuttings of ripe wood in sand, in a close case, with bottom-heat. Loam, peat, and sand.

S. exce'lsum (lofty). Yellow. Brazil. 1874.

SCHIZOLO'MA. (From *schizo*, to cut, and *loma*, an edge; edges of fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Lindsaya.)

S. ensifo'lia (sword-leaved). See LINDSAYA ENSIFOLIA.
„ *heterophy'lla* (various-leaved). See LINDSAYA HETEROPHYLLA.

SCHIZOME'RIA. (From *schizo*, to cut, and *meros*, a part; cut petals. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Allied to Weinmannia.)

Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, in spring; loam and peat, with silver sand and charcoal. Winter temp., 40° to 48°.

S. ova'ta (egg-*leaved*). 8. White. Australia. 1825.

SCHIZOPE'TALON. (From *schizo*, to cut, and *petalon*, a petal. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Seeds in a slight hotbed in March, pricked out into pots, and grown in an airy greenhouse, or transplanted to the front of borders in May; sandy loam and leaf-mould; if in a pot, add a little peat.

S. Wa'lkeri (Walker's). 2. White. June. Chili. 1822.

SCHIZOPHRA'GMA. (From *schizo*, to cut, and *phragma*, the wall of an enclosure; in reference to the splitting of the seed-vessel between the ribs at maturity. Nat. ord. Saxifragaceæ.)

Hardy shrubs very closely allied to Hydrangea. Seeds; cuttings in sandy soil under a bell-glass, in gentle heat. Fibrous loam, leaf-mould, and sand, if in pots, and well-drained soil in the open.

S. hydrangeoi'des (Hydrangea-like). White or flesh. Japan. 1879.
„ *integrifo'lia* (entire-leaved). White; bracts pure white. China. 1903.

SCHIZOSTYLIS. (From *schizo*, to cut, and *stulos*, a style; the style is deeply divided. Nat. ord. Iridaceæ.)

An evergreen, relatively hardy bulbous plant, grown in the open, and potted up in September to bloom in a greenhouse during November. Divisions in spring. Light, rich soil.

S. cocci'nea (scarlet). 1½. Crimson. November. S. Africa. 1864.

SCHLEI'CHERA. (Commemorative of *M. Schleicher*. Nat. ord. Sapindaceæ.)

Stove evergreen tree. Cuttings of ripe wood in sand, in a close case, with bottom-heat. Fibrous loam, a little peat, and sand.

S. tri'juga (three-pair-leaved). 20. India; Malaya. 1820.

SCHLI'MMIA. (Commemorative of *M. Schlim*, a collector of plants for M. Linden. Nat. ord. Orchidaceæ.)

Stove epiphytical orchids. Divisions. Fibre of peat, sphagnum, and crocks.

S. jasminodo'ra (jasmine-scented). White. Colombia. 1852.
„ *tri'fida* (three-cut). White, purple; lip white and orange. Colombia. 1876.

SCHLUMBERGE'RIA. (Commemorative of the Belgian horticulturist, *F. Schlumberger*. Nat. ord. Bromeliaceæ.)

Stove evergreen perennials. Suckers. Fibrous loam, lumpy peat, leaf-mould, and sand.

S. Linde'ni (Linden's). Peru. 1883.
„ *morrenia'na* (Morrenian). 3. Yellow; bracts dark purple. Ecuador or Peru. 1883.
„ *Roe'zlii* (Roezl's). 3. White and green. Peru. 1878.
„ *vire'scens* (greenish). See S. ROEZLII.

SCHMIDE'LIA. (Named after *C. C. Schmidel*, a German botanist. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Kœlreuteria.)
Stove, white-flowered evergreens. Cuttings of ripe shoots in sand, under a bell-glass, in the beginning of summer, and placed in a mild bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 85°.
S. Comi'nia (Cominia). 20. Jamaica. 1778.
„ *integrifo'lia* (whole-leaved). See ALLOPHYLUS COBBE.
„ *occidenta'lis* (western). 8. W. Ind. 1828.
„ *racemo'sa* (racemed). See ALLOPHYLUS COBBE.
„ *serra'ta* (saw-*leaved*). See ALLOPHYLUS COBBE.

SCHŒ'NIA. (In bonour of *Dr. Schœn*, a botanical artist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Pteropogon and Helichrysum.)
A tender annual. Sow end of March in moderate heat; transplant seedlings into small pots in same heat; plant four or five in an eight-inch pot; gradually harden; and when in flower place in greenhouse.
S. cassinia'na (Cassinian). 1. Pink. May. Australia. 1846.
„ *oppositifo'lia* (opposite-leaved). See S. CASSINIANA.

SCHŒ'FFIA. (Commemorative of *John Schœff*, a German botanist. Nat. ord. Olacaceæ.)
Greenhouse shrub. Cuttings in sand, under a hand-light in gentle heat.
S. fra'grans (fragrant). 10–15. Light yellow. June. Himalaya. 1827.

SCHŒNLA'NDIA GABONE'NSIS. See CYANASTRUM CORDIFOLIUM.

SCHŒ'NUS. (From *schoinos*, made of rushes. Nat. ord. Cyperaceæ.)
An interesting rush-like plant for the bog garden. Divisions. Marshy or boggy soil.
S. ni'gricans (blackening). 1½–2. Heads black. June, July. Cosmopolitan (Britain). "Bog Rush."

SCHOMBU'RGKIA. (Named after *Sir R. Schomburgk*. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Cattleya.)
Stove orchids, grown on blocks. See ORCHIDS.
S. carina'ta (keeled). See S. LYONSII.
„ *chionodo'ra* (snow-scented). 1–2. White; lip with a purple spot. Central Amer. 1886.
„ „ *kimballia'na* (Kimballian). Light purple. 1888.
„ *cri'spa* (curled-*flowered*). 3. Yellow, brown, pink. January. British Guiana. 1844.
„ *grandiflo'ra* (large-flowered). See S. TIBICINIS GRANDIFLORA.
„ *Humbo'ldtii* (Humboldt's). 3–4. Lilac, purple; lip amethyst-purple. Venezuela. 1887.
„ *lepida'ssima* (very-slender). 3½. Purple. 1889.
„ *Lyo'nsii* (Lyons's). 3. White, blotched with purple; lip yellow, white. Jamaica. 1853.
„ *margina'ta* (bordered. *Spread Eagle*). 4. Orange. August. Guiana. 1834.
„ „ *immargina'ta* (without-margin). Without a yellow margin. 1887.
„ *ro'sea* (rosy). Deep red and pale rose. Sierra Nevada. 1893.
„ *sanderia'na* (Sanderian). 3–4. Rosy-carmine. February. 1891.
„ *thomsonia'na* (Thomsonian). Light yellow, mauve; lip blackish-purple. 1887.
„ *Tibi'cinis* (cow-horn). 8. Pink, white. April. Honduras. 1834.
„ „ *grandiflo'ra* (large-flowered). 5. Brown, rose. May. Honduras. 1844.
„ *undula'ta* (wavy-*petaled*). Purple. January. Venezuela. 1843.

SCHO'TIA. (Named after *R. V. Schot*, who travelled with Jacquin. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Amherstia.)
Greenhouse evergreen shrubs, from South Africa. Cuttings of half-ripened, young, stubby shoots in sand, under a bell-glass; sandy peat and fibrous loam; flowers chiefly at the end of stiff young shoots.
S. ala'ta (winged). 5. Crimson. July. 1816.
„ *brachype'tala* (short-petaled). S. Africa.
„ *latifo'lia* (broad-leaved). Purple, white. June. 1810.
„ *simplicifo'lia* (simple-leaved). See BANDEIRÆA SIMPLICIFOLIA.
„ *specio'sa* (showy). 5. Scarlet. August. 1759.
„ *stipula'ta* (*large*-stipuled). See S. SPECIOSA.
„ *tamarindifo'lia* (tamarind-leaved). See S. SPECIOSA.

SCHOUSBŒ'A. (Commemorative of *P. K. A. Schousbœ*, a Danish consul. Nat. ord. Combretaceæ. Now referred to Cacoucia.)
S. cocci'nea (scarlet). See CACOUCIA COCCINEA.

SCHOU'WIA. (Named after *J. F. Schouw*, a Danish botanist. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)
Hardy annual. Seeds in light, sandy soil, in April.
S. ara'bica (Arabian). ½. Purple. June. Arabia. 1837.

SCHRA'DERA. (Commemorative of *H. Adolf Schrader*, a German botanist. Nat. ord. Rubiaceæ.)
Stove shrub. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
S. Cephalo'tes (headed). 3–4. White. July. Jamaica. 1820.

SCHRA'NKIA. (Named after *F. P. Schrank*, a German botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Allied to Mimosa.)
The leaves yield to the touch like those of the sensitive plant *Mimo'sa pu'dica*. Herbaceous plants. Division of the roots in spring, and cuttings of the young shoots in spring, in sandy soil, under a bell-glass, and a little bottom-heat; sandy loam and fibrous peat. Plant-stove and cool greenhouse treatment.
S. aculea'ta (prickly). 2. Red. July. Vera Cruz. 1733. Stove.
„ *leptoca'rpa* (slender-podded). Rose. July. St. Domingo. 1837. Stove.
„ *uncina'ta* (hooked). 2. Red. July. N. Amer. 1789. Greenhouse.

SCHRE'BERA A'LBENS. See ELÆODENDRON GLAUCUM.

SCHUBE'RTIA. (Named after *M. Schubert*, a Polish botanist. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Now referred to Araujia.)
S. auri'coma (yellow-haired). See ARAUJIA GRANDIFLORA.
„ *Gra'hami* (Graham's). See ARAUJIA GRANDIFLORA.
„ *grandiflo'ra* (large-flowered). See ARAUJIA GRANDIFLORA.
„ *grave'olens* (strong-scented). See ARAUJIA GRANDIFLORA.

SCHWA'BEA. (Commemorative of *Herr Schwabe*, a German. Nat. ord. Acanthaceæ. Allied to Justicia.)
Evergreen stove herb. Cuttings in sand, in a propagating case, with bottom-heat. Fibrous loam, leaf-mould, and sand.
S. cilia'ris (eye-lashed). 1–2. Trop. Africa.

SCHWÆGRICHE'NIA FLA'VIDA. See ANIGOZANTHOS FLAVIDA.

SCHWA'NNIA. (Commemorative of *Theodor Schwann*, a German physician. Nat. ord. Malpighiaceæ.)
A stove evergreen, woody climber. Cuttings of short side-shoots, in a mature condition, in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, and sand.
S. e'legans (elegant). Red. June, July. Brazil. 1842.

SCHWEIGGE'RIA. (Named after *Professor Schweigger*, a German botanist. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen. Cuttings of firm side-shoots, 2 or 3 inches in length, in sand, under a bell-glass, in May, and in a sweet hotbed. Winter temp., 50° to 55°; summer, 60° to 85°.
S. frutico'sa (shrubby). White. May. Brazil. 1838.
„ *pauciflo'ra* (few-flowered). See S. FRUTICOSA.

SCIADO'CALYX. (From *skias*, a parasol, or tent, and *kalux*, the calyx; in reference to the shape of the latter. Nat. ord. Gesneraceæ. Now referred to Isoloma.)

S. digitalæflo'ra (foxglove-flowered). See ISOLOMA DIGITALIFLORUM.

„ *Warscewi'czii* (Warscewicz's). See ISOLOMA WARSCEWICZII.

SCIADOPHY'LLUM. (From *skias, skiados*, a parasol, and *phullon*, a leaf; in allusion to the shape of the leaves. Nat. ord. Araliaceæ.)

Stove, evergreen shrubs or small trees. Cuttings of half-mature wood in sand, in a close case, with bottom-heat. Fibrous loam, a third of peat, and sand. The Peruvian species will thrive in a greenhouse.

S. acumina'tum (long-pointed). 10–15. Yellow. Peru. Climber.

„ *ano'malum* (anomalous). 15–20. Greenish-white. Trinidad. 1817.

„ *Bro'wnii* (Brown's). 15–20. White. Jamaica. 1793.

„ *co'nicum* (conical). 8–10. Reddish. Peru. Climber.

„ *digita'tum* (fingered). See PACHIRA INSIGNIS.

„ *ferrugi'neum* (rusty). 40. White. Trinidad. 1826.

„ *pedicella'tum* (long-stalked). 8–10. Purple. Peru. Climber.

„ *penta'ndrum* (five-anthered). 5–8. Reddish. Peru. 1820.

SCIADO'PITYS. (From *skias, skiados*, a parasol, and *pitus*, a pine or fir-tree; literally, the parasol pine, in allusion to the whorls of leaves. Nat. ord. Coniferæ.)

A hardy evergreen conifer. Seeds. Rich, deep, and well-drained soil.

S. verticilla'ta (whorled). 60–120. Japan. 1861. "Umbrella Pine."

„ „ *variega'ta* (variegated). Some leaves of each whorl are yellow. 1887.

SCIARA. *S. pyri*, Small Pear Midge. *S. Schmidbergeri*, Large Pear Midge. When a fallen pear is cut open, it is often found core-eaten, and with a brown powder marking the progress of the assailant. This is caused by the larva of these insects. The midges appear early in July. The Small Pear Midge has club-shaped halteres, the club dark brown, and the stem whitish. When alive, the abdomen is of a lead colour, with black wings. The head and thorax are black, as are also the antennæ; the palpi are of a pale yellow, the feet whitish, and the tarsi black.

The *Large Pear Midge* appears about the same time as the preceding. The female is little more than a line long, and half a line thick, also much larger than the smaller pear midge; the male is more slender, and somewhat shorter. The antennæ are blackish, and not so long as the body. The head is black and shining, as is also the thorax; the proboscis ash-grey, the abdomen of the male a deep black, that of the female browner, with black wings; the anal point, however, is quite black, the feet ash-grey, and the tarsi and wings black. They both survive the winter, and deposit their eggs in the blossom, when it opens in early spring. The larva eats its way into the core of the young fruit, and again eats its way out at one side when the time arrives for it to bury itself in the ground, and pass into the chrysalis form.—*Kollar.*

SCI'LLA. Squill. (From *skullo*, to injure; the bulbs said to be poisonous. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Offsets; light, sandy soil.

TENDER BULBS.

S. Adla'mi (Adlam's). 1. Mauve-purple. Natal. 1891.

„ *Be'llii* (Bell's). ½. Dusky blue. March. Persia. 1884.

„ *Berthelo'tii* (Berthelot's). Pink. Canary Islands. 1862.

„ *biparti'ta* (two-parted). See S. LINGULATA.

„ *brevifo'lia* (short-leaved). See HYACINTHUS BREVIFOLIUS.

„ *Bucha'nani* (Buchanan's). 1. Green; filaments purple. Nyasaland. 1893.

„ *chine'nsis* (Chinese). Light blue. May. China. 1819.

„ *conci'nna* (neat). Rose-purple. S. Africa. 1862.

„ *co'ncolor* (one-coloured). Purple, green. S. Africa. 1862.

S. Coope'ri (Cooper's). Purple. S. Africa. 1866.

„ *floribu'nda* (free-flowering). 1. Green, purple. S. Africa. 1862.

„ *Galpi'ni* (Galpin's). Transvaal.

„ *hæmorrhoida'lis* (blood-coloured). ½. Blue. August. Canary Islands. 1585.

„ *humifu'sa* (ground-spread). ¼–½. Reddish-green. Natal. 1881.

„ *hyacinthoi'des* (hyacinth-like) of Desfont. See S. HÆMORRHOIDALIS.

„ *i'ndica* (Indian). ½. Greenish-purple. India. 1816.

„ *Krau'ssii* (Krauss's). Natal.

„ *lanceæfo'lia* (lance-leaved). ½. White, green. May. S. and Trop. Africa. 1800.

„ *lanceola'ta* (lance-shaped) of Baker. ½. Greenish-purple. S. Africa. 1774.

„ *lanceola'ta* (lance-shaped) of Viv. See URGINEA MARITIMA.

„ *laxiflo'ra* (loose-flowered). ½. Green; filaments purple. S. Africa. 1891.

„ *Ledie'ni* (Ledien's). Green, with purple tube. Congo. 1889.

„ *linearifo'lia* (linear-leaved). Dusky purple. S. Africa. 1862.

„ *li'vida* (livid). ½. Green, tinted livid purple. S. Africa. 1883.

„ *lora'ta* (thong-shaped). Purple-green. S. Africa. 1862.

„ *Maco'wani* (Macowan's). ½. Green. S. Africa. 1875.

„ *mari'tima* (maritime). See URGINEA MARITIMA.

„ *maurita'nica* (Mauritian). See S. VINCENTINA.

„ *micro'scypha* (small-boat). 1. Green. S. Africa. 1881.

„ *natale'nsis* (Natal). Blue. Natal. 1863.

„ „ *so'rdida* (dirty). Leaves shaded with brown.

„ *ovatifo'lia* (ovate-leaved). See S. LANCEÆFOLIA.

„ *pallidiflo'ra* (pale-flowered). 1. White. S. Africa. 1870.

„ *paucifo'lia* (few-leaved). Green, white. S. Africa. 1862.

„ *pe'ndula* (drooping). 1–1½. Green; filaments lilac; anthers purple. Natal. 1878.

„ *plu'mbea* (lead-coloured). 1. Lead. May. S. Africa. 1812.

„ *polya'ntha* (many-flowered). 1. Purple, green. S. Africa. 1878.

„ *prasi'na* (leek-green). Green, purple. S. Africa. 1870.

„ *pri'nceps* (chief). Pale green, purple. S. Africa. 1862.

„ *rigidifo'lia* (rigid-leaved). S. and Trop. Africa.

„ *socia'lis* (social). Pale green. S. Africa. 1862.

„ *spathula'ta* (spathulate). ½. Green, purple. S. Africa. 1862.

„ *subglau'ca* (somewhat-glaucous). Purple. S. Africa. 1862.

„ *subsecu'nda* (somewhat-one-sided). ½. Brownish; filaments purple. S. Africa. 1881.

„ *tri'color* (three-coloured). ½. Green. Leaves slightly blotched. S. Africa. 1880.

„ *undula'ta* (waved). ½. Green, striped. May. S. Africa. 1819.

„ *versi'color* (changeable-coloured). Green-white. S. Africa. 1872.

„ *vincenti'na* (St. Vincent). ½. Blue. April. Portugal. 1819.

„ *zebri'na* (zebra-striped). Yellow-green, purple. S. Africa. 1862.

HARDY BULBS.

S. amœ'na (pleasing) of Bory. and Chaub. See S. MESSENIACA.

„ *amœ'na* (pleasing) of Linnæus. ½. Blue. March. Levant. 1596.

„ „ *sibi'rica* (Siberian). See S. SIBIRICA.

„ *amœ'nula* (pretty). See S. SIBIRICA AMŒNULA.

„ *antitau'rica* (Anti-Taurian). See S. SIBIRICA TAURICA.

„ *autumna'lis* (autumnal). ½. Pink. August. Europe (England).

„ „ *a'lba* (white). ½. White. August.

„ „ *ma'jor* (larger). ½. Pink. August. Britain.

„ *axilla'ris* (axillary). 1. White and green outside, violet edged, white inside. 1903.

„ *Bertolo'nii* (Bertoloni's). See S. ITALICA.

„ *bifo'lia* (two-leaved). ½. Blue. March. Europe; Asia Minor.

„ „ *a'lba* (white). ½. White. March. S. Europe.

„ „ *ro'sea* (rosy). Rose. March.

S. bifo'lia rube'rrima (reddest). Red when opening. Leaves chocolate. 1906.
„ „ *ru'bra* (red). ¼. Red. March. S. Europe.
„ „ *splé'ndens* (splendid). Intense cobalt blue. March. 1906.
„ „ *tau'rica* (Taurian). A many-flowered form. March. 1890.
„ „ *Whitta'llii* (Whittall's). A strong growing form.
„ *bruma'lis* (winter). Blue. May. N. Amer. 1841.
„ *campanula'ta* (bell-*flowered*). See S. HISPANICA and varieties.
„ *ce'rnua* (drooping). See S. FESTALIS CERNUA.
„ *cili'cica* (Cilician). ¼. Bright blue. Cilicia, Asia Minor. 1908.
„ *Clu'sii* (Clusius'). See S. PERUVIANA GLABRA.
„ *corymbo'sa* (corymbed). See HYACINTHUS CORYMBOSUS.
„ *Cupa'ni* (Cupani's). 1. Purple. June. Sicily. 1834.
„ *elonga'ta* (elongated). See S. PERUVIANA.
„ *erio'phora* (wool-bearing). See S. HYACINTHOIDES.
„ *escule'nta* (eatable). See CAMASSIA FRASERI.
„ *fa'llax* (deceiving). See S. OBTUSIFOLIA FALLAX.
„ *festa'lis* (gay). 1–1½. Blue. April, May. Western Europe (Britain). "English Bluebell," "Wild Hyacinth."
„ „ *a'lba* (white). 1. White. May. Britain.
„ „ *ca'rnea* (flesh). 1. Flesh. May. Britain.
„ „ *ce'rnua* (drooping). ½. Pink. March. Spain. 1815.
„ „ *ro'sea* (rosy). 1. Rose. May. Britain.
„ „ *ru'bra* (red). 1. Red. May.
„ *hispa'nica* (Spanish). 1. Dark blue. May. Spain. 1683.
„ „ *a'lba* (white). 1. White. May. Spain. 1683.
„ „ *ca'rnea* (flesh). 1. Pink. May. Spain. 1683.
„ „ *ru'bra* (red). 1. Rose. May.
„ *Hohena'ckeri* (Hohenacker's). Blue. April. Caucasus.
„ *Hu'ghii* (Hugh's). See S. PERUVIANA.
„ *hyacinthoi'des* (hyacinth-like) of Linnæus. S. Europe.
„ „ *stri'cta* (erect). Flower-stalks erect. Palestine. 1890.
„ *ita'lica* (Italian). ¼. Blue. May. S. Europe. 1605.
„ *leucophy'lla* (white-leaved). Bright purple, tipped green. Persia. 1893.
„ *Li'lio-hyaci'nthus* (lily-hyacinth). 1. Blue. June. S. Europe. 1597.
„ *lingula'ta* (tongue-shaped). Blue. N. Africa. 1887.
„ „ *a'lba* (white). White. N. Africa. 1887.
„ „ *lilaci'na* (lilac). Lilac. N. Africa. 1887.
„ *lusita'nica* (Portuguese). ¼. Blue. May. Portugal. 1777.
„ *messeni'aca* (Messenian). 1. Pale blue. Greece. 1905.
„ *monophy'lla* (one-leaved). Blue. May. S. Europe. 1821.
„ *no'n-scri'pta* (undescribed). See S. FESTALIS and varieties.
„ *nu'tans* (nodding). See S. FESTALIS.
„ *obtusifo'lia* (blunt-leaved). ¼. Blue. March. Sardinia; N. Africa. 1829.
„ „ *fa'llax* (deceiving).
„ *odora'ta* (sweet-scented). Blue. May. Spain. 1818.
„ *pa'tula* (spreading). 1. Blue. May. Europe.
„ *peruvia'na* (Peruvian). 1. Dark blue. May. Mediterranean region. 1607.
„ „ *a'lba* (white). 1. White. May. S. Europe. 1607.
„ „ *di'scolor* (two-coloured-*flowered*). 1. Buff. May. Portugal. 1843.
„ „ *gla'bra* (smooth).
„ *pomeridia'na* (afternoon). See CHLOROGALUM POMERIDIANUM.
„ *præbracteа'ta* (long-bracted). See S. PERUVIANA.
„ *præ'cox* (early). See S. SIBIRICA.
„ *prate'nsis* (meadow). Blue. May. Hungary. 1827.
„ *pu'bens* (downy). See S. PERUVIANA.
„ *pu'mila* (dwarf). See S. MONOPHYLLA.
„ *puschkinioi'des* (Puschkinia-like). ¼. Light blue. April. Turkestan. 1881.
„ *roma'na* (Roman). See HYACINTHUS ROMANUS.
„ *ro'sea* (rosy). See S. BIFOLIA ROSEA.
„ *sero'tina* (late). See DIPCADI SEROTINUM.
„ *sibi'rica* (Siberian). ¼. Blue. February. Siberia. 1796.
„ „ *amæ'nula* (small-pleasing). Brighter blue, dwarfer, earlier. 1906.
S. sibi'rica multiflo'ra (many-flowered). Flower-spikes longer. 1895.
„ „ *tau'rica* (Taurian). A robust, many-flowered, early variety. Anti-Taurus. 1890.
„ *uckra'nica* (Uckranian). Country unknown.
„ *umbella'ta* (umbelled). See S. VERNA.
„ *unifo'lia* (one-leaved). See ORNITHOGALUM UNIFOLIUM.
„ *ve'rna* (spring). ¼. Blue. April. Western Europe (Britain). "Sea Onion."
„ „ *a'lba* (white-*flowered*). ¼. White. May.
„ „ *ro'sea* (rosy). ¼. Rose. May.
„ *villo'sa* (shaggy-*leaved*). ¼. Lilac. Tripoli. 1831.

SCINDA'PSUS. (From *skindapsos*, a kind of tree resembling ivy, the species not ascertained. Nat. ord. Araceæ.)

Evergreen stove climbers. Cuttings in a case with bottom-heat. Fibrous loam, lumpy peat, and sand.

S. ano'malus (anomalous). See MONSTERA ACUMINATA.
„ *argyræ'us* (silvery). See S. PICTUS.
„ *officina'lis* (officinal). 4. Green, dusky yellow. May. India; Burma. 1820.
„ *pertu'sus* (perforated). See RHAPHIDOPHORA PERTUSA.
„ *pi'ctus* (painted). Leaves with silvery-grey patches above. Malaya.
„ *ptero'podus* (wing-stalked). Sumatra.

SCIODA'CALYX. See SCIADOCALYX.

SCIODAPHY'LLUM. See SCIADOPHYLLUM.

SCION. See GRAFF.

SCI'RPUS. (From *scirpus*, the old Latin name for a rush. Nat. ord. Cyperaceæ.)

Herbs, natives of marshes, wet places, and river-banks. Divisions. Plants for bog gardens, the margins of ponds, and ornamental water.

S. atrovi'rens (dark-green). See S. SYLVATICUS.
„ *ce'rnuus* (drooping). ½. Greenish-brown. Cosmopolitan. Syn. *Isolepis gracilis*.
„ *Holoschœ'nus* (Holoschœnus). 1½–2. Green. Old World on sandy sea-coasts.
„ „ *zebri'nus* (zebra-striped). Stems with white and green zones.
„ *lacu'stris* (lake-loving). 3–8. Rusty-brown. July to September. Cosmopolitan (Britain). "Bullrush."
„ „ *Tabernæmonta'ni* (Tabernæmontanus'). 3–5. Rusty-brown.
„ „ *Tabernæmonta'ni zebri'nus* (zebra-striped). 2–3. Stems with white and green zones. Japan. 1881. "Banded Rush."
„ *ripa'rius* (river-bank). See S. CERNUUS.
„ *seta'ceus* (bristle-like). ½. Greenish-brown. July. Europe (Britain).
„ *sylva'ticus* (wood). 2–4. Greenish-brown. July. Europe (Britain).

SCISSORS of various sizes are required by the gardener. A pair with very sharp and pointed blades is required for cutting away the anthers of flowers in hybridising, and for thinning grapes. Stouter pairs are used for removing flower-stalks when the petals have fallen from roses, &c. Sliding pruning scissors are employed for cutting the shoots of shrubs. They are powerful instruments for the purpose; but a more simple pair, without a spring, is made. Secateurs, in many patterns, now take the place of pruning scissors. They have short curved blades, one of which is sharp and does the cutting. They are much used for pruning Roses and other shrubs, and the stronger ones will cut shoots as thick as the finger, or thicker.

Shears are only large scissors. *Hedge Shears* for clipping hedges are the most common. *Sliding Pruning Shears*, with a movable centre, so as to make a drawing cut when used as when the pruning knife is employed. See AVERRUNCATOR.

The smaller size is suitable for using with one hand. The large size, which has wooden handles, will, when employed with both hands, cut through a bough full 3 inches in circumference with the greatest ease.

Verge Shears are merely the hedge shears set nearly at a right angle on long handles, for the convenience of the gardener in clipping the sides of box-edging and the verge of grass-plots. *Turf Shears* are set also at an angle, but in a different direction, for cutting the tops of edgings, and grass growing in corners unapproachable by the scythe.

SCLA'REA. (From French *sclarée*, and Low Latin *sclarea, sclaregia*, a name given to certain species of Salvia. Nat. ord. Labiatæ. Now referred to Salvia.)

S. vulga'ris (common). Common Clary. See SALVIA SCLAREA.

SCLE'RIA. (From *skleros*, hard or dry; in allusion to the hardness of the fruit. Nat. ord. Cyperaceæ.)

Hardy herbs for the bog garden or banks of ponds. Divisions. Wet soil.

S. cilia'ta (eye-lashed). 2. June. N. Amer.; W. Ind. 1823.

„ *verticilla'ta* (whorled). 1. June. N. Amer. 1825.

SCLEROCA'RPUS. (From *skleros*, hard, and *karpos*, a fruit; in allusion to the hardness of the fruit. Nat. ord. Compositæ.)

An annual resembling *Helianthus debilis*. Seeds. Ordinary garden soil.

S. uniseria'lis (uniserial). 2. Yellow. July, August. Texas. 1900.

SCLE'RÖON. (From *skleros*, hard, and *oon*, an egg; hard seeds. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Now referred to Petitia.)

S. ole'inum (olive-like). See PETITIA OLEINA.

SCLEROTHA'MNUS. (From *scleros*, hard, or rigid, and *thamnus*, a shrub. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Now referred to Eutaxia.)

S. microphy'llus (small-leaved). See EUTAXIA EMPETRIFOLIA.

SCOLOPE'NDRIUM. Hart's Tongue. (From *scolopendra*, a centipede; the appearance of the seed, or spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Hardy, brown-spored Ferns. See FERNS.

S. Hemiom'itis (Hemionitis). 1. August. Spain. 1779.

„ *Kre'bsii* (Krebs). An abnormal form of *Loma'ria punctula'ta*, which see.

„ *officina'rum* (shop). See S. VULGARE and varieties.

„ *palma'tum* (hand-shaped). See S. HEMIONITIS.

„ *pinna'tum* (leafleted). 1. May. Philippines. Greenhouse.

„ *rhizophy'llum* (rooting-leaved). ½. May. N. Amer. Greenhouse.

„ *vulga're* (common). 1–2. July. North temperate zone (Britain). "Hart's-tongue."

„ „ *acro'cladon* (top-branched). Fronds narrow, branched and crested at top. Britain.

„ „ *angustifo'lium* (narrow-leaved). Fronds narrow. Britain.

„ „ *columna're* (columnar). Fringed.

„ „ *Cooli'ngii* (Cooling's). ½. Plants dense, much branched, globular.

„ „ *cri'spum* (crisped). 1–1½. Fronds finely frilled, barren. Britain.

„ „ *cri'spum Cla'pham* (Clapham). Forked, fringed, and crested. 1857.

„ „ *cri'spum fimbria'tum* (fringed). Finely fringed, frilled, and crested.

„ „ *cri'spum fimbria'tum Stansfie'ldii* (Stansfield's). A form of the previous variety, with finer divisions.

„ „ *crista'tum* (crested). Fronds tasselled at the top.

„ „ *de'nsum* (dense). ½. A dense mass of fine divisions and bulbil plants. 1882.

„ „ *de'nsum Kelwa'yi* (Kelway's). ½. More finely divided and denser. 1880.

„ „ *lacera'tum* (torn). Fronds nearly pinnatifid, the lower lobes crested. 1857.

„ „ *margina'tum* (margined). Fronds contracted with a ridge or even two near the margin.

„ „ *multi'fidum* (many-cleft). Fronds much cut at the top. Britain.

„ „ *ra'mo-margina'tum* (branched-margined). Margin with broad, fan-like crests. 1860.

„ „ *ramo'sum* (branched). Branched and crested.

„ „ *undula'tum* (wavy). Wavy and fringed.

„ „ *Veloi'sii* (Velois's). Well-crested with round lobes. France. 1886.

SCO'LYMUS. Golden Thistle. (From *skolos*, a thorn; plants spiny. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Chicory.)

Hardy, yellow-flowered plants. Seeds and divisions in spring; common garden soil.

S. grandiflo'rus (large-flowered). 3. May. Barbary. 1820. Herbaceous.

„ *hispa'nicus* (Spanish). 3. August. S. Europe. 1658. Herbaceous.

„ *macula'tus* (spotted). 3. July. S. Europe. 1633. Annual.

SCO'LYTUS. A genus of small beetles, very nearly allied to Bostrichus. *S. destructor* attacks the Elm; *S. ligniperda* the bark of some of the Conifers; and *S. crenatus* perforates, in a similar manner, the wood of the Plum. They do not, however, confine their ravages to the trees we have named. They are not more than an eighth of an inch long, black, with chestnut-coloured legs, and sprinkled over with bristles.

SCOPO'LIA. (Named after *G. A. Scopoli*, a foreign botanist. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Physalis.)

Hardy herbaceous. Division of the roots in spring, or sowing the seeds in a slight hotbed; sandy loam, and a dry situation.

S. carnio'lica (Carniolian). 1. Dark purple. April. Europe. 1780.

„ „ *co'ncolor* (one-coloured). See S. CARNIOLICA HLADNIKIANA.

„ „ *hladnikia'na* (Hladnikian). Pale yellow, scentless. Eastern Europe. 1893.

„ *hladnikia'na* (Hladnikian). See S. CARNIOLICA HLADNIKIANA.

„ *japo'nica* (Japanese). Japan.

„ *lu'rida* (lurid). 3. Green, changing to yellow, then lurid purple. Himalaya. 1824.

„ *mu'tica* (snipped). See HYOSCYAMUS MUTICUS.

„ *physaloi'des* (Physalis-like). 1½. Violet-purple. March. Siberia. 1777.

„ *tangu'tica* (Tangutic). China.

SCORCHING, or **BURNING,** describes the drying up of the roots or of the leaves from exposure to too much heat. The preventive, in the first case, is reducing the temperature of the hotbed, or lifting the pots if the plants are so grown; in the second case, as it always arises from the sun's rays in the confined air of a house, Hartley's rough glass, and early ventilating, are the preventives.

SCORODO'SMA. (From *skorodon*, garlic, and *osme*, smell; in allusion to the odour of the plant. Nat. ord. Umbelliferæ. Now referred to Ferula.)

S. fœ'tidum (fetid). See FERULA ASSAFŒTIDA.

SCORPION. *Geni'sta Sco'rpius.*

SCORPION GRASS. *Myoso'tis.*

SCORPION SENNA. *Coroni'lla E'merus.*

SCORPIU'RUS. (From *skorpios*, the scorpion, and *oura*, a tail; in allusion to the narrow, twisted seed-pods. Nat. ord. Leguminosæ.)

Hardy annual grown out of curiosity. Seeds in ordinary garden soil.

S. vermicula'tus (worm-like). ½. Yellow. July. Mediterranean region. Caterpillar Plant.

SCORZONE'RA. Viper's Grass. (From *scurson*, a viper; supposed remedy for the bite of a viper. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy herbaceous; yellow-flowered, except where otherwise stated. Seeds in April or May; common garden soil.

S. angustifo'lia (narrow-leaved). July. S. Europe. 1759.

„ *arista'ta* (bearded). S. Europe.

„ *austri'aca* (Austrian). 1. August. Europe; N. Asia. 1597.

„ „ *latifo'lia* (broad-leaved). Dalmatia.

„ *calcitrapifo'lia* (Calcitrapa-leaved). 1. June. Europe. 1820.

„ *caricifo'lia* (Carex-leaved). See S. PARVIFLORA.

„ *coronopifo'lia* (buck's-horn-leaved). 1. N. Africa 1818.

„ *ensifo'lia* (sword-leaved). ½. May. Caucasus. 1825

„ *eriospe'rma* (woolly-seeded). 1. August. Caucasus 1816. Half-hardy.

„ *glastifo'lia* (woad-leaved). See S. HISPANICA.

S. graminifo'lia (grass-leaved). 2. July. Portugal. 1759.
„ *hirsu'ta* (hairy). 1½. June. S. Europe. 1774.
„ *hispa'nica* (Spanish). 3. July. Spain. 1576.
„ *hu'milis* (lowly). 1. August. Europe. 1597.
„ *interme'dia* (intermediate). June. Persia.
„ *jacquinia'na* (Jacquinian). June. S. Europe; Asia Minor. 1818.
„ *lacinia'ta* (torn). 1½–2. June. Mediterranean region, &c. 1640.
„ *lana'ta* (woolly). 1. July. Iberia. 1824.
„ *latifo'lia* (broad-leaved). See S. NERVOSA.
„ *mo'llis* (soft). 1½. July. Taurus. 1818. "Soft Viper's Grass."
„ *nervo'sa* (veiny). June. Armenia; Persia. 1836.
„ *octangula'ris* (eight-angled). See S. LACINIATA.
„ *parvifio'ra* (small-flowered). 1½. July. Europe; N. Asia. 1805.
„ *pu'mila* (dwarf). 1. June. Spain; Arabia. 1816. Annual.
„ *purpu'rea* (purple). 2. Purple. May. Austria. 1759.
„ *reseda'fo'lia* (Reseda-leaved). See LAUNÆA CHONDRILLOIDES.
„ *ro'sea* (rosy). See S. PURPUREA.
„ *tomento'sa* (felted). July. Asia Minor.
„ *tubero'sa* (tuberous). ½. June. Volga. 1825.
„ *undula'ta* (wavy). See S. MOLLIS.
„ *villo'sa* (shaggy). July. S. Europe.

SCORZONE'RA in th. kitchen-garden is the *S. hispa'nica*, grown for its parsnip-like roots. Sow annually, in any open light spot of ground, the latter end of March or beginning of April. Trench the ground, and with the bottom spit turn in a little dung; sow in ¼-inch deep drills, 12 inches asunder. Thin the plants to 10 inches distance; they will grow freely, and their roots continue increasing in size till September. The roots may either remain in the ground, to be drawn as wanted, or taken wholly up in autumn when their leaves decay, and preserved in sand all winter.

To save Seed.—Let some of the plants remain where sown, when they will shoot up in the spring, and produce plenty of seed in autumn.

SCOTCH ASPHODEL. *Tofie'ldia palu'stris.*

SCOTCH BONNETS. *Mara'smius orea'des.* A Fairy Ring fungus.

SCOTCH-KALE. *Bra'ssica olera'cea ace'phala.*

SCOTCH LABURNUM. *Labu'rnum alpi'num.*

SCOTCH PINE. *Pi'nus sylve'stris.*

SCOTCH PRIMROSE. *Pri'mula sco'tica.*

SCO'TTIA. (Named after *Dr. Scott*, once professor of botany in Dublin. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Now referred to Bossiæa.)
S. angustifo'lia (narrow-leaved). See BOSSIÆA DENTATA.
„ *denta'ta* (tooth-*leaved*). See BOSSIÆA DENTATA.
„ *læ'vis* (smooth-*branched*). See BOSSIÆA DENTATA.
„ *trapezifo'rmis* (trapezium-*leaved*). January. Australia. 1825.

SCREEN. All cooling is occasioned either by the heat being conducted from a body by a colder, which is in contact with it, or by radiating from the body cooled, though circumstances accelerate or retard the radiation; and whatever checks the radiation of heat from a body is a screen, and keeps it warmer. For screening or protecting the blossom of wall-fruit, Mr. Errington states: "We do not know that any material is more proper for covering than thin canvas, such as is manufactured by Mr. Nathaniel Hulme, of Paradise-green, Knutsford, which he sells at about fivepence per square yard. He generally makes it in widths of three yards, which is enough for most walls, so that every lineal yard costs fifteenpence; but then this canvas will last well for seven years if properly preserved, and a due care be exercised. Thus it will be seen, that the annual expense of protecting a lineal yard of walling is not more than twopence-halfpenny, exclusive of a few ordinary poles. We place a pole every 6 feet, running under the coping at top, and straddling away nearly 2 feet at bottom. At 2 feet above the ground level an auger hole is bored in the pole, and an oaken peg driven in, the end left projecting 9 inches forward; and when the canvas is lowered in the day, it hangs in folds on this line of pegs; this keeps it from contact with the damp soil. Every pole has a ring dangling from a staple close to the top; and on the outer face a rope of sash-cording is attached to the edge of the canvas opposite each ring; this being passed *through* the ring from the under side, enables the operator to pull it up or let it down with ease. Thus, when the canvas is lowered, the wall is uncovered, and *vice versa*. Now, these rings and cords will add to the expense; and, since both are very durable, we may, perhaps, add another halfpenny per lineal yard to the amount, accounting the ropes to last nearly as long as the canvas. A still more complete plan is to hang the canvas like curtains, or after the manner of the covering to what are termed conservative walls.

For wall-trees, now that glass is become so much cheaper, the best of all screens may be employed, viz. glazed frames, of a length extending from the coping of the wall to the surface of the soil, about 2 feet from the stems of the trees. See GLASS CASE.

SCREW PINE. *Panda'nus.*

SCREW-TREE. *Heli'cteres.*

SCROPHULA'RIA. (So named by Linnæus, from its supposed use in curing scrofula. Nat. ord. Scrophulariaceæ.)

Hardy perennial herbs. The variegated one was much used in bedding designs at one time. Seeds; divisions in spring. Ordinary garden soil.
S. aqua'tica variega'ta (variegated-aquatic). Leaves variegated with creamy-yellow. Britain.
„ *chrysa'ntha* (golden-flowered). 1–2. Yellow. April, May. Asia Minor. 1882.
„ *nodo'sa variega'ta* (variegated-knotty). See S. AQUATICA.
„ *sublyra'ta* (somewhat-lyre-shaped). 2–3. Green, purple. August. Portugal. 1879.
„ *verna'lis* (spring). 2. Yellow. March to May. Europe (Britain). Biennial for wild garden.

SCRUB OAK. *Que'rcus Catesbæ'i.*

SCRUBBY OAK. *Lophi'ra africa'na.*

SCURVY GRASS (*Cochlea'ria officina'lis*) flourishes most in a sandy, moist soil. *Sow* as soon as the seeds are ripe in June or July, in drills, 8 inches apart, and ½ inch deep. Thin to 8 inches asunder, and those removed may be transplanted to a bed at similar distances, giving water at the time, and frequently afterwards, until fully established. The leaves are fit to gather during the following spring.

To obtain Seed.—A few plants must be left ungathered from in the spring. They will run up to flower about May, and perfect their seed in the course of the two following months.

SCUTELLA'RIA. Skull-cap. (From *scutella*, a little saucer; form of calyx. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Tender Species.

S. a'lbo-ro'sea (rosy-white). White and rose. Brazil. 1869.
„ *aura'ta* (golden). Yellow. Brazil. 1863.
„ *cocci'nea* (scarlet). Scarlet. Colombia. Stove.
„ *cordifo'lia* (heart-leaved). See S. SPLENDENS.
„ *costarica'na* (Costarican). 1½. Scarlet, tipped yellow. Costa Rica. 1864. Stove.
„ *formosa'na* (Formosan). 1. Purplish. Hong-Kong. 1894.
„ *Hartwe'gii* (Hartweg's). 1–1½. Bright red; lower lip violet. Andes of Quito. 1882. Shrubby.
„ *hu'milis* (dwarf). ½. Blue. June. N.S. Wales. 1823.
„ *incarna'ta* (flesh-coloured). 1½. Rose. August. Quito. 1844. Greenhouse evergreen.
„ „ *Tria'nai* (Dr. Triana's). Rosy-scarlet.
„ *javane'nsis* (Javan). 2. Purple. China; Java. Stove.
„ *Lehma'nni* (Lehmann's). 1½. Scarlet-red. Summer. Colombia. 1884. Herbaceous.
„ *mocinia'na* (Mocinian). 1½. Scarlet, tipped yellow. Mexico. 1868. Stove.

S. purpura'scens (purplish). 2. Light blue; lower lip violet. June. Trop. Amer. 1820.
„ *sple'ndens* (splendid). 1. Scarlet, orange. September. Mexico. 1844. Stove.
„ *Ventena'tii* (Ventenat's). 2. Scarlet. August. Colombia. 1844. Greenhouse.
„ *villo'sa* (shaggy). ½. Scarlet. February. Brazil. 1842.
„ *viola'cea* (violet). Violet-blue, with white blotch on lower lip. India; Burma; Malaya. 1904.

HARDY HERBACEOUS.

S. a'lbida (whitish). Whitish. July. South-eastern Europe.
„ *alpi'na* (alpine). ½. Purple. August. Hungary. 1752.
„ „ *lu'tea* (yellow). Yellow. August. Tartary. 1739.
„ „ *sangui'nea* (blood-red). ½. Red. July. 1835.
„ „ *variega'ta* (variegated-*flowered*). ½. Pale yellow. August. Switzerland.
„ „ *versi'color* (changing-coloured).
„ *alti'ssima* (tallest). 1. Dark purple. July. Crimea. 1683.
„ *baicale'nsis* (Baical). ½. Rich purple. July. Siberia. 1827.
„ „ *cœlesti'na* (sky-blue). ½. Bright blue. 1904.
„ *Colu'mnæ* (Columna's). 1½. Blue. July. S. Europe. 1806.
„ *commuta'ta* (changed). See S. ALTISSIMA.
„ *galericula'ta* (small-capped). 1. Blue. July. North temperate regions (Britain). "Common Skull-cap."
„ *grandiflo'ra* (large-flowered). See S. ORIENTALIS.
„ *hastifo'lia* (spear-leaved). ½. Purple. June. Europe. 1798.
„ *hi'rta* (hairy). Dark purple. June. Candia. 1835.
„ *i'ndica japo'nica* (Indian. Japanese variety). ½–½. Purple, white. July. Japan. 1838.
„ *integrifo'lia* (entire-leaved). 1. Blue. July. N. Amer. 1731.
„ *japo'nica* (Japan). See S. INDICA JAPONICA.
„ *lateriflo'ra* (side-flowering). 1. Blue. July. N. Amer. 1752.
„ *linea'ris* (linear). Himalaya.
„ *macra'ntha* (large-flowered). See S. BAICALENSIS.
„ *mi'nor* (less). ½. Pink. July. Europe (Britain).
„ *nervo'sa* (*large*-nerved). 1. Blue. July. Virginia. 1826.
„ *orienta'lis* (eastern). 1. Yellow. August. Levant. 1729.
„ *pa'rvula* (very-small). ½. Blue. July. N. Amer. 1822.
„ *peregri'na* (spreading). 2. Violet. August. Tauria. 1823.
„ *pilo'sa* (shaggy). 1. Blue. July. N. Amer. 1825.
„ *rupe'stris* (rock). See S. HIRTA.
„ *scordiifo'lia* (Scordium-leaved). Siberia.
„ *serra'ta* (saw-*leaved*). ½. Blue. August. N. Amer. 1800.
„ *Sibtho'rpii* (Sibthorp's). See S. PEREGRINA.
„ *Tournefo'rtii* (Tournefort's). 1½. Purple. July. Persia. 1837.
„ *ve'rna* (spring). See S. ALPINA.

SCU'TIA. (From *scutum*, a shield; in reference to calyx surrounding the base of the globular fruit. Nat. ord. Rhamnaceæ. Allied to Ceanothus.)
A stove shrub. Cuttings in sand, in bottom-heat. Loam, peat, and sand.
S. Commerso'nii (Commerson's). 3. White. June. Trop. Asia. 1818.

SCUTICA'RIA. (From *scutica*, a whip; leaves as round as a whipcord. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Once called Maxillaria.)
Stove orchids, grown on blocks. See ORCHIDS.
S. Dodgso'ni (Dodgson's). This seems to be *S. Hadwe'nii*.
„ *Hadwe'nii* (Hadwen's). 1. Green, chocolate, and white. June. Brazil. 1851.
„ „ *be'lla* (pretty). Whitish, yellow, cinnamon, white.
„ „ *pardali'na* (pard-spotted). Yellow; with brown circles; lip ochre and yellow.
„ *Stee'lii* (Steel's). Yellow-spotted. July. Guiana. 1834.

SCYPHA'NTHUS. (From *scyphos*, a cap, and *anthos*, a flower. Nat. ord. *Loasads* [Loasaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*. Now referred to Grammatocarpus.)
S. e'legans (elegant). See GRAMMATOCARPUS VOLUBILIS.
„ *grandiflo'rus* (large-flowered). See GRAMMATOCARPUS VOLUBILIS.

SCYTHE. This mowing implement being confined, in the garden, to cutting the fine, short grass of lawns, requires to be much sharper than that used in cutting the coarser grasses, which stand up more firmly to the scythe. It is also necessary that the mowers should not *score* the grass, that is, should not leave the mark of each stroke of the scythe, which has a very unsightly appearance; to prevent which, have the scythe laid out rather wider, an inch or two beyond heel and toe, especially for very short grass; and in mowing keep the point rather out, and do not draw that part too fast toward, gathering the grass neatly to the left in a range; and having mowed to the end of the swath, mow it lightly back again, to trim off all scores and other irregularities unavoidably left the first time. A great inconvenience attending the old scythe is the difficulty of fastening and adjusting the blade to the handle. This is entirely obviated by *Boyd's Self-adjusting Scythe*. It is always a problem to determine the angle the blade should make with the handle, as it varies with every mower. A good guide is for a perpendicular line to be chalked against a wall, and for the mower to stand close and directly fronting to this line; then, without moving his feet, and with arm at full stretch above his head, to chalk a line to the left, from the perpendicular line, as far as he can reach. The line he thus chalks should correspond with the angle of the scythe's blade, supposing the perpendicular line to represent the handle.

SEA BELLS. *Calyste'gia Soldane'lla.*

SEA-BUCKTHORN. *Hippo'phaë rhamnoi'des.*

SEAFO'RTHIA. (Named after *Lord Seaforth*, a botanical patron. Nat. ord. *Palms* [Palmaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)
S. e'legans (elegant). See ARCHONTOPHŒNIX CUNNINGHAMI.

SEA HEATH. *Franke'nia la'vis.*

SEA-HOLLY. *Ery'ngium.*

SEA-KALE. *Cra'mbe mari'tima.* See CRAMBE.
In addition to what is there stated of its culture, we have only to make mention of the pots usually employed for blanching it; but see RHUBARB for a frame, which also answers, when fermenting materials are heaped over, to force it.
The following is also a good mode of forcing: On each side of a 3-foot bed dig a trench 2 feet deep, the side of it next the bed being perpendicular, but the outer side sloping, so as to make it 18 inches wide at the bottom, but 2½ at the top. These trenches fill with fermenting dung, which, of course, may be renewed if found necessary, and frames put over the plants, the light to be completely excluded by boards, matting, &c.

SEA LAVENDER. *Sta'tice.*

SEA RAGWORT. *Sene'cio Cinera'ria.*

SEA-SIDE BALSAM. *Cro'ton Eleute'ria.*

SEA-SIDE GRAPE. *Cocco'loba.*

SEA-SIDE LAUREL. *Phylla'nthus latifo'lius.*

SEA-WEED. See GREEN MANURE.

SEBÆ'A. (Named after *A. Seba*, a Dutch botanist. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)
Greenhouse annuals, all but *ova'ta* from South Africa. Seeds in a sweet hotbed in March, pricked out or potted, and either bloomed in the open garden, or in the greenhouse after May.
S. a'lbens (whitish). ½. White. August. 1820.
„ *au'rea* (golden). ½. Yellow. July. 1824.
„ *corda'ta* (heart-*leaved*). ½. Yellow. July. 1815.
„ *ova'ta* (egg-*leaved*). ½. Red. August. N. S. Wales. 1820.

SECAMO'NE. (Altered from *squamona*, the Arabic name. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Stove, white-flowered, evergreen twiners. Cuttings of firm side-shoots when about 3 inches in length; fibrous loam, two parts; fibrous peat and very rotten dung, or leaf-mould, dried, one part; silver sand and charcoal, to keep it open. Winter temp., 50° to 60°; summer, 60° to 85°.

S. ægyptiʹaca (Egyptian). See OXYSTELMA ESCULENTUM.
„ *eliʹptica* (oval-*leaved*). 6. Australia. 1824.
„ *emeʹtica* (emetic). 6. India. 1816.

SEʹCHIUM. Choko. (From *sekos*, a pen or fold; hogs are fed on the fruit in Jamaica. Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 21-*Monœcia*, 10-*Monadelphia*.)

A cucumber-like, yellow-flowered annual; seeds in a hotbed, and either cultivated in houses or pits; or, after June, in the open air; light, rich soil.

S. eduʹle (eatable). 6. June. W. Ind. 1816.
„ *palmaʹtum* (hand-*leaved*). See MICROSECHIUM PALMATUM.

SECURIDAʹCA. (From *securis*, a hatchet; form of the wing-like process at the end of the pod. Nat. ord. *Milkworts* [Polygalaceæ]. Linn. 17-*Diadelphia*, 3-*Octandria*.)

Stove evergreen twiners, from the West Indies. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat. Winter temp., 50° to 60°; summer, 60° to 80°. Sandy loam and sandy, fibrous peat.

S. Browʹnii (Brown's). 8. White.
„ *ereʹcta* (upright). Purple. July. 1824.
„ *paniculaʹta* (panicled). Yellow. July. 1820.
„ *virgaʹta* (twiggy). 10. White. 1739.
„ *voluʹbilis* (twining). 10. White. S. Amer. 1739.

SECURIʹNEGA. (From *securis*, a hatchet, and *nego*, to deny or refuse; the wood is extremely hard. Nat. ord. Euphorbiaceæ.)

Hardy and stove shrubs or small trees Cuttings of half-ripe wood in sand, in a frame for the hardy one, and a stove for the other. Fibrous loam, peat, and sand.

S. Commersoʹnii (Commerson's). See S DURISSIMA.
„ *duriʹssima* (hardest). 35. White. Mauritius. 1793. "Otaheite Myrtle."
„ *ramifloʹra* (branch-flowered). Yellow, red. August. Eastern Asia. 1785. Hardy.

SEʹDUM. Stonecrop. (From *sedere*, to sit; they grow as if sitting on stones, rocks, walls, &c. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)

Annuals, by seeds, on raised dry places, such as banks and rock-works; perennials, by divisions and cuttings, which root most readily, and all of which prefer dry, sandy, loamy soil; the more tender of these may be grown in well-drained pots, in sandy loam and brick-rubbish, and treated as alpines. The greenhouse kinds require similar treatment, only a higher temperature, and to be kept even drier in winter.

HARDY ANNUALS, &c.

S. andegaveʹnse (Andegavenny). ½. Yellow. July. Andegavenny. 1835.
„ *Andersoʹnii* (Anderson's). See S. HISPANICUM.
„ *atraʹtum* (dark-*annual*). ½. Purple. August. Italy. 1795.
„ *azuʹreum* (azure). See S. CÆRULEUM.
„ *Cepæʹa* (*purslane-leaved*). 1. White. July. Europe. 1640. Biennial.
„ *cæruʹleum* (pale-blue). ½. Pale blue. July. Mediterranean region. 1822.
„ *cæspitoʹsum* (tufted). ½. White. Mediterranean region. 1800.
„ *calaʹbricum* (Calabrian). 1. Whitish. July. Calabria. 1835.
„ *deltoïʹdeum* (triangular-*leaved*). See S. STELLATUM.
„ *glanduloʹsum* (glandular). ½. Rose. June. Sardoa. 1871.
„ *magellʹense* (Magellan). Yellow. July. Italy; Greece; Asia Minor. 1816.
„ *miʹserum* (miserable). Green. July. Mexico. 1837. Greenhouse.
„ *paʹllens* (pale). ½. White. July. S. Europe. 1816. Biennial.
S. paʹllidum (pale-*red-flowered*). ½. Pale red. July. Caucasus. 1817.
„ *sempervivoïʹdes* (Sempervivum-like). ½–¾. Bright red. July. Asia Minor. 1816. Biennial.
„ *Sempervivʹum* (Sempervivum-like). See S. SEMPERVIVOIDES.
„ *spathulaʹtum* (spatulate). See S. CEPÆA.
„ *stellaʹtum* (starred). ½. Pink. July. S. Europe. 1640.
„ *tetraphyʹllum* (four-leaved). See S. CEPÆA.
„ *villoʹsum* (shaggy). ½–¾. White or purplish. June, July. Europe (Britain). Biennial.

HARDY HERBACEOUS.

S. aʹcre (acrid). ½. Yellow. June. Europe (Britain). "Biting Stonecrop," "Wall Pepper."
„ „ *auʹreum* (golden). ½. Yellow. June. Leaves at top golden in spring.
„ „ *diminuʹtum* (less). ½. Yellow. June. England.
„ „ *elongaʹtum* (long-*shooted*). ½. Yellow. June. England.
„ „ *sartoriaʹnum* (Sartorian).
„ *Aïzoʹon* (ever-living). 1. Yellow. August. Siberia. 1757.
„ *Albʹertii* (Albert's). White. July, August. Turkestan. 1879.
„ *albéscens* (whitish-*leaved*). See S. REFLEXUM ALBESCENS.
„ *aʹlbicans* (*great*-white). See S. TELEPHIUM.
„ *aʹlbo-roʹseum* (white-rosy). 1½. White, shaded with rose. Japan. 1860.
„ *aʹlbum* (white). ½. White. June. Europe (England).
„ „ *brevifoʹlium* (short-leaved). Leaves short, thick.
„ „ *micraʹnthum* (small-flowered). ½. White. June. England.
„ „ *terelifoʹlium* (terete-leaved). Leaves narrow, flattened above. England.
„ *alpéstre* (alpine). ½. Red. June. Pyrenees. 1826.
„ *altaʹicum* (Altaic). 1. Yellow. June. Altaic Mountains. 1831.
„ *altiʹssimum* (tallest). 1. Yellow. July. S. Europe. 1769.
„ *amplexicauʹle* (stem-clasping). ½–¾. Golden-yellow. Summer. Mediterranean region.
„ *Anacaʹmpseros* (Anacampseros-like). ½. Purple. July. France. 1596. "Evergreen Orpine."
„ *aʹnglicum* (English). ½. White. July. Britain.
„ „ *hibʹernicum* (Irish). ½. White. July. Ireland.
„ „ *microphyʹllum* (small-leaved). ½. White. July. Britain.
„ *anopéʹtalum* (upward-petaled. *Green*). ½. Pale yellow. July. S. Europe. 1818.
„ „ *auranti'acum* (orange). ½. Orange. June. France. 1820.
„ *arboʹreum* (tree-like). ½–¾. White. July. Country unknown.
„ *asiaʹticum* (Asiatic). 1. Yellow. July, August. Himalaya.
„ *beyrichiaʹnum* (Beyrichian). ½. White. July. Origin doubtful.
„ *brevifoʹlium* (short-leaved). ½. White, with pink midrib. July. Western Mediterranean region.
„ *cærulʹescens* (bluish-*leaved*). See S. STENOPETALUM.
„ *caʹrneum* (fleshy). See S. SARMENTOSUM.
„ *Coopʹeri* (Cooper's). ½. White. July. 1868.
„ *cordifoʹlium* (heart-leaved). 1–1½. White, flushed purple. 1860.
„ *coʹrsicum* (Corsican). See S. DASYPHYLLUM GLANDULIFERUM.
„ *craʹssipes* (thick-stalked). See S. ASIATICUM.
„ *cyaʹneum* (blue). ½. Purplish. Siberia. 1879.
„ *dasyphyʹllum* (thick-leaved). ½. White. June. Europe (England).
„ „ *glanduliʹferum* (gland-bearing). White, tinted rose. Leaves glandular. N. Africa. 1873.
„ *dentaʹtum* (toothed). See S. SPURIUM.
„ *Douglaʹsii* (Douglas's). North-western Amer.
„ *eʹlegans* (elegant). See S. RUPESTRE.
„ *elongaʹtum* (lengthened). See S. ROSEUM of Scop.
„ *engleriaʹnum* (Englerian). White. Pyrenees. 1896.
„ *erythrostʹctum* (red-tinted). See S. TELEPHIUM.
„ *euphorbioïʹdes* (Euphorbia-like). Siberia.
„ *Eweʹrsii* (Ewer's). ½. June. Siberia. 1829.
„ *Fabaʹria* (Fabaria). 1–1½. Rosy-white. July. Europe (England).

S. forsteria'num (Forster's). See S. PRUINATUM FORSTERIANUM.
„ *fruticulo'sum* (small-shrubby). See S. ALTISSIMUM.
„ *glacia'le* (glacial). See S. ACRE.
„ *glanduli'ferum* (gland-bearing). See S. DASYPHYLLUM GLANDULIFERUM.
„ *glau'cum* (milky-green). See S. HISPANICUM.
„ *globulifo'lium* (globe-leaved). Yellow. June. Europe. 1838.
„ *gra'cile* (slender). Caucasus.
„ *heterodo'ntum* (variously-toothed). Himalaya.
„ *Hillebra'ndii* (Hillebrand's). See S. SEXANGULARE.
„ *himale'nse* (Himalayan). Himalaya.
„ *hispa'nicum* (Spanish). ½. Pinkish-white. June. S. Europe. 1732.
„ *hy'bridum* (hybrid). ½. Yellow. June. Siberia. 1776.
„ *ibe'ricum* (Iberian). See S. SPURIUM.
„ *involucra'tum* (clustered). ½. Yellow. July. Caucasus.
„ *japo'nicum* (Japanese). Pale yellow. August. China; Japan. 1866.
„ *kamtscha'ticum* (Kamtschatka). Yellow. June, July. Eastern Asia. 1844.
„ *latifo'lium* (broad-leaved). See S. MAXIMUM.
„ *li'vidum* (livid). ½. White, green. July. 1816.
„ *ly'dium* (Lydian). ½. White. June. Asia Minor. 1877.
„ *Maximowi'czii* (Maximowicz's). 1. Yellow. July. Japan. 1867.
„ *ma'ximum* (largest). 1–2. Whitish, spotted red. August, September. Europe. 1794.
„ „ *co'rsicum* (Corsican). 1–2. Pale yellow, apple-scented. Stems purplish.
„ „ *hæmato'des* (blood-like). 1–2. Whitish, tipped red. Leaves and stems purple. Portugal.
„ „ *Rodiga'si* (Rodigas'). Leaves purplish, variegated with yellow.
„ „ *terna'tum* (ternate). Yellowish. Leaves red above, green below, in threes. Stems red.
„ *micra'nthum* (small-flowered). See S. ALBUM MICRANTHUM.
„ *middendorffia'num* (Middendorffian). ½. Yellow. Summer. Amur. 1880.
„ *monregale'nse* (Monregalan). ½. White. Summer. S. Europe.
„ *multicau'le* (many-stemmed). Yellow. May. Himalaya Mountains. 1838.
„ *mu'lticeps* (many-headed). ½–½. Pale yellow. Summer. Algeria. Shrubby.
„ *negle'ctum* (neglected). See S. ACRE.
„ *Ne'vii* (Nev's). ½. White. July. N. Amer. Evergreen.
„ *nicæ'nse* (Nice). See S. ALTISSIMUM.
„ *Notarja'nni* (Notarjanni's). White. July. Naples. 1824.
„ *oblo'ngum* (oblong). See S. ANGLICUM.
„ *obtusa'tum* (obtuse). ½. Yellow. June, July. California. Evergreen.
„ *ochroleu'cum* (yellowish-white). See S. ALTISSIMUM.
„ *oppositifo'lium* (opposite-*leaved*). ½. White. August. Caucasus.
„ *pectina'tum* (comb-*leaved*). ½. White. July. 1818.
„ *populifo'lium* (poplar-leaved). 1. White. August. Siberia. 1780.
„ *pruina'tum* (frosted). 1. Bright yellow. Leaves glaucous. July, August. Western Mediterranean region.
„ „ *forsteria'num* (Forsterian). 1. Bright yellow. Leaves green. Wales; England.
„ *pulche'llum* (pretty). Purple. July. N. Amer. 1824.
„ *pu'lchrum* (beautiful). See S. PULCHELLUM.
„ *purpura'scens* (purplish). See S. TELEPHIUM.
„ *purpu'reum* (purple) of Link. See S. TELEPHIUM.
„ *quadri'fidum* (four-cleft). ½. Yellow. July. N. Asia. 1800.
„ *refle'xum* (bent-back-*leaved*). 1. Yellow. June. Europe (England). "Stone Orpine."
„ „ *albe'scens* (whitish). Yellowish-white. Plant sea-green.
„ „ *colli'num* (hill). 1. Yellow. 1815.
„ „ *crista'tum* (crested). Stems fasciated like a cockscomb.
„ „ *mi'nus* (smallest). The smallest form.
„ „ *monstro'sum* (monstrous). See S. REFLEXUM CRISTATUM.

S. refle'xum recurva'tum (curled-back-*green*). ½. Yellow. June. Europe. 1818.
„ „ *septangula're* (seven-angled). ½. Yellow. July. 1795.
„ „ *vi'rens* (green). ½. Yellow. Inflorescence erect. June. Portugal. 1774.
„ „ *vire'scens* (greenish). 1. Pale sulphur-yellow. July. 1815.
„ *re'pens* (creeping). See S. ALPESTRE.
„ *Rho'diola* (rose-scented). See S. ROSEUM of Scop.
„ *ro'seum* (rosy) of Scop. 1. Yellow. June. Northern temperate regions (Britain). "Rose Root."
„ „ *linifo'lium* (flax-leaved). 1. Purplish. Leaves narrow.
„ *ro'seum* (rosy) of Steven. Rose. July. Caucasus. 1827.
„ *ru'bens* (red). ½. Pinkish, white. Mediterranean region. 1759.
„ *rupe'stre* (rock). ½. Yellow. June. Europe (England).
„ *saxa'tile* (rock). ½. June. S. Europe. 1820.
„ *selskia'num* (Selskyan). 1–1½. Yellow. July, August. Amur. 1862.
„ *Semeno'vii* (Semenow's). 1. Whitish. June. Turkestan. 1878.
„ *septangula're* (seven-angled). See S. REFLEXUM SEPTANGULARE.
„ *serra'tum* (serrated). See S. HETERODONTUM.
„ *sexangula're* (six-angled). ½. Yellow. July. Europe (England).
„ „ *bolonie'nse* (Bolonian).
„ *se'xfidum* (six-cut). See S. HISPANICUM.
„ *spathulifo'lium* (spathulate-leaved). ½. Yellow. May, June. N.W. Amer. 1873.
„ *specta'bile* (showy). 1–2. Rosy-pink. August, September. Japan.
„ „ *atropurpu'reum* (dark-purple). 1–2. Deep rosy-purple. August, September. 1902.
„ *spu'rium* (spurious). ½. White or pink. August. Caucasus. 1816.
„ „ *splе'ndens* (splendid). ½. Bright rose-purple. August.
„ *stenope'talum* (narrow-petaled). Golden. June. N.W. Amer. 1826.
„ *subclava'tum* (slightly-clubbed). ½. July. N. Amer. 1829.
„ *Tele'phium* (Telephium-like). 2. Purple. August. Britain. "Common Orpine."
„ „ *Borde'ri* (Border's). 1–2. Pink. Stems reddish. Pyrenees.
„ „ *rube'lla* (reddish). 1–2. Pink. Leaves and stems red.
„ „ *variega'tum* (variegated). Leaves variegated with white and red in spring.
„ *telephioi'des* (orpine-like). 1. Purple. August. N. Amer. 1810.
„ *terna'tum* (ternate). ½. White. Leaves in threes. July, August. N. Amer. 1789.
„ *tri'fidum* (three-cut). ½–½. Reddish. Summer. Temperate Himalaya.
„ *turkesta'nicum* (Turkestan). See S. EWERSII.
„ *umbilicoi'des* (Umbilicus-like). White. July. Turkestan. 1877. Evergreen.
„ *verticilla'tum* (whorl-*leaved*). See S. CEPÆA.
„ *vi'rens* (green). See S. REFLEXUM VIRENS.
„ *vire'scens* (greenish). See S. REFLEXUM VIRESCENS.
„ *viri'dulum* (greenish). ½. Yellow. June. Europe. 1824.
„ *vulga're* (common). See S. TELEPHIUM.
„ *wallichia'num* (Wallichian). See S. ASIATICUM.

GREENHOUSE.

S. adeno'trichum (glandular-haired). Himalaya.
„ *califo'rnicum* (Californian). ½. Yellow. June. California. 1875.
„ *dendroi'deum* (tree-like). Yellow. Mexico.
„ *ebractea'tum* (bractless). 1. Yellow-white. Mexico. 1865.
„ *farino'sum* (mealy). ½. White. July. Madeira.
„ *formosa'num* (Formosan). ½. Yellow. June to September. Formosa. 1885. Annual.
„ *liebmannia'num* (Liebmannian). ½. White, tinted red. June. Mexico. 1880.
„ *nu'dum* (naked). ½. White. July. Madeira. 1777.

S. retu'sum (retuse). White, with rosy centre. June. Mexico. 1880.
„ *sarmento'sum* (trailing). ¼. Yellow. July. China. Evergreen.
„ „ *variega'tum* (variegated). Leaves variegated with cream or white. Stems flesh-coloured.
„ *Siebo'ldii* (Siebold's). ½–¾. Pinkish-purple. July, August. Japan. 1836.
„ „ *me'dio-variega'tum* (middle-variegated). Leaves with a central creamy blotch.
„ *Sta'hlii* (Stahl's). ½. Yellow. June. Mexico. 1902.

SEED-ROOM. All that has been said relative to the *Fruit-room* is applicable to this. Everything promotive of decay or germination is to be avoided; and if one relative direction more than another requires to be urged upon the gardener, it is comprised in these words—*keep it as dry as possible;* the room may be even hot, so that it is not damp.

SEEMA'NNIA. (Commemorative of the botanist *Berthold Seemann*. Nat. ord. Gesneraceæ.)
Perennial stove herbs. Offsets from the scaly rhizomes in spring. Fibrous loam, peat, or leaf-mould, and sand.
S. Bena'ryi (Benary's). 3. Scarlet. Trop. Amer. 1874.
„ *silva'tica* (wood). See S. TERNIFOLIA.
„ *ternifo'lia* (three-leaved). 3–4. Scarlet. Winter. Peru. 1855.

SEETZE'NIA. (Commemorative of *Seetzen*, a noted African traveller. Nat. ord. *Bean Capers* [Zygophyllaceæ]. Linn. 10-*Decandria*, 5-*Pentagynia*. Allied to Zygophyllum.)
A prostrate or diffuse, evergreen, leafy, greenhouse shrub. Cuttings in sand under a bell-glass. Loam, peat, and sand.
S. africa'na (African). 1–2 in. long. Yellow, without petals. July. S. Africa. 1810.

SELAGINE'LLA. (Diminutive of *Selago*. Nat. ord. Selaginellaceæ.)
Evergreen stove and greenhouse plants, some resembling ferns, others mosses. Cuttings in sandy loam and leaf-mould.
S. affi'nis (related). Stems trailing, 1 ft. long. Guiana.
„ *africa'na* (African). See S. VOGELII.
„ *alboni'tens* (white-shining). Slender, trailing. W. Ind.
„ *albospi'ca* (white-spiked). See S. STENOPHYLLA ALBOSPICA.
„ *amœ'na* (lovely). See S. CAULESCENS AMŒNA.
„ *a'pus* (stalkless). ½. N. Amer. 1819.
„ *arge'ntea* (silvery). See S. CAULESCENS.
„ *atrovi'ridis* (dark-green). ½–1. Sub-erect. Trop. Asia.
„ *bakeria'na* (Bakerian). Queensland.
„ *be'llula* (pretty). See S. INÆQUALIFOLIA PERELEGANS.
„ *brasilie'nsis* (Brazilian). ½. Stems trailing. Southern Brazil.
„ *Brau'nii* (Braun's). 1–1½. Erect. W. China. 1867.
„ *ca'sia* (grey). See S. UNCINATA.
„ *canalicula'ta* (channelled). 1. Trop. Asia. 1860. Climber.
„ *cauda'ta* (tailed). See S. CANALICULATA.
„ *caule'scens* (stemmed). 1–1½. Erect. Trop. Asia.
„ „ *amœ'na* (lovely). ½–1. Bright green. 1884.
„ „ *gra'cilis* (slender). ¾. Bright green. India. 1880.
„ „ *mi'nor* (smaller). ½.
„ *cogna'ta* (related). See S. LOBBII.
„ *conci'nna* (neat). Trailing 1 ft. long. Mascarene Isles.
„ *confe'rta* (crowded). See S. CANALICULATA.
„ *convolu'ta* (convolute). ½–¾. Tufted. Trop. Amer.
„ *cordifo'lia* (heart-leaved). 1. Trailing, 1 ft. long. W. Ind. 1838.
„ *cuspida'ta* (short-pointed). ½. Trop. Amer.
„ *elonga'ta* (elongated). 1. Colombia.
„ *delicati'ssima* (very-delicate). Trailing, ½–1 ft. long. Probably the Andes.
„ *denticula'ta* (finely-toothed) of Link. ½. Europe. 1779. Hardy.
„ *denticula'ta* (finely-toothed) of gardens. See S. KRAUSSIANA.
„ *di'chroa* (two-coloured). See S. VOGELII.
„ *Dougla'sii* (Douglas's). Trailing, ½–¾ ft. long. United States; British Columbia.
„ *emilia'na* (Emilian). ½. Habit dense. Gardens.
„ „ *au'rea* (golden). ½. Yellow tinted. 1908.
S. erythro'pus (red-stalked). 1–1½. Erect. Trop. Amer.
„ „ *mi'nor* (smaller). 1. Gardens. 1893.
„ *filici'na* (fern-like). See S. HÆMATODES.
„ *flabella'ta* (fan-shaped). 1–2. Erect. Tropics.
„ *flagelli'fera* (whip-bearing). See S. PLUMOSA.
„ *flexuo'sa* (flexuous). ½–1. S. Brazil. 1831.
„ *fulcra'ta* (propped). 1–1½. Erect, unbranched in lower half. E. Himalaya; Burma.
„ *Galeo'ttei* (Galeotte's). 1–2. Sub-erect. Mexico.
„ *gra'cilis* (slender). 2–3. South Sea Islands. 1886.
„ *gra'ndis* (grand). 2. Grass-green, much branched. Borneo. 1882.
„ *Griffi'thii* (Griffith's). ½–1. Erect. Trop. Asia. 1860.
„ *hæmato'des* (blood-like). 1–1½. Stems deep red. Trop. Amer.
„ *helve'tica* (Swiss). Stems densely matted, ½–¾ ft. long. Central Europe; N. Asia.
„ *horte'nsis* (garden). See S. KRAUSSIANA.
„ *inæqualifo'lia* (unequal-leaved). 1–2. Trop. Asia.
„ „ *be'llula* (pretty). See S. INÆQUALIFOLIA PERELEGANS.
„ „ *pere'legans* (very-elegant). 1. Dwarfer, denser. Ceylon. 1879.
„ *increscentifo'lia* (increasing-leaved). See S. RADIATA.
„ *invo'lvens* (rolling-inwards). ½. Densely tufted. China and Japan. 1831.
„ „ *te'xta* (plaited). ½. Stem simple.
„ „ *variega'ta* (variegated). Tips of some of the branches pure white. 1883.
„ *kraussia'na* (Kraussian). ½. S. Africa; Azores, &c. The most common.
„ „ *au'rea* (golden). Golden-yellow. 1880.
„ „ *Brow'nii* (Brown's). ½. Erect, dense, not trailing. Azores.
„ „ *Stansfie'ldii* (Stansfield's).
„ „ *variega'ta* (variegated). Variegated with white.
„ *lævига'ta* (bright-green). 1–1½. Stems erect, shining dark green. Madagascar.
„ „ *Lya'llii* (Lyall's). More divided; pinnæ bipinnate. Madagascar.
„ *lepidophy'lla* (slender-leaved). 1½. Trop. Amer. 1869. "Resurrection Plant." Prostrate, and requires stove heat.
„ *leptosta'chya* (slender-spiked). See S. BAKERIANA.
„ *Lo'bbii* (Lobb's). 3–4. Somewhat climbing. Borneo. 1884.
„ *longi'ssima* (longest). Stems trailing, 2 ft. long or more. Colombia; Antioquia.
„ *ludovicia'na* (Ludovician). ½. Trailing. Alabama; Louisiana.
„ *Lya'llii* (Lyall's). See S. LÆVIGATA LYALLII.
„ *Marte'nsii* (Martens'). ½–1. Stems trailing in lower half, rooting. Mexico.
„ „ *divarica'ta* (spreading). 1. Looser in habit, with fewer branches.
„ „ *stoloni'fera* (stolon-bearing). 1. Trailing and rooting.
„ „ *variega'ta* (variegated). Compact, upright, variegated with cream.
„ „ *watsonia'na* (Watsonian). Fronds arching, fan-shaped, with bright silvery variegation. 1903.
„ *Mette'nii* (Metten's). Stems wide-trailing. Garden origin. 1865. (? *uncinata* × *inæqualifolia*.)
„ *mo'lliceps* (soft-headed). ½–¾. Erect. Upper Guinea; Madagascar, &c.
„ *muta'bilis* (changeable). See S. SERPENS.
„ *pa'tula* (spreading). Trailing, ½–¾. Jamaica.
„ *Pervi'llei* (Perville's). See S. VOGELII.
„ *pili'fera* (hair-bearing). ½. Tufted. Texas; Central Mexico.
„ *pitcheria'na* (Pitcherian). See S. ERYTHROPUS MINOR.
„ *plumo'sa* (plumy). ¾–1. Trailing. Trop. Asia.
„ „ *flagelli'fera* (whip-bearing). Branches elongated at apex, with square spikes.
„ *pœppigia'na* (Pœppigian). Stems trailing 1–2 ft. long. Andes of Colombia and Peru.
„ *Poulte'ri* (Poulter's). ½. Densely tufted, erect. Azores. 1868.
„ *pube'scens* (downy). See S. FULCRATA.
„ *radia'ta* (rayed). ½–1. Sub-erect. Trop. Amer.
„ „ *bulbi'fera* (bulb-bearing). Decumbent, bearing bulbils at tips of branches. 1867.
„ *radica'ta* (rooting). See S. PLUMOSA.
„ *ri'gida* (rigid). See S. AFFINIS.
„ *rube'lla* (reddish). 1. Sub-erect. Garden origin. 1870.

S. rubricau'lis (red-stemmed). See S. SUBEROSA.
„ *se'rpens* (creeping). ½. Fronds prostrate, changing colour with the light. W. Ind.
„ *spino'sa* (spiny). ½. Fertile stems erect. Europe (Britain) and N. Amer.
„ *spinulo'sa* (finely-spiny) of Spring. See S. SPINOSA.
„ *stenophy'lla* (narrow-leaved). Sub-erect. Mexico.
„ „ *albospi'ca* (white-spiked). Young fronds with white points.
„ *subero'sa* (corky). 1. Sub-erect, densely tufted. Trop. Asia.
„ *sulca'ta* (furrowed). Stems trailing in the lower half, then ascending. S. Brazil.
„ *tassella'ta* (tasselled). Stems arching, ending in drooping spikes. Brazil. 1887.
„ *te'xta* (plaited). See S. INVOLVENS TEXTA.
„ *uncina'ta* (hooked). ½. Stems trailing, with blue-grey foliage. China. 1845.
„ *u'sta* (burned). ½–1. Erect. New Caledonia.
„ *Victo'riæ* (Queen Victoria's). 2–3. Sub-climbing. Borneo. 1878.
„ *virida'ngula* (green-angled). 3–4. Sub-erect, twiggy. Fiji. 1884.
„ *viticulo'sa* (little-vine-like). ½. Erect, simple in lower half. Trop. Amer.
„ *Voge'lii* (Vogel's). 1½–2. Stems erect, red. Trop. Africa; Madagascar.
„ „ *di'chroa* (two-coloured).
„ „ *fo'liis variega'tis* (leaves-variegated). Variegated. 1881.
„ *Walli'chii* (Wallich's). 2–3. Sub-erect, twiggy. Trop. Asia.
„ *Warscewi'czii* (Warscewicz's). See S. RADIATA.
„ *Willdeno'vii* (Willdenow's). 5–20. Climbing. Trop. Asia. 1867.

SELA'GO. (From the Celtic *sel*, sight, and *jach*, salutary; supposed effects on the eyes. Nat. ord. *Selagids* [Selaginaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Greenhouse evergreens, from South Africa. Cuttings of the points of shoots, or rather, the short, stubby side-shoots, taken off close to the stem, in spring and autumn, in sand, under a bell-glass, but raised at night to prevent damping. Sandy loam and vegetable mould. The protection of a greenhouse; but many of them are worth a place in the flower-garden in summer.

S. angustifo'lia (narrow-leaved). August. 1819.
„ *bractea'ta* (bracted). See MICRODON LUCIDUS.
„ *cane'scens* (hoary). 1½. Pale purple. September. 1812.
„ *corymbo'sa* (corymbed). 2. White. July. 1699.
„ *denta'ta* (toothed). See S. SPURIA.
„ *diffu'sa* (spreading). 1½. Purple. July. 1807.
„ *di'stans* (distant-*flowered*). 2. White. April. 1845.
„ *fascicula'ta* (bundle-*flowered*). See S. SERRATA.
„ *frutico'sa* (shrubby). Yellow. June. 1822.
„ *Gi'llii* (Gill's). See S. MYRTIFOLIA.
„ *heterophy'lla* (various-leaved). 1. Purple. July. 1823.
„ *hi'spida* (bristly). Yellow. June. 1823.
„ *micra'ntha* (small-flowered). Yellow. May. 1820.
„ *minuti'ssima* (smallest). Yellow. June. 1816.
„ *myrtifo'lia* (myrtle-leaved). 1. Pale rose. March. 1829.
„ *ova'ta* (egg-*headed*). See MICRODON OVATUS.
„ *polygaloi'des* (milkwort-like). See MICRODON CYLINDRICUS.
„ *polysta'chya* (many-spiked). White. June. 1823.
„ *ramulo'sa* (small-branchy). 1½. White. 1824.
„ *rapunculoi'des* (rampion-like). See S. SPURIA.
„ *rotundifo'lia* (round-leaved). 1. Purple. June. 1816.
„ *serra'ta* (sawed). 1½. Blue. July. 1774.
„ *spica'ta* (spiked). See MICRODON OVATUS.
„ *spi'nea* (spiny). 3. Purple. 1824.
„ *spu'ria* (spurious). 1. Violet. August. 1779.

SELANDRIA. See SLUGWORMS.

SELE'NIA. (From *selene*, the moon; in reference, possibly, to the shape of the seed-pod. Nat. ord. Cruciferæ.)

A dwarf, hardy annual, of ornamental character. Seeds. Ordinary garden soil.

S. au'rea (golden). ½. Bright yellow, fragrant. June, July. Texas; Arkansas. 1881.

SELENIPE'DIUM. (From *selenis*, a little moon, and *pedion*, a slipper; in allusion to the shape of the lip. Nat. ord. Orchidaceæ. Allied to Cypripedium.)

Orchids with a three-celled ovary, thus differing from Cypripedium, having a one-celled ovary or seed-vessel. See ORCHIDS. Culture like that of Cypripedium.

S. boissieria'num (Boissierian). 1½–2. Yellow, green, brownish. Peru. 1887.
„ „ *reticula'tum* (netted). Whitish, netted with green. Ecuador. 1885.
„ *carici'num* (Carex-like). 1. Light green, white, brown. Peru.
„ *cauda'tum* (tailed). 2. Green, pale brown. March. Ecuador. 1851.
„ „ *albertia'num* (Albertian). Yellow; lip yellow, stained dark purple.
„ „ *ro'seum* (rosy). Petals and lip rosy-purple. 1886.
„ „ *Urope'dium* (tailed-slipper). Lip long and narrow, not slipper-shaped. Colombia. 1850.
„ „ *Walli'sii* (Wallis's). Pale green, whitish; lip veined crimson. Ecuador.
„ „ *Warscewi'czii* (Warscewicz's).
„ *dallea'num* (Dallean). 2. Lip glossy carmine-red. 1895.
„ *hincksia'num* (Hincksian). See S. LONGIFOLIUM.
„ *kaieteu'rum* (Kaieteuran). See S. LINDLEYANUM.
„ *klotzschia'num* (Klotzschian). Guiana.
„ *Linde'ni* (Linden's). See S. CAUDATUM UROPEDIUM.
„ *lindleya'num* (Lindleyan). 2. Pale green, with crimson-brown veins. Colombia; British Guiana. 1885.
„ *longifo'lium* (long-leaved). Yellow-green, purple, shaded brown. Central Amer. 1869.
„ „ *colora'tum* (coloured). Pale purple. Costa Rica. 1873.
„ *Pari'shii* (Parish's). See CYPRIPEDIUM PARISHII.
„ *Pea'rcei* (Pearce's). See S. CARICINUM.
„ *reticula'tum* (netted). See S. BOISSIERIANUM.
„ *Rœ'zlii* (Rœzl's). 2½. Greenish-yellow, rose. Colombia. 1873.
„ *sargentia'num* (Sargentian). 2. Side lobes of lip with two white tubercles. Pernambuco. 1893.
„ *Schli'mii* (Schlim's). White, striped rose; lip with rose blotch. Colombia. 1867.
„ „ *albiflo'rum* (white-flowered). White. Colombia. 1875.
„ *vitta'tum* (striped). 1–1½. Pale green, striped red, brownish-red. Brazil. 1876.
„ *Walli'sii* (Wallis's). See S. CAUDATUM WALLISII.
„ *Warscewi'czii* (Warscewicz's). See S. CAUDATUM WARSCEWICZII.

SELF. A flower with petals of only one colour.

SELF-HEAL. *Prune'lla vulga'ris.*

SE'LINUM. (From *selinon*, parsley; in allusion to the finely divided leaves. Nat. ord. Umbelliferæ.)

Hardy or half-hardy herbs sometimes used in bedding designs. Seeds; divisions. Ordinary garden soil.

S. Cando'llii (Candoll's). 3. White. Leaves much divided. Himalaya.
„ *Carvifo'lia* (Carvi-leaved). White. Europe.
„ *Gmeli'ni* (Gmelin's). White. Northern regions.
„ *pyrena'icum* (Pyrenean). White. Pyrenees.
„ *tenuifo'lium* (slender-leaved). White. Himalaya.
„ *vagina'tum* (sheathing). White. Himalaya.

SELLIE'RA. (Probably a commemorative name. Nat. ord. Goodenoviaceæ.)

Hardy, creeping herb liking plenty of moisture. Divisions. Wet soil.

S. radi'cans (rooting). ½. Australia. "Swamp-weed."

SELLIGUE'A. (Probably from the Javanese name. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove, yellow-spored Ferns. See FERNS.

S. caudifo'rmis (tail-formed). See GYMNOGRAMME CAUDIFORMIS.
„ *flave'scens* (yellowish). May. E. Ind.
„ *Hamilto'ni* (Hamilton's). See GYMNOGRAMME HAMILTONIANA.
„ *heteroca'rpa* (various-fruited). See GYMNOGRAMME HETEROCARPA.
„ *macrophy'lla* (large-leaved). See GYMNOGRAMME MACROPHYLLA.
„ *pothifo'lia* (pothos-leaved). May. Nepaul.

SEMA'SIA WŒBERA'NA. See APPLE.

SEMECA'RPUS. Marking Nut-tree. (From *semeion*, a mark, and *karpos*, fruit; the black juice used for marking clothes. Nat. ord. *Anacards* [Anacardiaceæ]. Linn. 23-*Polygamia*, 2-*Diœcia*. Allied to Anacardium.)

Stove, greenish-yellow-flowered, evergreen trees. Cuttings of ripe shoots in sand, under a glass, in heat, in March or April; peat, loam, leaf-mould, and sand. Winter temp., 50° to 60°; summer, 60° to 90°.

S. Anaca'rdium (Anacardium). 20. Trop. Asia and Australia. 1820.
„ „ *cuneifo'lium* (wedge-leaved). 20. India. 1824.

SEMEIA'NDRA. (From *semeia*, a banner, and *aner*, an anther; referring to the petal-like appendage to each stamen. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

A greenhouse shrub, allied to Fuchsia, like which it may be cultivated.

S. grandiflo'ra (large-flowered). 5. Scarlet. March, and throughout the summer. Mexico. 1853.

SE'MELE. (Named after *Semele*, the mother of Bacchus. Nat. ord. Liliaceæ.)

Greenhouse evergreen climbing shrub. Divisions of the rootstock or suckers. Loam, peat, and sand.

S. andro'gyna (hermaphrodite). 3–20. Green, white. April. Canaries. 1713.

SEMPERVI'VUM. Houseleek. (From *sempervivo*, to live for ever; tenacity of life. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 11-*Dodecandria*, 7-*Dodecagynia*.)

Hardy and frame kinds, by division, and by cuttings, and most of them delight in dry, sandy soil, kept moist only when growing. Greenhouse kinds are also freely propagated by cuttings, dried for several days at the cut part; grown in sandy loam, leaf-mould, and brick-rubbish, and kept dry and in a state of rest in winter. Winter temp., 38° to 45°; summer, 55° to 75°.

HARDY HERBACEOUS.

S. admonte'nse (Admontan). Origin uncertain.
„ *Allio'nii* (Allioni's). France.
„ *ano'malum* (anomalous). ½. Mauve-purple. June. 1879.
„ *arachnoi'deum* (cobwebbed). ½. Purple. July. S. Europe. 1699. "Cobweb Houseleek."
„ „ *ma'jus* (large). ½. Red. June. Italy.
„ „ *mi'nus* (small). ½. Red. June. Italy.
„ *arena'rium* (sand). ½. Yellow. Tyrol, &c. 1879.
„ *arverne'nse* (Arverne). ½. Pink. France.
„ „ *boutignya'num* (Boutignyan). See S. BOUTIGNYANUM.
„ *assi'mile* (similar). ½. Light rose. July. Transylvania. 1879.
„ *atla'nticum* (Atlantic). ½. Light red. Morocco. 1873.
„ *atropurpu'reum* (dark-purple). Origin doubtful.
„ *barba'tulum* (slightly-bearded). ½. Light red. Tyrol.
„ *beugesi'acum* (Beugesian). France.
„ *bi'color* (two-coloured). Origin doubtful.
„ *bla'ndum* (smooth). Transsylvania.
„ *Boissie'ri* (Boissier's). Country unknown. 1879.
„ *bouli'cicum* (Boulician). See S. BEUGESIACUM.
„ *boutignya'num* (Boutignyan). ½. Light rose. Pyrenees, &c. 1878.
„ *Brau'nii* (Braun's). ½. Yellow. June, July. S. Europe. 1874.
„ *calcara'tum* (spurred). ½. Silvery-pink. Country unknown. 1874.
„ *calca'reum* (chalk-loving). ½. Soft red. Dauphiny.
„ *califo'rnicum* (Californian). See S. CALCAREUM.
„ *cauca'sicum* (Caucasian). Caucasus.
„ *cinera'scens* (greyish). Origin doubtful.
„ *Como'llii* (Comoll's). See S. GLAUCUM.
„ *cornu'tum* (horned). See S. ALLIONII.
„ *Delasoie'ii* (Delasoie's). Switzerland.
„ *doellia'num* (Doellian). ½. Red. Switzerland.
„ *Fauconne'ti* (Fauconnet's). ½. Red. Jura. 1879.
„ *fimbria'tum* (fringed). ½. Red. July. Tyrol.
„ *flagellifo'rme* (whip-formed). ½. Reddish. July. Siberia. 1823.
„ *Fu'nckii* (Funck's). ½. Red-purple. S. Europe.
„ *Gaudi'nii* (Gaudin's). Switzerland.
„ *glau'cum* (sea-green). 1. Red. Italy.
„ *globi'ferum* (globe-bearing). ½. Yellow. June. Europe; Asia Minor. 1733. "Hen and Chickens."
S. grandiflo'rum (large-flowered). See S. GLOBIFERUM.
„ *Gree'nii* (Green's). ½. Red. Origin doubtful. 1877.
„ *Hillebra'ndtii* (Hillebrandt's). Austria.
„ *hi'rtum* (hairy). 1. Cream. June. S. Europe. 1804.
„ *kopaonike'nse* (Kopaonikan). Servia.
„ *Lagge'ri* (Lagger's). Switzerland.
„ *Lamo'ttei* (Lamotte's). See S. TECTORUM.
„ *mettenia'num* (Mettenian). Switzerland.
„ *mode'stum* (modest). Europe.
„ *Moggri'dgei* (Moggridge's). ½. Red. August. Maritime Alps. 1881.
„ *monta'num* (mountain). ½. Red. June. Alps and Pyrenees. 1752.
„ *mucrona'tum* (small-pointed). India.
„ *Neilri'chii* (Neilrich's). See S. ARENARIUM.
„ *obscu'rum* (obscure). Origin doubtful.
„ *oligo'trichum* (few-haired). ½. Red. Tyrol. 1879.
„ *pa'rvulum* (small). ½. Soft red. Dauphiny
„ *pa'tens* (spreading). Yellowish. Eastern Europe.
„ „ *Heuffe'lii* (Heuffel's). Yellowish. Eastern Europe. 1876.
„ *Pilose'lla* (Pilosella). Origin doubtful.
„ *Pitto'nii* (Pitton's). ½. Yellow. July. Styria. 1879.
„ *Pome'lii* (Pomel's). ½. Red. July. Central France.
„ *pu'milum* (dwarf). ½. Pale red. June. Caucasus. 1824.
„ *Regi'næ-Ama'liæ* (Queen Amalia's). ½–½. Pale yellow. Greece. 1877.
„ *Roye'ni* (Royen's). Origin doubtful.
„ *rubicu'ndum* (reddish). See S. BLANDUM.
„ *ruthe'nicum* (Russian). ½–1. Yellow. Transsylvania. 1835.
„ *Schnittspa'hni* (Schnittspahn's). ½. Europe.
„ *Scho'ttii* (Schott's). ½. Red. Tyrol, &c. 1874.
„ „ *acumina'tum* (long-pointed).
„ „ *Schleha'ni* (Schlehan's).
„ *soboli'ferum* (stolon-bearing). See S. GLOBIFERUM.
„ *specio'sum* (showy). Europe.
„ *tecto'rum* (roof). 1. Purplish. July. Europe (Britain); Orient. "Common Houseleek."
„ „ *rustica'num* (rustic).
„ *tri'ste* (sad). ½. Red. Leaves red. Country unknown. 1879.
„ *venu'stum* (lovely). France.
„ *Verlo'ti* (Verlot's). ½. Rose. Dauphiny.
„ *Winkle'ri* (Winkler's). Origin doubtful.
„ *Wulfe'ni* (Wulfen's). ½. Yellow. Austria. 1879.
„ *Zelebo'ri* (Zelebor's). Servia.

GREENHOUSE HERBACEOUS.

S. a'nnuum (annual). Yellow. July. Canaries. 1815.
„ *dicho'tomum* (two-ranked). See S. ANNUUM.
„ *dodranta'le* (nine-inch). ½. Flesh. July. Teneriffe. 1815. Annual.
„ *micra'nthes* (small-flowered). ½. Green, red. September. Canaries.
„ *stella'tum* (starred). ½. Yellow. July. Madeira. 1790. Annual.

GREENHOUSE EVERGREENS.

S. aizoi'des (Aizoon-like). Yellow. June. Madeira.
„ *arbo'reum* (tree). 9. Golden. July. Levant. 1640.
„ „ *variega'tum* (variegated-*leaved*). 4. Yellow. July. Levant. 1640.
„ *au'reum* (golden). 1. Yellow. July. Canaries. 1815.
„ „ *spu'rium* (spurious). 1. Yellow. July. Canaries. 1820.
„ *balsami'ferum* (balsam-bearing). 1½. Yellow. Canaries.
„ *barba'tum* (bearded). 1. Yellow. July. Canaries. 1815.
„ *bifu'rcum* (forked). 2. Madeira.
„ *cæspito'sum* (turfy). ½. Yellow. August. Madeira. 1815.
„ *canarie'nse* (Canary). 1½. White. June. Canaries. 1699.
„ *chrysa'nthum* (golden-flowered). ½. Yellow. Abyssinia.
„ *cilia'tum* (hair-fringed). 1½. Pale yellow. Teneriffe. 1815.
„ *crue'ntum* (bloody). 2. Yellow. May. Canaries. 1834.
„ *cunea'tum* (wedge-shaped). 1–1½. Yellow. Canaries.
„ *Dora'me* (Dorame). 1–1½. Yellow.

S. frute'scens (shrubby). 3. Yellow. Teneriffe. 1804.
„ *glandulo'sum* (glanded-*leaved*). 1. Yellow. April. Madeira. 1777.
„ *glutino'sum* (clammy). 1½. Yellow. July. Madeira. 1777.
„ *Hawo'rthii* (Haworth's). 1. Yellow. Canaries.
„ *holochry'sum* (wholly-golden). 2. Golden-yellow. July. Canaries. 1816.
„ *hetero'trichum* (various-haired). Yellow. Eastern Europe.
„ *lineola're* (lined). See S. BARBATUM.
„ *longifo'lium* (long-leaved). Country unknown.
„ *Pai'væ* (Paiva's). Greenish. Canaries. 1866.
„ *poculifo'rme* (bowl-shaped). 2. Yellow. Canary Islands (?). 1909.
„ *polyphy'llum* (many-leaved). ½. Red. August. Canaries. 1777.
„ *pygmæ'um* (pigmy). Yellow. Canaries.
„ *retu'sum* (*large*-bitten). 2. Yellow. July. Teneriffe. 1824.
„ *rupi'fragra* (rock-scenting). Yellow. May. Canaries. 1830.
„ *Smi'thii* (Smith's). 1. Pale yellow. July. Teneriffe. 1815.
„ *tabulæfo'rme* (table-shaped). 1½. Yellow. July. Madeira. 1817.
„ *tortuo'sum* (twisted). ½. Yellow. July. Canaries. 1779.
„ *Tournefo'rtii* (Tournefort's). Country unknown.
„ *u'rbicum* (city) of Chr. Smith. 3. Pale yellow. Canary Islands. 1903.
„ *u'rbicum* (city) of Lindley. See S. HOLOCHRYSUM.
„ *uvi'ferum* (grape-bearing). Yellow. Teneriffe. 1829. "Uva de Guanches."
„ *villo'sum* (shaggy). ½. Yellow. June. Canaries. 1777.
„ *youngia'num* (Youngian). 3. Yellow. June. Canaries. 1842.

SENA'CIA GLAU'CA. See ELÆODENDRON GLAUCUM.

SENECI'LLIS. (A diminutive of *Senecio*. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Cineraria.)

Hardy herbaceous perennial. Seeds, but more generally by divisions; rich, sandy loam, or even common garden soil.

S. *glau'ca* (milky-green). 6. Yellow. July. Siberia. 1790.
„ *purpura'ta* (purple). See CINERARIA PURPURATA.

SENE'CIO. Groundsel. (From *senex*, an old man; naked receptacle compared to a bald head. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

So difficult are the species to determine, that sixty-four synonyms are added to Senecio. All yellow-flowered, where not otherwise specified; Annuals, by seeds in the open border, and in a slight hotbed; perennials, by seed, and division of the plant, and also in common garden soil, shrubby kinds, by seeds, and easily by cuttings, and mostly requiring a little peat or dried leaf-mould along with the soil, and the protection of a cool greenhouse. The double varieties of *e'legans* are much used in flower-gardens; but the single varieties are also very beautiful. The double varieties are preserved by cuttings in winter, and must be saved from damp, but they can also be reared from seeds like half-hardy annuals.

HARDY ANNUALS, &c.

S. aconitifo'lius (aconite-leaved). Light red or pink. China. 1877.
„ *ampulla'ceus* (flask-*headed*). 2. Texas. 1834.
„ *crassifo'lius* (thick-*leaved*). ½. Purple. July. S. Europe. 1815.
„ *divarica'tus* (straggling). See GYNURA DIVARICATA.
„ *erube'scens* (ruddy). 2. Purple. July. S. Africa. 1774. Greenhouse biennial.
„ *ga'llicus* (French). June. France.
„ *lanugino'sus* (woolly). 5. November. 1826.
„ *mari'timus* (maritime). 1. Yellow. July. S. Africa. 1820.
„ *telephifo'lius* (Telephium-leaved). See S. MARITIMUS.
„ *valerianæfo'lius* (Valerian-leaved). See ERECHTITES VALERIANÆFOLIA.

HARDY EVERGREEN.

S. gibbo'sus (swollen). June. Sicily. 1827.

GREENHOUSE EVERGREENS.

S. adeno'trichus (gland-haired). 2. May. Chili. 1826.
„ *Anteupho'rbium* (Euphorbia-like). Pale yellow. S. Africa. 1870.
„ *appendicula'tus* (appendaged). 3. White. June. Canaries. 1816.
„ *argu'tus* (sharp-*leaved*). 3. July. Mexico. 1827.
„ *a'sper* (rough). See S. ROSMARINIFOLIUS.
„ *auriculati'ssimus* (much-auricled). 1½–2. Bright yellow. British Central Africa. 1900.
„ *bellidioi'des* (Bellis-like). New Zealand.
„ *bi'color* (two-coloured). 2. Yellow. July. Italy; Greece.
„ *ca'ndidans* (whitish). Leaves white beneath. Falkland Isles. 1898.
„ *cauca'sicus* (Caucasian). 2. July. Caucasus. 1759. Herbaceous.
„ *chordifo'lius* (string-leaved). 1. Yellow, without rays. S. Africa.
„ *cinerarioi'des* (Cineraria-like). July. Mexico. 1826.
„ *clivo'rum* (of the hills). 3. Orange-yellow. Western and Central China; Japan. 1902.
„ „ *subcrena'tus* (subcrenate). 2½. Orange-yellow, smaller. China. 1909.
„ *compa'ctus* (compact). New Zealand.
„ *co'ncolor* (one-coloured) of Harvey. See S. SPECIOSUS.
„ *crue'ntus* (blood-coloured). 2–4. Red, purple, or rose. Canaries. 1839. The florist's Cineraria.
„ *e'legans* (elegant). 2. Purple. July. S. Africa. 1700.
„ „ *flo're-a'lbo* (white-flowered). 1½. White. July. S. Africa. 1700.
„ „ *ple'nus-a'lbus* (double-white). 1½. White. July. S. Africa. 1700.
„ „ *ple'nus-ru'ber* (double-red). 2. Red. July. S. Africa. 1700.
„ „ *pompo'nicus cu'preus* (pompon-copper). Double copper-coloured. 1888.
„ *Farri'sii* (Farris's). 2. Peru. 1869.
„ *Forste'ri* (Forster's). See BRACHYGLOTTIS REPANDA.
„ *fu'lgens* (shining). See KLEINIA FULGENS.
„ *Galpi'ni* (Galpin's). See KLEINIA GALPINI.
„ *grandiflo'rus* (large-flowered). 1½. Purple. August. S. Africa. 1774.
„ *grandifo'lius* (large-leaved). 4–6. Winter. Mexico.
„ *hadie'nsis* (Hadian). Arabia.
„ *hæmatophy'llus* (bloody-leaved). See GYNURA HÆMATOPHYLLA.
„ *halimifo'lius* (Halimus-leaved). 3. July. S. Africa. 1723.
„ *hanburia'nus* (Hanburyan). 1. Pale yellow. S. Africa (?). 1898.
„ *Heritie'ri* (Heritier's). 3. Purple. June. Canaries. 1780.
„ „ *cyanophtha'lmus* (blue-eyed). Whitish-blue. June. Canaries. 1843.
„ *Hu'ntii* (Hunt's). New Zealand.
„ *ilicifo'lius* (Ilex-leaved). 3. June. S. Africa. 1731.
„ *ju'nceus* (rush-like). S. Africa.
„ *Kæ'mpferi* (Kæmpfer's). 1–1½. Yellow. Japan.
„ „ *argе'nteo-variega'tus* (silver-variegated). Leaves variegated with creamy-white.
„ „ *au'reo-macula'tus* (golden-blotched). Leaves blotched with yellow. 1856.
„ „ *crispa'ta* (crisped). Leaves crisped. Japan. 1861.
„ *kleinioi'des* (Kleinia-like). Pale yellow. Abyssinia. 1894.
„ *la'nceus* (spear-*leaved*). 3. August. 1731.
„ *laxifo'lius* (lax-leaved). 2. Yellow. New Zealand. 1894.
„ *leuco'stachys* (white-spiked). Leaves white felted. Patagonia. 1893.
„ *lilaci'nus* (lilac). 6. Lilac. June. S. Africa. 1826.
„ *loba'tus* (lobed). S. Africa.
„ *longifo'lius* (long-leaved). 3. September. S. Africa. 1775.
„ *macroglo'ssus* (long-tongued). 8–12. S. Africa. 1868. Climber.
„ *macrodo'ntus* (large-toothed). Australia.
„ *madere'nsis* (Madeiran). 2. Yellow. June. Madeira. 1827.

S. *magnifi'cus* (magnificent). 5–8. Golden-yellow. March. Australia. 1901.
„ *malvæfo'lius* (mallow-leaved). 2. Yellow. August. Azores. 1777. Herbaceous.
„ *mikanioi'des* (Mikania-like). 20. Yellow. December. S. Africa. 1855. Climber.
„ *multibracteā'tus* (many-bracted). 1–1½. Purple. S. Africa. 1872.
„ *multiflo'rus* (many-flowered). 5. White. July. Canaries. 1829.
„ *orbicula'ris* (orbicular). Yellow, discoid. S. Africa. Tuberous-rooted.
„ *oxyriæfo'lius* (Oxyria-leaved). 1–1½. Yellow, discoid. S. Africa. Tuberous-rooted.
„ *Palmē'ri* (Palmer's). 1–2. Yellow. Lower California. 1890. Herbaceous.
„ *panicula'tus* (panicled). 2. Purple. July. S. Africa. 1774.
„ *persicæfo'lius* (peach-leaved). 3. Purple. July. S. Africa. 1820.
„ *Petasi'tis* (Petasites-like). 3. Yellow. February. S. Amer. 1812.
„ *peucedanifo'lius* (Peucedanum-leaved). 3. Purple. May. S. Africa. 1816.
„ *polymo'rphus* (many-formed). 1. Yellow. July. S. Africa. 1829.
„ *populifo'lius* (Poplar-leaved). 2. Red. July. Canaries. 1780.
„ *præ'cox* (early-*flowering*). 5½. Yellow. Mexico. 1824.
„ *Pseu'do-chi'na* (bastard-Chinese). See GYNURA PSEUDO-CHINA.
„ *pteroneu'rus* (winged-nerved). 3–8. Whitish. Morocco. 1872.
„ *pubi'gerus* (downy). 2. Red. June. S. Africa. 1816.
„ *pu'lcher* (beautiful). 2–3. Purple. September. Brazil; Uruguay.
„ *purpu'reus* (purple). 2. Purple. August. S. Africa. 1774. Herbaceous.
„ *pyramida'tus* (pyramidal). 2. Yellow. S. Africa. 1863. A fine species.
„ *reclina'tus* (leaning). See S. PANICULATUS.
„ *rigē'scens* (stiffish-*leaved*). See S. ROSMARINIFOLIUS.
„ *ri'gidus* (hard-*leaved*). 3. July. S. Africa. 1700.
„ *rosmarinifo'lius* (rosemary-leaved). 3. July. S. Africa. 1774.
„ *rotundifo'lius* (round-leaved). New Zealand.
„ *sagittifo'lius* (arrow-leaved). 7–10. White; disc yellow. Argentina. 1892.
„ *sali'gnus* (willow-like). 2. Yellow. July. Mexico. 1825.
„ *sca'ber* (scurfy). See S. RIGIDUS.
„ *scapo'sus* (long-scaped). 1–1½. Yellow. S. Africa.
„ *Ski'nneri* (Skinner's). 3–6. June. Guatemala. 1840. Climber.
„ *solidagi'neus* (Solidago-like). See S. HALIMIFOLIUS.
„ *sonchifo'lius* (Sonchus-leaved). See EMILIA SONCHIFOLIA.
„ *specio'sus* (showy). ½. Mauve-purple. July. S. Africa. 1789. Herbaceous.
„ *Tabula'ria* (Tabularia). 5. Greenish. Mexico. 1901.
„ *Trave'rsii* (Travers's). See S. BELLIDIOIDES.
„ *tropæolifo'lius* (Tropæolum-leaved). S. Africa.
„ *Tussila'ginis* (colt's-foot-*leaved*). 1. Purple. April. Teneriffe. 1829.
„ *venu'stus* (beautiful). See S. GRANDIFLORUS.
„ *volu'bilis* (twining). 6–10. Orange, purple. Peru. 1814. Twiner.

STOVE EVERGREENS.

S. *denticula'tus* (finely-toothed). 6. Yellow. S. Amer. 1825.
„ *di'scolor* (two-coloured). 4. White. July. Jamaica. 1804.
„ *lu'cidus* (shining). 2. Yellow. July. W. Ind.
„ *subsca'ndens* (somewhat-climbing). 10. Yellow, discoid. Trop. Africa. 1878. Climber.
„ *Swa'rtzii* (Swartz's). 2. Yellow. July. Jamaica. 1822.

HARDY HERBACEOUS.

S. *abrotanifo'lius* (Abrotanum-leaved). ½. Yellow. May, June. Europe.
„ *adonidifo'lius* (Adonis-leaved). 1. July. Europe. 1800.
„ *alpe'stris* (alpine). 1. Yellow. May. Europe. 1819.
S. *alpi'nus* (alpine). 2. July. S. Europe. 1683.
„ *alta'icus* (Altaian). Altai Mountains. 1837.
„ *arachnoi'des* (spider-like). See S. LANATUS.
„ *argē'ntea* (silvery). Chili. 1873.
„ *artemisiæfo'lius* (Artemisia-leaved) of Gilib. 1½. July. Lithuania. 1820.
„ *artemisiæfo'lius* (Artemisia-leaved) of Pers. See S. ADONIDIFOLIUS.
„ *atriplicifo'lius* (Atriplex-leaved). 3–6. White. August. N. Amer.
„ *aura'tus* (golden). 3. Yellow. July. Siberia. 1827.
„ *au'reus* (golden). June. N. Amer. 1819.
„ *balbisia'nus* (Balbisian). Europe.
„ *Balsami'tæ* (Balsamita-like). See S. AUREUS.
„ *brachychæ'tus* (short-cloaked). 2. Yellow. July. Europe; N. Asia. 1792.
„ *Cacalia'ster* (false-Cacalia). 4. July. Europe. 1805.
„ *campe'stris* (field). 1. Yellow. May. Europe. 1828.
„ „ *mari'timus* (maritime). 1. Yellow. Holyhead and Yorkshire.
„ *canade'nsis* (Canadian). See S. ARTEMISIÆFOLIUS.
„ *carnio'licus* (Carniolian). Europe.
„ *chenopodifo'lius* (Chenopodium-leaved). Himalaya.
„ *chrysanthemoi'des* (Chrysanthemum-like). Himalaya.
„ *Cinera'ria* (Cineraria). 1–2. Yellow. August. Mediterranean region. 1633. "Dusty Miller."
„ *cordifo'lius* (heart-leaved). 2. July. Austria. 1749.
„ *coria'ceus* (leathery-*leaved*). 4. July. Levant. 1728.
„ *correvonia'nus* (Correvonian). 1. Yellow, handsome. Caucasus. 1897.
„ *crassiflo'rus* (thick-flowered). Uruguay.
„ *crispa'tus* (crisped). 3. Yellow. July. Europe. 1818.
„ *croa'ticus* (Croatian). See S. CACALIASTER.
„ *cro'ceus* (reddish-yellow). See S. CRISPATUS.
„ *deci'piens* (deceiving). May. S. Africa. 1821.
„ *delphinifo'lius* (larkspur-leaved). 1. July. Mediterranean region. 1800.
„ *diversifo'lius* (diverse-leaved). Himalaya.
„ *Do'ria* (Doria). 3–5. Yellow. Europe.
„ *Doro'nicum* (Doronicum). 1. Yellow. Europe. "Leopard's Bane."
„ „ *hosmarie'nsis* (Hosmarian). Yellow. May. N. Africa. 1874.
„ *Dougla'sii* (Douglas's). N. Amer.
„ *eubæ'us* (Eubæan). Mount Eubæa.
„ *eudo'rus* (sweet-scented). July. 1815.
„ *Ewe'rsii* (Ewers's). See S. ALPINUS.
„ *Fabe'ri* (Faber's). 4–5. Deep yellow. Western China. 1906.
„ *farfaræfo'lius* (Farfara-leaved). Asia Minor.
„ *Fetiso'wi* (Fetisow's). Turkestan.
„ *fla'mmeus* (flame-coloured). Flame. Dahuria.
„ *fri'gidus* (cold). May. N. Amer. 1827
„ *Fu'chsii* (Fuchs's). 3. September. Europe. 1823.
„ *glau'cus* (sea-green). Transsylvania.
„ „ *carpa'thicus* (Carpathian). Carpathians.
„ *Grego'rii* (Gregory's). Australia.
„ *Hodgso'ni* (Hodgson's). 1½–3. Yellow. Japan. 1846.
„ *Hualta'ta* (Hualtata). 5. Straw-coloured. Argentina; Chili.
„ *inca'nus* (hoary). Europe, N. Asia.
„ *jacquemontia'nus* (Jacquemontian). Himalaya.
„ *jacquinia'nus* (Jacquinian). See S. NEMORENSIS.
„ *japo'nicus* (Japan). 1. August. Japan. 1774.
„ „ *macra'nthus* (large-flowered).
„ *Lago'pus* (hare's-foot). ½–1. Bright yellow. New Zealand. 1882.
„ *lana'tus* (woolly). July. Europe. 1827.
„ *Ledebou'rii* (Ledebour's). 6–8. Yellow. July, August. Siberia. 1831.
„ *leucophy'llus* (white-leaved). 1. July. S. Europe. 1816.
„ *Ligula'ria* (Ligularia). 3–4. Yellow. July. Himalaya. 1784.
„ „ *specio'sus* (showy). 3–4. Bright yellow. Central China. 1903.
„ *longi'lobus* (long-lobed). See S. DOUGLASII.
„ *lyratifo'lius* (lyre-leaved). 2. July. Austria. 1749.
„ *macrophy'llus* (large-leaved). 4. July. Caucasus. 1818.
„ *microphy'llus* (small-leaved). See S. MACROPHYLLUS.
„ *montevide'nsis* (Montevidean). Uruguay.
„ *Muehlenbe'rgii* (Muehlenberg's). 1½. White. July. N. Amer. 1801.
„ *nemore'nsis* (grove). 3. July. Austria. 1785.

S. ni'veus (snowy). See S. CRASSIFLORUS.
„ *odora'tus* (sweet-scented). 3. Australia.
„ *Otho'nnæ* (Othonna-like). 2. Pink. July. Iberia. 1816.
„ *ova'tus* (egg-*leaved*). See S. FUCHSII.
„ *palma'tus* (hand-shaped). Siberia; Sachalin Island.
„ *paludo'sus* (marshy). 3–6. Yellow. June, July. Europe (England); N. Asia. "Bird's Tongue."
„ *palu'stris* (marshy). 2–3. Pale yellow. June, July. N. temperate regions (England). Biennial.
„ „ *auranti'acus* (orange). 1. Orange. June. Switzerland. 1819.
„ *pappo'sus* (long-pappused). 1. Yellow. July. Galicia. 1821.
„ *pe'rsicus* (Persian). Northern Persia.
„ *prate'nsis* (meadow). See S. CAMPESTRIS.
„ *racemo'sus* (racemed). 1. Yellow. July. Russia; Caucasus, &c. 1820.
„ *raphanifo'lius* (Raphanus-leaved). See S. DIVERSIFOLIUS.
„ *Reisa'chii* (Reisach's). Bavaria; Switzerland.
„ *Rena'rdi* (Renard's). Turkestan.
„ *renifo'lius* (kidney-leaved). 1. Yellow. May. Caucasus. 1833.
„ *sagitta'tus* (arrow-shaped). 1. White. September. Russia, &c. 1780.
„ „ *gla'ber* (smooth).
„ *sarrace'nicus* (Saracen). 2. Yellow. July. Europe (Britain). "Saracen's Consound."
„ *sca'ndens* (climbing). 12–20. Yellow. July to September. Himalaya; China. 1909.
„ *sibi'ricus* (Siberian) of Linnæus. Yellow. July. Siberia. 1832.
„ *sibi'ricus* (Siberian) of Ledebour. See S. LIGULARIA.
„ *Smi'thii* (Smith's). Pink. July. Cape Horn. 1801.
„ *spathulæfo'lius* (spathulate-leaved) of Babington. See S. CAMPESTRIS MARITIMUS.
„ *spathulæfo'lius* (spathulate-leaved) of Decandolle. 1. Yellow. May. Europe. 1820.
„ *stenoce'phalus como'sus* (narrow-headed-tufted). 2. Yellow. July, August. Japan. 1881.
„ *suave'olens* (sweet-smelling). 6. White. August. N. Amer. 1732. "American Sweet Centaury."
„ *tabula'ris* (table-shaped). Mexico.
„ *tangu'ticus* (Tangutic). 6–7. Golden-yellow. July to September. Central and Western China. 1903.
„ *taraxacifo'lius* (dandelion-leaved). June. Caucasus. 1824.
„ *thapsoi'des* (Thapsus-like). Greece.
„ *thyrsoi'deus* (thyrse-like). S. Africa.
„ *Tournefo'rtii* (Tournefort's). 3. July. Pyrenees. 1810.
„ *umbro'sus* (shady). 2. July. Hungary. 1815.
„ *uniflo'rus* (one-flowered). ¼. July. Alpine Europe. 1789.
„ *veitchia'nus* (Veitchian). 3–6. Bright yellow. July, August. W. and Central China. 1905.
„ *wilsonia'nus* (Wilsonian). 3–5. Golden-yellow. China. 1905.

SENSITIVE FERN. *Onocle'a sensi'bilis.*

SENSITIVE PLANT. *Mimo'sa pu'dica.* There are several other plants which give evidence of being sensitive. The Venus Fly-trap (*Dionæ'a musci'pula*) has jointed leaves, which are furnished on their edges with a row of strong prickles. Flies, attracted by honey which is secreted in glands on their surface, venture to alight upon them. No sooner do their legs touch the hairs on these parts than the sides of the leaves spring up, and, locking their rows of prickles together, squeeze the insects to death. *O'xalis sensiti'va* and *Smi'thia sensiti'va* are similarly irritable, as the filaments of the stamens of the Barberry. One of this sensitive tribe, *Desmo'dium gy'rans*, has a spontaneous motion; its leaves are frequently moving in various directions, without order or co-operation. When an insect inserts its proboscis between the converging anthers of a Dog's Bane (*Apo'cynum androsæmifo'lium*), they close with a power usually sufficient to detain the intruder until death.

SE'PTAS. (From *septem*, seven; the number prevailing in the parts of the flower. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 7-*Heptandria*, 4-*Heptagynia*. Now referred to Crassula.)

Greenhouse, white-flowered evergreens, from the Cape of Good Hope. Increased by division of the roots; plants kept dry in winter; sandy loam and brick-rubbish. Winter temp., 38° to 45°.

S. cape'nsis (Cape). See CRASSULA SEPTAS.
„ „ *globiflo'ra* (globe-flowered). See CRASSULA SEPTAS GLOBIFLORA.
„ *Umbe'lla* (umbelled). See CRASSULA UMBELLA.

SEQUOI'A. (Supposed to be altered from *Seequayah*, an Indian name. Nat. ord. Coniferæ.)

Hardy evergreen trees. Seeds. Deep, well-drained soil.

S. gigante'a (gigantic). 200–450. California. 1853. "Wellingtonia," "Mammoth Tree."
„ „ *au'rea* (golden). Young growths pale yellow.
„ „ *pe'ndula* (drooping). Branches drooping. 1871.
„ *Rafine'squei* (Rafinesque's). 300. Oregon. A doubtful species.
„ *sempervi'rens* (evergreen). 200–300. California. "Redwood."
„ „ *a'lbo-spi'ca* (white-spiked). Young shoots white.
„ „ *glau'ca* (sea-green). Foliage sea-green.
„ „ *gra'cilis* (slender). Branches slender.
„ „ *taxifo'lia* (Taxus-leaved). Leaves broader.
„ „ *variega'ta* (variegated). Foliage sea-green, variegated. 1890.

SERA'PHYTA. (From *ser*, the silkworm, and *phuton*, a plant; fancied resemblance. Nat. ord. Orchidaceæ.)

Greenhouse epiphytical Orchid. Offsets. Fibre of peat, sphagnum, and crocks.

S. multiflo'ra (many-flowered). 1–2. Whitish. April. Mexico. 1816.

SERA'PIAS. (An ancient Greek name for some Orchid. Nat. ord. Orchidaceæ.)

Hardy terrestrial or ground Orchids. Offsets. Cool, moist soil.

S. cordi'gera (heart-bearing). 1. Lilac, purple. S. Europe, &c.
„ *Li'ngua* (tongue). 1. Lilac, red. S. Europe.
„ „ *elonga'ta* (elongated). 1½. Dull purple. Sicily. 1878.
„ „ *lu'teola* (small-yellow). 1. Yellowish. May. Sicily. 1876.
„ *longipe'tala* (long-petaled). See S. PSEUDO-CORDIGERA.
„ *negle'cta* (neglected). Italy; Corsica.
„ *Pseu'do-cordi'gera* (false-heart-bearing). 1½. Purple, green. May. S. Europe. 1876.
„ „ *pallidiflo'ra* (pale-flowered). 1. Pale purple. May. Sicily. 1876.

SERENO'A. (Commemorative of *Sereno Watson*, an American botanist. Nat. ord. Palmaceæ.)

A greenhouse Palm. Seeds. Fibrous loam, a little peat and sand.

S. serrula'ta (finely-sawed). 3–8. Pale green. N. Amer. 1840. "Saw Palmetto."

SERICOCA'RPUS. (From *serikos*, silken, and *karpos*, a fruit; in allusion to the silky hairs on the top of the fruit. Nat. ord. Compositæ.)

Hardy border perennials. Divisions. Ordinary garden soil.

S. conyzoi'des (Conyza-like). 2. White. June, July. N. Amer. 1778.
„ *solidagi'neus* (Solidago-like). 2. White. September. N. Amer. 1699.

SERICO'GRAPHIS. (From *serikos*, silken, and *grapho*, to write. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Now referred to Jacobinia.)

S. ghiesbreghtia'na (Ghiesbreght's). See JACOBINIA GHIESBRECHTIANA.
„ *Mohi'ntli* (Mohintl's). See JACOBINIA MOHINTLI.

SERI'NGIA. (Named after *M. Seringa*, a Swiss botanist. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Lasiopetalum.)

Greenhouse evergreen. Cuttings of young shoots in sand, under a bell-glass, in April or May; sandy peat one part, sandy, fibrous loam two parts. Winter temp., 40° to 48°.

S. platyphy'lla (broad-leaved). 12. White. June. Australia. 1822.

SERI'NGIA OVA'TA, of Sprengel. See PTELIDIUM OVATUM.

SERI'OLA. (From *seris*, succory; as the species resemble this plant. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Now referred to Hypochœris.)

S. ætné'nsis (Ætna). See HYPOCHŒRIS ÆTNENSIS.
„ *a'lbicans* (whitish). See HYPOCHŒRIS ACHYROPHORUS.
„ *glau'ca* (milky-green). See HYPOCHŒRIS ACHYROPHORUS.
„ *rube'scens* (reddish). See HYPOCHŒRIS ACHYROPHORUS.
„ *u'rens* (stinging). See HYPOCHŒRIS CRETENSIS.

SERI'SSA. (Name of a plant mentioned by Dioscorides. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse, white-flowered evergreens, from Japan and China. Cuttings in spring, under a glass; loam, peat, and sand. Probably hardy in the south of England.

S. fœ'tida (stinking). 2. May. 1787.
„ *mu'ltiplex* (double-flowered). May.

SERJA'NIA. (Commemorative of *Paul Sargeant*, a French botanist. Nat. ord. Sapindaceæ.)

Climbing or twining stove evergreen shrubs of no great beauty. Cuttings in sandy soil in a close case, with bottom-heat. Loam, a little peat and sand.

S. caracasa'na (Caracasan). Central Amer.
„ *clematidifo'lia* (Clematis-leaved). 6–10. White. Brazil. 1910.
„ *curassa'vica* (Curassavican). 16. W. Ind. 1818.
„ *cuspida'ta* (short-pointed). Whitish. Brazil.
„ *nodo'sa* (knotty). W. Ind.

SERRA'STYLIS. (From *serra*, a saw, and *stulis*, a style. Nat. ord. Orchidaceæ.)

A stove epiphytical Orchid. Offsets or divisions. Fibre of peat, sphagnum, and crocks.

S. mode'sta (modest). ½. Brown and yellow. Colombia. 1894.

SERRA'TULA. Sawwort. (From *serra*, a saw; edges of the leaves. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Perennials, by seeds and divisions in spring; annuals, by seed; common garden-soil. All purple-flowered, except where otherwise stated.

HARDY BIENNIALS.

S. flave'scens (yellowish). White. July. Spain. 1825. Annual.
„ *leuca'ntha* (white-flowered). See S. FLAVESCENS.
„ *ni'tens* (shining). See CENTAUREA NITENS.
„ *radia'ta* (rayed). 2½. July. Hungary. 1800.
„ *transylva'nica* (Transylvanian). See JURINEA MOLLIS.

HARDY HERBACEOUS.

S. ala'ta (winged). See SAUSSUREA JAPONICA.
„ *albe'scens* (whitish). See SAUSSUREA ALBESCENS.
„ *alpi'na* (alpine). See SAUSSUREA ALPINA.
„ *ama'ra* (bitter). See SAUSSUREA AMARA.
„ *angustifo'lia* (narrow-leaved). See SAUSSUREA ALPINA.
„ *argu'ta* (sharp-*toothed*). See S. TINCTORIA.
„ *atriplicifo'lia* (Atriplex-leaved). 5–10. Purple. August, September. Siberia; Central China. 1784.
„ *ca'spia* (Caspian). See KARELINIA CASPIA.
„ *centaurioi'des* (centaury-like). 1. July. Siberia. 1804.
„ *cichora'cea* (Chicory-like). 2. Purple. July. Italy. 1816.
„ *corona'ta* (crowned). 5. July. Siberia. 1739.
„ *cyanoi'des* (Cyanus-like). See JURINEA CYANOIDES.
„ *cynaroi'des* (Cynara-like). See CNICUS CYNAROIDES.
„ *depre'ssa* (depressed). 1. July. Caucasus. 1818.
„ *di'scolor* (two-coloured). See SAUSSUREA DISCOLOR.
„ *e'legans* (elegant). See LIATRIS ELEGANS.
„ *Gmeli'ni* (Gmelin's). July. Siberia. 1827.
„ *heterophy'lla* (various-leaved). 2. July. Dauphiny. 1824.
„ *Kitaibe'lii* (Kitaibel's). See S. HETEROPHYLLA.
„ *liatroi'des* (Liatris-like). See SAUSSUREA PYCNOCEPHALA.
S. linarifo'lia (linear-leaved). See JURINEA LINEARIFOLIA.
„ *multiflo'ra* (many-flowered). See JURINEA LINEARIFOLIA.
„ *ni'tida* (shining). 2. July. Siberia. 1827.
„ *pa'llida* (pale). Himalaya.
„ *panno'nica* (Hungarian). See CNICUS PANNONICUS.
„ *pilo'sa* (hairy). See LIATRIS SPICATA.
„ *pinnati'fida* (pinnately-cut). 2. Purple. July. Spain. 1820.
„ *pulche'lla* (pretty). See SAUSSUREA JAPONICA.
„ *pygmæ'a* (pigmy). See SAUSSUREA PYGMÆA.
„ *quinquefo'lia* (five-leaved). 3. Dark purple. July. Caucasus. 1804.
„ *sa'lsa* (salt). See SAUSSUREA CRASSIFOLIA.
„ *scario'sa* (dry). See LIATRIS SCARIOSA.
„ *si'mplex* (simple). See JURINEA MOLLIS.
„ *spica'ta* (spiked). See LIATRIS SPICATA.
„ *tincto'ria* (dyer's). 2–3. Purple. July. Europe (Britain). "Common Sawwort."
„ „ *monti'cola* (mountain-loving). 2. Purple. July, August.
„ *xeranthemoi'des* (Xeranthemum-like). 2. White. July. Russia; Caucasus. 1804.

SERRU'RIA. (Named after *J. Serrurier*, a German botanist. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Alliance near Leucospermum.)

Greenhouse, South African evergreens; purple-flowered, except where otherwise specified. Cuttings of ripe shoots in sand, under a bell-glass, and kept cool, the glass being raised and frequently removed at night, to prevent damping, the cuttings at the time protected by a frame or pit; light, fibrous loam, with a portion of charcoal and broken bricks or freestone. Winter temp., 38° to 48°, with a shaded position for the pots in the heat of summer; the heads will stand the sun freely if the roots are protected.

S. abrotanifo'lia (southernwood-leaved). 4. Pink. 1803.
„ *acroca'rpa* (pointed-fruited). Lilac. April. 1822.
„ *adsce'ndens* (ascending). 2. 1819.
„ *æ'mula* (rival). 3. 1803.
„ *anethifo'lia* (dill-leaved). 7. July. 1802.
„ *arena'ria* (sand). 1. 1803.
„ *artemisiæfo'lia* (Artemisia-leaved). 7. July. 1789.
„ *barbi'gera* (beard-bearing). 3. 1789.
„ *Burma'nni* (Burmann's). See S. FASCIFLORA.
„ *cilia'ta* (hair-fringed). 2. 1803.
„ *conge'sta* (congested). See S. MILLEFOLIA.
„ *crithmifo'lia* (Crithmum-leaved). 1½. 1800.
„ *cyanoi'des* (Cyanus-like). See S. PULCHELLA.
„ *decu'mbens* (lying-down). 1. 1818.
„ *diffu'sa* (straggling). 3. 1810.
„ *eleva'ta* (elevated). Lilac. April. 1821.
„ *elonga'ta* (lengthened). See S. CRITHMIFOLIA.
„ *emargina'ta* (end-notched). 2. Pink. 1800.
„ *fasciflo'ra* (bundle-flowered). 2½. 1876.
„ *flagella'ris* (whip). 2. 1816.
„ *flo'rida* (flowery). 2. 1824.
„ *glabe'rrima* (very smooth). 1. 1825.
„ *glomera'ta* (crowded). 3. 1789.
„ *millefo'lia* (thousand-leaved). 2. Pink, white. July. 1800.
„ *Nive'ni* (Niven's). 1½. 1800.
„ *odora'ta* (sweet-scented). 2. Pink. 1803.
„ *peduncula'ta* (long-stalked). See S. ARTEMISIÆFOLIA.
„ *phylicoi'des* (Phylica-like). See S. BARBIGERA.
„ *pinna'ta* (leafleted). 1. Pink. 1803.
„ *pulche'lla* (pretty). 1½. 1803.
„ *Roxbu'rghii* (Roxburgh's). 3. White. 1806.
„ *rubricau'lis* (red-stemmed). 2. 1818.
„ *scario'sa* (membranous). Lilac. 1816.
„ *squarro'sa* (spreading). 2. 1810.
„ *triplica'to-terna'ta* (thrice-ternate). S. Africa.
„ *triterna'ta* (triternate). See S. ANETHIFOLIA.
„ *villo'sa* (shaggy). 2. July. 1829.

SERVICE. (*Py'rus So'rbus.*) There are three varieties: Apple-shaped, Pear-shaped, and Berry-shaped.

Propagation.—By Grafting on the apple, medlar, and hawthorn.

By Cuttings and by *Seed*, as directed for the *Apple*.

Soil.—Clayey loam, well drained, suits it best.

Culture.—They are best trained as dwarf standards or espaliers. See MEDLAR.

Gather the fruit in autumn, and treat it like that of the Medlar.

SERVICE BERRY. *Amela'nchier canade'nsis.*

SERVICE-TREE. *Py'rus So'rbus.*

SE'SAMUM. (From *sesamon*, an old Greek name. Nat. ord. Pedaliaceæ.)

Stove herb. Seeds; cuttings in sand in heat. Fibrous loam, peat, and sand.

S. i'ndicum (Indian). 1–2. White, or marked with red, purple, or yellow. Trop. regions. 1731. "Sesame," "Gingelly," or "Oily-grain."

„ *lu'teum* (yellow) and *orienta'le* (oriental). See S. INDICUM.

SESBA'NIA. (From *sesban*, the Arabic name of *S. ægypti'aca*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Alliance near Cianthus.)

All yellow-flowered, except otherwise mentioned. Annuals require to be sown in a hotbed, in April, and flowered either in the plant-stove or a warm greenhouse; shrubs, by cuttings of the half-ripened, stubby shoots in sand, under a bell-glass, in bottom-heat; fibrous loam and sandy peat. Winter temp., 60°; summer, 60° to 90°, with abundance of moisture.

STOVE ANNUALS.

S. aculea'ta (prickly). 4. July. Tropics. 1690.
„ „ *cannabi'na* (hemp-like).
„ *affi'nis* (kindred). See S. ACULEATA.
„ *dispe'rma* (two-seeded). See S. PLATYCARPA.
„ *gra'cilis* (slender). 3. July. 1820.
„ *pi'cta* (painted). See S. OCCIDENTALIS.
„ *platyca'rpa* (broad-fruited). 2. July. N. Amer. 1816. Greenhouse.
„ *puncta'ta* (*red*-spotted). See S. ÆGYPTIACA.
„ *seri'cea* (silky). 3. July. W. Ind. 1818.

STOVE EVERGREENS.

S. ægypti'aca (Egyptian). 4. July. Tropics, Old World. 1680.
„ *Cavanille'sii* (Cavanilles's). 3. July. N. Amer.; Mexico. 1820.
„ *cocci'nea* (scarlet). See S. GRANDIFLORA.
„ *exaspera'ta* (rough). 8–10. Trop. Amer.
„ *grandiflo'ra* (large-flowered). 20–25. Red. August. India; Malaya. 1768.
„ *longifo'lia* (long-leaved). 3. July. Mexico. 1820.
„ *occidenta'lis* (western). 4. July. W. Ind. 1816.
„ *puni'cea* (purple). 3. Vermilion. July. Argentina. 1820.

SE'SELI. Meadow Saxifrage. (An old Greek name. Nat. ord. Umbelliferæ.)

Hardy perennial or annual herbs. Seeds; divisions. Ordinary garden soil.

S. a'nnuum (annual). 2. White. July. Europe. Annual.
„ *dicho'tomum* (forked). 2. White. July. Tauria. 1818.
„ *ela'tum* (tall). 4–6. White. July. S. Europe.
„ *gummi'ferum* (gum-bearing). 4. White. June to August. Tauria. 1804. Biennial.
„ *Hippoma'rathrum* (Hippomarathrum). 4–5. White. July. Europe. "Horse Fennel."
„ *Libano'tis* (Libanotis). 1½. White. July. Europe, &c.
„ *o'sseum* (bony). White. July. Europe.
„ *tenuifo'lium* (slender-leaved). 2–3. White. July. Siberia.
„ *tortuo'sum* (tortuous). White. July. S. Europe.

SESLE'RIA. (Commemorative of *Leonard Sesler*, an Italian botanist. Nat. ord. Gramineæ.)

Hardy perennial grasses. Seeds or divisions in ordinary garden soil.

S. arge'ntea (silvery). 1–2. S. Europe; Asia Minor.
„ *cæru'lea* (blue). 1–1½. Varying from blue to grey. May, June. Europe (Britain). "Moor Grass."
„ *sphæroce'phala* (round-headed). 1. Alps of Europe.

SESU'VIUM. (A name of unknown meaning. Nat. ord. Ficoidaceæ.)

Greenhouse succulents. Cuttings in sand. Fibrous loam, some finely broken bricks and sand.

S. peduncula'tum (long-stalked). See S. PORTULACASTRUM.

S. Portulaca'strum (Portulacastrum). Green, reddish. June. Tropics. 1692. "Sea Purslane."
„ „ *revolutifo'lium* (revolute-leaved). Red and white. July, August. Cuba.
„ „ *se'ssile* (stalkless). Flowers stalkless.

SETA'RIA. Bristly Foxtail Grass. (From *seta*, a bristle; there are long bristles at the base of the spikelets. Nat. ord. Gramineæ.)

Hardy annual grasses of neat form. Seeds in ordinary soil.

S. excu'rrens (ex-current). 1. Japan.
„ *glau'ca* (sea-green). 1. Tropical and sub-tropical regions (England).
„ *ita'lica* (Italian). 1. Tropical and subtropical regions. Italian Millet.
„ *macrochæ'ta* (large-cloaked). 1. India, &c.
„ *verticilla'ta* (whorled). 1. Green. Cosmopolitan (England).
„ *vi'ridis* (green). 1–1½. Green. Cosmopolitan (Britain). "Bottle Grass."
„ *vulpise'ta* (wolf's-bristle). 1. Green. July. Trop. Amer.

SETS are the tubers, or portions of tubers, employed for propagating potatoes and other tuberous-rooted plants. It may be accepted as a rule universally applicable to them, that a moderately-sized whole tuber is always to be preferred to a cutting of a tuber.

SETTERWORT. *Helle'borus fœ'tidus.*

SETTING is fertilising the female blossoms with pollen from the male blossoms. A plant is said to be *a shy setter* when this fertilising is apt to fail.

SET WALL. An old name for Valeriana.

SEVERI'NIA. (Commemorative of *M. A. Severino*, of Naples. Nat. ord. Rutaceæ. Now referred to Atalantia.)

S. buxifo'lia (box-leaved). See ATALANTIA BUXIFOLIA.

SEVILLE ORANGE. *Ci'trus Aura'ntium Bigara'dia.*

SEWERZO'WIA. (Commemorative of *Sewerzow*, a Russian traveller. Nat. ord. Leguminosæ. Now referred to Astragalus.)

S. turkesta'nica (Turkestan). See ASTRAGALUS SCHMALHAUSENI.

SEYME'RIA. (Named after *H. Seymer*, an English naturalist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Hardy, yellow-flowered annuals, from North America. Seeds in April, in a peat-border.

S. pectina'ta (comb-*leaved*). 1. July. 1820.
„ *tenuifo'lia* (fine-leaved). 1. July. 1730.

SEYMOU'RIA. (Commemorative of the *Hon. Mrs. Seymour*, of Woburn. Nat. ord. Geraniaceæ. Now referred to Pelargonium.)

S. asarifo'lia (Asarum-leaved). See PELARGONIUM ASARIFOLIUM.
„ *Heritie'ri* (Heritier's). See PELARGONIUM DIPETALUM.

SHADDOCK. *Ci'trus decuma'na.*

SHADES are for prolonging the time of a plant's blooming, or promoting the rooting of cuttings, by excluding the sunlight. See CUTTINGS, SCREENS, and TULIP.

SHALLOT. See ESCHALLOT.

SHANKING is the technical term for a gangrene which attacks the footstalks of grapes and the stems of cabbages which have vegetated through the winter. The shanking of *the grape* appears to be occasioned by the soil becoming exhausted, or by its temperature being too much below that in which the branches are vegetating; and, consequently, the supply of sap to the grapes being too much diminished, the parts which thus fail of support immediately begin to decay: this is an effect always the consequence of a diminished supply of sap, apparent either in the leaves, flower, or fruit. Shanking rarely appears in the grape if the roots of the vine are within the house. Shanking in *the cabbage* arises from a very different cause, viz. the freezing of the stalk of the cabbage just

where it comes in contact with the soil. The best preventive is dressing the soil with salt, about five bushels per acre, late in the autumn, and sprinkling charred vegetable matters among them. See DAMPING-OFF.

SHAREWORT. *A'ster Tripo'lium.*

SHARP CEDAR. *Aca'cia Oxyce'drus* and *Juni'perus Oxyce'drus.*

SHEARS. Garden shears are made with short handles and straight blades for pruning box, yew, and other hedges, for which the hedge bill is unsuitable. They are made with a notch near the base for cutting thick branches that could not readily be cut with a knife, and which the plain-bladed shears would not cut. Verge or edging shears have handles about 3 feet long, with the blades turned at right angles from the handles, and are used for cutting the grass edges of lawns, walks, and flower-beds.

SHEEP LAUREL. *Ka'lmia angustifo'lia.*

SHEEP'S SCABIOUS. *Jasio'ne.*

SHELLS. See ANIMAL MATTERS.

SHELTER. See SCREEN.

SHE-OAK. *Casuari'na quadriva'lvis.*

SHEPHERD'S BEARD. *Arnopo'gon.*

SHEPHERD'S CLUB. *Verba'scum Tha'psus.*

SHEPHERD'S KNOT. *Potenti'lla Tormenti'lla.*

SHEPHERD'S PURSE. *Capse'lla Bu'rsa-pasto'ris.*

SHEPHE'RDIA. (Named after the late *W. Shepherd*, curator of the Liverpool Botanic Garden. Nat. ord. *Oleasters* [Elæagnaceæ]. Linn. *22-Diœcia*, *4-Tetrandria*. Allied to Hippophaë.)

Hardy deciduous shrubs, from North America. Generally by suckers; frequently by seeds; deep, sandy loam. Good shrubs for lawns or shrubberies.

S. argе'ntea (silvery). 10. April. 1820.
„ *canade'nsis* (Canadian). 10. April. 1759.

SHERBOU'RNIA. (Commemorative of *Mrs. Sherbourn*, who first flowered the plant in this country. Nat. ord. Rubiaceæ. Allied to Gardenia.)

Evergreen stove shrub. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand. It requires similar heat and moisture to Gardenia to flower it.

S. folio'sa (leafy). 3–8. White and red. June, July. W. Trop. Africa. 1842.

SHIELD FERN. *Aspi'dium. Nephro'dium. Poly'stichum.*

SHIELD FLOWER. *Aspidi'stra.*

SHIFTING. See POTTING and ONE-SHIFT SYSTEM.

SHOLA or **SOLA.** *Æschyno'mene a'spera.*

SHOOTING STAR. *Dodeca'theon Mea'dia.*

SHO'REA. (A commemorative name. Nat. ord. Dipterocarpaceæ.)

Stove trees. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, with a little peat and sand, with a high temperature.

S. robu'sta (robust). India. "Sal."
„ *sela'nica* (Selanic). Moluccas.
„ *Talu'ra* (Talura). India.

SHO'RTIA. (Commemorative of *Dr. Short*, author of *Medicina Britannica*. Nat. ord. Diapensiaceæ.)

Hardy evergreen herbs. Divisions. Peaty soil in a little shade.

S. califo'rnica (Californian). See BÆRIA CORONARIA.
„ *galacifo'lia* (Galax-leaved). ½–½. White. February to April. Carolina. 1888.
„ „ *ro'sea* (rosy). ½–½. Rose. February to April. 1904.
„ *uniflo'ra* (one-flowered). ½–½. Flesh. March. Japan.
„ „ *grandiflo'ra* (large-flowered). ½–½. Pink, larger. 1910.

SHREDS for fastening trees to walls, &c., are best made of the list or selvage torn from black or blue cloth, and may be obtained of any tailor. The smallest possible number of shreds, and the narrowest consistent with strength, should be employed; for wherever the shred envelopes the branch, the wood beneath is never so well ripened as those parts exposed to the light and air, which are so essential to enable the bark to assimilate and separate from the sap those secretions which are required for the next year's growth. Shreds should always be long enough to permit the ends to be doubled over, so that the nail may pass through four thicknesses of the cloth, otherwise they look ragged, and are liable to tear away from the nail. If old shreds are re-used, they should be previously boiled for a few minutes to destroy any insect-eggs, or larvæ, they may contain.

SHRIVELLING of the berries of the grape in stoves arises from the roots of the vine not supplying a sufficiency of sap. This occurs if the roots are in a cold, heavy soil, or are vegetating in an outside border, the temperature of which is too low compared with that of the stove. In the first case, thorough draining and the incorporation of calcareous rubbish; and in the second case, protection to the border and stem, will remove the evil.

SHRUBBERY is a garden, or portion of a garden, devoted to the cultivation of shrubs.

SHRUBS are trees of a dwarf growth, not exceeding in height 12 or 15 feet, unless they are climbers, and having, if permitted, branches and foliage clothing the entire length of their stems.

SHRUBBY PINK. *Dia'nthus frutico'sus.*

SHUTE'RIA BI'COLOR. See HEWITTIA BICOLOR.

SHUTTING-UP is closing the lights of frames, pits, greenhouses, and stoves, which have been opened for the admission of air.

SIBBA'LDIA. (Named after *Dr. Sibbald*, of Edinburgh. Nat. ord. *Roseworts* [Rosaceæ]. Linn. *5-Pentandria*, *5-Pentagynia*. Now referred to Potentilla.)

S. ere'cta (upright). See CHAMÆRHODOS ERECTA.
„ *grandiflo'ra* (large-flowered). See CHAMÆRHODOS GRANDIFLORA.
„ *parviflo'ra* (small-flowered). See POTENTILLA SIBBALDI.
„ *procu'mbens* (lying-down). See POTENTILLA SIBBALDI.

SIBERIAN CRAB. *Py'rus prunifo'lia.*

SIBERIAN PEA-TREE. *Caraga'na.*

SIBTHO'RPIA. (Named after *Dr. Sibthorp*, of Oxford. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. *14-Didynamia*, *2-Angiospermia*.)

Yellow-flowered trailers. Seeds and divisions of the plant in spring; moist, sandy, shady peat-border. *Prostra'ta* requires the protection of a greenhouse in winter.

S. africa'na (African). Orient.
„ *europæ'a* (European). ½. July. Western Europe (England). "Cornish Moneywort."
„ „ *au'rea* (golden). Leaves yellow. 1895.
„ „ *variega'ta* (variegated). Leaves variegated with white.
„ *peregri'na* (wandering). ½. June. Mediterranean region; Madeira. 1771.
„ *prostra'ta* (trailing). See S. PEREGRINA.

SICA'NA. (A Peruvian name for *S. odorifera*. Nat. ord. Cucurbitaceæ.)

Rampant annual stove climbers. Seeds. Fibrous loam, a little rotted manure and sand. The fruits are edible.

S. atropurpu'rea (dark purple). Fruits purple-violet, otherwise like *S. odorifera*. Paraguay. 1894.
„ *odori'fera* (odoriferous). Yellow. Fruit like a large cucumber. Peru. 1889.
„ *sphe'rica* (spherical). Yellowish, fleshy. Fruit globose, size of an orange. Jamaica. 1890.

SI'CYOS. (An ancient Greek name for the cucumber. Nat. ord. Cucurbitaceæ.)

Climbing or prostrate herbs, most of them natives of the warmer parts of America, but *S. bryoniæfo'lia* may be planted outside in May. Seeds. Ordinary garden soil.

S. Badero'a (Baderoa). See S. BRYONIÆFOLIA.
„ *bryoniæfo'lia* (bryony-leaved). Yellow. July. Chili. "One-seeded Star Cucumber."
„ *edu'lis* (edible). See SECHIUM EDULE.

SI'DA. Indian Mallow. (From *side*, the pomegranate, but in the Doric dialect *side rhoa* was the water lily. Nat. ord. Malvaceæ.)

Stove, greenhouse or hardy herbs or shrubs. Seeds; cuttings under a bell-glass. Fibrous loam, leaf-mould, and sand for the tender species.

S. au'rea (golden). Yellow. India. Seems a species of Abutilon.
„ *auri'ta* (eared). See ABUTILON AURITUM.
„ *bedfordia'na* (Bedfordian). See ABUTILON BEDFORDIANUM.
„ *crista'ta* (crested). See ANODA LAVATEROIDES.
„ *diploscy'pha* (double-bowl). See SIDALCEA DIPLOSCYPHA.
„ *globiflo'ra* (globe-flowered). 5. White. Autumn. Mauritius. 1827. Seems a species of Abutilon.
„ *grave'olens* (strong-smelling). See ABUTILON GRAVEOLENS.
„ *hasta'ta* (halbert-shaped). See ANODA HASTATA.
„ *inæqua'lis* (unequal). 7. White. May. Brazil. 1829. Seems a species of Abutilon.
„ *intege'rrima* (very-entire). See ABUTILON INTEGERRIMUM.
„ *malvæflo'ra* (mallow-flowered). See SIDALCEA CAMPESTRIS.
„ *mo'llis* (soft). See ABUTILON MOLLE.
„ *Napæ'a* (Napæa). 4–8. White. July to September. N. Amer. 1748. Hardy herb.
„ *pæoniæflo'ra* (pæony-flowered). See ABUTILON PÆONIÆFLORUM.
„ *pa'tens* (spreading). Yellow. Abyssinia. Possibly a species of Abutilon.
„ *peri'ptera* (winged-round). See ANODA PUNICEA.
„ *pi'cta* (painted). See ABUTILON STRIATUM.
„ *pulche'lla* (pretty). See PLAGIANTHUS PULCHELLUS.
„ *ro'sea* (rosy). See ABUTILON ESCULENTUM.
„ *sessiliflo'ra* (stalkless-flowered). See ABUTILON CRISPUM.
„ *sherardia'na* (Sherardian). S. Europe; Orient.
„ *specio'sa* (showy). See ABUTILON ESCULENTUM.
„ *veno'sa* (veiny). See ABUTILON VENOSUM.
„ *vitifo'lium* (vine-leaved). See ABUTILON VITIFOLIUM.

SIDA'LCEA. Greek Mallow. (From *side*, an ancient Greek name, and *alkea*, another; applied to some mallow, and that from *alke*, strength, or healing power. Nat. ord. Malvaceæ.)

Hardy perennial herbs. Seeds; divisions. Well-drained garden soil.

S. campe'stris (field). 2–3. Pink. July to September. California. 1827.
„ *ca'ndida* (white). 2–3. White. July, August. New Mexico. 1882.
„ *diploscy'pha* (double-bowl). California.
„ *Hartwe'gii* (Hartweg's). 3. Pink. July, August. California.
„ *hu'milis* (dwarf). See S. MALVÆFLORA.
„ *Li'steri* (Lister's). 3–4. Pink, fringed. July to September. Gardens. 1896.
„ *malvæflo'ra* (mallow-flowered). 2. Rosy-purple. July to September. N.W. Amer.
„ „ *delphinifo'lia* (Delphinium-leaved). Leaves finely cut.
„ *murraya'na* (Murrayan). See S. SPICATA.
„ *spica'ta* (spiked). 2–3. Pink. July to September. California.

SIDERA'NTHUS SPINULO'SUS. See HAPLOPAPPUS SPINULOSUS.

SIDERA'NTHUS VILLO'SUS. See CHRYSOPSIS VILLOSA.

SIDERI'TIS. Ironwort. (From *sideros*, iron; supposed power of healing wounds by iron. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Marubium.)

Yellow-flowered, except where otherwise specified. Seeds; cuttings under a hand-light in summer; division of the plant in spring; dry, sandy, or chalky soil; well fitted for knolls and banks.

HARDY HERBACEOUS.

S. roma'na (Roman). 1. July. Italy. 1740. Annual.
„ *serra'ta* (saw-*leaved*). See S. SPINOSA.
„ *spino'sa* (spiny). 1½. August. Spain. 1818.

HARDY EVERGREENS.

S. scordioi'des (Scordium-like). 1. September. S. Europe. 1597.
„ „ *alpi'na* (alpine). 1. July. Pyrenees. 1827.
„ „ *angustifo'lia* (narrow-leaved). 1. July. Pyrenees. 1597.
„ „ *elonga'ta* (lengthened). August. Spain. 1822. Half-hardy.
„ *tau'rica* (Taurian). 1½. July. Tauria. 1822.

HALF-HARDY EVERGREENS.

S. angustifo'lia (narrow-leaved). 1. July. Spain. 1820.
„ *calyca'ntha* (calyx-flowered). See STACHYS LAVANDULÆFOLIA.
„ *canarie'nsis* (Canary). Yellow. Canaries. 1869. Greenhouse shrub.
„ *ca'ndicans* (white). 3. Yellowish. Madeira. 1714. Greenhouse shrub.
„ *chamædrifo'lia* (germander-leaved). 1. July. Spain. 1816.
„ *euba'a* (Eubæan). Greece.
„ *fra'grans* (fragrant). 1½. July. Spain.
„ *ilicifo'lia* (holly-leaved). See S. FRAGRANS.
„ *inca'na* (hoary). 1½. July. Spain. 1752.
„ *lana'ta* (woolly). 1. Asia Minor; Greece.
„ *leuca'ntha* (white-flowered). 1. White. July. Spain. 1823.
„ *monta'na* (mountain). Mediterranean region; Orient.
„ *perfolia'ta* (leaf-stem-pierced). 2. September. Levant. 1731.
„ *syri'aca* (Syrian). 1½. July. Levant. 1597.

SIDERODE'NDRON. Iron-tree. (From *sideros*, iron, and *dendron*, a tree; from hardness of wood. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Now referred to Ixora.)

S. triflo'rum (three-flowered). See IXORA FERREA.

SIDERO'XYLON. (From *sideros*, iron, and *xulon*, wood; literally, ironwood, from its hardness. Nat. ord. Sapotaceæ.)

Evergreen trees or shrubs. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

S. dulci'ficum (sweet-making). Trop. Africa. "Miraculous Berry."
„ *ine'rme* (unarmed). S. Africa. "Milk Wood."
„ *Mastichode'ndron* (Mastichodendron). W. Ind.
„ *melanophle'os* (black-barked). See MYRSINE MELANOPHLEOS.
„ *mi'te* (mild). White. June. S. Africa. 1816. Possibly a species of Ilex.
„ *spino'sum* (spiny). See ARGANIA SIDEROXYLON.
„ *tomento'sum* (felted). India.

SIDE-SADDLE FLOWER. *Sarrace'nia.*

SIE'BERA. (Commemorative of *F. W. Sieber*, a plant collector. Nat. ord. Umbelliferæ.)

Greenhouse evergreen perennials. Seeds; divisions. Fibrous loam, leaf-mould, and sand.

S. Billardie'ri (Billardière's). 2–3. White. May. Australia. 1829.
„ „ *lanceola'ta* (lance-shaped). 3. White. Australia. 1829.
„ *compre'ssa* (compressed). 1. Pale yellow. May. Australia.
„ *linearifo'lia* (linear-leaved). 2. Yellow. July. Australia. 1824.

SIEGESBE'CKIA. (Named after *J. G. Siegesbeck*, a German botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Alliance near Eclipta.)

Hardy, yellow-flowered annual. Seeds in a hotbed, in April; seedlings pricked off, and finally turned out into the flower-garden in the beginning of June; rich, light, sandy soil.

S. cordifo'lia (heart-leaved). See S. ORIENTALIS.
„ *droseroi'des* (Drosera-like). See S. ORIENTALIS.
„ *ibe'rica* (Iberian). See S. ORIENTALIS.

S. orienta'lis (eastern). 2. September. Tropics everywhere. 1730.
„ *triangula'ris* (triangular). See S. ORIENTALIS.

SIEVEKI'NGIA. (A commemorative name. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Divisions. Fibre of peat, sphagnum, and crocks, and grown in baskets.
S. reichenbachia'na (Reichenbachian). ½. Yellow; lip spotted with red. Ecuador. 1898.
„ *sua'vis* (sweet-scented). ½. Deep yellow; lip dotted with black. Costa Rica. 1902.

SIEVE'RSIA. (Named after *M. Sievers*, a Russian botanist. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 3-*Polygynia*. Now referred to Geum.)
Hardy, yellow-flowered, herbaceous perennials. Seeds, and division of the plant in spring; light, sandy soil.
S. anemonoi'des(Anemone-like). See GEUM ANEMONOIDES.
„ *atla'ntica* (Atlantic). See GEUM SYLVATICUM.
„ *glacia'lis* (icy). See GEUM GLACIALE.
„ *monta'na* (mountain). See GEUM MONTANUM.
„ *parado'xa* (paradoxical). See FALLUGIA PARADOXA.
„ *Pe'ckii* (Peck's). See GEUM RADIATUM.
„ *re'ptans* (creeping). See GEUM REPTANS.
„ *ro'sea* (rosy). See GEUM TRIFLORUM.
„ *trifio'ra* (three-flowered). See GEUM TRIFLORUM.

SIEVES. Garden sieves are made of various sizes, and the mesh also varies, but ¼-inch and ⅛-inch mesh are most often required for sifting soil, leaf-mould, and sand.

SIGMATO'GYNE. (From *sigma*, S-shaped, and *gune*, the ovary. Nat. ord. Orchidaceæ.)
Stove epiphytical orchid. Divisions. Fibre of peat, sphagnum, and crocks.
S. Pantli'ngii (Pantling's). ½. Yellowish. Assam. 1908.

SIGMATO'STALIX. (From *sigma*, S-shaped, and *stalix*, a pole. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Divisions. Fibre of peat, sphagnum, and crocks.
S. Eli'æ (Elia's). ½. Yellow, spotted with reddish-brown. Colombia. 1908.
„ *mallei'fera* (mallet-bearing). Yellow, spotted with brown. Colombia. 1883.
„ *peruvia'na* (Peruvian). ½. Straw, with purple band; lip yellow, orange. Peru. 1910.
„ *radi'cans* (rooting). Yellow, pale green, purple. Brazil.

SILE'NE. Catchfly. (From *sialon*, saliva; from the gummy secretion on the leaves and stems of some, which entraps small flies. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)
All freely by seeds. Annuals, in the open garden, in April, and many, if sown in September, will bloom very early; the low-growing ones are very suitable for knolls and rock-works. Herbaceous ones also by division, and by cuttings of the young shoots in sand, under a hand-light, in summer; shrubby ones by similar means; rich, sandy loam.

GREENHOUSE BIENNIALS.

S. crassifo'lia (thick-leaved). 1. Brown. July. S. Africa. 1774.
„ *diurnifio'ra* (day-flowering). See S. UNDULATA.
„ *gigante'a* (gigantic). 3. White. June. Mediterranean region. 1738.
„ *orna'ta* (ornamental). 2. Purple. July. S. Africa. 1775.
„ *undula'ta* (wavy). 1–2. Red. August. S. Africa. 1775.

HALF-HARDY HERBACEOUS.

S. Faba'ria (Faba-*leaved*). ½. White. July. Sicily; Crete. 1731.
„ *frutico'sa* (shrubby). 1½. Pink. June. Greece; Sicily. 1629. Evergreen.
„ *mocinia'na* (Mocinian). See S. LACINIATA.
„ *specio'sa* (showy). See S. LACINIATA.

HARDY ANNUALS, &c.

S. adsce'ndens (ascending). ½. Red. June. Spain. 1822.
„ *ægypti'aca* (Egyptian). 1. Pink. July. Egypt. 1781.
S. a'nglica (English). See S. GALLICA.
„ *Arme'ria* (Armeria). 1½. Pink. August. Europe (England). "Sweetwilliam Catchfly."
„ „ *a'lba* (white). White.
„ „ *compa'cta* (compact). See S. COMPACTA.
„ *Ato'cion* (Atocion). See S. ÆGYPTIACA.
„ *auricula'ta* (auricled). Italy; Greece.
„ *bi'color* (two-coloured). See S. PICTA.
„ *biparti'ta* (two-parted). See S. COLORATA.
„ *canarie'nsis* (Canary). ½. Red. June. Madeira. 1822.
„ *cerastioi'des* (Cerastium-like). ½. White. July. S. Europe. 1732.
„ *cheiranthifo'lia* (wallflower-leaved). 1. Red. July. Swan River. 1821.
„ *chromodo'nta* (coloured-toothed). Greece.
„ *clandesti'na* (hidden). Algeria; S. Africa.
„ *colora'ta* (coloured). 1. Red. June. Mediterranean region. 1818.
„ *compa'cta* (compact). 1½. Pink. August. Caucasus. 1823. Biennial.
„ *conge'sta* (crowded). 1. Pink. June. Greece. 1818.
„ *co'nica* (conical). ½–1. Rose or purple. May to July. Europe (Britain), &c.
„ *conoi'dea* (cone-like). Europe.
„ *cre'tica* (Cretan). ½. Green, white. July. Crete. 1732. Biennial.
„ *Cserei'i* (Cserei's). See S. FABARIA.
„ *cylindrifio'ra* (cylindrical-flowered). See S. JUVENALIS.
„ *dicho'toma* (forked). 1. White. June. Europe. 1823.
„ *di'scolor* (various-coloured). ½. Red. April. Greece. 1817.
„ *diversifo'lia* (various-leaved). See S. RUBELLA.
„ *echina'ta* (spiny) of Jaub. and Spach. See S. SQUAMIGERA.
„ *echina'ta* (spiny) of Otth. S. Europe.
„ *e'legans* (elegant). 1½. White. June. Portugal. 1819.
„ *friwaldskya'na* (Friwaldskyan). Thrace, &c.
„ *fusca'ta* (dusky). Brownish-red. June. Mediterranean region. 1829.
„ *ga'llica* (French). 1. Pink. June to August. Europe (England).
„ „ *quinquevu'lnera* (five-wounded). 1. Pink, with five red blotches. Europe (England).
„ *geminifio'ra* (twin-flowered). See S. OBTUSIFOLIA.
„ *glauca* (sea-green). 1. Purple. June. Spain. 1820.
„ *gra'cilis* (slender). See S. LONGICAULIS.
„ *hirsu'ta* (hairy). 1. White. June. Western Mediterranean region. 1820.
„ *hi'spida* (bristly). See S. VESPERTINA.
„ *ibe'rica* (Iberian). See S. DICHOTOMA.
„ *imbrica'ta* (imbricated). 1½. White. June. N. Africa. 1818.
„ *ita'lica* (Italian). 1½. White. May. Mediterranean region. 1759. Biennial.
„ *juvena'lis* (youthful). 2. Red or white. June. Asia Minor. 1835. Biennial.
„ *la'cera* (torn). 1½. White. July. Caucasus. 1818. Biennial.
„ *laxifio'ra* (loose-flowered). See S. HIRSUTA.
„ *lerchenfeldia'na* (Lerchenfeldian). Transsylvania.
„ *lini'cola* (flax-loving). Germany.
„ *linifo'lia* (flax-leaved). 1. Green, yellow. July. Greece. 1817.
„ *longicau'lis* (long-stemmed). 1. Red. June. Spain. 1818.
„ *lusita'nica* (Portuguese). See S. GALLICA.
„ *melandrioi'des* (Melandrium-like). 1. Violet-rose. July. Spain.
„ *multifio'ra* (many-flowered). 1. White. June. Hungary. 1794. Biennial.
„ *nemora'lis* (grove). See S. ITALICA.
„ *nicæ'nsis* (Nice). 1. June. Naples. 1824.
„ *no'cteolens* (night-smelling). Canaries.
„ *noctifio'ra* (night-flowering). 2. Pink. July. Europe (England).
„ *noctu'rna* (night). 2. Brown. July. S. Europe. 1683.
„ *nycta'ntha* (night-flowered). See S. NOCTURNA.
„ *obtusifo'lia* (blunt-leaved). 1. Purple. June. Western Mediterranean region. 1816.
„ *oliveria'na* (Oliver's). See S. COLORATA.
„ *orchi'dea* (orchid-like). See S. ÆGYPTIACA.

S. pe'ndula (drooping). 1. Red. June. Sicily. 1731.
„ „ *compa'cta* (compact). ½. Pink. May to August.
„ *perfolia'ta* (leaf-stem-pierced). See S. CHLORÆFOLIA.
„ *pi'cta* (painted). 2. Pink. July. France. 1817.
„ *porte'nsis* (Oporto). 1. Pink. July. Spain. 1759.
„ *Psammi'tis* (Psammitis). 1½. Cream. June. N. Africa. 1818. Biennial.
„ *Pumi'lio* (dwarf). ½. Pink. June. Alpine Europe. 1823.
„ *pygmæ'a* (pigmy). ½. Purple. June. Europe. 1823. Biennial.
„ *quinquevu'lnera* (five-wounded). See S. GALLICA QUINQUEVULNERA.
„ *ramo'sa* (branchy). See S. RAMOSISSIMA.
„ *ramosi'ssima* (branchiest). 1½. Rose. June. N. Africa. 1820. Biennial.
„ *reticula'ta* (netted). 1. Rose. July. Barbary. 1804.
„ *rube'lla* (small-red). ½. Flesh. May. Mediterranean region. 1735.
„ *sabuleto'rum* (gravel-pit). See S. GALLICA.
„ *Sarto'rii* (Sartor's). 1. Rose. June, July. Greece.
„ *secundiflo'ra* (side-flowering). See S. GLAUCA.
„ *sedoi'des* (Sedum-like). Mediterranean region.
„ *Sendtne'ri* (Sendtner's). Bosnia.
„ *seri'cea* (silky). 1½. Pink. July. S. Europe. 1801.
„ *spathula'ta* (spathulate). See S. PYGMÆA.
„ *squami'gera* (scale-bearing). White. July. Asia Minor.
„ *stri'cta* (upright). 1½. Purple. June. Spain. 1802.
„ *tenuifo'lia* (fine-leaved). See S. TENUIS.
„ *tridenta'ta* (three-toothed). ½. Pink. May. Barbary. 1823.
„ *undulæfo'lia* (wavy-leaved). See S. FUSCATA.
„ *vesiculi'fera* (vessel-bearing). White. June, July. Asia Minor.
„ *vesperti'na* (evening). 2. Rose. July. Mediterranean region. 1796.
„ *visco'sa* (clammy). 2. White. June. Europe. 1731. Biennial.
„ *viscosi'ssima* (clammiest). See S. NICÆENSIS.

HARDY HERBACEOUS.

S. acau'lis (stemless). ½. Rose. July. Northern and arctic regions (Britain). "Moss Campion," "Cushion Pink."
„ „ *a'lba* (white). ½. White. July. Britain.
„ „ *elonga'ta* (elongated).
„ „ *exsca'pa* (scapeless). ½. Red. July. Switzerland. 1819.
„ „ *fœ'mina* (female). Red. July. Scotland.
„ „ *ma's* (male). Rose. July. Scotland.
„ *alpe'stris* (alpine). ½. White. June, July. Alps. "Alpine Catchfly."
„ *alta'ica* (Altaic). 1. Yellowish. August. Altai. 1831.
„ *amœ'na* (pleasing). 1. White. July. Tartary. 1779.
„ *angustifo'lia* (narrow-leaved). 1. White. July. Europe. 1817.
„ *a'prica* (sunny). 1–1½. White or rosy. July. Eastern Siberia; China.
„ *argæ'a* (Argæan). Mount Argæus, Cappadocia.
„ *Aste'rias* (Asterias). 1½–2. Bright, lively red. June, July. Banat.
„ „ *grandiflo'ra* (large-flowered). 1½–2. Crimson-scarlet. Balkan Mts. 1903.
„ *bupleuroi'des* (Bupleurum-like). See S. LONGIFLORA.
„ *cæspito'sa* (turfy). ½. Pink. June. Caucasus. 1822.
„ *Campa'nula* (bell-*flowered*). ½. Green, white. July. Piedmont. 1823.
„ *ca'na* (hoary). See S. ITALICA.
„ *ca'spica* (Caspian). ½. Pink. June. Caucasus. 1823.
„ *Catesbæ'i* (Catesby's). See S. VIRGINICA.
„ *catho'lica* (universal). 1½. Green, white. August. Italy. 1711.
„ *cauca'sica* (Caucasian). ½. Rosy-violet. July. Caucasus.
„ *chloræfo'lia* (Chlora-leaved). 1. Lilac, yellow. August. Armenia. 1796.
„ *chlora'ntha* (pale-flowered). 1½. Green, white. July. Europe; Tauria. 1732.
„ *cilia'ta* (hair-fringed). ½. Purple. June. Crete. 1804.
„ *cordifo'lia* (heart-leaved). ½. Pink. June. Piedmont. 1819.
S. co'rsica (Corsican). See S. SUCCULENTA.
„ *Cucu'balus* (Cucubalus). 1–2. White. July. Europe (Britain). "Bladder Campion."
„ „ *pube'rula* (finely-downy). 1–2. White. July. Britain.
„ *depre'ssa* (depressed). ½. White. June. Iberia. 1816.
„ *di'sticha* (two-ranked). 1½. Pink. June. Western Mediterranean region. 1817.
„ *effu'sa* (spreading). See S. WOLGENSIS.
„ *ela'ta* (tall). See S. CHLORANTHA.
„ *Elizabe'thæ* (Elizabeth's). ½. Carmine-rose. Tyrol. 1863.
„ *fimbria'ta* (fringe-*flowered*). 2½. White. June. Caucasus. 1803.
„ *flave'scens* (yellowish). 1. Yellow. June. Hungary. 1804.
„ *folio'sa* (leafy). 1½. White. July. Amur; Manchuria.
„ *Fortu'nei* (Fortune's). 1–1½. Pink, laciniate. June to September. China. 1898.
„ „ *na'na* (dwarf). 1. Rosy-pink, laciniate. June to September. 1902.
„ *fruticulo'sa* (shrubby). ½. Pink. June, July. S. Europe.
„ *glaucifo'lia* (milky-green-leaved). See LYCHNIS PYRENAICA.
„ *graminifo'lia* (grass-leaved). See S. TURGIDA.
„ *Griffi'thii* (Griffith's). Himalaya.
„ *Gypso'phila* (chalk-loving). See S. REPENS.
„ *hispa'nica* (Spanish). See S. COLORATA.
„ *Hoo'keri* (Hooker's). ½. Pink. June. North-western Amer. 1873.
„ *infla'ta* (inflated). See S. CUCUBALUS.
„ „ *hirsu'ta* (hairy). See S. CUCUBALUS PUBERULA.
„ *infra'cta* (broken). See S. NUTANS.
„ *jeni'sea* (Jenisean). 1. White or pink. June, July. Siberia. 1824.
„ *lacinia'ta* (cut-*petaled*). 1½. Scarlet. July. N.W. Amer. 1823.
„ „ *Purpu'si* (Purpus's). ½–¾. Cardinal-red. Summer. Mexico. 1908.
„ *læ'ta* (bright-green). ½. Flesh. Western Mediterranean region. 1778.
„ *lanugino'sa* (woolly). Italian Alps.
„ *latifo'lia* (broad-leaved). 1. White. July. Barbary. 1817.
„ *li'vida* (livid). See S. NUTANS.
„ *longici'lia* (long-eye-lashed). 1–1½. White above, purplish beneath. July. Portugal.
„ *longiflo'ra* (long-flowered). 1½. Lilac, purple. August. Hungary. 1793.
„ *mari'tima* (sea). ½. White. August. Europe (Britain). "Witches' Thimble."
„ „ *flo're-ple'no* (double-flowered). 1. White. August. England.
„ *melandryifo'rmis* (Melandryum-formed). See S. APRICA.
„ *molli'ssima* (softest). 1. Pink. August. Italy. 1739.
„ *Monacho'rum* (monks'). ½. White. June, July. Bosnia.
„ *Musci'pula* (Muscipula). Mediterranean region. "Spanish Campion."
„ *nu'tans* (nodding). 1–2. White. June, July. Europe (Britain). "Nottingham Catchfly."
„ *ocymoi'des* (basil-like). See S. ITALICA.
„ *odontope'tala* (toothed-petaled). Syria.
„ *Oti'tes* (Otites). 1–3. Pale yellow-green. June to August. Europe (England); Orient.
„ *ova'ta* (egg-*leaved*). 1. White. June. N. Amer. 1820.
„ *parado'xa* (paradoxical). 1. Pink. July. S. Europe.
„ *parna'ssica* (Parnassian). See S. FRUTICULOSA.
„ *parvifo'lia* (small-leaved). See S. DISTICHA.
„ *pa'tula* (spreading). See S. ITALICA.
„ *pennsylva'nica* (Pennsylvanian). 1. Red. June. N. Amer. 1806.
„ *petræ'a* (rock). See S. SAXIFRAGA.
„ *pilo'sa* (shaggy). See S. ITALICA.
„ *polyphy'lla* (many-leaved). See S. NUTANS.
„ *procu'mbens* (lying-down). ½. Pink. June. Siberia. 1823.
„ *pube'scens* (downy). See S. SERICEA.
„ *pusi'lla* (puny). See S. QUADRIDENTATA.
„ *quadridenta'ta* (four-toothed). ½. White. June. Alps. 1822.

S. quadri'fida (four-cleft). ½. White. June. Europe. 1818.
„ *refle'xa* (bent-back). 1. Purple. June. S. Europe. 1726.
„ *re'gia* (royal). 1½. Crimson. June. N. Amer. 1811.
„ *re'pens* (creeping). 1. Pink. August. Siberia. 1823.
„ *Requie'nii* (Requien's). ½. White, red. June. Corsica. 1823.
„ *Saxi'fraga* (saxifrage). ½. Flesh. July. Europe. 1640.
„ *Scha'fta* (Schafta). ½. Rose. April. Caucasus. 1844.
„ *seri'cea* (silky). 1. Purple. July. S. Europe. 1818.
„ *sibi'rica* (Siberian). 1½. Rose. July. Siberia. 1773.
„ *spergulifo'lia* (spurry-leaved). ½. White. June. Armenia. 1817.
„ *stella'ta* (star-*leaved*). 1. White. July. N. Amer. 1696.
„ *stylo'sa* (large-styled). ½. Yellowish. July. Siberia. 1831.
„ *succule'nta* (succulent). 1. Purple. June. Egypt; Syria; Corsica. 1820.
„ *supi'na* (supine). ½. Pink. July. Caucasus. 1804.
„ *Ta'nakæ* (Tanaka's). 1–2. Purple. July. Japan.
„ *tata'rica* (Tartarian). 2. White. July. Russia. 1796.
„ *te'nuis* (slender). ½. Cream. July. Siberia. 1816.
„ *Tho'rei* (Thore's). ½–1. White. June, July. S.W. Europe.
„ *tu'rgida* (swollen). 2. White. June. Altaic Siberia. 1819.
„ *valle'sia* (Vallesian). ½. Flesh. July. Switzerland. 1765.
„ „ *cauca'sica* (Caucasian). See S. CAUCASICA.
„ *verecu'nda* (modest). 1–1½. Rosy. June, July. California.
„ *Vesе'lskyi* (Veselsky's). Syria.
„ *virgi'nica* (Virginian). 1. Purple. July. N. Amer. 1783. "Fire Pink."
„ *viscaginoi'des* (Viscago-like). See S. JENISEA.
„ *wolge'nsis* (Wolga). Green, yellow. July. Wolga. 1824.
„ *Zawa'dzkii* (Zawadzky's). ½. White. June, July. Transsylvania.

SILENO'PSIS LAGASCÆ. See LYCHNIS LAGASCÆ.

SILK-COTTON TREE. *Bo'mbax* and *Eriode'ndron anfractuo'sum.*

SILKEN SISSY. *Ascle'pias.*

SILK-TREE. *Albi'zzia Julibri'ssin.*

SILK VINE. *Peri'ploca græ'ca.*

SILKY OAK. *Grevi'llea robu'sta.*

SI'LPHIUM. (From *silphion*, a name given by Theophrastus to a plant, the juice of which was used as a condiment and in medicine. Nat. ord. Compositæ.)
Hardy border perennials allied to the Sunflowers. Divisions. Ordinary garden soil.
S. albiflo'rum (white-flowered). 2–4. Creamy-white. August, September. Texas. 1887.
„ *Asteri'scus* (Asteriscus). 2–4. Yellow. August. N. Amer.
„ *conna'tum* (united). See S. PERFOLIATUM.
„ *integrifo'lium* (entire-leaved). 3. Yellow. August, September. N. Amer.
„ *lacinia'tum* (deeply-cut). 4–6. Yellow. July to September. N. Amer. "Compass Plant."
„ *perfolia'tum* (stem-pierced). 3–6. Yellow. July, August. N. Amer. "Cap Plant."
„ *pinnati'fidum* (deeply-lobed). See S. TEREBINTHINACEUM PINNATIFIDUM.
„ *scabe'rrimum* (very-rough). 3–5. Yellow. August, September. N. Amer.
„ *terebinthina'ceum* (turpentine). 4–10. Yellow. July to October. N. Amer. "Prairie Burdock."
„ „ *pinnati'fidum* (deeply-lobed). Leaves deeply lobed.
„ *terna'tum* (three-lobed). See S. TRIFOLIATUM.
„ *trifolia'tum* (three-leafieted). 4–5. Yellow. August. N. Amer.

SILVER BELL or **SNOWDROP TREE.** *Hale'sia tetra'ptera.*

SILVER BERRY. The berry of *Elæa'gnus arge'ntea.*

SILVER BRACTS. *Cotyle'don Pachyphy'tum.*

SILVER BUSH. *Anthy'llis Ba'rba-Jo'vis.*

SILVER CEDAR. *Juni'perus virginia'na glau'ca.*

SILVER FIR. *A'bies pectina'ta.*

SILVER ROD. *Aspho'delus ramo'sus.*

SILVER TREE. *Leucade'ndron arge'nteum.*

SILVER WEED. *Potenti'lla Anseri'na.*

SILVER Y-MOTH. *Plu'sia Ga'mma.*

SI'LYBUM. (From *silubos*, and *silubon*, a name applied by Dioscorides for some thistle-like plant, used as food. Nat. ord. Compositæ.)
Hardy biennial, robust, thistle-like plants. *S. Marianum* is sometimes found as an escape in Britain. Seeds. Ordinary, well-drained soil.
S. ebu'rneum (ivory-like). 5–8. Purple. August, September. N. Africa. "Ivory Milk Thistle."
„ *hispa'nicum* (Spanish). See S. EBURNEUM.
„ *Maria'num* (Mary's). 5–8. Purple. August, September. Europe (Britain). "Milk Thistle."

SIMA'BA. (A native name. Nat. ord. Simarubaceæ.)
A deciduous stove tree. Seeds; cuttings in sand, in a close frame, with bottom-heat. The seed is used as a bitter tonic.
S. Ce'dron (Cedron). 10–20. May. Trop. Amer. 1846.

SIMARU'BA. (The Guiana name. Nat. ord. *Quassiads* [Simarubaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Quassia.)
Stove, yellowish-white-flowered evergreens, from Tropical America. Cuttings of the ripe shoots in sand, under a bell-glass, and in a strong, moist heat; fibrous peat, and light, fibrous loam. Winter temp., 55° to 65°; summer, 65° to 85°.
S. ama'ra (bitter). 10. 1789.
„ *exce'lsa* (lofty). See PICRÆNA EXCELSA.
„ *glau'ca* (milky-green). 1824.
„ *officina'lis* (shop). See S. AMARA.
„ *Tu'læ* (Tula's). 10. Bright carmine. Porto Rico. 1889.

SIME'THIS. (Named after the nymph *Simethis*. Nat. ord. Liliaceæ. Allied to Paradisia.)
Hardy perennial herb. Divisions. Peat and sand.
S. bi'color (two-coloured). 1. White, purple on the back. June. Europe (England, Ireland, naturalised only).
„ *planifo'lia* (flat-leaved). See S. BICOLOR.

SIMMO'NDSIA. (Commemorative of *T. W. Simmonds*, a botanist. Nat. ord. Euphorbiaceæ.)
Hardy evergreen shrub. Cuttings in a cold frame. Sandy loam and peat.
S. califo'rnica (Californian). 3–4. Green. California.

SIMOCHEI'LUS. (From *simos*, flat-nosed, and *cheilos*, a lip; the corolla being shortened and widened at the apex in some species. Nat. ord. Ericaceæ.)
A heath-like, evergreen shrub. Cuttings in sandy peat under a bell-glass. Peat and sand.
S. glabe'llus (smooth). 2. Flowers minute, in clusters. S. Africa. 1812.

SINA'PIS. Mustard. (From the Celtic *nap*, applied to the cabbage tribe. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Now referred to Brassica.)
Hardy, yellow-flowered annuals. See MUSTARD.
S. a'lba (white). See BRASSICA ALBA.
„ *frute'scens* (shrubby). See BRASSICA FRUTESCENS.
„ *ni'gra* (black). See BRASSICA NIGRA.
„ *nudicau'lis* (naked-stemmed). See BRASSICA OXYRHINA.

SINGA'NA. (From *singa-singa*, the name in Guiana. Nat. ord. *Legumes* [Leguminosæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)
Stove evergreen climber. Cuttings of firm side-shoots in sand, under a bell-glass, and in bottom-heat, in May; sandy loam and fibrous peat. Winter temp., 55° to 65°; summer, 60° to 85°.
S. guiane'nsis (Guianan). White. June. Guiana. 1827.

SINGLING. Thinning seedlings so that two do not touch each other.

SINNI'NGIA. (Named after *W. Sinning*, a German gardener. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove deciduous herbs, with tuberous rootstock. Seeds; leaf cuttings in sand under a bell-glass in heat. Loam, leaf-mould, a little manure and sand. The species are often, but erroneously, referred to Gloxinia.

S. barba'ta (bearded). See S. CAROLINÆ.
„ *Caroli'næ* (Carolina's). 1½. White, red. Summer. Brazil. 1867.
„ „ *ma'jor* (larger). 2. White. All parts larger. Bahia. 1883.
„ *conci'nna* (neat). Purple, yellow. June to September. Brazil.
„ „ *multiflo'ra* (many-flowered). Blue-lilac. 1864.
„ *conspi'cua* (conspicuous). 1. Yellow and purple. Brazil. 1868.
„ *gutta'ta* (spotted). 1½. Yellow, red. June. Brazil. 1827.
„ *He'lleri* (Heller's). 1. White, green. June. Rio Janeiro. 1827.
„ *hirsu'ta* (hairy). ½. Blue-lilac. July. Brazil. 1824.
„ *Menzie'sii* (Menzies'). Violet, with red markings. August. Brazil.
„ *Regi'na* (queen). Bluish-purple. Leaves velvety, with white veins. 1903.
„ *specio'sa* (showy). 1. Violet. June to September. Brazil. 1815. Wild plant with tubular, drooping flowers.
„ „ *albiflo'ra* (white-flowered). ½. White.
„ „ *caule'scens* (stemmed). 1–1½. Plants with a longer stem. 1826.
„ „ *macrophy'lla* (large-leaved). Leaves large, veined with silver. 1844.
„ „ *ru'bra* (red). ½. Red.
„ *veluti'na* (velvety) of Hooker. See S. HELLERI.
„ *veluti'na* (velvety) of Lindley. 1½. Yellow. June. Brazil. 1827.
„ *villo'sa* (shaggy). 1½. Yellow, green. June. Brazil. 1827.
„ *youngia'na* (Youngian). ½. Purple. June. (*S. speciosa* × *velutina*, 1840.)

SINOFRANCHE'TIA. (From *sin*, China, and *Franchet*, a French botanist. Nat. ord. Berberidaceæ.)

A tall, deciduous climber. Seeds; suckers; layers. Ordinary garden soil.

S. sine'nsis (Chinese). 20–30. White. Berries blue-purple. Central and W. China. 1909.

SINOWILSO'NIA. (From *sin*, China, and *E. H. Wilson*, the famous collector of plants for Messrs. J. Veitch & Sons, and the Arnold Arboretum. Nat. ord. Hamamelidaceæ.)

Hardy or half-hardy deciduous tree or shrub. Seeds; layers. Ordinary garden soil.

S. He'nryi (Dr. Henry's). 10–20. Greenish. Central China. 1909.

SIPHOCA'MPYLOS. (From *siphon*, a tube, and *kampulos*, a curve; shape of the flower. Nat. ord. *Bellflowers* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Cuttings root readily; those which are herbaceous are best struck from the young shoots, several inches in length, as they rise from the root in spring; *bi'color* and *betulæfo'lius* are hardy in sheltered places.

HARDY.

S. betulæfo'lius (birch-leaved). 3. Rich, yellow. July. Brazil. 1842. Deciduous.
„ *bi'color* (two-coloured). See LOBELIA LAXIFLORA.

GREENHOUSE EVERGREENS.

S. amœ'nus (lovely). See S. VILLOSULUS.
„ *cocci'neus* (scarlet-*flowered*). See CENTROPOGON COCCINEUS.
„ *crenatifo'lius* (crenate-leaved). 2. Scarlet, yellow. Brazil. 1870.
„ *duploserra'tus* (double-saw-*leaved*). 2. Red. Brazil. 1847.
„ *fimbria'tus* (fringed). See S. LONGEPEDUNCULATUS.
„ *fu'lgens* (shining). Scarlet. Country unknown. 1872.
„ *hama'tus* (hooked). Violet. Brazil. 1850.
S. humboldtia'nus (Humboldtian). Orange-scarlet. Peru. 1867.
„ *lantanifo'lius* (Lantana-leaved). Rose. July. Organ Mountains. 1841.
„ „ *glabriu'sculus* (rather-smooth). 3. Purplish-red. April. Caracas. 1847.
„ *longepeduncula'tus* (long-flower-stalked). 3. Red. January. Organ Mountains. 1841.
„ *villo'sulus* (somewhat-shaggy). 2–3. Orange and red. June. Brazil. 1832.

STOVE EVERGREENS.

S. ca'nus (grey). See S. MACROPODUS.
„ *ferrugi'neus* (rusty). Red. Colombia.
„ *gigante'us* (gigantic). 14. Yellow, red. October. Ecuador. 1794.
„ *glandulo'sus* (glanded-*calyxed*). 3. Red. July. Bogota. 1845.
„ *guiane'nsis* (Guianan). Guiana. 1847.
„ *Li'ndleyi* (Lindley's). Scarlet. Colombia. 1852.
„ *macro'podus* (long-stalked). 3. Purple-red. Brazil.
„ *manettiæflo'rus* (Manettia-flowered). 1. Red, yellow. April. Colombia. 1848.
„ *micro'stoma* (small-mouthed). 3. Scarlet. September. Colombia. 1844.
„ *ni'tidus* (shining). See S. MANETTIÆFLORUS.
„ *orbignia'nus* (D'Orbigny's). Yellow and scarlet. Valparaiso. 1850.
„ „ *exi'mius* (showy). Dark violet. Colombia. 1850.
„ „ *e'legans* (elegant). Bright red. Colombia. 1849.
„ *penduliflo'rus* (drooping-flowered). Pink. Venezuela. 1852.
„ *reticula'tus* (netted). Violet. Venezuela. 1850.
„ *sca'ndens* (climbing). Scarlet. Peru. 1847.
„ *suriname'nsis* (Surinam). See CENTROPOGON SURINAMENSIS.
„ *tovare'nsis* (Tovar). See CENTROPOGON TOVARENSIS.

SIPHONA'NDRA. See CHIOCOCCA.

SIPHONA'NTHUS I'NDICA. See CLERODENDRON SIPHONANTHUS.

SIPHO'NIA CAHU'CHU. See HEVEA GUIANENSIS.

SIPHO'NIA ELA'STICA. See HEVEA GUIANENSIS.

SI'REX GI'GAS. Two species of Sirex are known to be British, *S. gigas* being the largest, and when seen on the wing bears a superficial resemblance to a hornet. They do not sting, being Sawflies, with four wings of unequal length. *S. gigas* is ringed with black and yellow. The last ring of the female bears a spine directed backwards, and beneath it is an ovipositor, half as long as the body. With her saw she bores holes in the bark of coniferous trees, and deposits one egg in each hole. The larvæ eat their way into the wood, making holes one-third inch wide, thus making the wood useless except for fuel. *S. juvencus*, or Steel-blue Sirex, is smaller than the Giant Sirex, and is rich steel-blue, with reddish-brown feet. The larvæ are of large size, and in the case of *S. juvencus* prefers the Scotch Fir. Dying or unhealthy trees, especially those having holes from which the insects have emerged in the living state, and dead branches should be cut down and taken away to be used as fuel. They should be split up at once and the larvæ in the wood destroyed.

SISSOO WOOD. *Dalbe'rgia Si'ssoo.*

SISY'MBRIUM. (A classical name for some plant. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Many species, all but a few mere weeds. *S. millefolium* is propagated by cuttings of young shoots in spring; does best with greenhouse treatment, but requires at least a cold pit in cold winters; common, sandy loam. The others may be raised from seeds.

S. millefo'lium (milfoil-leaved). 1½. Yellow. June. Canaries. 1779. Evergreen.
„ *Sophi'a* (Sophia). 1–2. Yellow. June to September. Temperate regions (England). "Flixweed."
„ *toxophy'llum* (arrow-leaved). 1. White. July. Northern Asia. 1827.

SISYRI'NCHIUM. (From *sus*, a pig, and *runchos*, a snout; swine grub out the roots for food. Nat. ord. *Irids* [Iridaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Herbaceous perennials. Seeds and offsets in spring; sandy loam and leaf-mould.

HARDY.

S. a'nceps (two-edged). See S. ANGUSTIFOLIUM.
„ *angustifo'lium* (narrow-leaved). ½–1. Blue. June. N. Amer. 1693.
„ „ *be'llum* (pretty). ½–1. Blue. June.
„ „ *Nutta'llii* (Nuttall's). ½–1. Blue. June. N. Amer. 1823.
„ *be'llum* (pretty). See S. ANGUSTIFOLIUM BELLUM.
„ *bermudia'num* (Bermudan). ½–1. Blue. June. Bermuda. 1732. "Blue-eyed Grass."
„ *califo'rnicum* (Californian). ½. Yellow. July. California. 1796.
„ *colli'num* (hill). See HOMERIA COLLINA.
„ *Cummi'ngii* (Cumming's). 1. Cream. July. N. Amer. 1832.
„ *Dougla'sii* (Douglas's). See S. GRANDIFLORUM.
„ *filifo'lium* (thread-leaved). ½–1. White, veined with pink. May. Falkland Islands. 1885.
„ *formo'sa* (beautiful). See LIBERTIA FORMOSA.
„ *Gaudichau'dii* (Gaudichaud's). See S. FILIFOLIUM.
„ *glaucophy'llum* (milky-green-leaved). ½. Blue. August. N. Amer. 1830.
„ *grami'neum* (grassy). See S. ANGUSTIFOLIUM.
„ *grandiflo'rum* (large-flowered). 1. Purple. April, May. North-western Amer. 1826.
„ „ *a'lbum* (white). 1. White. April, May.
„ *iridioi'des* (Iris-like). See S. BERMUDIANUM.
„ *ixioi'des* (Ixia-like). See LIBERTIA IXIOIDES.
„ *lute'scens* (yellowish). See S. STRIATUM.
„ *mucrona'tum* (spine-pointed). See S. ANGUSTIFOLIUM.
„ *Nutta'llii* (Nuttall's). See S. ANGUSTIFOLIUM NUTTALLII.
„ *pulche'llum* (pretty). See LIBERTIA PULCHELLA.
„ *stria'tum* (channelled). 2. Yellow. June. Argentina. 1788.
„ *tenuifo'lium* (slender-leaved). ½. Yellow. May. Mexico. 1816.

HALF-HARDY.

S. chile'nse (Chilian). Blue. July. Trop. Amer. 1826.
„ *convolu'tum* (encircling). ½. Yellow. May. Trop. Amer. 1816.
„ *graminifo'lium* (grass-leaved). ½. Yellow. April. Chili. 1825.
„ „ *asce'ndens* (ascending). See S. GRAMINIFOLIUM.
„ „ *macula'tum* (blotched). Yellow, spotted with dark red. Chili. 1830.
„ „ *pu'milum* (dwarf). ½. Yellow. October. Chili.
„ *hirte'llum* (slightly-hairy). ½. White. July. N. Amer. 1830.
„ *iridifo'lium* (Iris-leaved). ½. Yellow. June. Trop. Amer. 1818.
„ *ju'nceum* (reed-like). ½. Lilac. June. Peru. 1832.
„ *la'xum* (loose). See S. IRIDIFOLIUM.
„ *longi'stylum* (long-styled). See SOLENOMELUS CHILENSIS.
„ *lu'teum* (yellow). See S. CONVOLUTUM.
„ *macroce'phalum* (large-headed). See S. PALMIFOLIUM.
„ *macula'tum* (spotted-*petaled*). See S. GRAMINIFOLIUM MACULATUM.
„ *maja'le* (May). See S. GRAMINIFOLIUM.
„ *micra'nthum* (small-flowered). ½. Yellow. June. Trop. Amer. 1815.
„ *moritzia'num* (Moritzian). See ORTHROSANTHUS CHIMBORACENSIS.
„ *odorati'ssimum* (sweetest-scented). See SYMPHYOSTEMON NARCISSOIDES.
„ *palmifo'lium* (palm-leaved). 1. White. February. Brazil. 1823. Stove.
„ *pedunculo'tum* (*long*-flower-stalked). See SOLENOMELUS CHILENSIS.
„ *plica'tum* (folded). See ELEUTHERINE PLICATA.
„ *specio'sum* (showy). See CALYDOREA SPECIOSA.

SITOLO'BIUM. (From *sitos*, wheat, and *lobos*, a lobe; shape of the lobes of the fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Dicksonia.)

Stove, brown-spored Ferns. See FERNS.

S. adiantoi'des (maiden-hair-like). See DICKSONIA ADIANTOIDES.
„ *cunea'tum* (wedge-shaped). See DICKSONIA DAVALLIOIDES CUNEATA.
„ *davallioi'des* (Davallia-like). See DICKSONIA DAVALLIOIDES.
S. disse'ctum (dissected). See DICKSONIA RUBIGINOSA.
„ *fla'ccidum* (weak). See DICKSONIA FLACCIDA.
„ *glutino'sum* (clammy). See DICKSONIA GLUTINOSA.
„ *pilosiu'sculum* (slightly-hairy). See DICKSONIA PILOSIUSCULA.
„ *puncti'lobum* (dotted-lobed). See DICKSONIA PUNCTILOBA.
„ *rubigino'sum* (ruddy). See DICKSONIA RUBIGINOSA.

SITO'NA. Two dark-coloured, short and flat-nosed weevils sometimes prove very destructive to Peas and Beans, during March and April. The Striped Pea Weevil (*S. lineata*) is black, with rusty red legs and antennæ. The wing-cases are lined with white. The Spotted Pea Weevil (*S. crinita*) is black, but covered with grey scales. The wing-cases are covered with short bristles, with some black spots, in lines. Dusting the leaves with soot while they are wet will deter the weevils to some extent. As they feed during the day when the sun is shining, tarred boards may be laid along the sides of the peas early in the morning, and the peas shaken over the boards when the sun is shining.

SI'UM. (From *sin*, the Celtic for water. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 2 *Digynia*.)

All weeds, except the following. See SKIRRET.

S. Si'sarum (skirret). 1. White. August. China. 1548.

SKI'MMIA. (From *Skimmi*, the Japanese name. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Hardy evergreen shrubs. Propagated from cuttings, and cultivated like the hardy evergreen Daphnes.

S. Fortu'nei (Fortune's) of Masters. 1–1½. White. March to May. China. 1853.
„ *japo'nica* (Japanese) of gardens. See S. FORTUNEI.
„ *japo'nica* (Japanese) of Thunberg. 1–4. White. Berries red. April, May. Japan. 1864.
„ „ *arge'ntea variega'ta* (silvery-variegated). Leaves irregularly bordered with white. 1875.
„ „ *Forema'ni* (Foreman's). Berries red, freely produced. 1881.
„ „ *fra'grans* (fragrant). 1–4. White, fragrant. Berries red. 1880.
„ „ *fragranti'ssima* (very-fragrant). 1–4. White, very fragrant, male. Japan. 1864.
„ „ *interme'dia* (intermediate). 1–3. White, rosy. 1870.
„ „ *obla'ta* (broadened). See S. JAPONICA.
„ „ *ova'ta* (egg-shaped). 1–4. White. Spring. Leaves broader.
„ „ *Roge'rsii* (Rogers'). 1–3. White. March, April.
„ „ *specio'sa* (showy). 1–4. White. March, April.
„ „ *Vei'tchii* (Veitch's). 3. Dull white. April. 1878.
„ *Lau'reola* (Laureola). 3–4. Pale yellow, fragrant. Spring. Himalaya.
„ *rube'lla* (reddish). See S. FORTUNEI.

SKI'NNERA EXCORTICA'TA. See FUCHSIA EXCORTICATA.

SKINNE'RIA CÆSPITO'SA. See IPOMŒA LINIFOLIA.

SKIRRET. (*Si'um Si'sarum.*) Sow at the end of March, or early in April, in drills ½ inch deep, and 12 inches apart. Thin the plants to 12 inches apart. In autumn they will be fit for use like parsnips. *By Offsets.*—Old roots throw off these in the spring, when they may be slipped off, and planted in rows a foot apart each way. *Soil.*—A light, rich loam is best, trenched, with a little manure dug in with the bottom spit. *To save Seed*, let a few of the old roots run up in spring; they ripen their seed in the autumn.

SKULL-CAP. *Scutella'ria.*

SKUNK CABBAGE. *Symploca'rpus fœ'tidus.*

SLEVO'GTIA. (Commemorative of *J. H. Slevogt* of Jena. Nat. ord. Gentianaceæ. Now referred to Enicostema.)

S. occidenta'lis (western). See ENICOSTEMA LITTORALE.
„ *orienta'lis* (oriental). See ENICOSTEMA LITTORALE.

SLIMY GRUB. See SLUGWORMS.

SLIPPERWORT. See CALCEOLA'RIA.

SLIPS are young shoots torn off from the parent plant, so that they have a heel of older wood attached to them.

(See CUTTINGS for culture.) *Slips*, also, is the name applied to the side beds of the kitchen garden, not immediately in contact with the walls or fences.

SLOA'NEA. (Commemorative of *Sir Hans Sloane*, founder of Chelsea Botanic Gardens and the British Museum. Nat. ord. Tiliaceæ.)

Evergreen stove shrubs or trees. Cuttings of mature wood in sand, in a close frame, with bottom-heat. Fibrous loam, a little peat and sand.

S. denta'ta (toothed). 40–50. White. October. Brazil; Guiana. 1752.
„ *sinemarie'nsis* (Sinemarian). 40–50. White. July. Guiana; W. Ind. 1820.

SLOE-TREE. *Pru'nus spino'sa.*

SLUGS are of many species, and the smaller are much more injurious to the gardener than those of a larger size, because they are much less discernible, and, their ravages being more gradual, are not at once detected. They are effectually destroyed by either salt or lime; and to secure the contact of these with their bodies, it is best first to water the soil where they harbour with lime-water in the evening when they are coming out to feed, sprinkling the surface at the same time with dry lime, and at the end of a week applying a surface-dressing of salt, at the rate of five bushels per acre. If cabbage-leaves are spread upon the surface of land infested by slugs, they will resort to their under sides, and thus they may be trapped; but lime and salt are most efficacious. Lime-water may be poured over wall-trees infested with them, and they may be syringed with it as well as with water in which gas liquor has been mixed, about half a pint to a gallon. If lime be sprinkled along the top and at the base of the wall, renewing it weekly, the slugs cannot get to the trees. Fresh brewers' grains, placed in small heaps, are good traps for them; and frequent earth-stirring helps to banish them.

SLUGWORMS. Under the name of Slimy Grub and Slugworm, a species of Sawfly (*Eriocampa limacina*) is only too well known for its destructiveness to the leaves of the pear, the upper surface of which it eats away, leaving only the skeleton, or framework of veins, and such leaves soon die. Various other names have been given to it, such as *Selandria atra* and *S. Cerasi*, the latter in allusion to its feeding on the Cherry. It sometimes attacks the Plum and the Peach. The larvæ are like small, slimy black slugs, with a large head. The Sawfly is shining black, with black or dusky legs and dusky wings with black nervures. It measures about half an inch across the outspread wings. The eggs are laid on the upper surface of the leaves about the middle of June, and the caterpillars hatch out late in that month. At first they are white, then yellow, and at last become covered with the black slime. They are most noticeable in July, and may occasionally be found in October, possibly from a second brood.

The Rose Slugworm (*Eriocampa Rosæ*) is much less conspicuous than the above, and often proves very destructive to Roses by eating away the upper skin of the leaf, in patches, or more or less completely, when the leaves die. The larvæ are pale yellow-green, with a darker line down the back, and an orange head. There are two broods, the first appearing in June, and the second in August or September.

As soon as the larvæ of Cherry and Pear Sawfly are observed on the leaves, the latter should be dusted with powdered quicklime or gas-lime. This causes the slugworms to moult or cast their skins to get rid of the lime, and then appear yellow. A second application will destroy the grubs, as they are unable to go on casting their skins. The perfect sawflies are rather sluggish in the early morning or late at night, and may then be shaken down on a cloth and destroyed. The Rose Slugworm may be destroyed by spraying the rose-bushes with nicotine or hellebore wash. The larvæ get killed by eating the poisoned leaves.

SMEATHMA'NNIA. (Named after *Smeathmann*, an African traveller. Nat. ord. *Passionworts* [Passifloraceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Stove, white-flowered evergreens, from Sierra Leone. Cuttings of ripened shoots, or short, stubby side-shoots, in sand, under a bell-glass, and in bottom-heat; sandy, fibrous loam, and lumpy peat. Winter temp., 55° to 60°; summer, 60° to 85°

S. emargina'ta (emarginate). Trop. Africa. 1851.
„ *læviga'ta* (smooth-*leaved*). 6. February. 1823.
„ *pube'scens* (downy). 10. February.
„ *ro'sea* (rosy). Rosy-red. 1851.

SMELOW'SKIA. (Commemorative of *T. Smelowsky*, a Russian botanist. Nat. ord. Cruciferæ.)

Hardy perennial herb. Seeds; divisions. Well-drained soil with some leaf-mould.

S. calyci'na (large-calyxed). ½. White. April. Arctic Asia and Amer. 1823.

SMILACI'NA. (Diminutive of *Smilax*, from *smile*, a scraper; referring to the rough stems. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy herbaceous, white-flowered, and from North America, except where otherwise specified. Divisions in spring; common, light soil.

S. alpi'na (alpine). See CLINTONIA ALPINA.
„ *amæ'na* (lovely). See S. PANICULATA.
„ *bifo'lia* (two-leaved). See MAIANTHEMUM CONVALLARIA.
„ *borea'lis* (northern). See CLINTONIA BOREALIS and C. UMBELLATA.
„ *canade'nsis* (Canadian). ½. June. 1812.
„ *cilia'ta* (eye-lashed). See S. RACEMOSA.
„ *cilia'ta* (hair-fringed). See MAIANTHEMUM CONVALLARIA.
„ *olera'cea* (pot-herb). 3. White, tinged with rose. Himalaya.
„ *panicula'ta* (panicled). 3–4. Green. May. Mexico. 1850. Greenhouse.
„ *racemo'sa* (racemed). 1. Pale yellow. May. 1640. "False Spikenard."
„ *ramo'sa* (branchy). 2. Pale yellow. May. Siberia. 1820.
„ *stella'ta* (starred). ½. May. 1633. "Star-flowered Lily of the Valley."
„ *trifo'lia* (three-leaved). ½. June. 1812.
„ *umbella'ta* (umbelled). See CLINTONIA UMBELLATA.
„ *uniflo'ra* (one-flowered). See CLINTONIA UNIFLORA.

SMI'LAX. (From *smile*, a scraper; rough, prickly stems. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 22-*Diœcia*, 6-*Hexandria*.)

Sarsaparilla is the produce of many species of Smilax. There are many species, but only the following require our notice, which have whitish-green flowers. Suckers from the roots; sandy, rich loam, and a little peat. They are evergreen climbers, seldom flowering. One of the most beautiful is *S. Bo'na-no'x ru'bens*, from the red colour of its tendrils. The species from China should have the protection of a cold pit or a wall.

S. argyræ'a (silvery). Leaves having silvery blotches. Bolivia. 1892. Stove.
„ *a'spera* (rough). 8. August. Europe; Orient. 1648. "Rough Bindweed."
„ „ *angustifo'lia* (narrow-leaved). 1½. September. China. 1820.
„ „ *macula'ta* (blotched). E. Indies.
„ „ *maurita'nica* (Mauritanian). Yellow-green. N. Africa. 1884.
„ „ *puncta'ta* (dotted). Leaves with white markings.
„ *auricula'ta* (eared). Spines white. N. Amer. 1884. Greenhouse.
„ *austra'lis* (southern). 4–6. Australia. 1791. Greenhouse.
„ *Bo'na-no'x* (good-night). 8–10. July. Carolina; Georgia. 1739.
„ „ *hasta'ta* (hastate). Leaves narrower. S. United States.
„ „ *ru'bens* (red). 6. Tendrils red. July. N. Amer. 1812.
„ *Chi'na* (China). 6–20. China. 1759.
„ *di'scolor* (two-coloured). Leaves with purple-brown blotches. Mexico. 1886. Greenhouse.
„ *excel'sa* (lofty). S.W. Europe; Asia Minor, &c.
„ „ *triangula'ta* (triangular). Leaves triangular, smaller by half. Servia. 1907.
„ *glau'ca* (sea-green). 2–3. July. N. Amer. 1815. "Carrion-flower."
„ *glycyphy'lla* (liquorice-leaved). Berries black in globose clusters. Australia. 1888. Greenhouse.
„ *herba'cea* (herbaceous). June. N. Amer.; Japan. 1699.
„ „ *Si'msii* (Sim's). A smaller leaved form.

S. hi'spida (roughly-hairy). N. Amer.
„ *lanceola'ta* (lance-shaped). 10–15. June. N. Amer. 1785.
„ *latifo'lia* (broad-leaved). See S. AUSTRALIS.
„ *longifo'lia* (long-leaved). See S. SALICIFOLIA.
„ „ *variega'ta* (variegated). See S. SALICIFOLIA VARIEGATA.
„ *laurifo'lia* (laurel-leaved). Southern United States.
„ *macrophy'lla* (large-leaved). E. Ind. Stove.
„ „ *macula'ta* (blotched). See S. ORNATA.
„ *officina'lis* (shop). Colombia. 1866. Stove.
„ *orna'ta* (adorned). Leaves blotched with silver. Mexico. 1863. Greenhouse.
„ *ovalifo'lia* (oval-leaved). See S. MACROPHYLLA.
„ *proli'fera* (proliferous). India. Stove.
„ *Pseu'do-chi'na* (false-China). Greenish. Berries black. N. Amer. 1888.
„ *quadrangula'ris* (four-angled). See S. ROTUNDIFOLIA.
„ *rotundifo'lia* (round-leaved). June. N. Amer. 1888. "Horse-brier," "Green-brier."
„ *ru'bens* (red). See S. BONA-NOX RUBENS.
„ *sagittæfo'lia* (arrow-leaved). See S. ASPERA ANGUSTIFOLIA.
„ *salicifo'lia* (willow-leaved). Leaves long. Brazil. Greenhouse.
„ „ *variega'ta* (variegated). Leaves with white variegation. Para. 1867. Greenhouse.
„ *Sarsapari'lla* (Sarsaparilla). 4. July. N. Amer. 1664.
„ *Shuttlewo'rthii* (Shuttleworth's). Leaves with silvery-grey blotches. Colombia. 1877. Stove.
„ *tamnoi'des* (Tamnus-like). N. Amer.
„ *Walte'rii* (Walter's). Virginia.
„ *Watso'nii* (Watson's). See S. HERBACEA.

SMI'THIA. (Commemorative of *Sir James Edward Smith*, the celebrated English botanist and founder of the Linnean Society of London. Nat. ord. Leguminosæ.) Stove annual. Seeds in heat in spring. Fibrous loam, peat, and sand.

S. purpu'rea (purple). 1. Purple, with white markings. June to September. India. 1848.

SMODI'NGIUM. (Possibly commemorative. Nat. ord. Anacardiaceæ. Allied to Rhus and Schinus.) A half-hardy or greenhouse climber. Cuttings in sand, under a bell-glass. Loam, a little peat, and sand.

S. argu'tum (acute). Flowers minute, green. S. Africa. 1908.

SMOKE PLANT. *Rhu's Co'tinus.*

SMOKE-WOOD. *Cle'matis Vita'lba.*

SMOOTH FLOWER. *Leia'nthus.*

SMOOTH-FRUITED HORSE CHESTNUT. *Pa'via.*

SMUT. The common name given to a number of minute fungi which live on the fruits of some cereals, and on the anthers and other parts of certain flowering plants. *Ustilago violacea* and *Sorosporium Saponariæ* live on the anthers of species of Dianthus, Silene, and other members of the Caryophyllaceæ. *S. primulicolum* lives on the young seeds of *Primula vulgaris*, *P. farinosa*, and *P. elatior*. Wherever these fungi are noticed, the flowers and other parts affected should be gathered and burnt.

SNAILS. Some gardens are considerably infested with snails, though they are less general enemies than slugs. The larger snails belong to the genus Helix, but only two of them need be mentioned here as garden enemies. The common snail (*H. aspera*) is yellow-brown, with five dark lines or narrow bands running round it, and wrinkled or rough on the outer surface. The shell of this species sometimes reaches 1¼ inches in diameter, and the inhabitant reaches a length of 2 to 3 inches when fully extended. The garden snail (*H. hortensis*) is marbled with dark spots and markings on an ochreous ground, and the out-turned lip of the shell is pale. This also comes into the garden, but is more common on grassy banks and hedgerows along with *H. nemoralis*, distinguished by the dark out-turned lip. These snails feed chiefly by night, and are very destructive to some kinds of plants on account of their size and the quantity they can eat in a night. They should be sought for in garden frames on the underside of boards, and in corners or secluded places where they can hide. Near and in hedges they may be found hidden away amongst loose, dry leaves, especially in winter, when they seal up the entrance to the shell and attach themselves to wood, stones, bricks, or to one another. They should be destroyed, as well as the heaps of shining, whitish eggs about the size of shot. Blackbirds and thrushes break the shells on stones and consume large numbers of snails.

SNAIL FLOWER. *Phase'olus Caraca'lla.*

SNAKE GOURD. *Trichosa'nthes angui'na.*

SNAKE PLANT. *Dracu'nculus vulga'ris.*

SNAKE ROOT. *Aristolo'chia Serpenta'ria.*

SNAKE'S BEARD. *Ophiopo'gon.*

SNAKE'S HEAD. *Hermoda'ctylus tubero'sus.*

SNAKE'S HEAD FRITILLARY. *Fritilla'ria Melea'gris.*

SNAKE'S MOUTH ORCHID. *Pogo'nia ophioglossoi'des.*

SNAKE'S TONGUE or **ADDER'S TONGUE.** *Ophioglo'ssum.*

SNAKE-WEED. *Poly'gonum Bisto'rta.*

SNAKE WOOD. *Bro'simum Auble'tii*, *Cecro'pia*, and *Stry'chnos colubri'na.*

SNAPDRAGON. *Antirrhi'num.*

SNAPWEED. *Impa'tiens.*

SNEEZEWORT. *Achille'a Pta'rmica.*

SNOW is one of the gardener's best shelters, and should never be removed from his outdoor crops. It prevents heat from radiating from them; protects them from freezing, drying blasts, and, being a bad conductor of heat, thus prevents its escape from them. We have never known the surface of the earth, below a covering of snow, colder than 32°, even when the temperature of the air above has been 28°.

SNOWBALL-TREE. *Vibu'rnum O'pulus ste'rilis.*

SNOWBERRY. *Chioco'cca* and *Symphorica'rpus racemo'sus.*

SNOWDROP. *Ane'mone sylve'stris* and *Gala'nthus.*

SNOWDROP-TREE. *Hale'sia tetra'ptera.*

SNOWDROP-TREE, AFRICAN. *Royе'na lu'cida.*

SNOWDROP WINDFLOWER. *Ane'mone sylve'stris.*

SNOWFLAKE. *Leuco'jum.*

SNOW FLOWER. *Chiona'nthus.*

SNOW GLORY, or **GLORY OF THE SNOW.** *Chionodo'xa.*

SNOW IN SUMMER. *Cera'stium tomento'sum.*

SNOW PEAR. *Py'rus sine'nsis.*

SNOW TREE. *Py'rus niva'lis.*

SNOWY FLY. Under the name of *Aleyro'des* three species of insects, closely allied to the aphides, may be noted, which are very injurious to various garden plants when they are allowed to become very numerous. They pierce the leaves with their long beaks, causing them to become yellow, and die before their proper time. They also make the leaves unsightly with the white scales from which the pupæ emerge. *Aleyro'des Bra'ssicæ* is the Cabbage Powdered Wing, and infests the leaves of Cabbages and other members of the tribe. The head and body between the wings are black, the rest of the body yellow or rosy, and the four wings white and powdery. The Snowy Fly of Cabbages (*A. proleté'lla*) is more or less covered with a white powder, with a dusky spot near the middle of the two fore-wings. Under the powder the body is similar in colour to *A. Brassicæ*. A third species is much more troublesome and destructive to Tomatoes, Cucumbers, and many stove plants, and is believed to have been introduced with plants from Tropical America or Mexico. This also is known as Snowy Fly (*A. vaporario'rum*), and is milk-white, with pale yellow bodies and no spots on the wings. It lives on the underside of the leaves, to which the white, scale-like pupæ become attached in immense numbers and hatch out in a few days.

The remedies adopted vary with the plants attacked. The worst attacked leaves of Cabbages, &c., should be

gathered and burnt. Giving them to pigs is another but less sure method of destroying them. Nicotine or soft soap washes will destroy them in the early stages of attack. In the case of the Snowy Fly of hothouses, fumigation and spraying with nicotine wash is efficacious against the fly, but not against the pupæ, and the fumigation must be repeated. Badly infested leaves should be burned.

SOAP-BOILER'S ASHES. See ASHES.

SOAP-PLANT. *Chloro'galum pomeridia'num.*

SOAP TREE. *Gymnocla'dus chine'nsis.*

SOAPWORT. *Sapona'ria officina'lis.*

SOBOLE'WSKIA. (Commemorative of the Russian, *Sobolewsky*. Nat. ord. Cruciferæ.)

Hardy, perennial, erect herb. Seeds; divisions. Well-drained garden soil.

S. clava'ta (club-shaped). Pure white. Armenia. 1892.
„ *litho'phila* (stone-loving). White. Tauria; Caucasus.

SOBRA'LIA. (Named after *F. M. Sobral*, a Spanish botanist. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, grown in pots. See ORCHIDS.

S. beyeria'na (Beyerian). 1½. White, tinted with pink; lip rosy-lilac, yellow. 1892.
„ *bla'nda* (pleasing). White; disc of lip golden-yellow. 1910.
„ *Bra'ndtiæ* (Mrs. Brandt's). 4. Rose-purple; lip with yellow throat. S. Amer. 1896.
„ *Ca'tlleya* (Cattleya-like). Purplish-brown; lip purple, with yellow keels. Colombia. 1877.
„ *Charleswo'rthii* (Charlesworth's). Rich rose-purple; crest bright yellow. Colombia. 1910.
„ *chlora'ntha* (yellow-flowered). See S. MACROPHYLLA.
„ *Clifto'niæ* (Clifton's). White, tinted with purple in throat of lip. Ecuador. 1910.
„ *deco'ra* (comely). Various. July. Guatemala. 1836.
„ *dicho'toma* (two-ranked). Rose, purple. March. Peru.
„ *Elizabe'thæ* (Elizabeth's). See S. LILIASTRUM.
„ *fra'grans* (fragrant). 1. Yellow. Colombia. 1853.
„ *Lanthoi'nei* (Lanthoin's). Flowers all opening together. Colombia. 1908.
„ *leucoxa'ntha* (white-yellow). White; throat of lip deep yellow, lined orange-red. Costa Rica. 1888.
„ *Lilia'strum* (lily-*flowered*). 3. White. July. Guiana. 1840.
„ „ *ro'sea* (rosy). Deep rose; petals with white veins.
„ *Linde'nii* (Linden's). 3–4. White, tinted rose; lip crimson-purple. Ecuador. 1895.
„ *Lo'wii* (Low's). 1–1½. Bright purple. Colombia. 1890.
„ *lu'teola* (small-yellow). 3. Light yellow, with darker veins. Trop. Amer. 1898.
„ *macra'ntha* (large-flowered). 6. Crimson. September. Mexico. 1842.
„ „ *a'lba na'na* (white-dwarf). 1. Pure white. 1897.
„ „ *a'lbida* (whitish). Creamy-white; lip rosy-purple. Mexico. 1871.
„ „ *Hodgkinso'ni* (Hodgkinson's). Lilac; lip rose-purple and orange. 1894.
„ „ *kienastia'na* (Kienastian). White, with a small yellow spot on the lip. 1888.
„ „ *na'na* (dwarf). 2½. Rose-purple; lip violet, yellow. 1874.
„ „ *pa'llida* (pale). Whitish, pale purple, and yellow throat. 1873.
„ „ *purpu'rea* (purple). Deep purple.
„ „ *splé'ndens* (splendid). 3. Crimson. September. Mexico. 1846.
„ *macrophy'lla* (large-leaved). Yellow. June. Panama.
„ *ro'sea* (rosy). 6. Pale rose. Peru; Colombia.
„ *Ru'cheri* (Rucker's). See S. ROSEA.
„ *Sa'nderæ* (Mrs. Sander's). White. Central Amer. 1890.
„ *se'ssilis* (stalkless) of Hooker. See S. DECORA.
„ *se'ssilis* (stalkless) of Lindley. 2–4. Rose-red; lip crimson. British Guiana. (B.M., t. 7376.)
„ *suavé'olens* (sweet-smelling). Pale yellow; lip white, with brown disc. Central Amer. 1878.
„ *va'lida* (strong). ¾–1. Whitish-yellow; lip deep orange in front. Panama. 1909.
S. viola'cea (violet). Violet, white. July. Merida.
„ „ *a'lba* (white). White, with yellow throat. 1904.
„ *Warscewi'czii* (Warscewicz's). Panama.
„ *Wiga'niæ* (Mrs. Wigan's). Soft yellow, shaded with rose. 1898.
„ *Wilso'ni* (Wilson's). White, rose; lip with yellow blotch. Central Amer.
„ *xantholeu'ca* (yellow-white). Sulphur-yellow; lip lemon, with yellow throat. Central Amer. 1882.
„ „ *a'lba* (white). Pale primrose. 1889.

SOCRATE'A. (Commemorative of the great Greek philosopher, *Socrates*. Nat. ord. Palmaceæ. Allied to Iriartea.)

A stove Palm sending out aerial roots, one to 6 feet from the ground, so that it appears to be standing on its roots. Seeds. Fibrous loam, one-third of lumpy peat, and sand.

S. exorrhi'za (rooting-outwards). 60–100. Yellow-green. Guiana; Amazons. 1849. "Zanona Palm."

SOIL. However varying in the proportions, yet every soil is composed of silica, alumina, lime, magnesia, oxide of iron, salts, and animal and vegetable remains. A fertile soil is one which contains such a proportion of decomposing matter and of moisture as to keep the crop growing upon it always supplied with food in a state fit for the roots to absorb, yet not so superabundantly as to render the plants too luxuriant, if the object in view is the production of seed; but for the production of those plants whose foliage is the part in request, as spinach or of edible bulbous roots, as onions, which have a small expanse of leaves, so as to be almost entirely dependent upon the soil for nourishment, there can scarcely be an excess of decomposed matter presented to their roots.

A *subsoil* of gravel, mixed with clay, is the best, if not abounding in oxide of iron; for clay alone retains the moisture on the arable surface in too great an excess; and sand or chalk, on the contrary, carries it away too rapidly. It is, however, evident, that to insure these desiderata in any soil, at all seasons, is impossible; and it is manifest that a soil that would do so in one climate would fail in another, if the mean annual temperature of them should differ, as well as the amount in inches of rain which falls during the same period. Thus, in the western parts of England, more than twice as much rain occurs as in the most eastern counties, or in the proportion of forty-two to nineteen. A soil in the east of England, for any given crop, therefore, may be richer and more tenacious than the soil required for it on the western coast.

Alumina (clay) imparts tenacity to a soil when applied; silica (sand) diminishes that power; whilst chalk and lime have an intermediate effect. They render heavy soils more friable, light soils more retentive. These simple facts are important; two neighbouring gardens, by an interchange of soils, being often rendered fertile, which before were in the extremes of tenacity and porosity.

In affording warmth to plants, the earth is of considerable importance, and the power of accumulating and retaining heat varies as much in soils as the proportions of their constituents. Sir Humphry Davy found that a rich black mould, containing one-fourth of vegetable matter, had its temperature increased, in an hour, from 65° to 88° by exposure to the sunshine, whilst a chalk soil was heated only to 69° under similar circumstances. But the first, when removed into the shade, cooled in half an hour 15°; whereas the latter lost only 4°. This explains why the crops on light-coloured, tenacious soils are in general so much more backward in spring, but are retained longer in verdure, during autumn, than those on black, light soils; the latter attain a genial warmth the more readily, but part from it with equal speed.

The quantity of soluble matter obtainable from a soil at any one time is very small, seldom exceeding a one-thousandth part of its weight; and even pure vegetable mould, the debris of entirely putrefied plants, was found by Saussure to yield only one-eleventh of soluble matter. This mould was too rich for horticultural purposes, peas and beans grown in it being too luxuriant; and they were more productive in a soil containing only one-twentieth of organic constituents dissolvable by water. Small in amount, however, as are the soluble constituents of the most fertile soils, they are necessary for the

vigorous vegetation of plants; for when a soil is deprived of those constituents by frequent washings with boiling water, it is much less fertile than before. Liebig and others have most illogically concluded, from the smallness of the soluble extract contained in a soil, that it is of small importance, forgetting that as fast as it is taken by the roots of the crop, it is generated again by the decomposition of the animal and vegetable remains. This is one reason why fallowing is beneficial. Easily decomposing matters have been exhausted by successive crops; and by a year's rest, and exposure to the disintegrating agency of the air, rain, and frost, the more stubborn and more slowly decomposing matters have time to decay and accumulate in the soil.

SOILING-UP. See BASINING-UP and EARTHING-UP.

SO'JA. (From *sooja*, the name of a sauce made from the seeds in Japan. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Now referred to Glycine.)

S. hi'spida (bristly). See GLYCINE SOJA.

SOLA'NDRA. (Named after *Dr. Solander*, a Swedish botanist. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings from flowering shoots in open, sandy loam, and in a brisk bottom-heat; sandy loam, a little fibrous peat, and dried nodules of old cow-dung. Winter temp., 30° to 60°, and almost dry; summer, 60° to 90°, and plenty of moisture when growing.

S. grandiflo'ra (large-flowered). 15. Pale yellow. May. Jamaica. 1781. Climber.
„ *gulta'ta* (spotted-*flowered*). 12. Pale yellow. Mexico. 1830.
„ *læ'vis* (smooth-*leaved*). See S. LONGIFLORA.
„ *longiflo'ra* (long-flowered). 2. White. October. W. Ind.
„ *ni'tida* (shining). See S. GRANDIFLORA.
„ *oppositifo'lia* (opposite-leaved). See FAGRÆA CEILANICA.
„ *viridiflo'ra* (green-flowered). 3. Green. S. Amer. 1815.

SOLA'NUM. Nightshade. (From *solon*, to comfort; soothing narcotic effect. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

All freely by seeds. Annuals, hardy, seeds in the open air; tender, in a hotbed, and transplanted in June; herbaceous, by similar means, and division; shrubby, by similar modes, and cuttings under a bell-glass, and requiring the protection of a house and temperature, in proportion to the place of which they are natives. See POTATO.

HARDY ANNUALS.

S. æthio'picum (Ethiopian). 1½. White. August. Ethiopia. 1597.
„ *cornu'tum* (horned). See S. ROSTRATUM.
„ *fontanesia'num* (Fontaine's). Yellow. August. Brazil. 1813.
„ *guinee'nse* (Guinea). 2–4. Violet. Berries black. Trop. Africa. 1889.
„ *hetera'ndrum* (various-stamened). See S. ROSTRATUM.
„ *heterodo'xum* (heterodox). Blue. July. Mexico. 1820.
„ *Lycope'rsicum* (Lycopersicum). See LYCOPERSICUM ESCULENTUM.
„ *ni'grum* (black-*berried*). 3. White. July. Both Worlds (Britain). "Hound Berry," "Wonder Berry."
„ „ *melanoce'rasum* (black cherry). 2. White. July. Virginia. 1820.
„ „ *minia'tum* (scarlet). 1–2. White. Fruit scarlet. Kent.
„ *obtusifo'lium* (blunt-leaved). August. 1831.
„ *rostra'tum* (beaked). Yellow. July. Mexico. 1823.
„ *septe'mlobum* (seven-lobed). China.
„ *villo'sum* (shaggy). Berries black. Europe; Asia; Africa.

HARDY HERBACEOUS.

S. cardiophy'llum (heart-leaved). 1. Cream. June. Mexico. 1846. Tuberous.
„ *Commerso'nii* (Commerson's). 2. Pale lilac or white. Argentina. 1822. Tuberous.
S. cri'spum (curled). 18. Blue. June. Chili. 1824. Evergreen. "Potato-tree."
„ *demi'ssum* (low-lying). See S. TUBEROSUM DEMISSUM.
„ *Dulcama'ra* (Dulcamara). 4–6 ft. long. Purple. Berries red. July to September. Europe (Britain). "Bitter-sweet."
„ *etubero'sum* (tuberless). 2. Purple. June. Chili. 1833.
„ *Jame'sii* (James's). ¾. White. July, August. North-western Amer. 1844. Tuberous.
„ *Ma'glia* (Maglia). 1–1½. White. July, August. Chili. 1862. Tuberous.
„ *Ohro'ndii* (Ohrond's). See S. COMMERSONII.
„ *Torre'yi* (Torrey's). 1–2. Purple. June to August. North-western Amer. 1878.
„ *tubero'sum* (tuberous. *Potato*). 2. White. July. S. Amer. 1597.
„ „ *demi'ssum* (low-lying). 1½. June. Mexico. 1846. Tuberous, procumbent.

GREENHOUSE ANNUALS.

S. fusca'tum (dusky). 1½. Scarlet. June. S. Amer. 1817.
„ *Melonge'na* ("Melongena"). Violet. June. Tropics, Old World. 1597. "Egg-plant."
„ „ *escule'ntum* (eatable). Blue. August. E. Ind. 1815.
„ „ *fru'ctu-a'lbo* (white-fruited). 2. Blue. June. Tropics. 1597.
„ „ *fru'ctu-lu'teo* (yellow-fruited). 2. Blue. June. Tropics. 1597.
„ „ *fru'ctu-ru'bro* (red-fruited). 2. Blue. June. Tropics. 1597.
„ „ *fru'ctu-viola'ceo* (violet-fruited). 2. Blue. June. Tropics. 1597.
„ „ *ovi'gerum* (egg-bearing). 2. Blue. June. Africa. 1597.
„ *ovi'gerum* (egg-bearing). See S. MELONGENA OVIGERUM.
„ *pu'ngens* (stinging). Blue, violet. June. Australia. 1823.
„ *racemiflo'rum* (cluster-flowered). 2. White, rose. August. S. Amer. 1818. Biennial.

GREENHOUSE HERBACEOUS.

S. a'lbidum (whitish). 2–3. White. August, September. Peru.
„ „ *Poortma'nni* (Poortmann's). 2–3. White. September. Andes. 1886.
„ *campanula'tum* (bell-flowered). 1. Blue. June. N.S. Wales. 1836.
„ *corona'tum* (crowned). See S. SAMBUCIFLORUM.
„ *crini'tum* (bristly). 6–8. Deep blue. Quito. 1889.
„ *cyana'nthum* (blue-flowered). 6. June. Brazil. 1880.
„ *escule'ntum* (esculent). See LYCOPERSICUM ESCULENTUM.
„ *glaucophy'llum* (glaucous-leaved). See S. GLAUCUM.
„ *glau'cum* (sea-green). 3–6. Blue. Buenos Ayres. 1880.
„ *jasminoi'des* (jasmine-like). 6. Purple. August. S. Amer. 1838. Climber.
„ „ *floribu'ndum* (free-flowering). Flowers more abundant. 1885.
„ *peruvia'num* (Peruvian). See LYCOPERSICUM PERUVIANUM.
„ *Pseu'do-lycope'rsicum* (false-lycopersicum). See LYCOPERSICUM ESCULENTUM.
„ *quercifo'lium* (oak-leaved). 3–5. Violet, large. Peru. 1880.
„ *robu'stum* (robust). 2–4. White. Brazil. 1868.
„ *sambuciflo'rum* (Sambucus-flowered). 3. White. Fruit size of a plum. Brazil. 1892.
„ *somnicule'ntum* (sleep-giving). 1½. Pale violet. Mexico.
„ *texa'num* (Texan). 1–2. Whitish-violet. Fruit red. Texas. 1861.
„ „ *ovi'gerum* (egg-bearing). Fruit red, as large as an egg. 1894.
„ „ *tri'color* (three-coloured). Fruit white, changing to yellow, then red. 1907.
„ *tweedia'num* (Tweedie's). 1½. White, purple. September. Buenos Ayres. 1833.

STOVE HERBACEOUS.

S. anthropophago'rum (man-eating). 6. White. Berries scarlet. Fiji. "Cannibal's Tomato." Berries formerly eaten by natives with human flesh.
„ *asarifo'lium* (Asarum-leaved). Whitish. Venezuela. 1870. Stem creeping.
„ *azu'reum* (azure). Blue. Ecuador. 1879.
„ *calyci'num* (*large*-calyxed). 1. Blue. June. Mexico. 1820.
„ *dammania'num* (Dammanian). 8–9. Dark blue. Berries yellow. 1890.
„ *duplosinua'tum* (doubly-scolloped). 6. Blue. Berries white. Trop. Africa. 1892.
„ *Fari'æi* (Farin's). Blue. Africa. 1896.
„ *mona'nthum* (one-flowered). See S. MOZINIANUM.
„ *mozinia'num* (Mozinian). 2. Blue. June. Mexico. 1818.
„ *pe'nsile* (hanging). Deep blue. Brazil. 1889. Climber.

STOVE EVERGREENS.

S. acantho'des (thorny). 3–6. Blue-purple. Brazil. 1863.
„ *aculeati'ssimum* (very-prickly). 1½. White. Berries scarlet. Tropics. 1816.
„ „ *macroca'rpum* (large-fruited). Berries 1½ in. in diameter. 1888.
„ *aggrega'tum* (clustered). 6. Purple. June. Trop. Africa. 1821.
„ *alterna'to-pinna'tum* (alternately-pinnate). Brazil.
„ *amazo'nium* (Amazonian). Blue. July. Mexico. 1800.
„ *Angui'vi* (Anguivi). Madagascar.
„ *angula'tum* (angular). See S. QUITOËNSE.
„ *arbo'reum* (tree). 40. White. June. Cumana. 1819.
„ *atropurpu'reum* (dark-purple). 3–6. Yellowish. Spines purple. Brazil. 1869.
„ *auricula'tum* (ear-*leaved*). 4. Violet. Madagascar. 1773.
„ *beta'ceum* (beet-*leaved*). See CYPHOMANDRA BETACEA.
„ *bonarie'nse* (Buenos Ayres). 10. White. July. Buenos Ayres. 1727.
„ *brasilia'num* (Brazilian). 2. June. Brazil. 1820.
„ *cilia'tum* (eye-lashed). See S. ACULEATISSIMUM.
„ *coria'ceum* (leathery). 4. Purple, white. July. Mexico. 1820.
„ *corni'gerum* (horn-bearing). 3–6. Violet. Fruit yellow, drooping, horned. Brazil. 1868. Climber.
„ *corymbo'sum* (corymbed). 2. Violet. July. Peru. 1786.
„ *Ducha'rtrei* (Duchartre's). 1½. Purple. W. Trop. Africa. 1890.
„ *ela'tum* (tall). 6. White. June. 1820.
„ *fra'grans* (fragrant). See CYPHOMANDRA FRAGRANS.
„ *gigante'um* (giant). 10–15. Violet. June. India. 1792.
„ *glutino'sum* (clammy). 4. Blue. June. Mexico. 1810.
„ *guatemale'nse* (Guatemalan). See S. MURICATUM.
„ *havane'nse* (Havannah). 5. Blue. July. W. Ind. 1793.
„ *hi'rtum* (shaggy). 2. Blue or white. June. Trinidad. 1821.
„ *hookeria'num* (Hookerian). See S. HAVANENSE.
„ *hy'bridum* (hybrid). 2. Purple, blue. June. Guinea. 1815.
„ *i'gneum* (fiery-*spined*). 3. White. July. S. Amer. 1714.
„ *inca'num* (hoary). 2. Purple. July. Asia; E. Africa. 1802.
„ *i'ndicum* (Indian). 6. Purple. July. India. 1732.
„ *Jacqui'nii* (Jacquin's). See S. XANTHOCARPUM.
„ *jamaice'nse* (Jamaica). 4. White. June. Jamaica. 1818.
„ *Juci'ri* (Jucir's). See S. ALTERNATO-PINNATUM.
„ *lanceæfo'lium* (lance-leaved). 10. White. July. W. Ind. 1816.
„ *lanceola'tum* (spear-head-*leaved*). 7. Pale blue. June. Mexico. 1800.
„ *laurifo'lium* (laurel-leaved). 8. June. S. Amer. 1820.
„ *longiflo'rum* (long-flowered). 3. Violet. July. Cayenne. 1823.
„ *macra'nthum* (large-flowered). 12. Pale lilac. Brazil.
S. macroca'rpon (large-fruited) of Linnæus. 3. Bright blue. Berry canary-yellow. Trop. Africa. 1894.
„ *macroca'rpon* (large-fruited) of Pav. See S. QUITOËNSE.
„ *maronie'nse* (Maroni-river). 6–14. Bluish-violet. Brazil.
„ *melano'xylon* (black-wooded). 3. White. June. 1821.
„ *mexica'num* (Mexican). 3. Violet. June. Mexico. 1825.
„ *mo'lle* (soft). 5. Purple. July. Trinidad. 1817.
„ *Mo'rs-elepha'ntum* (elephants'-death). See S. MACROCARPON.
„ *murica'tum* (prickly). 3. Violet. July. Peru. 1785.
„ *myriaca'nthum* (many-spined). See S. ACULEATISSIMUM.
„ *negle'ctum* (neglected). 4. Violet. June. W. Ind. 1824.
„ *palinaca'nthum* (backward-spined). Brazil.
„ *Pyraca'ntha* (fire-thorn). 4. Purple. August. Madagascar. 1789.
„ „ *ine'rme* (unarmed). 4. Purple. September. Madagascar. 1789.
„ *pyraca'nthum* (red-spined). 3–6. Bluish-violet. Trop. Africa. 1789.
„ *quitoë'nse* (Quito). 4. White. July. Peru. 1759.
„ *sca'brum* (rough). 6–8. Blue. June. S. Amer. 1823. Climber.
„ *seaforthia'num* (Seaforthian). 6–8. Blue. November. Trop. Amer. 1804. Climber.
„ *subine'rme* (half-unarmed). 7. Blue. July. W. Ind. 1752.
„ *te'ctum* (covered). 3. Yellow. June. Mexico. 1823.
„ *Tego're* (grim). See CYPHOMANDRA TEJORE.
„ *tomento'sum* (woolly). 2. Blue. June. S. Africa. 1662.
„ *trichoca'rpum* (hairy-fruited). Guiana.
„ *triloba'tum* (three-lobed). 2–5. Violet, blue, or white. Berry scarlet. Trop. Asia. 1759.
„ *trique'trum* (three-cornered). 2. White. June. Mexico. 1820.
„ *tri'ste* (sad). 6. Violet. June. W. Ind. 1820.
„ *umbro'sum* (shady). 2. White. June. Trinidad. 1825.
„ „ *uncine'llum* (slightly-hooked). Rose. Brazil. 1837. Trailer.
„ *venu'stum* (lovely). See S. SEAFORTHIANUM.
„ *verbascifo'lium* (mullein-leaved). 7. White. June. Tropics, both Worlds. 1749.
„ *viola'ceum* (violet). 4. Blue. June. E. Ind. 1817.
„ *volu'bile* (twining). See S. SCABRUM.
„ *Warscewi'czii* (Warscewicz's). Country unknown. 1865.
„ *xanthoca'rpum* (yellow-fruited). Berries yellow. Tropics, Old World.

GREENHOUSE EVERGREENS.

S. aculea'strum (false-prickly). S. Africa.
„ *avicula're* (small-bird). 3. Violet. July. Australia; New Zealand. 1772. "Bird Solanum."
„ „ *herba'ceum* (herbaceous). 3. Violet. July. Tasmania. 1772.
„ *Balbi'sii* (Balbis's). See S. SISYMBRIIFOLIUM.
„ *Bro'wnii* (Brown's). See S. VIOLACEUM.
„ *cape'nse* (Cape). 3. White. July. S. Africa. 1762.
„ *Capsica'strum* (Capicastrum). 1–2. White. Summer. Berries red. Brazil. 1833.
„ „ *variega'tum* (variegated). 1–1½. White. Leaves variegated.
„ *ce'rnuum* (drooping). S. Brazil.
„ *Cervante'sii* (Cervantes'). White. June. Mexico. 1818.
„ *coa'gulans* (curdling). See S. INCANUM.
„ *crassifo'lium* (thick-leaved). 2. Yellow. June. S. Africa. 1706.
„ *elæagnifo'lium* (oleaster-leaved). 6. Blue. June. Chili. 1823.
„ *flave'scens* (yellowish). See S. HIRTUM.
„ *fu'gax* (fleeting). 5. White. June. Caracas. 1816.
„ *juba'tum* (maned). See S. CERNUUM.
„ *lacinia'tum* (cut-*leaved*). See S. AVICULARE.
„ *lasiophy'llum* (woolly-leaved). 1. Purple. Western Australia. 1879.
„ *ligustri'num* (privet-*leaved*). See S. CRISPUM.

S. lycioï'des Ioda'sterum (Lycium-like). 4. Violet, yellow, dark purple. Peru. 1791.
„ *macranthe'rum* (large-anthered). 3. Purple. August. Mexico. 1838.
„ *margina'tum* (*white*-edged). 4. Purple. July. Trop. Africa. 1775.
„ *Mille'ri* (Miller's). See S. CAPENSE.
„ *monta'num* (mountain). 1. White. June. Peru. 1822.
„ *mu'ticum* (snipped). 4½. Violet-blue. Berries reddish. Paraguay. 1874.
„ *myrtifo'lium* (myrtle-leaved). Blue. S. Amer.
„ *platanifo'lium* (plane-leaved). 3–4. Pale violet. Colombia.
„ *Pseu'do-ca'psicum* (bastard-capsicum). 4. White. July. Madeira. 1596. "Winter Cherry."
„ „ *Henderso'nii* (Henderson's). 3–4. White. Berries egg-shaped, erect, orange-red. 1878.
„ „ *ri'gidum* (rigid). 3. Berries globose, orange. 1868.
„ „ *Weatheri'lli* (Weatherill's). 3. Berries oval, pointed, orange. 1868.
„ *pubi'gerum* (downy). See S. CERVANTESII.
„ *radi'cans* (rooting). 3. Purple. Peru. 1771.
„ *Rantonne'tii* (Rantonnet's). Argentina.
„ *rige'scens* (stiff). 1½. Violet. June. S. Africa. 1823.
„ *Ro'ssii* (Ross's). Pale blue. Mexico.
„ *runcina'tum* (runcinate-*leaved*). 3. Violet. September. Chili. 1831.
„ *sa'nctum* (holy). See S. INCANUM.
„ *sapona'ceum* (soapy). 4. White. July. Chili. 1825.
„ *sinua'tum* (scolloped-*leaved*). 2½. Bluish. July. 1815.
„ *sisymbriifo'lium* (Sisymbrium-leaved). 4. Blue. July. Brazil; N. Amer.; Mexico. 1816.
„ „ *bipinna'tum* (twice-pinnate). Blue. June, July. Buenos Ayres. 1840.
„ *sodo'meum* (Sodom). 3. Violet. June. Warmer parts, Old World. 1688.
„ *stella'tum* (starred). 6. Blue. June. S. Amer. 1805.
„ *stelli'gerum* (star-bearing). 3. Pale purple. July. Australia. 1823.
„ *stramonifo'lium* (Stramonium-leaved). 6. Purple. July. Tropics everywhere. 1778.
„ *Vesperti'lio* (bat). Blue. June. Canaries. 1779.
„ *vesti'tum* (clothed). 6. White. October. Mexico.
„ *Walli'sii* (Wallis's). 2. Purple. Berry violet, spotted, edible. Peru. 1877.
„ *Wendla'ndii* (Wendland's). 6–12. Mauve-purple. Costa Rica. 1887. Stove or greenhouse.
„ *Worsle'yi* (Worsley's). 8. Blue. Berries scarlet, size of an egg. Brazil. 1900. Climber.
„ *Xa'nti* (Xanti). Pale purple. Berry purple, size of a cherry. S. California. 1902.

SOLA'RIA. (Commemorative of *Francisci de Borja Solar*, a notable Chilian. Nat. ord. Liliaceæ.)
Greenhouse bulb. Seeds; offsets. Fibrous loam, leaf-mould, and sand. When the foliage begins to fade, the bulbs should be dried off and rested like Nerine.
S. miersioï'des (Miersia-like). ½. Green. Chili. 1871.

SOLDANE'LLA. "Blue Moonwort." (A diminutive of *solidus*, a shilling; shape of the leaves. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to the American Cowslip.)
Hardy herbaceous perennials, purple-flowered, and blooming in April, except where otherwise mentioned. Seeds and division of the plant in spring; peat and loam; front of a sheltered peat-border, or treated as alpine plants, protected from severe frosts and heavy rains in winter; *mi'nima* and *pusi'lla*, at least, require this protection.
S. affi'nis (related). See S. MONTANA.
„ *alpi'na* (alpine). ½. Switzerland. 1656.
„ „ *a'lba* (white). ½. White. May.
„ „ *pyrolæfo'lia* (Pyrola-leaved). ½.
„ *Clu'sii* (Clusius's). See S. MONTANA HUNGARICA.
„ *crena'ta* (scolloped). ½.
„ *mi'nima* (least). ½. Blue. Switzerland. 1823.
„ „ *a'lba* (white-*flowered*). ½. Bluish. May. Switzerland.
„ *monta'na* (mountain). ½. Bohemia; Eastern Europe. 1816.
„ „ *hunga'rica* (Hungarian). ½.
„ *pusi'lla* (weak). ½. Blue. Switzerland. 1820.
„ „ *a'lba* (white). ½. White.

SOLDIER-WOOD. *I'nga purpu'rea.*

SO'LEA. (Commemorative of *W. Sole*, of Bath, author of Sole's *Monograph of Mints*. Nat. ord. Violaceæ. Now referred to Ionidium.)
S. stri'cta (upright). See IONIDIUM CONCOLOR.
„ *verticilla'ta* (whorled). See IONIDIUM POLYGALÆFOLIUM.

SOLE'NA. (From *solen*, a tube; the flowers are tubular. Nat. ord. Rubiaceæ. Now referred to Posoqueria.)
S. gra'cilis (graceful). See POSOQUERIA GRACILIS.
„ *longiflo'ra* (long-flowered). See POSOQUERIA LONGIFLORA.

SOLENA'NTHUS. (From *solen*, a tube, and *anthos*, a flower; the flowers are tubular. Nat. ord. Boraginaceæ. Allied to Lindelofia.)
Hardy biennial or perennial herbs. Seeds; divisions. Well-drained soil.
S. apenni'nus (Apennine). 6. Red. May. Europe. 1819. Biennial.
„ *lana'tus* (woolly). Blue or rosy. Armenia.

SOLENI'DIUM. (From *solen*, a tube, and *eidion*, appearance; the lip being rather tubular. Nat. ord. Orchidaceæ. Allied to Brassia.)
Epiphytical orchid. Offsets; divisions. Requires to be fastened on a raft, with some sphagnum about it.
S. racemo'sum (racemed). ½. Yellow, red. Autumn. Colombia.

SOLENO'MELUS. (From *solen*, a tube, and *melos*, a limb; the perianth is tubular. Nat. ord. Iridaceæ.)
Half-hardy herb, with a rhizomatous rootstock. Offsets; divisions. Fibrous loam, leaf-mould, and sand.
S. bifo'rus (two-flowered). See SYMPHYOSTEMON NARCISSOIDES.
„ *chile'nsis* (Chilian). 1–1½. Deep yellow. June. Chili. 1827.
„ *Lechle'ri* (Lechler's). ½–1. Blue. Andes of Chili.

SOLENO'PHORA. (From *solen*, a tube, and *pherein*, to bear; in reference to the tubular flower. Nat. ord. Gesneraceæ.)
Stove evergreen shrub. Cuttings of mature wood, in a close case, with bottom-heat. Fibrous loam, with some leaf-mould and sand.
S. endlicheria'na (Endlicherian). 1–2. Orange, spotted with purple. April. Mexico. 1849.

SOLENO'PSIS. See LAURENTIA.

SOLIDA'GO. Golden Rod. (From *solidare*, to unite; supposed healing properties. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Hardy herbaceous perennials, all yellow-flowered, and all from North America, where not otherwise noticed. Divisions of the plant in spring; common soil. Showy at the back of herbaceous borders, or the back rows of herbaceous plants in the front of shrubberies.
S. alpe'stris (rock). See S. VIRGAUREA.
„ *alti'ssima* (tallest). See S. CANADENSIS, S. PILOSA, and S. RUGOSA.
„ *ambi'gua* (doubtful). 2. July. 1759.
„ *angustifo'lia* (narrow-leaved). See S. STRICTA.
„ *anisa'ta* (anise-scented). 3. September. 1815.
„ *arena'ria* (sand). See S. VIRGAUREA.
„ *arge'ntea* (silvery). See S. PUBERULA.
„ *argu'ta* (acute). 3. September.
„ *a'spera* (rough-*leaved*). See S. RUGOSA.
„ *bi'color* (two-coloured). 3. September. 1759.
„ *cæ'sia* (grey). 2. September. 1732.
„ *califo'rnica* (Californian). California.
„ *canade'nsis* (Canadian). 3. August. 1648.
„ *cilia'ris* (hair-fringed). See S. JUNCEA.
„ *Curti'sii* (Curtis's). 2. October.
„ *decu'rrens* (decurrent). See S. VIRGAUREA.
„ *Doro'nicum* (Doronicum). See SENECIO DORONICUM.
„ *Drummo'ndii* (Drummond's). 4–5. September. N. Amer. 1885.
„ *ela'ta* (tall). See S. ELONGATA.
„ *elli'ptica* (oval-*leaved*). 3. August. 1759.
„ „ *axilliflo'ra* (axil-flowered). Flower-heads in the axils of the leaves.
„ *elonga'ta* (elongated). 4–5. September. 1811.

S. ere'cta (upright). 3. September.
„ *fra'grans* (fragrant). See S. ELONGATA.
„ *Gattinge'ri* (Gattinger's). N. Amer.
„ *gigante'a* (gigantic). See S. SEROTINA.
„ *glomera'ta* (crowded). 3. September. 1820.
„ *graminifo'lia* (grass-leaved). See S. LANCEOLATA.
„ *hu'milis* (humble). 1. July. 1811.
„ „ *Gillma'ni* (Gillman's).
„ *ju'ncea* (rush-like). 3. August. 1811.
„ *lævига'ta* (smooth-*leaved*). See S. SEMPERVIRENS.
„ *lanceola'ta* (lanceolate). 3. August, September. 1758.
„ *lateriflo'ra* (lateral-flowered). See S. ELLIPTICA.
„ *latifo'lia* (broad-leaved). 1½. September. 1725.
„ *lithospermifo'lia* (Lithospermum-leaved). 3–5.
„ *longifo'lia* (long-leaved). See S. CANADENSIS.
„ *macrophy'lla* (large-leaved). 3. September.
„ *mexica'na* (Mexican). See S. SEMPERVIRENS.
„ *minu'ta* (minute). ½. July. Pyrenees. 1772.
„ *missourie'nsis* (Missouri). 3–5. N. Amer.
„ *multiradia'ta* (many-rayed). ½. July. Labrador. 1776.
„ *negle'cta* (neglected). N. Amer.
„ *nemora'lis* (grove). 1½. September. 1769.
„ *nepale'nsis* (Nepaul). See S. VIRGAUREA.
„ *noveborace'nsis* (New York). 3. September.
„ *nudiflo'ra* (naked-flowered). See S. VIRGAUREA.
„ *odo'ra* (sweet-smelling). 3. July. 1699.
„ *ohioe'nsis* (Ohio). N. Amer.
„ *pa'tula* (spreading). 2. September. 1805.
„ *pauciflosculo'sa* (few-floreted). 2. September. 1811.
„ *petiola'ris* (long-stalked). N. Amer.
„ *pilo'sa* (thinly-hairy). 2. September. 1790.
„ *plantagi'nea* (plantain-like). See S. ELLIPTICA.
„ *polifo'lia* (Polium-leaved). 3. September. 1826.
„ *pro'cera* (tall). See S. CANADENSIS.
„ *pube'rula* (slightly-downy). 2. September.
„ *pulverule'nta* (powdered). See S. PUBERULA.
„ *pyramida'ta* (pyramidal). See S. PILOSA.
„ *recurva'ta* (curled-back). 2. October.
„ *refle'xa* (bent-back-*leaved*). See S. CANADENSIS.
„ *Ridde'llii* (Riddell's). N. Amer.
„ *ri'gida* (stiff-*leaved*). 3. September. 1710.
„ *rugo'sa* (wrinkled). 3. August, September. 1732.
„ *sca'bra* (scurfy). See S. RUGOSA.
„ *sempervi'rens* (evergreen). 5. September. 1699.
„ *sero'tina* (late-*flowering*). 4. July. 1758.
„ *Sho'rtii* (Short's). 2. October. Arkansas.
„ *si'mplex* (simple-*stemmed*). 1. Mexico. 1826.
„ *specio'sa* (showy). 4. October. 1817.
„ *specta'bilis* (showy). 2½. Rich golden-yellow. September. 1910.
„ *spithamæ'a* (span-high). ¾–1. S. United States.
„ *squarro'sa* (spreading). 3. September.
„ *stri'cta* (upright). 3. September. 1758.
„ *tenuifo'lia* (fine-leaved). 2. October. 1758.
„ *ulmifo'lia* (elm-leaved). N. Amer.
„ *urticæfo'lia* (nettle-leaved). See CALEA URTICÆFOLIA.
„ *villo'sa* (shaggy). See S. RUGOSA.
„ *vimi'nea* (twiggy). See S. BICOLOR.
„ *virga'ta* (rod-like). See S. STRICTA.
„ *Virgau'rea* (golden-rod). 1½–2. August. N. temperate regions (Britain). "Common Golden Rod."
„ „ *ca'mbrica* (Cambrian). 1. Europe (Wales).
„ „ *na'na* (dwarf). See S. VIRGAUREA CAMBRICA.

SOLLYA. (Named after *R. H. Solly*, a naturalist. Nat. ord. *Pittosporads* [Pittosporaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse, blue-flowered, evergreen climbers, from Australia. Seeds in a slight hotbed, in April; cuttings then of young shoots a little firm at the base, in sand, under a bell-glass, and placed in a cold pit, when the night temperature does not exceed from 45° to 50°; loam and peat. Winter temp., 40° to 45°. Most of them would succeed against a conservative wall.

S. angustifo'lia (narrow-leaved). See BILLARDIERA SCANDENS.
„ *Drummo'ndii* (Drummond's). See S. PARVIFLORA.
„ *heterophy'lla* (various-leaved). 5. July. 1830.
„ „ *angustifo'lia* (narrow-leaved). 5. Leaves linear-lanceolate.
„ *linea'ris* (narrow-*leaved*). See S. HETEROPHYLLA ANGUSTIFOLIA.
„ *parviflo'ra* (small-flowered). July. 1838.
„ *salicifo'lia* (willow-leaved). 1839. Appears a garden form of *S. heterophylla*.

SOLOMON'S SEAL. *Polygona'tum multiflo'rum*.

SO'NCHUS. Sow Thistle. (From *sogkos*, the old Greek name for *Sonchus oleraceus*, or *S. maritimus*. Nat. ord. Compositæ.)

Hardy or half-hardy perennial herbs. Seeds; cuttings or divisions. Loam, leaf-mould, and sand in a pit or cool greenhouse.

S. arbo'reus (tree). Yellow. Canary Islands.
„ „ *lacinia'tus* (deeply-cut.) See S. LACINIATUS.
„ *gu'mmifer* (gum-bearing). 2–3. Yellow. Canary Islands.
„ *Jacqui'nii* (Jacquin's). 1–2. Deep yellow. March. Canary Islands. 1882.
„ *lacinia'tus* (deeply-cut). Yellow. Country unknown. 1871.
„ *leptoce'phalus* (slender-headed). Yellow. Canary Islands.
„ *palu'stris* (marsh). 4–8. Yellow. September. Europe (England); Asia Minor. Hardy.
„ *pectina'tus* (comb-like). Yellow. Canaries.
„ *pinna'tus* (pinnate). 3. Yellow. June to August. Madeira. 1777.
„ *radica'tus* (rooting). 1. Yellow. July, August. Madeira; Teneriffe. 1780.

SONERI'LA. (From *Soneri-ila*, the Javanese name. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Alliance near Bertolonia.)

Stove evergreen perennial herbs or subshrubs. Seed in a gentle hotbed, in March, potted off, and bloomed in greenhouse or stove; cuttings in sandy peat in a close case, with bottom-heat. Lumpy peat, sphagnum, charcoal, and sand.

S. Benso'ni (Benson's). 1. Rosy-purple. India. 1873.
„ *e'legans* (elegant). See S. SPECIOSA.
„ *grandiflo'ra* (large-flowered). 1. Mauve. India. 1856. Subshrub.
„ *Henderso'nii* (Henderson's). See S. MARGARITACEA HENDERSONII.
„ *læ'ta* (bright). 1. Leaves deep green above, with white spots, purple beneath. S. China. 1906.
„ *macula'ta* (spotted). 1. Pink, rose, or purple. Himalaya. 1890.
„ *margarita'cea* (pearly). 1. Purple. Burma. 1854.
„ „ *Henderso'nii* (Henderson's). ½. Lilac-rose. 1874.
„ *orbicula'ta* (orbicular). See S. SPECIOSA.
„ *orienta'lis* (oriental). See S. MACULATA.
„ *peperomiæfo'lia* (Peperomia-leaved).
„ *specio'sa* (showy). 1. Pink. Winter. E. Ind. 1852.
„ *stri'cta* (upright). ½. Rose. May. Burma. 1848.

SONNERA'TIA. (Named after *M. Sonnerat*, a botanical traveller. Nat. ord. *Loosestrifes* [Lythraceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to the Pomegranate.)

Stove evergreen shrubs, from the East Indies. Cuttings of half-ripened shoots, taken off with a heel, in sand, under a bell-glass, and placed in a mild hotbed in May; fibrous loam, turfy peat, a little sand, and dried old cow-dung. Winter temp., 45° to 55°; summer, 60° to 85°.

S. a'cida (sour). Red. June. 1822.
„ *a'lba* (white). White. May. 1824.
„ *ape'tala* (petal-less). White. June. 1826.

SOOT is the volatilised unconsumed portion of common coal. It is thus constituted: Charcoal, 371; salts of ammonia, 426; salts of potash and soda, 24; oxide of iron, 50; silica, 65; alumina, 31; sulphate of lime, 31; carbonate of magnesia, 2. It is an excellent manure for peas, onions, carrots, and probably all garden crops. An excellent liquid-manure is soot mixed with rain-water, in the proportion of one tablespoonful of soot to a quart of water, for plants in pots; but for asparagus, peas, &c., six quarts of soot to a hogshead of water. It must never be applied to plants in a state of rest. It succeeds admirably with bulbs. See LIQUID-MANURES.

SO'PHORA. (From the Arabic name, *Sophera*, of a leguminous tree. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Hardy herbaceous kinds by divisions in spring; stove and greenhouse species, by cuttings of half-ripened shoots under a bell-glass, in sand, and grown in peat and loam. The hardy kinds, such as *japo'nica* and its varieties, are very ornamental trees on a lawn, but should be grown in poor soil north of London, that the annual growth

may be well ripened; propagated by imported seeds, by cuttings of the roots, and layers; its varieties by grafting. *Pe'ndula* is extremely graceful and fast growing.

HARDY HERBACEOUS.

S. alopecuroi'des (fox-tail-grass-like). 4. Yellow. July. Levant.
„ *alpi'na* (alpine). See THERMOPSIS CORGONENSIS.
„ *angustifo'lia* (narrow-leaved). See S. FLAVESCENS.
„ *argе'ntea* (silvery). See AMMODENDRON SIEVERSII.
„ *austra'lis* (southern). See BAPTISIA AUSTRALIS.
„ *bifo'lia* (two-leaved). See AMMODENDRON SIEVERSII.
„ *faba'cea* (bean-like). See THERMOPSIS FABACEA.
„ *flave'scens* (yellowish). 2. Yellow. June. Siberia. 1785.
„ *galegoi'des* (Galega-like). See S. FLAVESCENS.

HARDY DECIDUOUS TREES.

S. chine'nsis (Chinese). 30. White. August China. 1763.
„ *grandifo'ra* (large-flowered). See S. TETRAPTERA.
„ *heptaphy'lla* (seven-leaved). 6. Yellow. October. Ceylon; China. 1830.
„ *japo'nica* (Japanese). 40. White. August. Japan. 1763.
„ „ *columna'ris* (columnar). Stems erect. 1907.
„ „ *fo'liis-variega'tis* (variegated-leaved). 14. White. August. Japan.
„ „ *hy'brida* (hybrid). Main branches spreading; smaller drooping. 1893.
„ „ *pe'ndula* (drooping). 12. White. August. Japan.
„ „ *pra'cox* (early). Flowers freely when two years old. 1907.
„ *Korolko'wi* (Korolkow's). China.
„ *macnabia'na* (Macnabian). See S. TETRAPTERA.
„ *pachyca'rpa* (thick-fruited). Central Asia.
„ *platyca'rpa* (broad-fruited). See PLATYOSPRION PLATYCARPUM.
„ *tetra'ptera* (four-winged). 12. Yellow. May, June. New Zealand. 1772. "Houma."
„ „ *microphy'lla* (small-leaved). 6–10. Yellow. May, June. New Zealand. 1772.
„ *viciifo'lia* (Vicia-leaved). 3–5. White; calyx violet-blue. July. China. 1903.

GREENHOUSE.

S. chrysophy'lla (golden-leaved). 6–10. Yellow. May. Sandwich Islands.
„ *glau'ca* (milky-green). 7. Purple. Northern India. 1818.
„ *macroca'rpa* (large-fruited). 6. Yellow. April. Chili. 1822.
„ *ni'tida* (shining). 8. Yellow. Bourbon. 1820.
„ *secundifo'ra* (one-side-flowering). 4–6. Violet. June. Mexico. 1820.
„ *seri'cea* (silky). See S. NITIDA.
„ *tomento'sa* (downy). 5. Yellow. August. Warm regions. 1739.
„ *veluti'na* (velvety). See S. GLAUCA.
„ *viola'cea* (violet) of Thwaites. Violet. Ceylon.
„ *viola'cea* (violet) of gardens. Violet. China.

SOPHRO'NIA, of Lindley. See SOPHRONITIS.

SOPHRONI'TIS. (From *sophron*, modest; in allusion to the unpretending or quiet beauty of the flowers. Nat. ord. Orchidaceæ.)

Stove epiphytical Orchids. Divisions or offsets. Fibre of peat, sphagnum, and crocks in pans or baskets.

S. ce'rnua (drooping). ¼. Red. June. Rio Janeiro. 1827.
„ *cocci'nea* (scarlet). See S. GRANDIFLORA.
„ *grandiflo'ra* (large-flowered). ¼. Red. Organ Mountains. 1837.
„ „ *auranti'aca* (orange). Orange-red. 1886.
„ „ *purpu'rea* (purple). Bright rose-purple. Brazil. 1878.
„ „ *ro'sea* (rosy). Carmine-rose. 1884.
„ *milita'ris* (military). See S. GRANDIFLORA.
„ *pteroca'rpa* (wing-fruited). See S. CERNUA.
„ *purpu'rea* (purple). See S. GRANDIFLORA PURPUREA.
„ *ro'sea* (rosy). See S. GRANDIFLORA ROSEA.
„ *viola'cea* (violet-coloured). Violet. February. Mexico. 1838.

SOPU'BIA. (The native Indian name. Nat. ord. Scrophulariaceæ.)

Stove perennial herb. Seeds; cuttings in sand, in a close frame, with heat. Fibrous loam, leaf-mould, and sand.

S. delphinifo'lia (Delphinium-leaved). 2. Rose. July. India. 1800.

SORBA'RIA. (From *sorbum*, the service-berry, and *aria*, pertaining to, belonging to. Nat. ord. Rosaceæ. Now referred to Spiræa.)

S. assu'rgens (standing-up). See SPIRÆA ASSURGENS.
„ *sorbifo'lia stelli'pila* (starry-haired). See SPIRÆA SORBIFOLIA STELLIPILA.

SO'RBUS. (From *sorbum*, the sorb-apple or service-berry. Nat. ord. Rosaceæ. Now referred to Pyrus.)

S. america'na (American). See PYRUS AMERICANA.
„ *A'ria* (Aria). See PYRUS ARIA.
„ *Aucupa'ria* (Aucuparia). See PYRUS AUCUPARIA.
„ *di'scolor* (two-coloured). See PYRUS AUCUPARIA DISCOLOR.
„ *dome'stica* (domestic). See PYRUS SORBUS.
„ *hy'brida* (hybrid). See PYRUS PINNATIFIDA.
„ *japo'nica* (Japanese). See PYRUS AUCUPARIA JAPONICA.
„ *madere'nsis* (Madeira). See PYRUS AUCUPARIA MADERENSIS.
„ *pohuashane'nsis* (Pohuashan). See PYRUS POHUASHANENSIS.
„ *reflexipe'tala* (reflexed-petaled). See PYRUS REFLEXIPETALA.
„ *sero'tina* (late). See PYRUS SEROTINA.
„ *Vilmori'ni* (Vilmorin's). See PYRUS FOLIOLOSA.

SO'RGHUM. Millet Grass. (From the Indian name *Sorghi*. Nat. ord. Gramineæ.)

Half-hardy or greenhouse annual grass that may be planted out in May. Seeds. Ordinary soil.

S. halepe'nse (Aleppo). See ANDROPOGON HALEPENSIS.
„ *vulga're* (common). 2–3. Green. August. Tropical and subtropical regions. "Guinea Corn," "Durra," "Dari."

SORINDEI'A. (The native name. Nat. ord. Anacardiaceæ.)

Large shrub or small tree requiring stove heat. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, a little peat, and sand.

S. madagascarie'nsis (Madagascar). 10. Purple. May. Madagascar. 1828.

SOROCE'PHALUS. (From *soros*, a heap, and *kephale*, a head; clustered head of flowers. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse, purple-flowered evergreens, from South Africa. Cuttings of ripened young shoots in sand, under a hand-light, either in spring or autumn; may be hastened, after the base has swelled, with a little bottom-heat; sandy, fibrous loam, and a little peat and broken freestone, carefully drained. Winter temp., 38° to 45°.

S. diversifo'lius (various-leaved). 4. June. 1803.
„ *imbe'rbis* (beardless). 3. July. 1806.
„ *imbrica'tus* (imbricated). 3. June. 1794.
„ *lana'tus* (woolly). 2. August. 1790.
„ *seta'ceus* (bristly). 2. July. 1823.
„ *spatalloi'des* (Spatalla-like). 3. July. 1803.
„ *tenuifo'lius* (slender-leaved). 3. July. 1802.

SORO'MANES SERRATIFO'LIUM. See ACROSTICHUM SERRATIFOLIUM.

SORRELS. These are *O'xalis Acetose'lla*, Wood Sorrel; *Ru'mex Aceto'sa*, Garden Sorrel; *R. scuta'tus*, French or Roman Sorrel. They thrive best in any light, rich garden soil.

The *Rumexes* are propagated by seed, and all of them by parting the roots, both which modes may be practised from the middle of February until the same period in May, and by parting the roots in September and October. Sow in drills, 6 or 8 inches apart, and ½ inch in depth. When 2 or 3 inches high, the seedlings should be thinned to 3 or 4 inches apart. In September or October, or in the March and April of the succeeding year, they may be removed into their final stations, in rows 12 inches apart each way, or, if the French, 18 inches.

When divisions of the root are employed, they must be

set at once where they are to remain, at the final distances above mentioned. In summer, the stalks must be cut down, to encourage the production of leaves. In autumn and spring the surface of the ground should be gently stirred, and a little manure turned in.

To obtain Seed.—Some plants must not be gathered from, but be allowed to run up unchecked. They flower in the course of June, July, and August, perfecting their seed in autumn. Wood Sorrel does not produce seed.

SORREL-TREE. *Oxyde'ndron arbo'reum.*

SORROWFUL-TREE. *Nycta'nthes a'rbor-tri'stis.*

SO'RUS. The name applied to the individual heaps, clusters, or lines of spore-cases (*sporangia*), containing the spores, and arranged on the backs or edges of the fronds of ferns. The sori are naked in Polypodium, but covered with a stalked circular scale in Aspidium; a kidney-shaped one in Nephrodium; a linear one in Asplenium; two-valved in Hymenophyllum; tubular or cup-shaped in Trichomanes; and bladder-shaped in Cystopteris. In Adiantum and Pteris the sori are covered by the revolute margin of the frond.

SOUARI NUT-TREE. *Caryo'car nuci'ferum.*

SOULA'NGIA. (Named after *Soulange Bodin*, a French nurseryman. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Referred to Phylica.)

Greenhouse evergreen shrubs, from the Cape of Good Hope. Cuttings of the points of shoots in sand, under a bell-glass, in April or May; sandy, fibrous peat, and a few bits of charcoal, to keep it open. Winter temp., 38° to 45°. Should be tried against a wall, as, in the open air, in dry places and mild situations, *Phy'lica ericoi'des* stands the winter uninjured. The Soulangias were once united with the Phylicas.

S. buxifo'lia (box-leaved). See PHYLICA BUXIFOLIA.
„ *corda'ta* (heart-*leaved*). See PHYLICA BUXIFOLIA.
„ *dioi'ca* (dicœcious). See PHYLICA DIOICA.
„ *myrtifo'lia* (myrtle-leaved). See PHYLICA PANICULATA.
„ *ru'bra* (red). See PHYLICA RUBRA.
„ *thymifo'lia* (thyme-leaved). See PHYLICA THYMIFOLIA.

SOUR is a term applied to wet lands producing acid weeds, such as Sorrel; but it is also appropriate because such lands contain gallic and other acid compounds, unfriendly to cultivated plants.

SOUR GOURD. *Adanso'nia digita'ta.*

SOUR-SOP. *Ano'na murica'ta.*

SOUTH AFRICAN YELLOW WOOD. *Podoca'rpus elonga'ta.*

SOUTHERNWOOD. *Artemi'sia Abro'tanum.*

SOUTH SEA TEA. *Cassi'ne vomito'ria.*

SOWBREAD. *Cy'clamen.*

SOWERBÆ'A. (Named after *Mr. Sowerby*, an eminent botanical artist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Laxmannia and Aphyllanthes.

Half-hardy, pink-flowered, herbaceous perennials, from New South Wales. Divisions of the plant in spring; loam and sandy peat, or old leaf-mould. Require the protection of a cold pit in winter, and to be kept dryish.

S. ju'ncea (rush-*leaved*). 1. May. 1792.
„ *laxiflo'ra* (loose-flowered). 1. June. 1839.

SOWING. (See GERMINATION.) In addition, a few practical directions may be given. Let all sowing be done in drills. For small seeds, such as lettuce, cabbage, &c., the drills may be sunk by pressing the handle of the hoe into freshly-dug soil; but for larger seeds, as parsnips, beet, and onions, the drills must be made with the hoe. Almost all sowing should be performed in dry weather, more particularly all early sowing in winter and spring; but in hot weather, in summer and autumn, it may often be eligible to take advantage of sowing immediately after a shower of moderate rain.

The drills being at some distance from one another, not only admit the sun, air, and rain more effectually to the plants, and give them a greater scope than such as are sown broadcast, but admit more readily the hoe between the drills to cut down weeds and loosen the soil.

The general method of forming drills for the reception of seeds is with a common drawing-hoe, sometimes with a large hoe, and sometimes a middling or small hoe, according to the size of the drill required, and the size and nature of the seeds; drawing the drill sometimes with the corner of the hoe, especially for larger seeds, and sometimes with the edge of the hoe flatwise, or horizontally. Large seeds, such as peas, kidney beans, many of the nut kinds, and other large seeds, both of trees, shrubs, and herbaceous plants, require a deep angular drill, drawn with the corner of the hoe, turning the face or edge close to the line, and drawing the drill along with an angular bottom evenly the depth required, the earth remaining close along the side of the drill, ready for turning in again over the seeds; but where flat or shallow drills are required for smaller seeds, it may, in many cases, be more eligible to draw the drill with the hoe flatwise, holding the edge in a horizontal position.

Bedding-in Sowing.—In this method, the ground being dug and formed in 4 or 5 feet wide beds, with alleys a spade width or more between bed and bed, and the earth being drawn off the top of the bed with a rake or spade ½ inch or 1 inch deep into the alleys, the seed is then sown all over the surface of the bed, which being done, the earth in the alleys is immediately drawn or cast over the bed, again covering the seeds the same depth, and the surface is raked smooth.

The method of bedding-in sowing by *sifting* is sometimes practised for very small or light seeds of a more delicate nature, that require a very light covering of earth when sown. In order to bury them as shallow as possible, cover them in by sifting fine earth over them out of a wire sieve.

SOY. See GLYCINE SOJA.

SOYMI'DA. (Evidently a native name. Nat. ord. Meliaceæ.)

Stove evergreen tree. Cuttings of half-ripe wood in sand, in a close frame, with bottom-heat. Fibrous loam and sand.

S. febri'fuga (fever-conquering). 60. White, yellow. E. Ind. 1796.

SPADE. This most important of the gardener's tools varies in its form and size. *The Common Digging Spade* is of the largest size, being generally from 14 to 16 inches long in the plate, and 9 or 10 broad, narrowing half an inch to the bottom. *The Middling Spade* is about a foot long in the plate, and 7 or 8 inches broad, and is useful in digging any narrow compartments and between rows of small plants; also in flower-beds and borders, and in stirring and fresh earthing the surface of beds occasionally between close-placed plants of long standing; planting and transplanting many sorts, both in the ground and in the pots.

The Small Spade.—Size 10 or 12 inches long in the plate, and 5 or 6 wide. It is convenient in pointing-up or slight digging, and fresh earthing the surface between close rows of small plants, in beds and borders, &c., where neither of the two former spades can be readily introduced; likewise in planting and potting many sorts of small plants, taking up small roots, and for other light purposes. Proper garden spades have the plate wholly of iron, not above ¼ inch thick upwards, growing gradually thinner from the middle downward, the tree or handle being generally of ash, about 2½ feet long and 1½ inch thick, with a firm, open handle at top, formed out of the solid wood, just big enough to admit of taking ready hold, one hand at top and the other below, and with an iron rivet through it to prevent it splitting. *Semicircular* or *Scooped Spade* has the plate made semicircular, like a garden trowel, and is very useful in taking up plants with balls of earth, to preserve them more firmly about the roots.

SPADO'STYLES. (Derivation not explained. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Referred to Pultenæa.)

S. Sie'beri (Sieber's). See PULTENÆA EUCHILA.

SPANISH BLUEBELL. *Sci'lla hispa'nica.*

SPANISH BROOM. *Spa'rtium ju'nceum.*

SPANISH CHESTNUT. *Casta'nea sati'va.*

SPANISH GARLIC. See ROCAMBOLE.

SPANISH LIQUORICE. *Glycyrrhi'za gla'bra.*

SPANISH MOSS. *Tilla'ndsia usneoi'des.*

SPANISH NUT. *I'ris Sisyri'nchium.*

SPANISH OYSTER PLANT. *Sco'lymus hispa'nicus.*

SPANISH VIPER'S GRASS. *Scorzone'ra hispa'nica.*

SPARA'XIS. (From *sparasso*, to tear; lacerated spathes. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Ixia.)

Pretty little bulbs, from South Africa. For culture, see I'XIA.

S. anemoniflo'ra (Anemone-flowered). See IXIA ANEMONEFLORA.
„ *bi'color* (two-coloured). See SYNNOTTIA BICOLOR.
„ *bla'nda* (pleasing). See S. TRICOLOR BLANDA.
„ *bulbi'fera* (bulb-bearing). ¾. Violet. May. 1758.
„ *fra'grans* (sweet-scented). See IXIA FRAGRANS.
„ *grandiflo'ra* (large-flowered). ¾. Purple. April. 1758.
„ „ *Lilia'go* (lily-*flowered*). ¾. White. April. 1758.
„ „ *linea'ta* (lined). ¾. Yellow, pink. April.
„ „ *stella'ris* (starry). 1. Purple. June. 1836.
„ „ *stria'ta* (streaked). ¾. Variegated. April. 1758.
„ *Lilia'go* (lily-*flowered*). See S. GRANDIFLORA LILIAGO.
„ *linea'ta* (*pink*-lined). See S. GRANDIFLORA LINEATA.
„ *pe'ndula* (drooping). See DIERAMA PENDULA.
„ *pulche'rrima* (fairest). See DIERAMA PULCHERRIMA.
„ *stella'ris* (starry). See S. GRANDIFLORA STELLARIS.
„ *tri'color* (three-coloured). 1. Orange. May. 1789.
„ „ *bla'nda* (pleasing). White, pink, yellow. May. 1811.
„ „ *Griffi'nii* (Griffin's). Yellow, violet-purple. April. 1811.
„ „ *ro'seo-a'lba* (red and white). See S. TRICOLOR BLANDA.
„ „ *sangui'neo-purpu'rea* (bloody-purple). 1. Red. April. 1811.
„ „ *versi'color* (parti-coloured). ¾. Deep purple, brown, yellow. September. 1825.
„ „ *viola'ceo-purpu'rea* (violet-purple). See S. TRICOLOR GRIFFINII.
„ *versi'color* (parti-coloured). See S. TRICOLOR VERSICOLOR.
„ *Wa'ttii* (Watt's). See SYNNOTIA VARIEGATA.

SPARMA'NNIA. (Named after *A. Sparmann*, a Swedish botanist. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Fine greenhouse evergreen shrubs. Cuttings of young shoots in April; loam and a little peat. Winter temp., 38° to 48°.

S. africa'na (African). 5–10. White. May. S. Africa. 1790.
„ „ *flo're ple'no* (double-flowered). Flowers double. 1881.
„ *palma'ta* (hand-shaped). 3–6. White. S. Africa.

SPARTI'NA. Prairie Grass. (From *spartine*, a cord; the leaves being used to make cords. Nat. ord. Gramineæ.)

S. cynosuroi'des au'reo-margina'ta (golden-margined). See S. POLYSTACHYA AUREO-MARGINATA.
„ *polysta'chya* (many-spiked). 5–6. September. N. Amer. "Reed Grass."
„ „ *au'reo-margina'ta* (golden-margined). 5–6. Leaves with golden edges. 1905.
„ *Schrebe'ri* (Schreber's). See S. POLYSTACHYA.
„ *stri'cta* (erect). 1–3. July, August. Europe (England); N. and S. Amer. "Cord Grass."
„ *Townse'ndi* (Townsend's). 1–3. July, August. England. 1880.

SPA'RTIUM. Spanish Broom. (From *sparton*, cordage; alluding to the flexible shoots. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Genista.)

Hardy deciduous, yellow-flowered shrubs. Generally by seeds, but cuttings will strike freely in summer under a hand-light; and this is the best mode for securing a particular variety. They should be planted out young, or be frequently moved, as they make long, naked stems; common, light soil.

S. acutifo'lium (sharp-leaved). See S. JUNCEUM.
„ *ju'nceum* (rush-*leaved*). 6. August. Temperate regions of Old World. 1548.
S. ju'nceum flo're-ple'no (double-flowered). 6. August. S. Europe. 1548.
„ „ *odorati'ssimum* (sweetest-scented). 4. July. Persia. 1834.

SPARTOTHA'MNUS. (From *sparton*, cordage, and *thamnos*, a shrub; its flexible shoots. Nat. ord. *Vervains* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Greenhouse evergreen shrub. Cuttings of young shoots under a bell-glass, in sandy soil; sandy, fibrous peat, and lumpy loam. Winter temp., 38° to 45°.

S. ju'nceus (rushy). 3. White. August. Australia. 1819.

SPATALA'NTHUS. (From *spatalos*, delicate, and *anthos*, a flower. Nat. ord. *Irids* [Iridaceæ]. Linn. 16-*Monadelphia*, 1-*Triandria*. Now referred to Romulea.)

S. specio'sus (showy). See ROMULEA MONADELPHA.

SPATA'LLA. (From *spatalos*, luxurious or lavish, in allusion to the large stigma. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse, purple-flowered evergreens, from South Africa. Cuttings of ripe young shoots in sand, under a bell-glass, and kept cool; sandy, fibrous loam, with pieces of charcoal and freestone; drainage and watering very particularly attended to. Winter temp., 38° to 45°. Pots defended from sun in summer.

S. bractea'ta (bracted). 3. June. 1806.
„ *brevifo'lia* (short-leaved). 1½. July. 1823.
„ *caudæflo'ra* (tailed-flowered). 2. June. 1812.
„ *cauda'ta* (tailed). See S. CAUDÆFLORA.
„ *curvifo'lia* (curved-leaved). April. 1822.
„ *incu'rva* (curled-in-*leaved*). See S. PROCERA.
„ *mo'llis* (soft). 2. June. 1826.
„ *ni'vea* (white). 2. June. 1806.
„ *pa'rilis* (like). June. 1821.
„ *peduncula'ta* (*long*-flower-stalked). See S. CURVIFOLIA.
„ *pro'cera* (tall). 2½. May. 1789.
„ *proli'fera* (proliferous). 1½. July. 1800.
„ *pyramida'lis* (pyramidal). See S. PARILIS.
„ *ramulo'sa* (twiggy-branched). 3. August. 1787.
„ *Thunbe'rgii* (Thunberg's). 3. May. 1806.

SPATHA'NTHEUM. (From *spathe*, a spathe, and *anthos*, a flower; the flowers arise from the midrib of the spathe. Nat. ord. Araceæ. Allied to Spathicarpa.)

Greenhouse herb, with tuberous roots. Offsets and divisions. Fibrous loam, lumpy peat, and some charcoal. Water liberally when in full leaf, and dry it off in winter.

S. hetera'ndrum (various-anthered). See S. ORBIGNYANUM.
„ *orbignya'num* (Orbignyan). 1½. Green. Bolivia. 1876.

SPATHE. The large bract or bracts, which enclose the flowers of Aroids, Palms, and Amaryllids before expansion. The showy part of Richardia is the spathe.

SPATHE'LIA. (From *spathe*, a sheath, or spathe, as in the Palm-tree; resemblance. Nat. ord. *Simarubads* [Simarubaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*. Allied to Ailanthus.)

Stove evergreen tree. Cuttings of ripened shoots in sand, under a glass, in heat; loam and peat. Winter temp., 50° to 60°; summer, 60° to 85°.

S. si'mplex (simple). 40. Red. Jamaica. 1778.

SPATHICA'RPA. (From *spathe*, a sheath, or spathe, and *karpos*, a fruit; the spadix, or flower-stem, fruiting in the sheath. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 7-*Heptandria*. Allied to Caladium.)

Stove herbaceous perennials. Division of the plant or tubers; loam and peat. Winter temp., 50° to 60°; summer, 60° to 80°.

S. cornu'ta (horned). 1. Green. Brazil. 1860.
„ *hastifo'lia* (halbert-leaved). White. July. S. Amer.
„ *longicu'spis* (long-pointed). See S. SAGITTIFOLIA.
„ *platy'spatha* (broad-spathed). See S. SAGITTIFOLIA.
„ *sagittifo'lia* (arrow-leaved). 1. Green. Brazil. 1860.

SPATHIPHY'LLUM. (From *spathe*, a spathe, and *phullon*, a leaf; the spathe resembles a leaf. Nat. ord. Araceæ.)

Evergreen stove herbs. Seeds; divisions. Fibrous loam, lumpy peat, small nodules of charcoal and sand. Water freely when in growth.

S. bla'ndum (pleasing). Trop. Amer.
„ *ca'ndidum* (white). 1. Spathe white; spadix white. Colombia. 1875.
„ *cannæfo'lium* (Canna-leaved). 1. Spathe white; spadix pale yellow. Trop. Amer. 1877.
„ *cochleari'spathum* (shell-spathed). 4. Spathe green; spadix white. Mexico.
„ *commuta'tum* (changed). 2–3. Spathe and spadix white. Philippines. 1870.
„ *Decha'rdi* (Dechard's). See S. CANNÆFOLIUM.
„ *floribu'ndum* (free-flowering). 1. White. Colombia. 1874.
„ *Gardne'ri* (Gardner's). Brazil.
„ *heliconiæfo'lium* (Heliconia-leaved). See S. COCHLEARISPATHUM.
„ *lanceæfo'lium* (lance-leaved). Spathe pale green. Venezuela.
„ *longiro'stre* (long-beaked). Mexico.
„ *Minaha'ssæ* (Minahassa's). Country unknown. 1870.
„ *Ortgie'sii* (Ortgies's). 1½. Spathe green; spadix white. July. Mexico. 1873.
„ *Pati'nii* (Patin's). 1. White. Colombia. 1874.
„ *pi'ctum* (painted). 1. Leaves marked with yellow-green. S. Amer. 1874.
„ *pictura'tum* (pictured). Leaves dark green, spotted with yellow. 1898.
„ *Walli'sii* (Wallis's) of Regel. Colombia or Venezuela. 1877.
„ *Walli'sii* (Wallis's) of gardens. See STENOSPERMATION WALLISII.

SPATHO'DEA. (From *spathe*, a sheath; sheath, or spathe-like calyx. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Cuttings of side-shoots, 3 or 4 inches in length, taken off with a heel, as growth is proceeding, in spring, inserted thinly in sand, under a bell-glass, and in a sweet bottom-heat; peat and loam. Winter temp., 50° to 60°; summer, 60° to 80°.

STOVE EVERGREEN CLIMBERS.

S. bracteo'sa (large-bracted). See MACFADYENA BRACTEOSA.
„ *fraxinifo'lia* (ash-leaved). 10. Caracas. 1822.
„ *unca'ta* (hooked). 10. Yellow. Guiana. 1804.

STOVE EVERGREEN TREES.

S. adena'ntha (gland-flowered). Trop. Africa.
„ *adenophy'lla* (gland-leaved). See HETEROPHRAGMA ADENOPHYLLUM.
„ *campanula'ta* (bell-shaped). 30–50. Orange, red. Trop. Africa.
„ *Cau'da-feli'na* (cat's-tail). See DOLICHANDRONE CAUDA-FELINA.
„ *corymbo'sa* (corymbed). See MACFADYENA CORYMBOSA.
„ *læ'vis* (smooth). 12. Purple. Guinea. 1825.
„ *longiflo'ra* (long-flowered). See DOLICHANDRONE RHEEDII.
„ *penta'ndra* (five-anthered). See OROXYLON INDICUM.
„ *Rhee'dii* (Rheede's). See DOLICHANDRONE RHEEDII.
„ *Roxbu'rghii* (Roxburgh's). See HETEROPHRAGMA ROXBURGHII.
„ *Serra'tula* (Serratula). Siam. 1832.
„ *specio'sa* (showy). Pink. May. Brazil. 1850.

SPATHOGLO'TTIS. (From *spathe*, a sheath, and *glottis*, a tongue. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Bletia.)

Stove orchids, grown in pots. See ORCHIDS.

S. Augusto'rum (The Augusts'). See S. VIEILLARDII.
„ *au'rea* (golden). 2. Yellow. July. Malaya. 1849.
„ *Fortu'nei* (Fortune's). ¾. Yellow. August. Hong-Kong. 1844.
„ *gra'cilis* (slender). 2. Bright yellow, streaked red. Borneo.
„ *hardingia'na* (Hardingian). ¾–1¼. Rose-purple, sometimes pale lilac. N. Burma. 1903.
„ *ixioi'des* (Ixia-like). Himalaya.
„ *kimballia'na* (Kimballian). Golden-yellow, with red-brown lines. Borneo. 1888.
S. Lo'bbii (Lobb's). Sulphur-yellow, streaked brown. Burma. 1876.
„ *paci'fica* (pacific). Sepals whitish-lilac; lip lilac, edged yellow. Pacific Islands. 1883.
„ *Pe'tri* (Petr's). 2. Dark lilac; lip purple. South Sea Islands. 1877.
„ *plica'ta* (plaited). Purple. Penang. 1843.
„ „ *a'lba* (white). White.
„ *pube'scens* (downy). 1½. Yellow, violet. June. N. India.
„ *Regnie'ri* (Regnier's). Light yellow; callus white. Cochin-China. 1887.
„ *ro'sea* (rosy). Rose. July. Philippines. 1837.
„ *soutteria'na* (Soutteriian). Light rose; lip darker. Queensland. 1910.
„ *tomento'sa* (felted). Crimson. June. Philippines. 1845.
„ *Vieilla'rdii* (Vieillard's). 2. Pale lilac. Polynesia. 1886.
„ „ *ru'bra* (red). 2. Dark lilac. 1892.

SPATHO'LOBUS. (From *spathis*, a spoon, and *lobos*, a pod; the pod is thickened at the apex. Nat. ord. Leguminosæ.)

Tall climbing, evergreen stove shrub. Cuttings of side-shoots with a heel, in sand, and placed in a close frame with bottom-heat. Fibrous loam, a little peat and sand.

S. Roxbu'rghii (Roxburgh's). 20. Scarlet. India; Burma. 1818.

SPAWN is the white, thready matter produced in the soil by Mushrooms, and by which they are propagated. These threads or hyphæ arise from spores produced in great abundance upon the gills of the mushroom; they also constitute the vegetative part of the plant, and the portion that is made to grow in the bricks made of clay and horse manure and sold to gardeners under the name of mushroom spawn. Pieces of these bricks are inserted in beds of fermenting manure, and the mycelium or hyphæ grow and ramify in the manure for a space of six weeks, then begin to develop the fruiting part on the surface, known as the mushroom, which is the part eaten.

SPECULA'RIA. (From the ancient name, *Spe'culum-Ve'neris*, or Venus's Looking-glass. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Annuals and all others, by seeds in pans, in a bed under glass, in March and April; division of the herbaceous kinds in spring, and cuttings of young shoots under a hand-light, in a shady place, in summer; cuttings of shrubby kinds under a glass, in sandy soil, in April; sandy loam, with a little peat, or reduced dried leaf-mould, for shrubby. Winter temp., 40° to 48°.

GREENHOUSE EVERGREENS.

S. diffu'sus (spreading). See PRISMATOCARPUS DIFFUSUS.
„ *frutico'sus* (shrubby). See PRISMATOCARPUS FRUTICOSUS.

GREENHOUSE HERBACEOUS.

S. interru'ptus (interrupted). See PRISMATOCARPUS INTERRUPTUS.
„ *ni'tidus* (shining). See PRISMATOCARPUS NITIDUS.

HARDY ANNUALS.

S. biflo'ra (two-flowered). 1. Blue. June. N. and S. Amer. 1836.
„ *falca'ta* (sickle-*petaled*). ½. Rose. July. Mediterranean. 1820.
„ *hy'brida* (hybrid). 1. Rose. July. Europe (England). "Corn Violet."
„ *pentago'nia* (five-angled). 1. Blue. July. Levant. 1686.
„ *perfolia'ta* (leaf-stem-pierced). 1. Blue. July. N. Amer. 1680.
„ *Spe'culum* (*Venus's*-looking-glass). 1. Green, white. July. S. Europe. 1596.
„ „ *calyci'na* (*large*-calyxed). July. Iberia.
„ „ *liba'nica* (Libanian). July.
„ „ *pube'scens* (downy). July. France.

SPEEDWELL. *Vero'nica.*

SPEIRA'NTHA. (From *speira*, a spire, curve, or coil, and *anthos*, a flower; the flowers are arranged in an erect spire-like raceme. Nat. ord. Liliaceæ. Allied to Convallaria or Lily of the Valley.)

Greenhouse perennial herb with thick creeping rhizomes. Divisions. Fibrous loam, leaf-mould, and sand.

S. convallarioi'des (Convallaria-like). ½–¾. White. June. China. 1854.

SPE'NNERA. (Named after *M. Spenner*, a German botanist. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Now referred to Aciotis.)

Stove evergreens. Seeds, and cuttings of the young shoots in sand, under a bell-glass, and in heat; sandy peat and fibrous loam. Winter temp., 50° to 60°; summer, 60° to 85°.

S. fra'gilis (brittle). See ACIOTIS FRAGILIS.
„ *glandulo'sa* (glanded). See PLEROMA GLANDULOSUM.
„ *paludo'sa* (marsh). See ACIOTIS PALUDOSA.
„ *pendulifo'lia* (hanging-leaved). See ACIOTIS PENDULIFOLIA.

SPE'RGULA. (From *spargo*, to throw here and there, to scatter; in reference to the way the seeds get scattered all over the ground. Nat. ord. Caryophyllaceæ.)

Annuals of a weedy character, from which the perennial species have been separated. *S. arve'nsis* has been used for ensilage. Seeds. Ordinary soil.

S. arve'nsis (field). ½–1½. White. All seasons. Europe (Britain). "Corn Spurrey."
„ *pili'fera* (hair-bearing). See SAGINA GLABRA PILIFERA.

SPERGULA'RIA. (Like or similar to *Spergula*, from *spargo*, to scatter; in allusion to the scattering of the seeds. Nat. ord. Caryophyllaceæ.)

Hardy annuals. Seeds. Ordinary garden soil.

S. ru'bra (red). ½. Rose. Summer. Europe (Britain).
„ *sali'na* (salt). ½. Purple. Summer. Europe (Britain).
„ *segeta'lis* (cornfield). 1. White. July. Europe. 1805.

SPERMACO'CE. Button Weed. (From *sperma*, a seed, and *kokkos*, a berry; the fruits break up into one-seeded berries or nuts. Nat. ord. Rubiaceæ.)

Annual, or perennial herbs or subshrubs. Cuttings of the perennials and subshrubs in a close, warm frame. Loam, leaf-mould, or peat and sand.

S. Bruno'nis (Brown's). See KNOXIA BRACHYCARPA.
„ *hi'rta* (hairy). See MITRACARPUM VILLOSUM.
„ *hi'spida* (hispid). Tropics, Old World.
„ *lasioca'rpa* (woolly-fruited). See S. STRICTA.
„ *stri'cta* (upright). 1. White. July. Tropics, Old World.
„ *sumatre'nsis* (Sumatra). See KNOXIA SUMATRENSIS.
„ *verticilla'ta* (whorled). 1–2. White. July. Trop. Africa and Amer.

SPERMADI'CTYON. (From *sperma*, a seed, and *diktuon*, a net; in allusion to the netted seeds. Nat. ord. Rubiaceæ. Now referred to Hamiltonia.)

S. azu'reum (azure). See HAMILTONIA SUAVEOLENS.
„ *suave'olens* (sweet-smelling). See HAMILTONIA SUAVEOLENS.

SPERMA'XYRUM. (From *sperma*, a seed, and *xuron*, a razor; in allusion to the thread-like placenta running along the side of the seed. Nat. ord. Olacaceæ. Now referred to Olax.)

S. stri'ctum (upright). See OLAX STRICTA.

SPHA'CELE. (From *sphakelos*, a species of sage, possibly *Salvia cretica*. Nat. ord. Labiatæ.)

Free-flowering, perennial greenhouse herbs. Seeds; cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.

S. cæru'lea (blue). Sky-blue. Summer. Trop. Amer. 1865.
„ *campanula'ta* (bell-shaped). ½–1. Blue. July. Chili. 1795. Trailer.
„ *Li'ndleyi* (Lindley's). 1½–2. Purple-violet. July. Chili. 1825.

SPHÆRA'LCEA. (From *sphaira*, a globe, and *alcea*, the Marsh Mallow; the seed-pods, or carpels, in globular heads. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polygynia*. Allied to Mallow.)

Annuals, by seed in a hotbed, in April, planted out at the beginning of June; shrubs, by cuttings of young shoots in sandy soil, under a hand-light, in summer; loam and peat. Winter temp., 40° to 48°.

S. abutiloi'des (Abutilon-like). 4. Purple. August. Bahamas. 1725.
„ *acerifo'lia* (maple-leaved). 3. Rose. N. Amer. 1863. Hardy.
„ *angustifo'lia* (narrow-leaved). 8. Pink. August. Mexico. 1780.
„ *carolinia'na* (Carolina). See MODIOLA MULTIFIDA.
„ *cisplati'na* (hither-Platan). 4. Red. June. Trop. Amer. 1798.
„ *decu'mbens* (lying-down). See MODIOLA MULTIFIDA.
„ *e'legans* (elegant). 3. Red. July. S. Africa. 1791.
„ *Emo'ryi* (Emory's). 1–2. Red. Summer. North-western Amer. 1888.
„ *minia'ta* (vermilion). See S. CISPLATINA.
„ *munroa'na* (Munroan). 2. Scarlet. August. N. Amer. 1828. Hardy.
„ *nu'tans* (nodding). Purple. Guatemala. 1852.
„ *obtusi'loba* (blunt-lobed). 4. Purple. July. Chili. 1827.
„ *prostra'ta* (trailing). See MODIOLA MULTIFIDA.
„ *umbella'ta* (umbelled). 4. Violet. April. Mexico. 1814.

SPHÆROCO'DON. (From *sphaira*, a globe, and *kodon*, a bell; in allusion to the shape of the flowers. Nat. ord. Asclepiadaceæ.)

A woody stove climber. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

S. obtusifo'lium (blunt-leaved). 1–3. Purple. Trop. Africa. 1903.

SPHÆRO'GYNE. (From *sphaira*, a globe, and *gune*, the ovary; the shape of the ovary. Nat. ord. Melastomaceæ. Now referred to Tococa.)

S. cinnamo'mea (cinnamon). See TOCOCA CINNAMOMEA.
„ *ferrugi'nea* (rusty). See TOCOCA FERRUGINEA.
„ *imperia'lis* (imperial). See TOCOCA IMPERIALIS.

SPHÆROLO'BIUM. (From *sphaira*, a globe, and *lobos*, a pod; from the spherical shape of the pods. Nat. ord. Leguminosæ.)

Evergreen, greenhouse shrubs. Cuttings in sand in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

S. acumina'tum (long-pointed). See S. MEDIUM.
„ *me'dium* (intermediate). 2–3. Red. June to September. Australia. 1803.
„ *mi'nus* (lesser). See S. VIMINEUM.
„ *vimi'neum* (twiggy). 2. Yellow. July to September. Australia. 1802.

SPHÆROPHY'SA. (From *sphaira*, a globe, and *phusa*, a bladder; the pods are spherical and inflated. Nat. ord. Leguminosæ.)

Hardy perennial or shrubby at the base. Cuttings in sand under a hand-light. Light sandy, well-drained soil.

S. ca'spica (Caspian). See S. SALSULA.
„ *sa'lsula* (saltish). 1½. Purple. July. Caspian region; N. Asia. 1818.

SPHÆRO'PTERIS. (From *sphaira*, a globe, and *pteris*, a fern; the sori are globose. Nat. ord. *Ferns* [Filices]. Allied to Dicksonia.)

Stove or moist warm greenhouse. See FERNS FOR CULTURE.

S. barba'ta (bearded). 3. Northern India and Neilgherries.

SPHÆROSTE'MA. (From *sphaira*, a globe, and *stema*, a stamen; stamens collected into close clusters. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 22-*Dioecia*, 12-*Icosandria*. Now referred to Schizandra.)

S. marmora'tum (marbled). See SCHIZANDRA MARMORATA.
„ *propi'nquum* (related). See SCHIZANDRA PROPINQUA.

SPHÆROSTI'GMA. (From *sphaira*, a globe, and *stigma*, the female organ. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Now referred to Œnothera.)

S. Chamisso'nis (Chamisso's). See ŒNOTHERA DENTATA.
„ *cheiranthifo'lium* (wallflower-leaved). See ŒNOTHERA CHEIRANTHIFOLIA.

S. hi'rtum (hairy). See ŒNOTHERA HIRTA.
„ *minutiflo'rum* (small-flowered). See ŒNOTHERA MINUTIFLORA.

SPHÆROTHE'CA PANNO'SA. This is the Mildew of Roses and various other woody Rosaceous plants. In the early part of the season it appears as a white or grey web upon the leaves only, as it cannot attack old wood. Later in the season it attacks the leaves, young shoots, and fruit, which it envelops with a dense white web. This is the second stage of the fungus and the more dangerous one, because the resting or winter spores are produced upon it, and are capable of setting up infection the following summer. Soft leaves like those of Rose Crimson Rambler, R. Queen Alexandra, and other varieties of *Rosa multiflora* are much more liable to attack than those having harder and more leathery leaves. The first stage of the fungus is easily destroyed by dusting the leaves with flowers of sulphur, but the second can only be destroyed by sulphide of potassium, one ounce to three to five gallons of water, the weaker solutions to be used when the leaves are young and tender. The fungicide can be made to adhere to the foliage longer by mixing with it a tablespoonful of liquid glue or the white of two eggs.

SPHA'GNUM. This is a white-leaved Moss, commonly found on peat-bogs. Its botanical name is *Spha'gnum cymbifo'lium* and other species, Grey Bog Moss. It is an excellent material for packing plants in, being extremely retentive of moisture, and yet contains so much astringency as to check decay. It is also extensively employed for potting Orchids, on account of its capability for retaining moisture, and its open, spongy character, admitting air freely to the roots of aerial and epiphytical plants.

SPHEDAMNOCA'RPUS. (From *sphendamnos*, a maple, and *karpos*, a fruit; the fruits are winged like a maple. Nat. ord. Malpighiaceæ.)
A tall climbing greenhouse shrub. Cuttings of half-ripe wood in sand under a bell-glass, in gentle heat. Fibrous loam, a little peat, and sand.
S. pru'riens (stinging). 6–15. Golden-yellow. S. Africa. 1903.

SPHENA'NDRA. (From *sphen*, a wedge, and *aner, andros*, a male or anther; the shape of the anthers. Nat. ord. Scrophulariaceæ.)
An annual or perennial greenhouse plant. Seeds. Loam, leaf-mould, and sand.
S. visco'sa (clammy). 1. Violet. S. Africa. 1773.

SPHENODE'SME. (From *sphen*, a wedge, and *desme*, a truss; the flowers being produced in trusses. Nat. ord. Verbenaceæ.)
A climbing stove shrub. Cuttings in sand in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
S. jackia'na (Jackian). See S. PENTANDRA.
„ *penta'ndra* (five-anthered). 4–6. Purple and white. India; Malaya. 1823.

SPHENO'GYNE. (From *sphen*, a wedge, and *gune*, female organ; the shape of pistil. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Now referred to Ursinia.)
S. abrotanifo'lia (southernwood-leaved). See URSINIA ABROTANIFOLIA.
„ *anthemoi'des* (chamomile-like). See URSINIA ANTHEMOIDES.
„ *crithmifo'lia* (samphire-leaved). See URSINIA CRITHMIFOLIA.
„ *denta'ta* (tooth-*leaved*). See URSINIA DENTATA.
„ *fœnicula'cea* (fennel-*leaved*). See URSINIA FŒNICULACEA.
„ *leucanthemoi'des* (Leucanthemum-like). See URSINIA LEUCANTHEMIFOLIA.
„ *odora'ta* (sweet-scented). See URSINIA ODORATA.
„ *pilife'ra* (hairy). See URSINIA PILIFERA.
„ *scario'sa* (membranous). See URSINIA SCARIOSA.
„ *serra'ta* (saw-*edged*). See URSINIA SERRATA.
„ *specio'sa* (showy). See URSINIA SPECIOSA.

SPHENO'TOMA. (From *sphenoo*, to cleave, and *tome*, a section; limb or border of the flower deeply cut. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. See DRACOPHYLLUM.)
S. capita'tum (head-*spiked*). See DRACOPHYLLUM CAPITATUM.
„ *gra'cile* (slender). See DRACOPHYLLUM GRACILE.

SPHINCTACA'NTHUS. (From *sphigxis*, constriction, and *Acanthus*; the throat of the corolla is constricted. Nat. ord. Acanthaceæ.)
A smooth, erect greenhouse subshrub. Cuttings in sand under a bell-glass. Loam, leaf-mould, and sand.
S. Griffi'thii (Griffith's). White, purple. Autumn. Himalaya. 1774.

SPICE BUSH. *Linde'ra Benzo'in.*

SPIDER FLOWER. *Cleo'me.*

SPIDER ORCHIS. *O'phrys arani'fera.*

SPIDERWORT. *Tradesca'ntia.*

SPIELMA'NNIA. (Named after *P. R. Spielmann*, a German botanist. Nat. ord. *Myoporads* [Myoporaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.) Now referred to Ottia.)
S. africa'na (African). See OTTIA AFRICANA.

SPIGE'LIA. Worm Grass. (Named after *A. Spigelius*, a botanist at Padua. Nat. ord. *Loganiads* [Loganiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Annual, by seed under the usual treatment; hardy herbaceous, by seed and division of the roots; loam and peat.
S. Anthe'lmia (Anthelmia). 1½. Red. July. Trop. Amer. 1759. Stove annual.
„ *marila'ndica* (Maryland). 1. Scarlet. July. N. Amer. 1694. Hardy herbaceous.
„ *sple'ndens* (splendid). Scarlet. Mexico; Guatemala. Stove perennial.

SPIKENARD or **NARD.** *Nardo'stachys Jatama'nsi.*

SPIKENARD, PLOUGHMAN'S. *Ba'ccharis.*

SPILA'NTHES. Alphabet Plant. (From *spilos*, a spot or stain, and *anthos*, a flower; the disc is like a brown spot in some species. Nat. ord. Compositæ.)
Mostly annual herbs, which may be reared in heat and planted out in May. Seeds. Light, sandy loam.
S. Acme'lla (Acmella). 1. Yellow. July to September. Tropical and subtropical regions.
„ *croca'ta* (saffron). See VERBESINA CROCATA.
„ *exaspera'ta* (roughened). 2. Pale yellow. Venezuela.
„ *olera'cea* (pot-herb). See S. ACMELLA.

SPINACH. *Spina'cia olera'cea.*
There are the *Round-leaved*, or *Smooth-seeded*, and the *Triangular-leaved*, or *Prickly-seeded*. The first being the most succulent, is employed for the spring and summer crops, and the latter for autumn and winter. The *Lettuce-leaved* and the *Flanders* are hardy for a winter crop, and by much the best.
Soil.—For the round-leaved variety, a rich, light, moist loam, in an open situation, is preferable; but for the triangular-leaved, and other winter varieties, a light, moderately fertile, and dry border. The earth should always be well pulverised at the time of digging, and the soil for the summer crops cannot be too rich. Liquid-manure is highly beneficial to them, and when made of blood and the most fertilising matters, the greater the benefit.
Sow of the round-leaved variety at the close of January in a warm situation, to be repeated in larger, but still small breadths, at the commencement and end of February, and to be continued every three weeks until the middle of April, when it must be performed once a week until the close of May, and then once a fortnight till the end of July. In August sow at intervals of three weeks until the early part of September. Sow thinly in drills half an inch deep and a foot apart. The sowing should be in showery weather, otherwise an occasional watering must be given; for if there is a deficiency of moisture during the first grades of vegetation, not half of the seedlings will come up. The triangular-leaved plants must be thinned to 4 or 5 inches apart, and the round-leaved to 8. Thin by degrees, separating them at first only an inch or two, as the plants of the several thinnings are fit for use. The thinning ought to commence when they have attained four leaves about an inch in breadth. Regular gathering promotes the health of the plants. The outer leaves only should be gathered at a

time, the centre being left uninjured, to produce successional crops. This direction applies chiefly to the winter standing crops; those of the summer may be cut off close to the root.

To obtain Seed.—A sowing of each variety may be made in February or March, according to the openness of the season; or, of the round-leaved variety, some plants of a regular crop may be allowed to run up in April or May; and of the triangular-leaved, some plants of the winter-standing crops may be transplanted in March. Set them 12 inches apart. Spinach is dicœcious, and many ignorant persons, perceiving some of the plants to have no appearance of bearing seed, advise these to be pulled up; but they are the male-bearing plants, without which the others would be unfruitful. If, however, they are very numerous, some of them may be removed with benefit to those that remain, care being taken that some are left in every part of the bed. When the seed is set the male plants may be entirely removed. When the seed is ripe in July or August, the plants ought to be pulled up, and laid to dry thoroughly on a cloth, previously to its being beaten out and stored.

SPINACH, MOUNTAIN, or **GARDEN ORACHE.** *Atriplex hortensis.*

SPINACH, NEW ZEALAND. See TETRAGO'NIA EXPA'NSA.

SPINACH, WILD, or **GOOD HENRY.** *Chenopodium Bonus-Henricus.*

SPINA'CIA. Spinach. (From *spina*, a prickle; seeds prickly. Nat. ord. *Chenopods* [Chenopodiaceæ]. Linn. 22-*Dioecia*, 6-*Pentandria*.)

Hardy, green-flowered annual. See SPINACH.

S. olera'cea (potherb). 1½. June. Cultivated everywhere. 1568.
„ „ *gla'bra* (smooth-*seeded*). 1½. June.
„ „ *spino'sa* (prickly-*seeded*). 1½. June.

SPINDLE-TREE. *Euonymus.*

SPINO'VITIS DAVI'DII. See VI'TIS VINI'FERA DAVI'DII.

SPIRÆ'A. (From *speira*, anything wreathed; the flowering branches used in garlands. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*.)

All white-flowered, except where otherwise mentioned. Herbaceous and tuberous, by division of the plant in spring; shrubs, by cuttings, layers, and suckers; good garden-soil.

HARDY TUBEROUS-ROOTED.

S. Filipe'ndula (thread-hanging). 2. September. Europe (Britain). "Dropwort."
„ „ *flo're ple'no* (double-flowered). Double.
„ „ *mi'nor* (smaller). 1½. August. Europe.
„ „ *pube'scens* (downy). 1½. August. France.

HARDY HERBACEOUS.

S. Aru'ncus (Aruncus). 4. June. Siberia. 1633. "Goat's Beard."
„ „ *america'na* (American). 4. June. N. Amer.
„ „ *Knei'ffii* (Kneiff's). Leaflets cut into narrow segments. 1902.
„ „ *plumo'sa* (plumy). 3. Panicle of flowers 2 ft. long. 1907.
„ *astilboi'des* (Astilbe-like). 1½. July. Japan. 1880.
„ *barba'ta* (bearded). See ASTILBE RIVULARIS.
„ *cæspito'sa* (tufted). ½. Flowers in cylindrical spikes. Rocky Mountains. 1899.
„ *camtscha'tica* (Kamtschatkan). 4–7. White. July. Kamtschatka. 1830.
„ „ *e'legans* (elegant). See S. CAMTSCHATICA ROSEA.
„ „ *himale'nsis* (Himalayan). See S. VESTITA.
„ „ *ro'sea* (rosy). 4–7. Rose. 1907.
„ *denuda'ta* (naked). See S. ULMARIA.
„ *digita'ta* (hand-*leaved*). 2. Red. July. Siberia. 1823.
„ *gigante'a* (gigantic). See S. CAMTSCHATICA.
„ *japo'nica* (Japanese) of Makoy. See ASTILBE JAPONICA.
„ *kamtscha'tika* (Kamtschatkan). See S. CAMTSCHATICA.
„ *loba'ta* (lobed). 2. Red. July. N. Amer. 1765.
„ „ *a'lbicans* (whitish). Pale rose. Seedling.
„ *S. loba'ta magnifica* (magnificent). Flowers larger, darker. 1909.
„ *palma'ta* (hand-*leaved*). 2. Red. July. Japan. 1823.
„ „ *a'lba* (white). 2. White. 1884.
„ „ *e'legans* (elegant). 2. White, with red anthers. 1878.
„ *pectina'ta* (comb-like). ½–1. Whitish. Summer. North-western Amer.
„ *rotundifo'lia* (round-leaved). June. Cashmere. 1840.
„ *trifolia'ta* (three-leafleted). See GILLENIA TRIFOLIATA.
„ *Ulma'ria* (Ulmaria). 2. August. Europe (Britain). "Meadow Sweet."
„ „ *mu'ltiplex* (double-flowered). 2. August. Britain.
„ „ *variega'ta* (variegated). 2. July. Britain.
„ *ulmifo'lia* (elm-leaved). 3. June. Carniola. 1790.
„ „ *phylla'ntha* (leafy). 3. June.
„ *venu'sta* (lovely). See S. LOBATA.
„ *vesti'ta* (clothed). 1–1½. June. Himalaya. 1838.

HARDY DECIDUOUS SHRUBS.

S. acutifo'lia (acute-leaved). 4. May. Siberia. 1817.
„ *Aitchiso'ni* (Aitchison's). 4–8. July. Afghanistan. 1900.
„ *alpi'na* (alpine). 3. July. Siberia. 1806.
„ *amure'nsis* (Amur). See NEILLIA AMURENSIS.
„ *arbo'rea* (tree). 4–10. Habit tree-like; allied to *S. lindleya'na*. Central China. 1910.
„ *arbu'scula* (little tree). 1. Bright rose-red. Washington; Oregon. 1897.
„ *arge'ntea* (silvery) of gardens. See S. CANESCENS.
„ *argu'ta* (acute). 2–4. April. Garden origin.
„ *ariæfo'lia* (white-beam-leaved). See S. DISCOLOR.
„ *assu'rgens* (rising). 4–8. Stems erect; allied to *S. lindleya'na*. China. 1904.
„ *be'lla* (pretty). 2. Red. July. Nepaul. 1820.
„ *betulifo'lia* (birch-leaved). 2. Pink. June. N. Amer. 1812.
„ *Blu'mei* (Blume's). 2–3. July. China and Japan, 1858.
„ *Boursie'rii* (Boursier's). See S. DISCOLOR DUMOSA.
„ *brachybo'trys* (short-bunched). 3–5. June. (*S. canescens* × *Douglasii*.) Gardens.
„ *bractea'ta* (large-bracted). 3–5. June. Japan. 1885.
„ *bruma'lis* (winter). 2. Gardens.
„ *bulla'ta* (blistered). 1–1½. Dark red. June to September. Japan. 1882.
„ *Buma'lda* (Bumalda). See S. JAPONICA BUMALDA.
„ „ *rube'rrima* (reddest). See S. JAPONICA RUBERRIMA.
„ *cæspito'sa* (tufted). Rocky Mountains.
„ *callo'sa* (beautiful). See S. JAPONICA.
„ *ca'na* (hoary). 1½. June. Hungary. 1825.
„ *cane'scens* (hoary). 4–6. June, July. Himalaya. 1879.
„ *cantonie'nsis* (Canton). 2–4. June, July. China; Japan; Himalaya. 1843.
„ „ *flo're ple'no* (double-flowered). Flowers double.
„ *capita'ta* (headed). See NEILLIA OPULIFOLIA.
„ *ceanothifo'lia* (Ceanothus-leaved). See S. CORYMBOSA.
„ *chamædrifo'lia* (germander-leaved). 4. June. Siberia. 1789.
„ „ *flexuo'sa* (flexuous). 4. June. S. Siberia. 1820.
„ „ *inci'sa* (cut-*leaved*). 1½. June. Germany.
„ „ *Jakobse'nii* (Jacobsen's).
„ „ *me'dia* (intermediate). See S. MEDIA.
„ „ *oblongifo'lia* (oblong-leaved). See S. MEDIA.
„ „ *subracemo'sa* (sub-racemed). 1½. June.
„ „ *ulmifo'lia* (elm-leaved). See S. CHAMÆDRIFOLIA.
„ *chine'nsis* (Chinese). See S. DASYANTHA.
„ *confu'sa* (confused). See S. MEDIA.
„ *corymbo'sa* (corymbed). 1½. July. Virginia. 1812.
„ „ *soro'ria* (sister). 2. August. N. Amer. 1829.
„ *cratægifo'lia* (Cratægus-leaved). See S. CORYMBOSA.
„ *crena'ta* (scallop-*leaved*). 2. April. Podolia. 1739.
„ *crenifo'lia* (crenate-leaved). See S. CRENATA.
„ *crispifo'lia* (crisped-leaved). See S. BULLATA.
„ *cuneifo'lia* (wedge-leaved). See S. CANESCENS.
„ *dasya'ntha* (thick-flowered). 4–5. March. China. 1843.
„ *decu'mbens* (lying-down). 1–1½. June to September. Europe. 1879.
„ „ *tomento'sa* (felted). 1–1½. June to August. Tyrol, &c.
„ *di'scolor* (two-coloured). 6–8. Creamy-white. July. N.W. Amer. 1827.
„ „ *ariæfo'lia* (Aria-leaved). See S. DISCOLOR.

S. di'scolor dumo'sa (bushy). 1–3. Creamy-white. July. California. 1859.
„ *Douglas'sii* (Douglas's). 4–6. Rose. August. N.W. Amer.
„ *dumo'sa* (bushy). See S. DISCOLOR DUMOSA.
„ *expa'nsa* (spreading). 3. Pink. June. Himalaya. 1846.
„ *fi'ssa* (split). See S. DISCOLOR.
„ *flagella'ta* (whip-line). See S. HYPERICIFOLIA.
„ *flexuo'sa* (zigzag). See S. CHAMÆDRIFOLIA FLEXUOSA.
„ *Fortu'nei* (Fortune's). See S. JAPONICA.
„ *gemma'ta* (budded). China.
„ *gra'cilis* (slender). 2. July, August. Himalaya. 1820.
„ *grandiflo'ra* (large-flowered). See EXOCHORDA GRANDIFLORA.
„ *Hacque'ti* (Hacquet's). See S. DECUMBENS TOMENTOSA.
„ *He'nryi* (Dr. Henry's). 6–7. June. Central China. 1903.
„ *hypericifo'lia* (Hypericum-leaved). 5. April. N. Amer. 1640.
„ „ *acu'ta* (acute). See S. ACUTIFOLIA.
„ *besseria'na* (Besserian). See S. CRENATA.
„ „ *crena'ta* (crenate). See S. CRENATA.
„ „ *plunkenetia'na* (Plunkenet's). April. Canada.
„ „ *thalictroi'des* (Thalictrum-like). See S. HYPERICIFOLIA.
„ *inci'sa* (cut). See S. CHAMÆDRIFOLIA.
„ *japo'nica* (Japanese). 2–6. Rose. June. India; China; Japan. 1859.
„ „ *a'lba* (white). 1–2. White.
„ „ *Buma'lda* (Bumalda). 2–3. Deep rose.
„ „ *Frœbe'lii* (Frœbel's).
„ „ *glabra'ta* (smooth). 3–6. Leaves smooth.
„ „ *macrophy'lla* (large-leaved). 4–6. Leaves large.
„ „ *rube'rrima* (*reddest*). 2–4. Dark red. 1891.
„ „ *ru'bra* (red). 2–4. Dark red. Japan. 1882.
„ „ *sple'ndens* (splendid). 2–5. Peach-coloured.
„ „ *supe'rba* (superb). 2–5. Deep rose-red.
„ *læviga'ta* (smooth-*leaved*). 4. White tinted rose in male flowers. May. Siberia. 1774.
„ *lanceola'ta* (spear-head-*leaved*). See S. CANTONIENSIS.
„ *laxiflo'ra* (loose-flowered). See S. VACCINIIFOLIA.
„ *lindleya'na* (Lindleyan). 4–10. July, August. Himalaya. 1845.
„ *longige'mmis* (long-budded). China. 1894.
„ *me'dia* (intermediate). 1½–4. June. Europe; N. Asia. 1816.
„ „ *glabre'scens* (smooth).
„ „ *rotundifo'lia* (round-leaved). See S. BRACTEATA.
„ *Menzie'sii* (Menzies'). 3–5. Rose. July, August. N.W. Amer.
„ „ *angustifo'lia* (narrow-leaved).
„ „ *Billia'rdii* (Billiard's).
„ „ *exi'mia* (choice).
„ „ *lennea'na* (Lennean).
„ „ *macrothy'rsa* (large-thyrsed).
„ „ *ovalifo'lia* (oval-leaved).
„ „ *Pseu'do-Douglas'sii* (false-Douglas's).
„ „ *triu'mphans* (triumphant).
„ *Millefo'lium* (Milfoil-leaved). 2. Whitish. Summer. California. 1880. Evergreen.
„ *mollifo'lia* (soft-leaved). Stems prostrate. Leaves very hairy when young. W. China. 1910.
„ *mongo'lica* (Mongolian). Mongolia; China.
„ *noblea'na* (Noblean). Purplish-red. August. California. 1859.
„ *obova'ta* (reversed-egg-*leaved*). See S. HYPERICIFOLIA.
„ *opulifo'lia* (guelder-rose-leaved). See NEILLIA OPULIFOLIA.
„ „ *tomentе'lla* (slightly-woolly). 5. June. N. Amer.
„ *pickowie'nsis* (Pickow). See S. PIKOVIENSIS.
„ *pikovie'nsis* (Pickowian). 4. June. Podolia. 1807.
„ *prunifo'lia* (plum-leaved). 4–6. March. China and Japan.
„ „ *flo're-ple'no* (double-flowered). 4–6. Double. China. 1844.
„ *pube'scens* (downy) of Lindley. See S. DASYANTHA.
„ *pube'scens* (downy) of Turcz. 2. March. China, &c. 1843.
„ *Ramale'yi* (Ramaley's). 6–8. July. Colorado. 1909.
„ *reevesia'na* (Reevesian). See S. CANTONIENSIS.
„ *rhamnifo'lia* (Rhamnus-leaved). See S. VACCINIIFOLIA.
„ *salicifo'lia* (willow-leaved). 5. Rosy. July. Europe (Britain). Asia.
„ *alpe'stris* (alpine). 5. July. Russia. 1820.
S. salicifo'lia ca'rnea (flesh-coloured). 5. Flesh. July. Britain.
„ „ *flo'ribus a'lbis* (white-flowered). 5. White.
„ „ *flo'ribus ro'seis* (rose-flowered). 5. Rose.
„ „ *grandiflo'ra* (large-flowered). 4. Pink. July. Kamtschatka. 1827.
„ „ *latifo'lia* (broad-leaved). 5. July. Europe.
„ „ *mi'nor* (lesser). 2–3. Rose.
„ „ *panicula'ta* (panicled). July. N. Amer.
„ *savra'nica* (Savranian). See S. CRENATA.
„ *sorbifo'lia* (service-leaved). 4. August. Siberia. 1759.
„ „ *alpi'na* (alpine). 3. August. Siberia. 1817.
„ „ *Fo'xii* (Fox's). See S. SORBIFOLIA.
„ „ *Palla'sii* (Pallas's). See S. SORBIFOLIA.
„ „ *stelli'pila* (starry-haired). Panicles dense. Filaments long, hair-like. 1903.
„ *thalictroi'des* (meadow-rue-like). See S. HYPERICIFOLIA.
„ *Thunbe'rgii* (Thunberg's). 1–3. Spring. China; Japan.
„ *tobo'lskia* (Tobolsk). 4. June. Siberia. 1823.
„ *tomento'sa* (downy). 5. August. N. Amer. 1736.
„ *triloba'ta* (three-lobed). 3. May. Altai. 1801.
„ *urale'nsis* (Uralian). See S. HYPERICIFOLIA.
„ *vacciniifo'lia* (Vaccinium-leaved). 1–2. July, August. Himalaya. 1838.
„ *Vei'tchii* (Veitch's). 4–7. June. Flowering twigs in two opposite rows. Central China. 1903.
„ *Wilso'nii* (Wilson's). 4–6. June. Central China. 1910.

SPIRANTHE'RA. (From *speira*, spiral, and *anthera*, an anther; twisted anthers. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen. Cuttings of short, stubby side-shoots in sand, under a bell-glass, in a sweet bottom-heat, the glass to be removed at night; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 80°.

S. odorati'ssima (sweetest-scented). 6. White, red. Brazil. 1823.

SPIRA'NTHES. Lady's Traces. (From *speira*, spiral, and *anthos*, a flower; flowers arranged spirally. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Neottia.)

Stove terrestrial orchids, grown in pots. See ORCHIDS.

S. æstiva'lis (summer). ½. White. August, September. Europe (England). Hardy.
„ *albe'scens* (whitish). Green; lip tipped brown. Colombia. 1885.
„ *argе'ntea* (silvery). White. April. Brazil. 1843.
„ *au'rea* (golden). Olive, brown. April. Guatemala. 1842.
„ *austra'lis* (southern). 1. White, pink. June. Temp. and trop. Asia and Australia. 1819. Greenhouse.
„ *autumna'lis* (autumn). ½–1. White. August, September. Europe (Britain). Hardy.
„ *bi'color* (two-coloured). 1. Pale green. January. Trinidad. 1823.
„ *bracteo'sa* (*long*-bracted). 1. White, yellow. May. St. Catherine. 1835.
„ *ce'rnua* (drooping). ½–1. White. September. N. Amer. 1796. Hardy or half-hardy.
„ *cinnabari'na* (cinnabar). 2–3. Yellowish. June. Mexico. 1846.
„ *colora'ta* (coloured). 1½. Scarlet. April. Trop. Amer. 1790.
„ „ *macula'ta* (blotched). Leaves dark green with light green markings. 1883.
„ „ *Ortgie'sii* (Ortgies'). Rose. Leaves with white markings.
„ *deci'piens* (deceiving). See GOODYERA MENZIESII.
„ *diure'tica* (diuretic). Green, white. April. Chili. 1838.
„ *ela'ta* (tall). 2. Greenish-white. July. Trop. Amer. 1790.
„ „ *lindleya'na* (Lindleyan). See S. LINDLEYANA.
„ *Esmera'lda* (Esmeralda). Whitish. Leaves with white markings. Brazil.
„ *Esse'ri* (Esser's). Whitish-green. Trop. Amer. 1863.
„ *euphle'bia* (beautifully-veined). Whitish, striped with brown. November. Brazil. 1882.
„ *gemmi'para* (bud-bearing). See S. ROMANZOFFIANA.
„ *grandiflo'ra* (large-flowered). White, green. March, April. Brazil. 1827.

S. leucosti'cta (white-speckled). See S. ALBESCENS.
„ *lindleya'na* (Lindleyan). Greenish-white. July. Leaves banded with white. S. Amer. 1861.
„ *margariti'fera* (pearl-bearing). See S. ESMERALDA.
„ *meta'llica* (metallic). Brazil and Guiana.
„ *orchioi'des* (Orchis-like). 2–3. Rose. November. Trop. Amer. 1826.
„ *pi'cta* (painted). 2. Green. April. Trop. Amer. 1805.
„ „ *grandiflo'ra* (large-flowered). See S. GRANDIFLORA.
„ „ *variega'ta* (variegated). White. Leaves variegated.
„ *plantagi'nea* (plantain-like). 1. Red. June. Peru. 1824.
„ *romanzoffia'na* (Romanzovian). ½–1. White. August. Ireland and N. Amer.
„ *Sauroglo'ssum* (lizzard's-tongue). 1½. Green. Brazil. 1832.
„ *Smi'thii* (Smith's). Yellow and green. Costa Rica and Central Amer. 1868.
„ *Wei'rii* (Weir's). Pale red. Brazil. 1870.

SPIRE LILY. *Galto'nia ca'ndicans.*

SPIROCO'NUS. See TRICHODESMA.

SPIRONE'MA. (From *speira*, spiral, and *nema*, a filament; stamens spiral. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Tradescantia.)
Greenhouse herbaceous. Seeds, and division of the roots; sandy, fibrous peat and loam. Winter temp., 45° to 55°; summer, 60° to 80°.
S. fra'grans (fragrant). 1. White. May. Mexico. 1839.

SPLEENWORT. *Asple'nium.*

SPO'NDIAS. Hog Plum. (The ancient name of a wild Plum; resemblance of fruit. Nat. ord. *Anacards* [Anacardiaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*.)
Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat, in May or June; loam and peat. Winter temp., 50° to 55°; summer, 60° to 80°.
S. acumina'ta (pointed-*leaved*). June. Malabar. 1824.
„ *axilla'ris* (axillary). See S. LUTEA.
„ *borbo'nica* (Bourbon). 40. Dark purple. Mauritius. 1825.
„ *du'lcis* (sweet). 30–50. Yellowish. June. Tropics. 1793. "Sweet Otaheite Apple."
„ *lu'tea* (yellow-*fruited*). 50. Yellow, green. Tropics everywhere. 1739. "Golden Apple."
„ *mangi'fera* (Mango-bearing). 30. White. Trop. Asia. 1820. "Hog Plum."
„ *Mo'mbin* (Mombin) of Jacquin. See S. LUTEA.
„ *Mo'mbin* (Mombin) of Linnæus. See S. PURPUREA.
„ *myrobala'nus* (Myrobalan-like). See S. LUTEA.
„ *pleio'gyne* (full-ovaried). Australia.
„ *purpu'rea* (purple). 30. Purplish. Summer. Trop. Amer. 1817.
„ *Sola'ndri* (Solander's). Australia.
„ *tubero'sa* (tuberous). Brazil. "Burdekin Plum."

SPONGE TREE. *Aca'cia farnesia'na.*

SPONGIOLE. This word has long been applied to the thickened part at the points of the roots of flowering plants, under the mistaken idea that they were the parts that sucked up water containing the food of plants. The term means a little sponge. The thickened part is really the root-cap, consisting of several layers of dead cells, which cover and protect the growing point as it pushes its way through the soil. The root hairs are the organs that absorb moisture, containing plant food. The thin-walled cells of the root, a little behind the root cap, also absorb moisture.

SPORANGE or **SPORANGIUM.** The cases on the back of a fern, and in the axils of the upper leaves or bracts of a Selaginella and allied flowerless plants, which contain the small bodies known as spores. These sporangia or spore-cases are produced in round clusters on the back of the fronds of Polypodium, but in Asplenium the sori or spore clusters are linear, and covered with an indusium or cover.

SPORE. The small dust-like bodies of ferns and other flowerless plants, that correspond to seeds in flowering plants, and serve for reproducing them. They are produced inside the sporanges or sporangia above mentioned.

SPORTING is the term whereby gardeners describe any deviation from the usual form or colours of a plant or flower.

SPOT, a disease occurring on the leaves of the pelargonium, is a dry gangrene, occasioned by an irregularity in the supply of moisture and vicissitudes of temperature, but especially if one of the extremes is much below the degree of heat most favourable to the healthy growth of that plant. The reason of this is very obvious. If a pelargonium, or any other plant, be placed in a highly stimulating heat, and is abundantly supplied with root moisture, it immediately increases its surface of leaf to elaborate and digest the large amount of sap forwarded from the roots. If this amount of sap is subsequently suddenly reduced, by lowering the temperature and adding water to the soil less freely, the increased surface of leaf is no longer required, and it is a law pervading all the vegetable creation that the moment any one of the parts of a plant is unnecessary to it, immediately that part begins to decay.

SPRA'GUEA. (Commemorative of *Isaac Sprague*, a botanical draughtsman of America. Nat. ord. Portulaceæ.)
A hardy perennial herb, suitable for the rockery. Seeds; cuttings in a cold frame. Light, well-drained soil.
S. umbella'ta (umbelled). White, purple. July. New Mexico. 1859.

SPREAD EAGLE. *Onci'dium carthagine'nse.*

SPREKE'LIA. (Named after *Dr. Sprekel*, a German botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
This is the name for the old *Amary'llis formosi'ssima*, or Jacobæa Lily, not by Dr. Herbert, but by Heister, a German botanist; and Dr. H. had some doubts latterly of its correctness. Stove bulbs. For culture, see HIPPEASTRUM.
S. bre'vis (short-*flowered*). See HIPPEASTRUM CYBISTER BREVE.
„ *Cy'bister* (tumbler). See HIPPEASTRUM CYBISTER.
„ *formosi'ssima* (handsomest). ¾. Crimson. June. Mexico; Guatemala. 1658.
„ „ *glau'ca* (sea-green). 1. White. April. Bolivia. 1839.
„ „ *ri'ngens* (gaping). See S. FORMOSISSIMA.
„ *glau'ca* (milky-green). See S. FORMOSISSIMA GLAUCA.

SPRENGE'LIA. (Named after *C. Sprengel*, naturalist. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Greenhouse evergreen. Cuttings of short young shoots, a little firm at the base, in sand, under a bell-glass, in spring and early summer. Winter temp., 35° to 45°.
S. Anderso'ni (Anderson's). See ANDERSONIA SPRENGELIOIDES.
„ *incarna'ta* (flesh-coloured). 2. Flesh. May. N.S. Wales. 1793.
„ *Poncele'tia* (Ponceletia). 1. Scarlet. May. N.S. Wales. 1826.

SPRING BEETLES. A name applied to the Elateridæ, a group of beetles, many of which are known as skipjacks, soldiers, and sailors. In the larva stage they are known as wireworms, and are very destructive to plants. See WIREWORMS.

SPRING BELL. *Sisyri'nchium grandiflo'rum.*

SPRING GRASS. *Anthoxa'nthum odora'tum.*

SPRING SNOWFLAKE. *Leuco'jum ve'rnum.*

SPRUCE FIR. *Pi'cea exce'lsa* and other species.

SPRUCE GALL. See INSECT PESTS.

SPRUE. A market name for the smallest sprouts of Asparagus.

SPURGE FLAX. *Da'phne Meze'reum.*

SPURGE LAUREL. *Da'phne Lau'reola.*

SPURGE NETTLE. *Ja'tropha u'rens.*

SPURGE OLIVE. *Cneo'rum trico'ccum* and *Da'phne Mezе'reum.*

SPURGEWORTS. *Euphorbiaceæ.*

SPURLESS VIOLET. *Vi'ola hedera'cea.*

SPURRING is cutting the lateral or side-shoots, so as to leave only a few buds in length of them projecting from the main branches.

SPYRI'DIUM. (From *spuris, spuridos*, a wicker basket; probably in relation to the fruit. Nat. ord. Rhamnaceæ.)

A greenhouse shrub. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.

S. globulo'sum (globular). 6. July. Australia. 1803.

SQUASH. *Cucu'rbita Melope'po.*

SQUILL. *Sci'lla.*

SQUILL, MEDICINAL. *Urgi'nea Sci'lla.*

SQUILL, ROMAN. *Hyaci'nthus roma'nus.*

SQUILL, STRIPED. *Puschki'nia scilloi'des.*

SQUINANT. *Andropo'gon Schœna'nthus.*

SQUIRREL-TAIL GRASS. *Bro'mus sciuroi'des.*

SQUIRTING CUCUMBER. *Ecba'llium Elate'rium.*

STAA'VIA. (Named after *M. Staaf*, a correspondent of Linnæus. Nat. ord. *Bruniads* [Bruniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

Greenhouse, white-flowered evergreens, from South Africa. Cuttings of young shoots in sand, under a bell-glass; sandy, fibrous peat. Winter temp., 38° to 45°.

S. ciliia'ta (hair-fringed-*leaved*). 1½. June. 1800.
„ *globo'sa* (globose). See S. CILIATA.
„ *glutino'sa* (clammy). 1½. April. 1793.
„ *radia'ta* (rayed). 1. May. 1787.

STA'CHYS. Hedge Nettle, Woundwort. (From *stachus*, a spike; their manner of flowering. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia.*)

Herbaceous perennials, by seeds and divisions; shrubs, by cuttings under a hand-light, in sandy soil, in summer. The tender kinds require a cold pit or greenhouse in winter. There are many annuals and biennials, but not worth culture.

HARDY EVERGREENS.

S. fruticulo'sa (small-shrubby). 1. Purple. July. Caucasus. 1818.
„ *palæsti'na* (Palestine). 1. Purple. July. Syria. 1820.
„ *stenophy'lla* (narrow-leaved). 1. Yellow. July. Spain. 1823.

GREENHOUSE EVERGREENS.

S. Lama'rckii (Lamarck's). Yellow. July. S. Africa. 1820.
„ *rugo'sa* (wrinkly). 2. Pale yellow. July. S. Africa. 1774.

HARDY HERBACEOUS.

S. affi'nis (allied). See S. SIEBOLDII.
„ *albicau'lis* (white-stemmed). 2–3. Violet. Summer. Chili.
„ *alopecu'ros* (foxtail-grass-like). 1½. Red. July. S. Europe. 1759.
„ *alpi'na* (alpine). 1–2. Red-purple. June to August. Europe.
„ *angustifo'lia* (narrow-leaved). 1. Purple. July. South-eastern Europe; Tauria. 1823.
„ *a'nnua* (annual). 1. Yellow. June to October. Europe (England); Caucasus. Annual.
„ *arena'ria* (sand). 1. Purple. July. Western Mediterranean region. 1804.
„ *arve'nsis* (field). 1. Purple. June to October. N. temperate regions (Britain).
„ *a'spera* (rough). 3–4. Rose-red. July to September. N. Amer.
„ *Balbi'sii* (Balbis's). See S. PUBESCENS.
„ *Beto'nica* (Betonica). 1–2. Purple. July to September. Europe (Britain); Asia Minor. "Wood Betony."
S. Beto'nica a'lba (white). 1. White. July to September. Britain.
„ *ca'ndida* (white). White. Greece.
„ „ *chrysa'ntha* (golden-flowered). See S. CHRYSANTHA.
„ *chrysa'ntha* (golden-flowered). Lemon-yellow. Leaves woolly. July. Greece. 1897. Half-hardy.
„ *citri'na* (citron). 1. Sulphur-yellow. Leaves woolly Asia Minor. 1906.
„ *cocci'nea* (scarlet). 3. Scarlet. July. Texas; Mexico. 1798.
„ *co'rsica* (Corsican). ½–¾. Straw; lip purple. July. Corsica. 1823. Reintroduced 1910. Half-hardy.
„ *densiflo'ra* (dense-flowered). ½–1½. Flesh to purple. June. S. Europe. 1710.
„ *di'scolor*, (two-coloured). Caucasus.
„ *Fœni'culum* (fennel-scented). See LOPHANTHUS ANISATUS.
„ *germa'nica* (German). 1–3. Pink, white. July to September. Europe (England).
„ „ *pube'scens* (downy). 1–2. Purple. August. Germany. 1826.
„ *glutino'sa* (clammy). 1. Purple. June. Mediterranean region. 1729.
„ *græ'ca* (Grecian). Greece.
„ *grandidenta'ta* (large-toothed). 1–3. Violet. June to September. Chili.
„ *grandiflo'ra* (large-flowered). 1½. Purple. May. Asia Minor. 1800.
„ „ *robu'sta* (robust). 1½. Pink. June to August. 1905.
„ *hirsu'ta* (hairy). See S. DENSIFLORA.
„ *hypoleu'ca* (white-beneath). See S. SPECTABILIS.
„ *inca'na* (hoary). See S. DENSIFLORA.
„ *infla'ta* (inflated). 1½. Red. July. Persia; Mesopotamia. 1852.
„ *ita'lica* (Italian). 6. Purple. June. Europe.
„ *lana'ta* (woolly). 2. Striped. July. Caucasus, &c. 1782.
„ *lavandulæfo'lia* (lavender-leaved). Caucasus; Asia Minor.
„ *longifo'lia* (long-leaved). Caucasus.
„ *macrou'ra* (long-tailed). 1. Pale red. July. Europe. 1820.
„ *mawea'na* (Mawean). Pale sulphur; lip spotted with purple. Morocco. 1878.
„ *menthæfo'lia* (mint-leaved). Yellow. July. Dalmatia. 1838.
„ *ni'vea* (snowy). 1. Red. July. Syria. 1820.
„ *officina'lis* (shop). See S. BETONICA.
„ *orienta'lis* (eastern). 1. Light purple. August. Levant. 1737.
„ *paniculа'ta* (panicled). See SIDERITIS LANATA.
„ *pube'scens* (downy). Yellowish. July. S. Europe. 1816.
„ *re'cta* (upright). 2. Yellow. July. S. Europe. 1683.
„ *ru'bra* (red). See S. ARENARIA.
„ *Sa'lviæ* (Salvia-like). See SPHACELE LINDLEYI.
„ *salviæfo'lia* (Salvia-leaved). See S. ITALICA.
„ *sca'rdica* (Mt. Scardus). See S. GRÆCA.
„ *Sendtne'ri* (Sendtner's). Europe. 1887.
„ *seri'cea* (silky). 1. Lilac. August. Nepaul. 1830.
„ *sero'tina* (late-*flowering*). See S. BETONICA.
„ *seti'fera* (bristly). 1½. Red, brown. Asia Minor, &c. 1837.
„ *Sideri'tis* (Sideritis). See S. RECTA.
„ *Siebo'ldii* (Siebold's). 1–2. Purple. August. Japan. 1887. "Chinese Artichoke." Tubers edible.
„ *specio'sa* (showy). See GARDOQUIA ELLIPTICA.
„ *specta'bilis* (showy). Armenia; Persia.
„ *stri'cta* (upright). See S. BETONICA.
„ *sylva'tica* (wood). 2–3. Purple, spotted. Europe (Britain). "Hedge Nettle."
„ *tuberi'fera* (tuber-bearing). See S. SIEBOLDII.

STACHYTARPHE'TA. Bastard Vervain. (From *stachus*, a spike, and *tarpheios*, dense; mode of flowering. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Verbena.)

Annuals and biennials treat as tender stove annuals; perennials, by division; shrubs, by cuttings under a bell-glass, in sand, and in bottom-heat; sandy loam and leaf-mould. Winter temp., 50° to 60°; summer, 60° to 85°. *Muta'bilis* is very interesting.

Stove Evergreens.

S. arista'ta (awned-*bracted*). See S. ORUBICA.
„ *bi'color* (two-coloured). Blue, white. Brazil. 1865.
„ *cæru'lea* (blue). 2. Deep blue. July.
„ *cajanc'nsis* (Cayenne). 3. Violet. July. Trop. Amer. 1821.
„ *cayenne'nsis* (Cayenne). See S. CAJANENSIS.
„ *crassifo'lia* (thick-leaved). Violet. June. Brazil. 1826.
„ *hi'rta* (hairy). See S. CAJANENSIS.
„ *muta'bilis* (changing-*flowered*). 3. Orange or rose, violet. June. S. Amer. 1801.

Stove Biennials.

S. dicho'toma (forked). 2. Blue. May to July. Trop. Amer. 1714.
„ *ela'tior* (taller). Violet. October. Brazil. 1821.
„ *jamaice'nsis* (Jamaica). See S. DICHOTOMA.
„ *oru'bica* (Orubian). 3. Violet. July. Panama. 1699. Annual.
„ *prisma'tica* (prismatic). See BOUCHEA EHRENBERGII.
„ *umbro'sa* (shady). See S. DICHOTOMA.
„ *urticifo'lia* (nettle-leaved). See S. DICHOTOMA.
„ *Zucca'gni* (Zuccagni's). See S. MUTABILIS.

STACHYU'RUS. (From *stachus*, a spike, and *oura*, a tail. Nat. ord. *Ternströmiads* [Ternströmiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Half-hardy evergreen shrub. Cuttings of the points of shoots in sand, under a bell-glass, in April; fibrous, sandy loam and a little peat. Winter temp., 35° to 45°.

S. præ'cox (early). Pink. April. Japan.

STACKHOU'SIA. (Named after *Mr. Stackhouse*, a British botanist. Nat. ord. *Stackhousiads* [Stackhousiaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

Australian plants. Perennial, by division of the plant in spring; shrubs, by cuttings in sand, under a bell-glass, in summer. Winter temp. for latter, 35° to 45°.

S. linarifo'lia (flax-leaved). See S. MONOGYNA.
„ *mono'gyna* (one-styled). 1. Pink. April. 1823. Hardy herbaceous.
„ *spathula'ta* (spathulate). White. April. 1825. Evergreen.

STADMA'NNIA. (Commemorative of the botanical traveller, *M. Stadmann*. Nat. ord. Sapindaceæ.)

Stove evergreen trees. Cuttings in sand in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

S. ama'bilis (lovely). Zanzibar. 1873.
„ *austra'lis* (southern). See MELICOCCA AUSTRALIS.
„ *sorbifo'lia* (Sorbus-leaved). Brazil.

STÆHELI'NA. (Named after *B. Stæhelin*, a Swiss botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Arctium.)

Half-hardy, purple-flowered, deciduous shrubs. Cuttings in sandy soil, under a hand-light, in summer; sandy, fibrous loam and leaf-mould; require the protection of a cold pit in winter.

S. arbore'scens (tree-like). 6. August. Candia. 1739.
„ *Chamæpeu'ce* (ground-pine-*leaved*). See CNICUS CHAMÆPEUCE.
„ *du'bia* (doubtful). 3. June. S. Europe. 1640.
„ *e'legans* (elegant). See LIATRIS ELEGANS.
„ *gnaphalioi'des* (Gnaphalium-like). See HELIPTERUM GNAPHALIOIDES.

STAFF-TREE. *Cela'strus.*

STAG BEETLE. *Luca'nus ce'rvus.*

STANDARD. A tree unsupported by a wall or trellis.

Full Standards are such trees as are trained with tall, straight stems, 6 or 7 feet high, clear of branches, and are then suffered to branch out.

Half Standards are trees trained with short stems only 2 or 3 feet high, then suffered to branch out at that height to form heads; having low heads the fruit is more easily gathered. *Concave* dwarfs have the middle hollow, and the branches all round in a cup form. *Horizontal* dwarfs have the branches extended all round in a flat or horizontal position, but the concave dwarf is to be preferred.

STANGE'RIA. (Commemorative of *Dr. Stanger*, of Natal. Nat. ord. Cycadaceæ.)

Evergreen stove plants, allied to Zamia, with forked veins as in ferns. Imported rootstocks; offsets may possibly be rooted like cuttings. Fibrous loam, peat, and old mortar.

S. Katze'ri (Katzer's). S. Africa. 1874.
„ *parado'xa* (paradoxical). 2–3. S. Africa. 1851.
„ *schi'zodon* (cut-toothed). 2–3. Pinnæ toothed. S. Africa. 1872.

STANHO'PEA. (Named after *Earl Stanhope*. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, grown in pots. See ORCHIDS.

S. amesia'na (Amesian). See S. LOWII.
„ *aura'ntia* (orange-coloured). See S. BUCEPHALUS.
„ *au'rea* (golden). See S. WARDII.
„ *Barke'ri* (Barker's). Yellow, brown. July. Mexico.
„ *Buce'phalus* (bull-horned). 2. Yellow, crimson. May. Quito. 1823.
„ *gutta'ta* (spotted). Apricot, spotted with brown.
„ „ *Rœzlii* (Rœzl's). Yellow, brown. Nicaragua. 1874.
„ *cirrha'ta* (tendrilled). 1. White, yellow, violet. Nicaragua. 1840.
„ *conna'ta* (connate). Peru. 1853.
„ *convolu'ta* (rolled-together). 1–1½. Ivory-white, lip buff, orange. Colombia. 1909.
„ *costaricе'nsis* (Costa Rican). 1. Pale yellow, dotted with purple. Costa Rica. 1860.
„ *cymbifo'rmis* (boat-formed). Central Amer.
„ *deltoi'dea* (deltoid). Pale yellow, speckled crimson; lip orange, brown. Mexico. 1862.
„ *devonie'nsis* (Duke of Devonshire's). 1½. Yellow crimson. June. Mexico. 1833.
„ *ebu'rnea* (ivory). White. Brazil.
„ „ *specta'bilis* (showy). Straw, white, spotted crimson. Venezuela. 1868.
„ *ecornu'ta* (hornless). 1. White, yellow. Guatemala. 1846.
„ *elega'ntula* (rather elegant). Primrose-yellow; base orange. Country unknown. 1910.
„ *expa'nsa* (expanded). See S. TIGRINA.
„ *flo'rida* (flowery). White, dotted with purple. Mexico. 1879.
„ *fregea'na* (Fregean). Mexico. 1855.
„ *Fuerstenbe'rgiæ* (Baroness Fuerstenberg's). White; lip blotched crimson at base. 1899.
„ *gibbo'sa* (bulged). Dusky yellow, spotted crimson. June. S. Amer. 1870.
„ *grandiflo'ra* (large-flowered). 1. White. June. Trinidad. 1824.
„ „ *a'lba* (white). White. June. Demerara. 1841.
„ „ *incarna'ta* (flesh-coloured). White, flesh. June. Demerara. 1835.
„ „ *odora'ta* (sweet-scented). White. June. Demerara. 1835.
„ *grave'olens* (strong-scented). Straw. May. Peru. 1843.
„ „ *auri'ta* (eared). Dark apricot.
„ „ *Lie'bzei* (Lietze's). Yellow; lip with red band. Brazil.
„ *guttula'ta* (small-spotted). Buff. June. Trop. Amer. 1843.
„ *Harriso'niæ* (Mrs. Harrison's). See BIFRENARIA HARRISONIÆ.
„ *haselovia'na* (Haselovian). Peru.
„ *impre'ssa* (marked). 1. Buff yellow, spotted purple; lip with orange blotch. Western Andes. 1898.
„ *inodo'ra* (scentless). Yellow, white. May. Mexico. 1844.
„ „ *amæ'na* (lovely). Rich yellow, dull red, rose.
„ *insi'gnis* (notable). 1. White, purple. September. Brazil; Peru. 1826.
„ „ *a'tro-purpu'rea* (dark purple). White, purple. September. Brazil. 1830.
„ „ *fla'va* (yellow). Yellow, purple. September. Brazil. 1837.
„ „ *fu'lva* (tawny). White, red. September. Brazil. 1838.
„ „ *lu'tea* (yellow). Yellow, purple. September. Brazil. 1834.
„ „ *ma'jor* (larger). Yellow, purple. September. Brazil. 1836.
„ „ *obscu'ra* (obscure). White, purple. September. Brazil. 1830.
„ „ *pa'llida* (pale). White, red. September. Brazil. 1830.

S. jenischia'na (Jenischian). See S. BUCEPHALUS.
„ *langlassea'na* (Langlassean). Lip small, like a flattened sphere, hornless. 1901.
„ *Li'ndleyi* (Lindley's). See S. OCULATA LINDLEYI.
„ *Lo'wii* (Low's). Whitish buff; lip hornless, spotted purple. Colombia. 1893.
„ *ly'ncea* (lynx-plant). See S. TIGRINA.
„ *macrochi'la* (large-lipped). White, spotted crimson. Mexico. 1859.
„ *maculo'sa* (spotted). See S. DEVONIENSIS.
„ *madouxia'na* (Madouxian). 1½–2½. Creamy white, spotted pink; lip tinged purple. Colombia. 1898.
„ *martia'na* (Martian). 1. White. May. Mexico. 1843.
„ „ *bi'color* (two-coloured). 1. White, purple. Mexico. 1843.
„ *marti'ana* (Von Martius's). 1. White. May. Mexico. 1843.
„ „ *bi'color* (two-coloured *flowered*). 1. White, purple. June. Mexico. 1843.
„ *molia'na* (Molian). Sepals yellow-white; petals and lip white, spotted rose. Peru.
„ *ni'gripes* (black-stalked). Yellow, dotted purple. Country unknown. 1894.
„ *ocula'ta* (eyed). 2. White, purple. June. Mexico. 1829.
„ „ *barkeria'na* (Barker's). 2. White, purple. June. Mexico.
„ „ *cro'cea* (saffron). Orange, red-brown. 1862.
„ „ *Li'ndleyi* (Lindley's). 1. Brown, red. August. Mexico. 1839.
„ „ *ma'jor* (larger). White, purple. June. Mexico. 1835.
„ „ *pa'llida* (pale). White, red. June. Mexico. 1836.
„ *ornati'ssima* (much-adorned). See S. OCULATA CROCEA.
„ *platy'ceras* (broad-horned). Yellow, purple, brown-purple. Colombia. 1868.
„ *pu'lla* (dark). Apricot-yellow; lip yellow, white, purple. Costa Rica. 1877.
„ *quadrico'rnis* (four-horned). 2. Yellow, red. June. Central Amer. 1838.
„ *radio'sa* (rayed). See S. SACCATA.
„ *reichenbachia'na* (Reichenbachian). White, ochre, rose. Andes of Colombia. 1879.
„ *rodigasia'na* (Rodigasian). Cream, spotted rose; lip dark purple. 1898.
„ *Ru'cheri* (Mr. Rucker's). Yellow, brown. May. Guatemala. 1843.
„ *russellia'na* (Duke of Bedford's). Various. May. Brazil. 1843.
„ *sacca'ta* (bagged). Yellow, green. May. Guatemala. 1836.
„ „ *pa'llida* (pale). Yellow. May. Guatemala. 1840.
„ *Shuttlewo'rthii* (Shuttleworth's). Apricot, with dark purple blotches. Colombia. 1876.
„ *stenochi'la* (narrow-lipped). Sepals white; petals apricot; lip ivory white. Colombia. 1900.
„ *tigri'na* (tiger-*spotted*). 2. Red, chocolate. July. Mexico.
„ „ *atra'ta* (blacked). Orange, black. July. Guatemala. 1843.
„ „ *lute'scens* (yellowish). Yellow, orange, chocolate. Guatemala.
„ „ *ni'gro-viola'cea* (black-violet). Dark brown-purple. 1845.
„ „ *purpu'rea* (purple). Orange, purple. July. Guatemala. 1836.
„ „ *sple'ndens* (splendid). Flowers darker in colour. 1908.
„ „ *supe'rba* (superb). Cream, vivid crimson. 1908.
„ *trico'rnis* (three-horned). Whitish ochre, with crimson spots. Peru. 1878.
„ *vela'ta* (veiled). See S. MARTIANA.
„ *venu'sta* (handsome). See S. WARDII VENUSTA.
„ *Wa'rdii* (Ward's). 1. Yellow, brown. August. Mexico. 1836.
„ „ *venu'sta* (handsome). Guatemala. 1839.
„ *warscewiczia'na* (Warscewiczian). White, yellow. Central Amer. 1852.
„ *xytrio'phora* (small-pot-bearing). Straw-yellow, purple. Peru. 1868.

STANHOPEA'STRUM ECORNU'TUM. See STANHOPEA ECORNUTA.

STA'NLEYA. (Named after the *Earl of Derby*. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)

Hardy herbaceous perennial. Seeds, and division of the plant in spring; sandy loam and vegetable mould.
S. pinnati'fida (leaflet-like-*leaved*). 1. Yellow. June. Louisiana. 1816.

STAPE'LIA. (Named after *P. B. Stapel*, a Dutch botanist. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Greenhouse evergreens, from South Africa. Cuttings of shoots in spring, well-dried at the base before inserting them in sandy soil; sandy loam, brick-rubbish, and broken bricks, with top-dressings of rotten cow-dung when growing freely, or manure waterings. Winter temp., 40° to 50°, and dry; summer, 60° to 80°, and moisture, but with judgment at all times.
S. acumina'ta (pointed-*leaved*). ¾. Purple-striped. August. 1795.
„ *a'lbicans* (whitening). ½. White. August. 1894.
„ *ambi'gua* (doubtful). 2. Purple, brown. June. 1795.
„ *angui'nea* (snaky). See S. PICTA.
„ *angula'ta* (angled). ½. Purple, pale yellow. September.
„ *angulo'sa* (angled). S. Africa.
„ *ape'rta* (open-*flowered*). 2. Yellow, purple. July. 1795.
„ *Arno'ti* (Arnot's). S. Africa.
„ *Aste'rias* (star-fish-like). ¾. Violet. May. 1795.
„ *atra'ta* (dark). ½. Purple-brown, pale yellow. September. 1877.
„ *atrosangui'nea* (dark-blood-red). Blackish-crimson. Kalahari Desert. 1901.
„ *barba'ta* (bearded). See HUERNIA BARBATA.
„ *Bayfie'ldii* (Bayfield's). ¾. Purple-brown, yellow. Long before 1877.
„ *beffonia'na* (Beffonian). See S. VARIEGATA BUFONIA.
„ *be'lla* (pretty). ½. Deep purple or brown, fringed with trembling hairs. 1902.
„ *bisu'lca* (two-furrowed). 1. Yellow-striped. July. 1805.
„ *bufo'nia* (toad-like). See S. VARIEGATA BUFONIA.
„ *cactifo'rmis* (Cactus-like). See S. CLAVATA.
„ *cæspito'sa* (tufted). See DUVALIA CÆSPITOSA.
„ *campanula'ta* (bell-shaped). See HUERNIA CLAVIGERA.
„ *cane'scens* (hoary). ½. Brown. July. 1795.
„ *cilia'ta* (hair-fringed). See DIPLOCYATHA CILIATA.
„ *clava'ta* (club-shaped). ½. Yellow-striped. August. 1844.
„ *clypea'ta* (shield-like). S. Africa.
„ *coma'ta* (tufted). 1. Pale yellow. September. 1819.
„ *compa'cta* (compact). See DUVALIA COMPACTA.
„ *conci'nna* (neat). ½. Green. July. 1798.
„ *conspurca'ta* (polluted). S. Africa.
„ *Cordero'yi* (Corderoy's). See DUVALIA CORDEROYI.
„ *cri'spa* (crisped). See HUERNIA CRISPA.
„ *cupula'ris* (cup-shaped). 1. Yellow-striped. 1897.
„ *Curti'sii* (Curtis's). See S. VARIEGATA CURTISII.
„ *deco'ra* (graceful). See PIARANTHUS DECORUS.
„ *defle'xa* (deflexed). ½. Green, purple. July.
„ *depre'ssa* (depressed). See S. PATULA.
„ *desmetia'na* (Desmetian). ½. Purple-red, with yellow lines. December. 1873.
„ *di'scolor* (two-coloured). ½. Purple-brown pale yellow. September.
„ *divarica'ta* (straggling). ¾. Flesh-coloured. August. 1793.
„ *dive'rgens* (diverging). ¼. Yellow, lined and spotted brownish-crimson. 1905.
„ *e'legans* (elegant). See DUVALIA ELEGANS.
„ *engleria'na* (Englerian). Dark brown. E. Trop. Africa (?). 1906.
„ *erectiflo'ra* (erect-flowered). ½. Grey-purple. 1889.
„ *europæ'a* (European). See BOUCEROSIA GUSSONIANA.
„ *fissiro'stris* (split-beaked). 2½. Yellow, green. 1823.
„ *flavicoma'ta* (yellow-tufted). ½. Yellow. 1810.
„ *fusca'ta* (browned). ½. Brown, purple. July. 1814.
„ *gemina'ta* (twin-*flowered*). See PIARANTHUS GEMINATUS.
„ *gemmiflo'ra* (gem-flowered). ½. Dark purple. October. 1795.
„ *gigante'a* (gigantic). ½. Yellow, banded brown. 12–14 in. across. 1862.
„ *glabricau'lis* (smooth-stemmed). S. Africa.
„ *glabriflo'ra* (smooth-flowered). ½–¾. Purplish-red, with creamy lines. 1862.
„ *glanduli'fera* (glanded). See S. GLANDULIFLORA.

S. glanduliflo'ra (gland-flowered). ½. Brown. August. 1795.
„ *glau'ca* (milky-green). 2. Red, purple. July. 1799.
„ *glomera'ta* (crowded). See DUVALIA GLOMERATA.
„ *Gordo'ni* (Gordon's). See HOODIA GORDONI.
„ *grandiflo'ra* (large-flowered). 1. Dark purple. October. 1795.
„ „ *linea'ta* (lined). ½. Purple-brown, lined yellow. 1873.
„ „ *mi'nor* (smaller). See S. GLABRIFLORA.
„ *gussonea'na* (Gussone's). See BOUCEROSIA GUSSONIANA.
„ *hama'ta* (hooked). ½. Blood-red. July. 1820.
„ *hirco'sa* (goat-smelling). ½. Brown, purple. July.
„ *hirsu'ta* (hairy). ½. Purple. July. 1710.
„ „ *a'tra* (dark-*flowered*). ½. Dark purple. July. 1710.
„ *hirtel'la* (rather hairy). See DUVALIA HIRTELLA.
„ *hispi'dula* (rather bristly). See S. GLANDULIFLORA.
„ *hu'milis* (humble). See HUERNIA HUMILIS.
„ *Hy'strix* (hedge-hog). See HUERNIA HYSTRIX.
„ *irrora'ta* (besprinkled). Yellow, red, purple. October. 1795.
„ *jacquinia'na* (Jacquin's). See DUVALIA JACQUINIANA.
„ *Juve'ncula* (little girl). 1. Brown. Purple. July.
„ *lævига'ta* (smooth). See DUVALIA LÆVIGATA.
„ *lani'fera* (woolly). ½. Brown. August. 1800.
„ *lentigino'sa* (freckled). See HUERNIA GUTTATA.
„ *lo'ngidens* (long-toothed). ½. Greenish yellow, spotted purple. Delagoa Bay. 1895.
„ *lu'cida* (shining). 1. Purple. July. 1812.
„ *maculo'sa* (spotted). 1. Brown-striped. August. 1804.
„ *maculosoi'des* (maculosa-like). 1. Brown-striped. 1901.
„ *margina'ta* (*red*-edged). ½. Yellow-striped. July. 1805.
„ *marmora'ta* (marbled). 1. Yellow-striped. July. 1820.
„ *marocca'na* (Moroccan). See BOUCEROSIA MAROCCANA.
„ *Masso'ni* (Masson's). 2. Brown-purple, with yellow lines.
„ *mi'xta* (mixed). 1. Yellow-striped. July. 1800.
„ *moscha'ta* (musky). See S. HIRCOSA.
„ *multiflo'ra* (many-flowered). 1. Violet, red. September. 1817.
„ *munbya'na* (Munbyan). See BOUCEROSIA MUNBYANA.
„ *muta'bilis* (changeable). ½. Yellow-striped. June. 1823.
„ „ *negle'cta* (neglected). Yellow, purple-brown. 1876.
„ *namaque'nsis* (Namaqualand). Bright yellow, densely spotted purple-brown. 1882.
„ „ *tridenta'ta* (three-toothed). Corona lobes 3-toothed. 1882.
„ *no'bilis* (noble). ½. Yellow, banded with brown. 1901.
„ *norma'lis* (regular-*spotted*). ½. Yellow-striped. July. 1821.
„ *ocella'ta* (small-eyed). See HUERNIA OCELLATA.
„ *oliva'cea* (olive). ½. Rich olive-green. June to August. 1872.
„ *ophiu'ncula* (small-serpent). ½. Brown. July. 1805.
„ *orbicula'ris* (orbicular). ½. Purple. June, July.
„ *pa'llida* (pale). ½. Pale blue. 1818.
„ *panicula'ta* (panicled). ½. Green, brown, purple. July. 1805.
„ *parvipuncta'ta* (small-spotted). S. Africa.
„ *Passeri'ni* (Passerin's). See S. MUTABILIS.
„ *patentiro'stris* (spreading-beaked). Rich. Purple-brown, with yellow lines. 1877.
„ *pa'tula* (spreading). 1. Orange. July. 1797.
„ *pi'cta* (painted). ½. Yellow-striped. August. 1709.
„ *pili'fera* (hairy-*tubercled*). See TRICHOCAULON PILIFERUM.
„ *Pilla'nsii* (Pillans's). ½–½. Dark purple-brown. 1904.
„ *planiflo'ra* (flat-flowered). ½. Pale yellow. August. 1800.
„ *Pla'ntii* (Plant's). ½. Purple-brown, lined yellow. September. 1866.
„ *pulche'lla* (neat). ½. Yellow-striped. May. 1795.
„ *pu'lchra* (beautiful). See S. RORIFLUA.
„ *pu'lla* (blackish). See BOUCEROSIA MAMMILLARIS.
„ *pulvina'ta* (cushion-*flowered*). ½. Dark violet. August. 1795.
„ *pu'tida* (stinking). ½. Dull red; annulus with brown spots. 1905.

S. quinquene'rvis (five-nerved). See S. PLANIFLORA.
„ *radia'ta* (rayed). See DUVALIA RADIATA.
„ *ramo'sa* (branchy). 1½. Dark purple. June. 1795.
„ *reclina'ta* (lying-down). See DUVALIA HIRTELLA.
„ *refle'xa* (bent-back). ½. Green, purple. July.
„ *reticula'ta* (netted). See HUERNIA RETICULATA.
„ *retu'sa* (bitten-off). ½. Yellow-striped. July. 1800.
„ *revolu'ta* (curled-back-*flowered*) 1. Purple. July. 1790.
„ *rori'flua* (dew-flowing). ½. Green, striped yellow, brown. August. 1800.
„ *ru'fa* (rusty-brown). ½. Brown. September. 1795.
„ *rufe'scens* (rufous). ½. Reddish-brown. September.
„ *rugo'sa* (wrinkled). Purple, green. June.
„ *salmia'na* (Salmian) of gardens.
„ *sangui'nea* (blood-red) of gardens.
„ *scutella'ta* (little-shield). See S. TRISULCA.
„ *Scy'lla* (Scylla). Spots in longitudinal stripes. 1894.
„ *serrula'ta* (saw-*edged*). See PIARANTHUS SERRULATUS.
„ *Si'msii* (Sims's). ½. Dark purple. July. 1800.
„ *soro'ria* (sister). 1. Dark purple. July. 1797.
„ *specta'bilis* (showy). 1. Dark purple. December. 1802.
„ *stella'ris* (starry). ½.
„ *stri'cta* (upright). ½. Blue-purple. August. 1814.
„ *sty'gia* (Stygian). ½. Dark purple. August. 1810.
„ *tri'fida* (three-lobed). ½. Purple-brown, pale yellow. September. 1876.
„ *trisu'lca* (three-furrowed). ½. Pale yellow, purple-brown. August. 1877.
„ *tsomoe'nsis* (Tsomo). ½. Smoky purple. June to August. Tsomo River, S. Africa. 1882.
„ *tuba'ta* (tubed). See HUERNIA TUBATA.
„ *uncina'ta* (hooked). S. Africa.
„ *unguipe'tala* (clawed-petaled). ½. Rich purple-brown, with yellow lines. 1877.
„ *Uspe'nskyi* (Uspensky's). S. Africa.
„ *varia'bilis* (variable). Yellow, red. June. 1823.
„ *variega'ta* (variegated). 1. Yellow-striped. August. 1727.
„ „ *bufo'nia* (toad-like). 1. Yellow-striped. July. 1806.
„ „ *Curti'sii* (Curtis's).
„ *venu'sta* (lovely). See HUERNIA VENUSTA.
„ *verruco'sa* (warted). Sulphur-yellow, with dark purple spots.
„ *ve'tula* (stale). ½. Dark purple. August. 1793.
„ *wendlandia'na* (Wendland's). 1. Yellow-striped. August. 1818.

STAPHYLE'A. Bladder-Nut. (From *staphule*, a bunch; flowers in clusters. Nat. ord. *Bladder-Nuts* [Sapindaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

Hardy, white-flowered, deciduous shrubs. Seeds sown when ripe, remaining a year or more in the soil; cuttings in September; layers and suckers; any light soil. *Occidenta'lis* requires a hothouse, but it scarcely deserves one; *pinna'ta* is singular from its large bladder-capsules.

S. Bolande'ri (Bolander's). California. 1883.
„ *Buma'lda* (Bumaldan). June. Japan. 1804.
„ *co'lchica* (Colchican). 2–4. June. Caucasus. 1879.
„ „ *He'ssei* (Hesse's). Bright rose. 1909.
„ *holoca'rpa* (entire-fruited). 9–22. White or rose. Central China. 1895.
„ *loboca'rpa* (pod-fruited). See S. HOLOCARPA.
„ *occidenta'lis* (western). See TURPINIA OCCIDENTALIS.
„ *pinna'ta* (leafleted). 6. June. Europe (England). "St. Anthony's Nut."
„ *trifo'lia* (three-leaved). 6. May. N. Amer. 1640. "American Bladder-nut."

STAR APPLE. *Chrysophy'llum Caini'to.*

STAR FISH. *Stape'lia Aste'rias.*

STAR FLOWER. *A'ster.*

STAR GRASS. *Ale'tris farino'sa.*

STAR HEAD. *Asteroce'phalus*, a section of Scabiosa.

STAR HYACINTH. *Sci'lla ame'na.*

STAR OF BETHLEHEM. *Ornitho'galum umbella'tum.*

STAR, SEA. *A'ster Tripo'lium.*

STAR THISTLE. *Centau'rea Calci'trapa.*

STARWORT. *A'ster.*

STARTING. A term used to designate the hastening the commencement of growth, either in a seed or plant, by submitting it to artificial heat.

STA'TICE. Sea Lavender. (From *statizo*, to stop; the powerful medical astringency of some of the species. Nat. ord. *Leadworts* [Plumbaginaceæ]. Linn. 5-*Pentandria*, 6-*Polygynia*.)

Hardy perennials, by division and seeds, and tender species by similar means, and also by cuttings; those requiring a cold pit and greenhouse flourish best in sandy, fibrous loam and a little peat, also good and fibrous.

Greenhouse Evergreens.

S. arbo'rea (tree). See S. FRUTICANS.
,, *Bourgæ'i* (Bourgæ's). 1. Purple, white. August. Canaries. 1859.
,, *brassicæfo'lia* (Brassica-leaved). 1½–2. Purple. August. Canaries. 1859.
,, *crassifo'lia* (thick-leaved). Gardens.
,, *Dickso'nii* (Dickson's). Purple. May. 1840.
,, *echioi'des* (Echium-like). 1. Pale blue. July. S. Europe. 1752. Biennial.
,, *frute'scens* (shrubby). See S. FRUTICANS.
,, *fru'ticans* (shrubby). 2. Blue. July. Canaries. 1829.
,, *grandiflo'ra* (large-flowered). See ARMERIA LATIFOLIA.
,, *macro'ptera* (large-winged). Purple. Canaries.
,, *monope'tala* (one-petaled). See LIMONIASTRUM ARTICULATUM.
,, ,, *denuda'ta* (naked-*stemmed*). See LIMONIASTRUM ARTICULATUM DENUDATUM.
,, *ro'sea* (rosy). 3. Blue. May. S. Africa. 1840.
,, *suffrutico'sa* (subshrubby). ½. Blue. July. Caucasus; Middle Asia. 1799.

Half-hardy Herbaceous.

S. ægypti'aca (Egyptian). See S. THOUINI.
,, *ala'ta* (winged). See S. THOUINI.
,, *auricula'ta* (eared). ½. Blue. July. Galicia. 1817.
,, *austra'lis* (southern). 1. Australia. 1823.
,, *Bonduе'lli* (Bonduell's). 1–2. Yellow. July. Algeria. 1859.
,, *cine'rea* (grey). See S. PURPURATA.
,, *conge'sta* (crowded). Red. July. Altai. 1837.
,, *conspi'cua* (conspicuous). See S. SPECIOSA.
,, *corda'ta* (heart-*leaved*). ½. Blue. June. S. Europe. 1752.
,, *emargina'ta* (notched-ended). ½. Purple. May. Gibraltar.
,, *floribu'nda* (free-flowering). 1–2. Violet-blue. July to September. 1882.
,, *folio'sa* (leafy). 1. Purple, white. July. Canaries. 1830.
,, *Fortu'nei* (Fortune's). See S. SINENSIS.
,, *Halfo'rdii* (Halford's). See S. MACROPHYLLA.
,, *imbrica'ta* (imbricated). Teneriffe. 1829.
,, *macrophy'lla* (large-leaved). 2. White. May. Canaries. 1824.
,, *mucrona'ta* (spine-pointed). 1. Red. July. Barbary. 1784.
,, *ovalifo'lia* (oval-leaved). 1. White. July. Western Mediterranean region. 1816.
,, *pectina'ta* (comb-like). ½. Blue. September. Canaries. 1780.
,, *Pere'zii* (Perez's). 1½. Violet-blue; calyx white. Canaries. 1910.
,, *profu'sa* (profuse). 2. White, blue-purple. August, September. (*S. puberula* × *macrophylla*.)
,, *Pseu'do-arme'ria* (false-armeria). See ARMERIA LATIFOLIA.
,, *pube'rula* (rather downy). ½. Violet. May. Canaries. 1830.
,, *pube'scens* (downy). See S. CORDATA.
,, *purpura'ta* (purpled). 6. Purple. July. S. Africa. 1800.
,, *Reinwa'rdtii* (Reinwardt's). Blue, white.
,, *sca'bra* (rough-*branched*). 1. Blue. June. S. Africa. 1788.
,, *sine'nsis* (Chinese). 1½–3. Yellow; calyx silvery. April. China. 1845.
,, *sinua'ta* (scollop-*leaved*). 1. Purple, yellow. August. Mediterranean region. 1629.
,, *specio'sa* (showy). 1. White. July. Caucasus; Siberia. 1776.
,, *tetrago'na* (four-angled). 2. Red. July. S. Africa. 1820.

Hardy Herbaceous.

S. acero'sa (sharp). See ACANTHOLIMON ACEROSUM.
,, *alpi'na* (alpine). See ARMERIA ALPINA.
,, *alta'ica* (Altaian). 1. Blue. July. Siberia. 1820.
,, *Arara'ti* (Ararat). See ACANTHOLIMON GLUMACEUM.
,, *Arme'ria* (Armeria). See ARMERIA MARITIMA.
,, *articula'ta* (jointed). ½. Blue. July. S. France. 1826.
,, *au'rea* (golden). Golden. Siberia. 1832.
,, *auriculæfo'lia* (Auricula-leaved). 1. Blue. July to September. Europe (Britain).
,, *bahusie'nsis* (Bahusian). See S. RARIFLORA.
,, *Be'hen* (Behen). See S. LIMONIUM.
,, *bellidifo'lia* (daisy-leaved). ½. Pale blue. June. Europe. 1810.
,, *bi'color* (two-coloured). Purple, white. May. China. 1837.
,, *binervo'sa* (two-nerved). See S. AURICULÆFOLIA.
,, *carolinia'na* (Carolina). See S. LIMONIUM.
,, *ca'spia* (Caspian). See S. BELLIDIFOLIA.
,, *corda'ta* (heart-shaped). ½. Red. July. Mediterranean region. 1824.
,, *Coria'ria* (Coriaria-like). See S. LATIFOLIA.
,, *cosyre'nsis* (Cosyr). S. Europe.
,, *cunea'ta* (wedge-*leaved*). See S. THOUINI.
,, *dicho'toma* (two-ranked). ½. Blue. July. S. Europe. 1810.
,, *Echi'nus* (hedgehog). See ACANTHOLIMON HOHENACKERI.
,, *echioi'des* (Echium-like). Mediterranean region.
,, *ela'ta* (tall). 1. Blue. August. Siberia. 1820.
,, *exi'mia* (choice). 1. Lilac, rose. August. Central Asia.
,, ,, *turkesta'nica* (Turkestan). 2–2½. Lilac. Turkestan. 1888.
,, *ferula'cea* (Ferula-*leaved*). 1. Yellow. July. Mediterranean region. 1796.
,, *flexuo'sa* (zigzag). 1. Purple. July. Siberia. 1701.
,, *globulariæfo'lia* (Globularia-leaved). 1. White. August. N. Africa. 1821.
,, *Gmeli'ni* (Gmelin's). 1. Blue. July. Caucasus; Siberia. 1796.
,, *gougetia'na* (Gougetian). Spain.
,, *græ'ca* (Greek). ½. White. June. Greece. 1810.
,, *graminifo'lia* (grass-leaved). 1. Red. June. Siberia. 1780.
,, *Heldrei'chii* (Heldreich's). Origin unknown.
,, *inca'na* (hoary). 1. Pink. July. Tauria; Siberia. 1823.
,, *kaufmannia'na* (Kaufmannian). ½–1½. Pink. Turkestan. 1880.
,, *latifo'lia* (broad-leaved). 1. Blue. June. Bulgaria; Russia; Caucasus. 1791.
,, *lepto'loba* (slender-podded). Calyx purple; corolla yellow. Central Asia. 1879.
,, *Limo'nium* (Limonium). 1–2. Blue. July to September. Europe (Britain).
,, ,, *pyramida'le* (pyramidal). Inflorescence pyramidal.
,, ,, *Smi'thii* (Smith's).
,, *minu'ta* (small). ½. Red. June. Mediterranean. 1658.
,, *na'na* (dwarf). ½. Blue. July. Britain.
,, *oleifo'lia* (olive-leaved). 1. Red. July. Italy. 1688.
,, *pruino'sa* (frosted). 1. White. July. S. Europe. 1823.
,, *rarifio'ra* (thin-flowered). Blue. July. Europe (Britain).
,, *reticula'ta* (netted). ½. Blue. July. Europe (England).
,, *rytidophy'lla* (wrinkled-leaved). 3. Blue. May. Port Natal. 1840.
,, *scopa'ria* (broom-like). See S. GMELINI.
,, *sibthorpia'na* (Sibthorpian). Sicily.
,, *spathula'ta* (spatula-*leaved*). 1. Purple. July. Barbary. 1804.
,, *spica'ta* (spiked). ½. White. July. Caucasus. 1819. Annual.
,, *subpube'rula* (finely-downy). Origin doubtful.
,, *supe'rba* (superb). See S. SUWOROWI.
,, *Suworo'wi* (Suworow's). 1. Rose. July to September. Central Asia. 1883.
,, *tata'rica* (Tartarian). 1½. Pink. June. S.E. Europe; Caucasus. 1731.
,, *Thoui'nii* (Thouin's). 1. Blue. August. Mediterranean region. 1700.

S. tomenté'lla (finely-felted). Southern Russia.
„ *vimi'nea* (twiggy). See S. VIRGATA.
„ *virga'ta* (rod-like). 1½. Blue. July. Mediterranean region. 1818.
„ *Willdeno'vii* (Willdenow's). ½. Violet. July. France. 1800.

STATIONS FOR FRUIT-TREES. Unless the soil is good, this is the best mode of planting; and it often renders draining unnecessary. If the soil be too wet, the hole need only be half the prescribed depth; the other half may arise above the ordinary ground level. If too dry, there is no occasion to elevate the surface, only care must be taken not to place the collar of the tree too deep, which is a serious fault under all circumstances. Let the stations extend 3 feet on each side the position for the tree, thus producing an excavation of 6 feet square. Two feet in depth is amply sufficient for any fruit-tree, especially for a dwarfing plan. The soil then should be thrown entirely out, and 4 or 5 inches more must be allowed for some impervious material, which we will presently describe. In throwing out the soil, care must be taken to place it in samples, or both labour and material will be wasted. It very frequently happens that three distinct samples of soil or subsoil will come to hand during the operation. Of course all clayey, or sour, and badly-coloured subsoil must be rejected, and its amount will be supplied by the new material to be introduced; and if this is scarce, any ordinary surface-soil may be in part substituted. In filling the materials back again, the best of the original surface-soil must be kept downwards, mixing it thoroughly with the new soil; the inferior or second-rate soil may be kept to dress the surface with. As to character of soil to be introduced, that depends partly upon the soil already existing in the garden, as well as on the kind of fruit-tree about to be planted. If the soil is naturally sandy and dry, a very stiff or clayey loam should be selected; if naturally clayey, any fresh, mellow, sandy loam, or even the paring of roadsides, commons, or lanes, will prove excellent material. The furrowings of old leys from what is considered good wheat soil is, however, of all other soils the best adapted for general fruit culture. Whatever materials are used, let it be remembered that the more of turfy matter that can be introduced, the longer will the compost endure. Any sort of turf, even from hungry situations, is most relished by fruit-trees. If, nevertheless, no turf can be obtained, and the soil is loose and poor, it is well to introduce any refuse vegetables of a dry character, such as decayed bean or pea haulm, ordinary straw, old thatch, or, indeed, anything of a decaying vegetable character which is strong in fibre and enduring. If any manure is thought necessary, it should be fresh from the stable or cow-shed, as such will endure longer in the soil; merely using one barrowful of mellow and rather rich soil to plant the tree in. As before observed, the most inferior portion of the soil may be reserved to dress the surface of the station with after the tree is planted; here it will do no harm, and will be in an improvable position. We now come to the hard materials for the bottom of the hole; 4 or 5 inches in depth, as before stated. It matters not what this is composed of: broken stones from quarries, brick-bats, chalk, cinders, or clinkers, &c., all are eligible. These being rammed hard, throw a coating of fine-riddled cinders over the whole, or very fine gravel: this secures drainage, and prevents the roots entering to any injurious extent.

STAUNTO'NIA. (Commemorative of *George Staunton*, who travelled in China. Nat. ord. Berberidaceæ.)
Evergreen climber requiring wall protection. Cuttings of half-mature shoots in sandy soil, under a hand-light. Well-drained soil.
S. hexaphy'lla (six-leaved). White. April. China; Japan. 1876.
„ *latifo'lia* (broad-leaved). See HOLBŒLLIA LATIFOLIA.

STAUROCA'NTHUS. (From *stauros*, a cross, and *akantha*, a spine; two side-spines at the base of the principal spine give it the resemblance of a cross. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia* 6-*Decandria*. Referred to Ulex.)
S. aphy'llus (leafless). See ULEX GENISTOIDES.

STAURANTHE'RA. (From *stauros*, a cross, and *anthera*, an anther; the anthers are arranged in the form of a cross. Nat. ord. Gesneraceæ.)
Stove herb. Seeds in a temperature of 60° to 65°. Fibrous loam, peat, a little leaf-mould, and sand.
S. grandifo'lia (large-leaved). 1. Pale blue, orange. Malaya. 1863.

STAURO'PSIS. (From *stauros*, a cross, and *opsis*, resemblance; the shape of the flower. Nat. ord. Orchidaceæ.)
Stove epiphytical Orchids. Offsets. Fibre of peat, sphagnum, and potsherds.
S. Batema'nni (Batemann's). See S. LISSOCHILOIDES.
„ *fascia'ta* (bundled). White, yellow, purple. India. 1872.
„ *gigante'a* (gigantic). Yellow, with cinnamon spots; lip white. March. Burma. 1858.
„ *lissochilo'des* (Lissochilus-like). 3. Crimson, yellow. Philippines. 1845.
„ *luchue'nsis* (Luchuan). 1–1½. Yellow, with brown spots. Luchu Archipelago. 1907. Climbing.
„ *philippine'nsis* (Philippine). Red-brown; lip purple, white. Philippines. 1894. Climber.
„ *undula'ta* (wavy). White, greenish, orange. N. India. 1875.
„ *warocquea'na* (Warocquean). Yellow, dotted with red-brown; lip white, rose. New Guinea.

STAUROSTI'GMA. (From *stauros*, a cross, and *stigma*, the stigma: in allusion to the cross-shape of the latter. Nat. ord. Araceæ.)
Stove herbs with tuberous rootstocks. Offsets. Fibrous loam peat, and sand, and kept on the dry side in winter.
S. colubri'num (serpent-like). Green, purple, brown. Brazil. 1860.
„ *conci'nnum* (neat). 1½. White, red. Brazil. 1860.
„ *Langsdo'rffi* (Langsdorff's). 1. Green, purple. Brazil. 1860.
„ *lineola'tum* (finely-lined). 1–1½. Green, purple-brown. Brazil. 1860.
„ *luschnathia'num* (Luschnathian). 1½. Green, yellow, red. Brazil.
„ *riedelia'num* (Riedelian). 1–2. Green, creamy. Brazil. 1860.
„ *zebri'num* (zebra-striped). Brazil. 1865.

STAVES-ACRE. *Delphi'nium Staphisa'gria.*

STEEPING. (See GERMINATION.) It is a very unfounded idea, that by steeping seeds in certain solutions the vigour and fecundity of the plants to which they give birth might be promoted. A certain degree of heat, oxygen gas, and water are all the requisites for germination, and until this process has commenced, no liquid but water at common temperatures will pass through the coverings of a seed. So soon as germination has commenced, this power to exclude foreign fluids ceases, but the organs starting into activity are so delicate, that the weakest saline solutions are too acid and offensive for them. So utterly incapable are the infant roots of imbibing such solutions, that at first they are absolutely dependent themselves for their very existence upon the seed-leaves, and if these are removed the plant either makes no further advance or altogether perishes. To hasten the germination of peas, beans, &c., it is a good plan to soak them in water for twelve hours previously to sowing; and old seeds of all kinds have had their germinating powers aroused by putting them into water heated to 200°, and allowing them to remain in it until cold.

STEIRONE'MA. (From *steira*, a keel, and *nema*, a filament; in allusion to the keeled filaments. Nat. ord. Primulaceæ. Allied to Lysimachia.)
Hardy perennial herbs. Divisions; seeds. Ordinary garden soil.
S. cilia'tum (ciliated). 2. Yellow. July. Europe; N. Amer. 1732.
„ *heterophy'llum* (various-leaved). 1½. Yellow. July. N. Amer. 1806.
„ *longifo'lium* (long-leaved). 2. July. N. Amer. 1798.

STE'LIS. (From *stelis*, a parasitical plant, probably *Loranthus europæus*. Nat. ord. Orchidaceæ.)
Stove epiphytical orchids. Offsets and divisions. Fibre of peat, sphagnum, and crocks in small pots.

S. atropurpu'rea (dark-purple). See S. CILIARIS.
„ *Bino'ti* (Binot's). Greenish-purple. Brazil. 1904.
„ *Bruchmü'lleri* (Bruchmüller's). ½. Deep purple. Winter. Mexico (?). 1879.
„ *canalicula'ta* (channelled). Yellow-green. Colombia. 1872.
„ *cilia'ris* (eye-lashed). ½. Dark purple. Winter. Mexico. 1842.
„ *di'scolor* (two-coloured). Peru.
„ *Endre'sii* (Endres's). Greenish-white. Costa Rica. 1870.
„ *glo'ssula* (little-tongue). Dull brown. Costa Rica. 1870.
„ *grandiflo'ra* (large-flowered). Chocolate. July. Brazil. 1836.
„ *grossila'bris* (large-lipped). Greenish. Country unknown. 1881.
„ *micra'ntha* (small-flowered). ½. White, marked red. Jamaica. 1805.
„ *Mie'rsii* (Miers's). Brazil.
„ *muscí'fera* (fly-bearing). Venezuela.
„ *ophioglossoi'des* (Ophioglossum-like). Green, pale purple. W. Ind. 1791.
„ *sesquipeda'lis* (foot-and-a-half). ½. Pale yellow. August. Venezuela. 1845.
„ *tuba'ta* (long-tubed). See PHYSOSIPHON LODDIGESII.
„ *zona'ta* (zoned). Pale yellow, mauve. Guiana. 1881.

STELLA'RIA. Stitchwort. (From *stella*, a star. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)

A genus of weedy herbs, with the exception of *Stellaria Holo'stea*, one of the prettiest flower-garden plants for May in the British Flora. Increased by division of the roots in spring or autumn, when it may be planted out to flower, and may be removed in June when the flowers are over.

S. grami'nea (grass-like). ½–1. White. Summer. Europe (Britain).
„ „ *au'rea* (golden). Leaves yellow. Used for carpet beds and edgings. 1874.
„ *Holo'stea* (Holostea). ½. White. May, June. Europe (Britain).

STE'LLERA. (Commemorative of *G. W. Steller*, a Russian collector of plants. Nat. ord. Thymeleaceæ.)

Hardy herbaceous perennials or subshrubs. Seeds; divisions. Ordinary soil.

S. Albe'rti (Albert's). 1–2. Yellow. Central Asia. 1887. Shrub.
„ *alta'ica* (Altaic). See S. CHAMÆJASME.
„ *Chamæja'sme* (ground-jasmine). 1. White. June, July. N. and temperate Asia. 1817.
„ *passeri'na* (sparrow-like). See THYMELÆA ARVENSIS.

STEMMA'TIUM NARCISSOIDES. See TRISTAGMA NARCISSOIDES.

STEMO'DIA. (From *stemon*, a stamen, and *di*, two or double; the four stamens have the anther cells separate and stalked, appearing like eight. Nat. ord. Scrophulariaceæ.)

Half-hardy or greenhouse herbs. Divisions; seeds. Ordinary soil, or fibrous loam, leaf-mould, and sand in pots.

S. chile'nsis (Chilian). 1. Blue. September. Chili. 1829.
„ *durantifo'lia* (Duranta-leaved). Blue-purple. W. Ind. 1890.
„ *lobelioi'des* (Lobelia-like). 1. Dark blue. August. Chili. 1830.
„ *trifolia'ta* (three-leaved). 2. Blue. September. Brazil. 1823.

STE'MONA. (From *stemon*, a stamen; in allusion to the large size and fleshy character of the stamens. Nat. ord. Roxburgiaceæ.)

Stove climbers. Increased by suckers or offsets. Fibrous loam, leaf-mould, and sand.

S. Curtisii (Curtis's). India.
„ *gloriosoi'des* (Gloriosa-like). See S. TUBEROSA.
„ *tubero'sa* (tuberous). 6. Yellow-green. July. India and China. 1803.

STEMONACA'NTHUS. (From *stemon*, a stamen, and *Acanthus*; in allusion to the long stamens, and Acanthus as the type of the order. Nat. ord. Acanthaceæ. Now referred to Ruellia.)

S. macrophy'llus (large-leaved). See RUELLIA MACROPHYLLA.
„ *Pea'rcei* (Pearce's). See RUELLIA PEARCEI.

STENA'CTIS. (From *stenos*, narrow, and *aktin*, a sunbeam; the rays of the expanded blossoms. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Erigeron.)

Hardy herbaceous. Seeds, which, if sown in a slight hotbed in March, will produce plants to bloom the same season; division of the root in spring.

S. heterophy'lla (various-leaved). 1. White. July. N. Amer. 1640.
„ *inuloi'des* (Inula-like). 1. Red. August. Nepaul.
„ *specio'sa* (showy). See ERIGERON SPECIOSUS.
„ *strigo'sa* (short-bristled). See ERIGERON STRIGOSUS.

STENA'NDRIUM. (From *stenos*, narrow, and *aner*, *andros*, a stamen; in allusion to the slender stamens. Nat. ord. Acanthaceæ.)

Stove herbs with fine foliage. Seeds; cuttings in sand in a close frame, with bottom-heat. Fibrous loam, leaf-mould, and sand.

S. i'gneum (fiery). See CHAMÆRANTHEMUM IGNEUM.
„ *Lindé'ni* (Linden's). Yellow. Leaves with pale green centre and yellow veins. Peru. 1890.

STENANTHE'RA. (From *stenos*, narrow, and *anthera*, an anther; the stamens broader than the anthers, which are narrower in proportion. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Astroloma.)

S. cilia'ta (hair-fringed). See ASTROLOMA LONGIFLORUM.
„ *pinifo'lia* (pine-leaved). See ASTROLOMA PINIFOLIUM.

STENA'NTHIUM. (From *stenos*, narrow, and *anthos*, a flower; the segments of the flower are narrow. Nat. ord. Liliaceæ.)

Hardy or half-hardy tunicated bulbs. Offsets. Loam, peat, and sand, whether in pots or planted out.

S. angustifo'lium (narrow-leaved). 2–3. Greenish-white, June. N. Amer. 1823.
„ „ *grami'neum* (grassy). 2. Flowers fewer. Leaves narrow, grass-like. N. Amer. 1812.
„ *fri'gidum* (frigid). 2–3. Pale purple. June. Mexico. 1846. Greenhouse.
„ *occidenta'le* (western). Deep purple. North-Western Amer. 1881.
„ *robu'stum* (robust). 1½–2. White, fragrant. June to August. N. Amer. 1905.

STE'NIA. (From *stenos*, narrow; the pollen masses. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Allied to Maxillaria.)

Stove orchids, grown on blocks. See ORCHIDS.

S. fimbria'ta (fringed). Pale sulphur, spotted with brown. Colombia. 1868.
„ *gutta'ta* (spotted). Straw, spotted with purple. Peru. 1880.
„ *pa'llida* (pale-*flowered*). ½. Yellow. August. Demerara. 1837.

STENOCA'RPUS. (From *stenos*, narrow, and *karpos*, a fruit; the fruits are long and narrow, or slender. Nat. ord. Proteaceæ.)

Evergreen, greenhouse trees. Cuttings of ripe wood in sand, under a bell-glass. Fibrous loam and peat in equal parts, and sand.

S. Cunningha'mii (Cunningham's). 40–100. Scarlet. August. Australia. 1830.
„ *Forste'ri* (Forster's). White. New Caledonia. 1851.
„ *sali'gnus* (willow-like). 5–8. Pale green. June. Australia. 1819. "Beef Wood."
„ *sinua'tus* (scolloped). 40–100. Scarlet. Australia.

STENOCHI'LUS. (From *stenos*, narrow, and *cheilos*, a lip; the narrow lip of the flower. Nat. ord. *Myoporads* [Myoporaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Now referred to Eremophila.)

S. e'legans (elegant). See LAMOUROUXIA MULTIFIDA.
„ *gla'ber* (smooth-*leaved*). See EREMOPHILA BROWNII.
„ *longifo'lius* (long-leaved). See EREMOPHILA LONGIFOLIA.
„ *macula'tus* (spotted). See EREMOPHILA MACULATA.
„ *visco'sus* (clammy). See EREMOPHILA BROWNII.

STENOCHLÆ'NA. (From *stenos*, narrow, and *chlaina*, a cloak; the covering of the spore-cases. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Lomaria.)

Stove, brown-spored Ferns. See FERNS.

S. heteromo'rpha (various-formed). April. Australia.
„ *limonifo'lia* (Limonia-leaved). May. E. Ind.
„ *longifo'lia* (long-leaved). 2. June. W. Ind. 1810.
„ *sca'ndens* (climbing). 30. July. E. Ind. 1841.
„ *sorbifo'lia* (service-leaved). July. W. Ind. 1793.
„ *spondicifo'lia* (hog-plum-leaved). June. E. Ind.
„ *trique'tra* (three-sided). July. E. Ind.

STENOCO'RYNE. (From *stenos*, narrow, and *korune*, a club. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Referred to Bifrenaria.)

S. longico'rnis (long-horned). See BIFRENARIA LONGICORNIS.

STENOGA'STRA CONCI'NNA. See SINNINGIA CONCINNA.

STENOGLO'TTIS. (From *stenos*, narrow, and *glotta*, a tongue; the lip is narrow. Nat. ord. Orchidaceæ.)

Warm greenhouse terrestrial orchids. Divisions. Fibrous loam, rough leaf-mould, or lumpy peat, charcoal, and sand. Treatment similar to Disa.

S. fimbria'ta (fringed). 1. Rosy-pink, spotted with purple. S. Africa. 1871.
„ *longifo'lia* (long-leaved). 1½. Mauve-purple. Natal.

STENOME'SSON. (From *stenos*, narrow, and *messon*, the middle; the flowers contracted in the middle. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Coburgia.)

Pretty frame or half-hardy bulbs, requiring complete rest in winter; "sandy soil, shade, and plenty of moisture in summer." They flower before the leaves rise, and are easily increased from offset-bulbs in spring; sandy loam and fibrous peat.

S. auranti'acum (orange-coloured-*flowered*). Orange. May. Ecuador. 1843.
„ *cocci'neum* (scarlet). Scarlet. May. Peru.
„ *cro'ceum* (saffron-coloured). 1. Copper. May. Peru. 1820.
„ *curvidenta'tum* (bent-toothed). See S. FLAVUM CURVIDENTATUM.
„ *fla'vum* (yellow). Yellow. May. Peru. 1823.
„ „ *curvidenta'tum* (curved-toothed). Yellow. May. Peru. 1842.
„ „ *latifo'lium* (broad-leaved). 1. Yellow. March, April. 1837.
„ *Hartwe'gii* (Hartweg's). See S. AURANTIACUM.
„ *hu'mile* (low). 1. Orange-red. March. Andes of Peru. 1841.
„ *incarna'tum* (flesh). 1½–2. Pale to bright red. August. Andes of Ecuador, &c. 1826.
„ „ *trichro'mum* (three-coloured).
„ „ *acu'tum* (acute). Tube and segments narrow.
„ „ *fu'lvum* (tawny).
„ „ *linea'tum* (lined).
„ „ *quite'nse* (Quitan).
„ *latifo'lium* (broad-leaved). See S. FLAVUM LATIFOLIUM.
„ *luteovi'ride* (yellow-green). 1. Primrose-yellow. March. Andes of Ecuador. 1879.
„ *pauciflo'rum* (few-flowered). See S. FLAVUM CURVIDENTATUM.
„ *Pea'rcei* (Pearce's). 2–3. Green, pale yellow. May. Andes of Ecuador. 1871.
„ *recurva'tum* (recurved). 1–1½. Reddish yellow. Andes of Peru, &c.
„ *ru'brum* (red). See S. COCCINEUM.
„ *strami'neum* (straw). W. Trop. Amer.
„ *Strickla'ndi* (Strickland's). See STRICKLANDIA EUCROSIOIDES.
„ *suspe'nsum* (suspended). 1. Bright scarlet. Andes of Peru. 1868.
„ *viridiflo'rum* (green-flowered). 1½–2. Green. Summer. Andes of Peru. 1840.
„ „ *angustifo'lium* (narrow-leaved). 1½–2. Green. Leaves narrower. Summer. 1840.
„ „ *Elwe'sii* (Elwes's). Staminal cup deeply six-cleft. 1878.
„ *vitelli'num* (yolk-of-egg). See S. FLAVUM LATIFOLIUM.

STENORHY'NCHUS. (From *stenos*, narrow, and *rhunchos*, a beak; shape of the column. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Referred to Spiranthes.)

S. aphy'llus (leafless). See SPIRANTHES ORCHIOIDES.
„ *cinnabari'na* (cinnabar-coloured). See SPIRANTHES CINNABARINA.
„ *plantagi'nea* (plantain-*leaved*). See SPIRANTHES PLANTAGINEA.
„ *specio'sus* (showy). See SPIRANTHES COLORATA.
„ „ *Ortgie'sii* (Ortgies'). See SPIRANTHES COLORATA ORTGIESII.

STENOSE'MIA AURI'TA. See ACROSTICHUM AURITUM.

STENOSPERMA'TION. (From *stenos*, narrow, and *spermation*, a little seed; the seeds are narrow. Nat. ord. Araceæ.)

Stove evergreen perennial herb. Offsets; divisions. Fibrous loam, lumpy peat, some bits of charcoal, and sand.

S. multiovula'tum (many-ovuled). 3–6. Spathe white. Colombia. 1894.
„ *popayane'nse* (Popayan). See S. WALLISII.
„ *Walli'sii* (Wallis's). 1. Spathe and spadix white. Colombia. 1875.

STENO'STOMUM. (From *stenos*, narrow, and *stoma*, a mouth; referring to the flower. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Referred to Antirrhœa.)

Stove, white-flowered, West Indian, evergreen shrub. Cuttings of half-ripened shoots in sand, under a glass, in a sweet bottom-heat; peat and loam. Winter temp., 50° to 55°; summer, 60° to 80°.

S. lu'cidum (shining). See ANTIRRHŒA LUCIDA.
„ *tomento'sum* (downy). 20. May. Jamaica. 1820.

STENOTA'PHRUM. (From *stenos*, narrow, and *taphros*, a ditch; in allusion to the furrows in which the spikelets lie. Nat. ord. Gramineæ.)

A stove perennial grass. Seeds; divisions; cuttings. Loam, leaf-mould, and sand.

S. america'num (American). See S. GLABRUM.
„ *gla'brum* (smooth). ¼–1. Green. Tropical shores.
„ „ *variega'tum* (variegated). Leaves striped with yellow. Australia. 1874.

STEPHANA'NDRA. (From *stephane*, a crown, and *aner*, *andros*, a stamen; in reference to the crown of stamens. Nat. ord. Rosaceæ.)

Hardy deciduous shrubs. Seeds; cuttings; suckers; layers. Ordinary soil.

S. flexuo'sa (flexuous). 3–4. White. July. China and Japan. 1880.
„ *inci'sa* (incised). See S. FLEXUOSA.
„ *Ta'nakæ* (Tanaka's). 3–5. White. July. Japan. Larger in all parts than *S. flexuosa*.

STEPHA'NIA. (Commemorative of *Professor Stephani*. Nat. ord. Menispermaceæ.)

Greenhouse climbers. Cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.

S. di'scolor (two-coloured). June. Tropics, Old World.
„ *hernandifo'lia* (Hernandia-leaved). See S. DISCOLOR.
„ *rotu'nda* (round). Orange. Trop. Asia. 1866.

STEPHANO'COMA. (From *stephane*, a crown, and *kome*, hair; in reference to the pappus crowning the fruit. Nat. ord. Compositæ. Now referred to Berkheya.)

S. carduoi'des (Carduus-like). See BERKHEYA CARDUIFORMIS.

STEPHANOLI'RION NARCISSOI'DES. See TRISTAGMA NARCISSOIDES.

STEPHANO'PHORUM. See NARCISSUS.

STEPHANOPHY'SUM. (From *stephane*, a crown, and *phusa*, a bladder. Nat. ord. Acanthaceæ. Referred to Ruellia.)

S. Baikie'i (Baikie's). See RUELLIA BAIKIEI.
„ *longifo'lium* (long-leaved). See RUELLIA AMŒNA.

STEPHANO'TIS. (From *stephane*, a crown, and *ous*, *otos*, an ear; the ear-like processes on the crown of the stamens. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove, white-flowered, evergreen twiners. Cuttings of the points of shoots, but best by small, stiff side-shoots, in sand, under a bell-glass, and plunged in bottom-heat;

fibrous loam and fibrous peat, with a little silver sand and dried leaf-mould. Winter temp., 45° to 55°, and rather dry; summer, 60° to 85°, and plenty of moisture when growing. Would answer, probably, in a warm conservatory when once it reached the top of the roof.

S. floribu'nda (copious-flowered). 20. May. Madagascar. 1839.
„ *Thoua'rsii* (Thouars'). May. Madagascar. 1842.

STERCU'LIA. (Named after *Sterculius*, a heathen god. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 21-*Monœcia*, 10-*Decandria*.)

Stove evergreens. Cuttings of ripe shoots in sand, under a bell-glass, in moist bottom-heat; fibrous loam and peat. Winter temp., 45° to 58°; summer, 60° to 80°. *Tragaca'ntha* produces the gum of that name. *Platanifo'lia* stood for years in the open air at Chelsea, and it is likely that many of the East Indian and New Holland species would thrive with greenhouse treatment.

S. acerifo'lia (Acer-leaved). Australia.
„ *ala'ta* (winged). India.
„ *au'stro-caledo'nica* (Southern-Caledonian). See S. NEOCALEDONICA.
„ *Bala'nghas* (Balanghas). 20. Purple. August. E. Ind. 1787.
„ *Bidwi'llii* (Bidwill's). Red. September. Australia. 1851. Greenhouse.
„ *carthagine'nsis* (Carthaginian). Trop. Amer.
„ *cauda'ta* (tailed). 20. Australia. 1824. Greenhouse.
„ *Chi'ca* (Chica). Brazil.
„ *cocci'nea* (scarlet-*fruited*). 20. E. Ind. 1817.
„ *colora'ta* (coloured). 30. Scarlet. E. Ind. 1818.
„ *di'scolor* (two-coloured). 4–40. Rose-red. Australia. 1822. Greenhouse.
„ *diversifo'lia* (diverse-leaved). 20–30. Australia. 1824.
„ *fœ'tida* (fetid). Tropics, Old World.
„ *grandifo'ra* (large-flowered). See COLA ACUMINATA.
„ *Heli'cteres* (Helicteres-like). 8. Yellow, purple. Carthagena. 1820.
„ *heterophy'lla* (various-leaved). See S. DIVERSIFOLIA.
„ *Ivi'ra* (Ivira). 15–60. Pale yellow. July. S. Amer. 1793.
„ *lanceola'ta* (lance-shaped). 10–20. Red-brown. June to August. China; Java. Greenhouse.
„ *lu'rida* (lurid). Australia.
„ *macrophy'lla* (large-leaved). Yellow. July. E. Ind. 1822.
„ *mexica'na* (Mexican). Mexico.
„ *neocaledo'nica* (New-Caledonian). 10–15. Deep red, shaded orange. New Caledonia.
„ *no'bilis* (noble). 20. Pale buff. E. Ind. 1787.
„ *orna'ta* (adorned). Burma.
„ *platanifo'lia* (plane-leaved). 20–30. China and Japan.
„ *pube'scens* (downy). 20. White. Guinea. 1793.
„ *pyrifo'rmis* (pear-formed). See S. PLATANIFOLIA.
„ *rupe'stris* (rock). Australia. 1880. "Bottle Tree."
„ *russellia'na* (Russellian). Leaves with seven narrow divisions. 1902.
„ *Tragaca'ntha* (tragacanth). 40. Red, brown. May. Sierra Leone. 1793.
„ *villo'sa* (shaggy). India.

STEREOSPE'RMUM. (From *stereos*, hard, and *sperma*, a seed; the seeds are hard, and the fruit woody. Nat. ord. Bignoniaceæ.)

Stove trees, with pinnate or bipinnate leaves. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

S. chelonoides (Chelone-like). India; Burma.
„ *hyposti'ctum* (under-spotted). 20. Yellow. Burma; Malaya. 1828.
„ *si'nicum* (Chinese). 50–60. Pinkish-white. S. China. 1908. Greenhouse.
„ *xyloca'rpum* (wood-fruited). White. E. Ind. 1820.

STERILE. See BARREN.

STERIPHO'MA. (From *steriphoma*, a fortification, a foundation; the fruit-stalk is stout. Nat. ord. Capparidaceæ.)

Evergreen stove shrubs. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, leaf-mould, or peat and sand.

S. elli'ptica (elliptic). Trinidad.
„ *parado'xa* (paradoxical). Yellow, orange. July. Caracas. 1797.

STERNBE'RGIA. (Named after *Count Sternberg*, a German botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy autumnal-flowering bulbs, with one yellow flower on a stalk, open before the leaves rise; offsets; good, sandy loam and leaf-mould.

S. clusia'na (Clusian) of Boissier. See S. MACRANTHA.
„ *clusia'na* (Clusian) of Ker Gawler. See S. COLCHICIFLORA.
„ *colchiciflo'ra* (Colchicum-flowered). ½. Hungary. 1816.
„ *exi'gua* (small). See TAPEINANTHUS HUMILIS.
„ *fischeria'na* (Fischerian). ½. Yellow, large. February, March. Asia Minor. 1868.
„ *lu'tea* (yellow). ½. Yellow. September, October. Mediterranean region. 1596. "Winter Daffodil."
„ „ *angustifo'lia* (narrow-leaved). ½. Yellow. September. S. Europe. 1596.
„ „ *græ'ca* (Greek). ½. Yellow. Greece.
„ „ *Ika'riæ* (Ikaria). ½. Yellow. Ikaria.
„ „ *ma'jor* (larger). ½. Yellow, much larger than the type. 1904.
„ *macra'ntha* (large-flowered). ½. Yellow. Autumn. Asia Minor, &c.
„ *si'cula* (Sicilian). ½. Yellow. Sicily.

STEU'DNERA. (Commemorative of *Dr. Steudner*, a German botanist. Nat. ord. Araceæ. Allied to Colocasia.)

Perennial stove herbs with stout stems like Dieffenbachia. Offsets; cuttings; seeds. Fibrous loam, lumpy peat, leaf-mould, and some nodules of charcoal with sand. Give plenty of water, and maintain a moist atmosphere in summer; keep dry in winter.

S. colocasiæfo'lia (Colocasia-leaved). 1. Spathe purple-brown. Martaban. 1869.
„ *colocasioi'des* (Colocasia-like). Himalaya.
„ *di'scolor* (two-coloured). 1. Spathe yellow and purple. India. 1874.

STEVENSO'NIA. (Commemorative of *Stevenson*, a Governor of the Mauritius. Nat. ord. Palmaceæ.)

A magnificent stove Palm, with large, fan-shaped reddish-green leaves. Seeds. Lumpy, fibrous peat, with a little loam, charcoal, and sand. Moist atmosphere.

S. grandifo'ra (large-flowered). See S. GRANDIFOLIA.
„ *grandifo'lia* (large-leaved). 5–40. Yellow. Seychelles. 1865.
„ *viridifo'lia* (green-leaved). See VERSCHAFFELTIA SPLENDIDA.

STE'VIA. (Named after *P. J. Esteve*, a Spanish botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Greenhouse herbaceous perennials, from Mexico, where not otherwise mentioned. They all bloom in August. Seeds and division in spring; sandy, loamy soil. The protection of a cold pit in winter.

S. adeno'phora (gland-bearing). 2. White. Chili. 1822.
„ *angustifo'lia* (narrow-leaved). See S. SALICIFOLIA.
„ *breviarista'ta* (short-awned). 3. Rose. July. Argentina. 1836.
„ *callo'sa* (beautiful). A doubtful plant. Mexico.
„ *cane'scens* (hoary). See S. SERRATA.
„ *Eupato'ria* (Eupatoria). 2. Pink. 1798.
„ *fascicula'ris* (close-headed). 1. White. September. 1830.
„ *fastigia'ta* (peaked). 1½. White. New Spain. 1826.
„ *glandulife'ra* (gland-bearing). 3. Purple. 1839.
„ *glandulo'sa* (glandular). Mexico.
„ *hyssopifo'lia* (hyssop-leaved). See S. PANICULATA.
„ *incane'scens* (hoary). See S. SERRATA.
„ *ivæfo'lia* (Iva-leaved). 2. White. 1816.
„ *lanceola'ta* (spear-head-*leaved*). 1. Purple. 1822.
„ *laxiflo'ra* (loose-flowered). Purple.
„ *linea'ris* (linear). See PALAFOXIA LINEARIS.
„ *lu'cida* (shining). 2. Pink. 1824.
„ *microphy'lla* (small-leaved). 2. Blush. September. 1828.
„ *mo'llis* (soft). White. 1834.
„ *monardæfo'lia* (Monarda-leaved). 1½. Violet. 1826.
„ *nepetæfo'lia* (Nepeta-leaved). 1½. White. S. Amer. 1823.
„ *odora'ta* (scented). 1–1½. White. 1890.
„ *ova'ta* (egg-*leaved*). 2. White. 1816.
„ *panicula'ta* (panicled). 1½. White. 1824.

S. peda'ta (pedate). See FLORESTINA PEDATA.
„ *pilo'sa* (shaggy). 1½. Pink. 1820.
„ *pube'scens* (downy). 1½. Purple. 1823.
„ *puncta'ta* (dotted). See S. EUPATORIA.
„ *purpu'rea* (purple). 1½. Purple. 1812.
„ *rhombifo'lia* (diamond-leaved). 1½. White. 1827.
„ *salicifo'lia* (willow-leaved). 1½. Pink. 1803.
„ *salviæfo'lia* (sage-leaved). 1½. White. 1827.
„ *serra'ta* (saw-*leaved*). 1½. Flesh. S. Amer. 1799.
„ *suave'olens* (sweet-smelling). See S. NEPETÆFOLIA.
„ *subo'cto-arista'ta* (slightly-eight-awned). White. Peru. 1824.
„ *subpube'scens* (slightly-downy). 2. Pink. 1820.
„ *ternifo'lia* (three-leaved). 1½. White. 1824.
„ *tomento'sa* (woolly). 1½. Violet. 1824.
„ *trachelioi'des* (Trachelium-like). 3. Purple. 1839.
„ *trachelioi'des* (Trachelium-like) of Hooker. See S. GLANDULIFERA.
„ *tri'fida* (three-cleft). 1½. White. New Spain. 1827.
„ *viola'cea* (violet-coloured). 3. Violet. 1829.
„ *vi'scida* (clammy). Purple. 1821.
„ *visco'sa* (clammy). See S. VISCIDA.

STI'FFTIA. (A commemorative name. Nat. ord. Compositæ.)

A stove shrub. Cuttings in sand, in a close frame, with bottom-heat. Loam, peat, and sand.

S. chrysa'ntha (golden-flowered). 3–6. Orange. Winter. Brazil.

STIGMAPHY'LLON. (From *stigma*, the female organ, and *phullon*, a leaf; leafy-like stigma. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*. Allied to Banisteria.)

Stove, yellow-flowered climbing shrubs. Cuttings of ripened shoots in sand, under a glass, in bottom-heat; peat and loam. Winter temp., 48° to 55°; summer, 60° to 80°.

S. arista'tum (awned-*leaved*). 20. July. Brazil. 1832. Twiner.
„ *auricula'tum* (eared-*leaved*). 10. Brazil. 1820. Twiner.
„ *cilia'tum* (hair-fringed-*leaved*). 10–20. May. Brazil. 1796.
„ *convolvulæfo'lium* (Convolvulus-leaved). June. Guiana. 1814.
„ *diversifo'lium* (diverse-leaved). 15–25. June. W. Ind. 1826.
„ *elli'pticum* (elliptic). 10. September. Mexico. 1844. Twiner.
„ *emargina'tum* (notched). 10. June. W. Ind. 1826.
„ *fu'lgens* (shining). 10–25. Summer. Guiana. 1759.
„ *heterophy'llum* (various-leaved). 10. December. Buenos Ayres. 1842.
„ *humboldtia'num* (Humboldtian). 15–20. S. Amer. 1824.
„ *jatrophæfo'lium* (Jatropha-leaved). 3. May. Uruguay. 1841. Twiner.
„ *litiora'le* (shore). 15–20. Autumn. S. Brazil. 1882.
„ *mucrona'tum* (spine-pointed). See S. ELLIPTICUM.
„ *periplocæfo'lium* (Periploca-leaved). 10. July. W. Ind. 1818.
„ *pu'berum* (finely-downy). August. W. Ind. 1824.

STILLI'NGIA. (Named after *Dr. B. Stillingfleet*, an English botanist. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 10-*Decandria*. Allied to Homalanthus.)

Stove, yellow-flowered evergreen. Cuttings in sand, in heat; sandy, fibrous loam, a little peat and charcoal, and also a little brick-rubbish. Winter temp., 50°; summer, 60° to 75°.

S. popu'lnea (poplar-like). See HOMALANTHUS LESCHENAULTIANUS.
„ *sebi'fera* (tallow-bearing). China. 1703. "Chinese Tallow Tree."

STINGING BUSH. *Ja'tropha u'rens.*

STINGING NETTLE. *U'rtica dioi'ca.*

STINKING GLADWYN. *I'ris fœtidi'ssima.*

STI'PA. Feather Grass. (From *stipe*, feathery, or silky. Nat. ord. *Grasses* [Gramineæ]. Linn. 3-*Triandria*, 2-*Digynia*.)

Sti'pa penna'ta is a common feather-grass of the seed-shops. All but *hu'milis* hardy herbaceous perennials; division and seeds in spring; common soil.

S. alta'ica (Altaic). See S. SPLENDENS.
„ *Aristella* (short-awned). Mediterranean region.
„ *Calamagro'stis* (Calamagrostis). S. Europe.
„ *capilla'ta* (long-haired). 2. July. Europe. 1815.
„ *conferta* (crowded). See S. REDOWSKII.
„ *eleganti'ssima* (very-elegant). 2–3. Australia.
„ *formica'rum* (ants'). Country unknown. 1849.
„ *gigante'a* (giant). 3. July. Spain. 1823.
„ *hu'milis* (lowly). ½. July. S. Amer. 1802.
„ *ju'ncea* (rush-*leaved*). 3. July. Mediterranean region. 1772.
„ *Lasiagro'stis* (Lasiagrostis). See S. CALAMAGROSTIS.
„ *pappo'sa* (long-awned). Country unknown. 1849.
„ *penna'ta* (feathered). 2. July. Europe (Britain); N. Asia; N. Amer. "Common Feather Grass."
„ *Redow'skii* (Redowsky's). 2. July. N. Asia. 1819.
„ *robu'sta* (robust). See S. SPARTEA.
„ *sibi'rica* (Siberian). Siberia; Himalaya.
„ *spa'rtea* (cord-like). N. Amer. "Porcupine Grass."
„ *splе'ndens* (splendid). July. Siberia. 1836.
„ *tenaci'ssima* (toughest).
„ *viri'dula* (greenish). N. Amer.

STITCHWORT. *Stella'ria.*

STIZOLO'BIUM ALTIS'SIMUM. See MUCUNA ALTISSIMA.

STIZOLO'BIUM PRU'RIENS. See MUCUNA PRURIENS.

STOBÆ'A. (Named after *Dr. Stobæus*, a Swede. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Referred to Berkheya.)

S. atractyloi'des (Atractylis-like). See BERKHEYA CARLINOIDES.
„ *membranifo'lia* (membrane-leaved). See BERKHEYA ADLAMI.
„ *pinna'ta* (leafleted). See BERKHEYA PINNATA.
„ *purpu'rea* (purple). See BERKHEYA PURPUREA.
„ *Ra'dula* (rasp). See BERKHEYA ADLAMI.
„ *sphærocе'phala* (sphere-headed). See BERKHEYA CARDUIFORMIS.

STOCK and **STOCK-GILLIFLOWER.** See MATHIOLA.

STOCKS are young trees or shrubs raised from seed, suckers, layers, and cuttings, for the reception of buds or grafts from other trees or shrubs of a kindred species.

The old gardener's maxim, "the graft overruleth the stock quite," is consonant with truth, though it is to be taken with some reservation. The graft prevails, and retains its qualities; yet the stock has the power of influencing its productiveness, as well as the quality of the fruit. Thus, a tree having an expansive foliage and robust growth, indicative of large sap vessels and vigorous circulation, should never be grafted upon a stock oppositely characterised, for the supply of sap will not be sufficient. Illustrations are afforded by the codlin never succeeding so well on a crab, nor a bigarreau on a wild cherry, as they do on freer-growing stocks.

The habit of the stock, also, is of much more importance than is usually considered. If it grows more rapidly, or has larger sap vessels than the scion or bud, an enlargement occurs below these; but if they grow more rapidly than the stock, an enlargement takes place just above the point of union. In either case, the tree is usually rendered temporarily more prolific; but in the case where the stock grows most slowly, the productiveness is often of very short duration, the supply of sap annually becoming less and less sufficient to sustain the enlarged production of blossom and leaves. This very frequently occurs to the freer-growing cherries when inserted upon the wild species, and still more frequently to the peach and apricot upon stocks of the slow-growing plums. It is highly important, therefore, to employ stocks, the growth of which is as nearly similar as may be to the parent of the buds or scion.

The earlier vegetation of the stock than of the bud or graft is also important; for, if the latter is earliest in development, it is apt to be exhausted and die before the flow of sap has enabled growth of the cambium to occur, and union at the junction.

Stocks for general use may be used for grafting or budding, when from the size of a good goose-quill to half an inch, or not more than a inch in the part where the graft or bud is to be inserted. Stocks of 2 or 3 inches or more in diameter, either the stems or branches, are also occasionally grafted or budded with success, but are

not proper for general practice. *Crab Stocks* are all such as are raised from seeds, &c., of any wild ungrafted trees, particularly if of the fruit-tree kind, such as the wild crab apple of the woods and hedges, wild pears, plums, wild cherry, and such other trees as have not been grafted or budded. *Free Stocks* are such as are raised from the seed, layers, &c., of any of the cultivated varieties of fruit-trees and others. *Paradise* or *Doucin* stocks are raised from layers or suckers from a dwarf variety of apple, the roots of which are produced nearer to the surface than those from crab stocks. The *French Paradise* stock is distinguished from all others by its very dwarf growth, its clear chestnut-coloured shoots, and small fibrous roots, which spread near the surface. The *English Paradise* may be either referred to as the Doucin of the French or the Dutch Paradise; for, in English nurseries, trees propagated on either are said to be on Paradise stocks. Of these two the Doucin has the darkest shoots. Their effects on the growth of the trees worked upon them are similar, being intermediate between the very dwarf habit induced by the French Paradise, and the luxuriant growth induced by the crab or free stocks. See GRAFTING and BUDDING.

STŒ'BE. (From *stibas*, a bed of leaves; those of *æthio'pica* so used. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 5-*Segregata*.)

Greenhouse evergreens, from South Africa. Cuttings of young shoots in sand, under a bell-glass, in May; fibrous, sandy loam and peat. Winter temp., 40° to 45°.

S. æthio'pica (Ethiopian). 2. August. 1759.
„ *cine'rea* (grey). 2. August. 1784.
„ *ericoi'des* (heath-like). 2. August. 1816.
„ *reflе'xa* (bent-back). 2. August. 1816.

STOKES' ASTER. See STOKESIA CYANEA.

STO'KESIA. (Named after *Dr. Stokes*, an English botanist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Half-hardy evergreen. Seeds, or division of the plant in spring; sandy loam and a little leaf-mould; requires a little protection in winter.

S. cya'nea (azure). 2. Blue. August. Carolina. 1766.
„ „ *a'lba* (white). Pure white, with mauve shade at base of florets. 1908.
„ „ *præ'cox* (early). An early flowering variety. 1906.

STONECROP. *Se'dum.*

STONE PINE. *Pi'nus Pi'nea.*

STOPPING is pinching or nipping off the extremity of a branch, to prevent its further extension in length. It is frequently done, either to promote its robustness or the production of laterals.

STORAX. *Sty'rax.*

STORK'S BILL. *Pelargo'nium.*

STOVES, or HOTHOUSES, are glazed structures, differing from greenhouses chiefly in requiring a higher temperature to be sustained within them, either for forcing fruits or for growing plants from tropical climates. Nearly all that is stated relative to the *greenhouse*, *hotbed*, and *pit* under the articles MELON and RENDLE'S TANK SYSTEM is applicable to the stove. In addition, relative to *glazing*, if lapping be permitted, its width should not exceed ⅛ inch, and the panes should be acutely rhomboid, to throw the condensed vapour down to the lower corner, and induce it to trickle down the bars instead of dropping. It is very doubtful whether the amount of moisture is reduced by running between the laps.

Flues are best built of bricks set on their edges, and the top formed of a shallow iron trough for the purpose of holding water, and thus keeping the air moist as required. At night, for retaining heat, pantiles may be placed along within the trough.

Hot water in a tank is superior to the same source of heat in pipes, because it is not liable to freeze; and it is preferable to steam, because its heating power continues until the whole mass of water is cooled down to the temperature of the house, whereas steam ceases to be generated as a source of heat the moment the temperature falls below 212°. If steam be employed, Mr. Tredgold has given the following rules for calculating the surface of pipe, the size of the boiler, the quantity of fuel, and the quantity of ventilation required for a house 30 feet long and 12 feet wide, with the glass roof 8 feet, length of the rafters 14 feet, and height of the back wall 15 feet. The surface of glass in this house will be 720 feet superficial, viz. 540 feet in the front and roof, and 180 feet in the ends. Now, half the vertical height, 7 feet 6 inches, multiplied by the length in feet, and added to one and a half times the area of glass in feet, is equal to the cubic feet of air to be warmed in each minute when there are no double doors. That is, $7.5 \times 30 + 1\frac{1}{2} \times 720 = 1305$ cubic feet. But in a house with wooden bars and rafters, about one-tenth of this space will be occupied with wood-work, which is so slow a conductor of heat that it will not suffer a sensible quantity to escape; therefore 130 feet may be deducted, leaving the quantity to be warmed per minute = 1175 cubic feet.

To ascertain the surface of pipe required to warm any given quantity of air, multiply the cubic feet of air to be heated per minute by the difference between the temperature the house is to be kept at, and that of the external air in degrees of Fahrenheit's thermometer, and divide the product by 2.1, the difference between 200, which is the temperature of the steam pipes, and the temperature of the house; the quotient will be the surface of cast-iron pipe required.

Now, in the house, the dimensions of which are above given, if the lowest temperature in the night be fixed at 50°, and 10° are allowed for winds, and the external air is supposed to be at zero or 0 of Fahrenheit, then 1175 multiplied by 60°, and the product divided by 2.1, the difference between 200 and 60 will give us the quotient 236 = to the surface of pipe required. Now, the house being 30 feet long, five pipes of that length, and 5 inches in diameter, will be about the proper quantity.

If hot water be employed instead of steam, the following proportions and information, obtained from Mr. Rendle, may be adopted confidently as guides. In a span-roof propagating-house, 40 feet long, 13 feet broad, 7 feet high in the centre, and 4 feet high at the two fronts, having a superficial surface of glass amounting to 538 square feet, Mr. Rendle has a tank 83 feet long, running round three sides of the house, 4 feet wide and about 8 inches deep, and consequently capable of containing nearly 300 cubic feet of hot water, though only half that quantity is used. This is closely approaching to the size pointed out, according to Mr. Tredgold's formula. The mean temperature of a hot-water tank will never be much above 100°, so that, for the sized house mentioned by that skilful engineer, the divisor must be 2.1 times the difference between 100° and 60°, which gives as the quotient 335 cubic feet.

The tank in Mr. Rendle's propagating-house is built lined with Roman cement, and if the temperature at the time of lighting the fire be 90°, the temperature of the atmosphere of the house 67°, and the temperature out of doors 50°, the quantity of small coal or breeze required to raise the temperature of the water to 125° is 28 pounds. In twelve hours the water cools, after the fire has been extinguished, from 125° to 93°.

When steam is employed, the space for steam in the boiler is easily found by multiplying the length of the pipe in feet by the quantity of steam in a foot in length of the pipe.

In the above-noticed house, the length of pipe 5 inches in diameter is 150 feet; and these multiplied by 1.363 = 20.5 cubic feet of steam, and as the pipe will condense the steam of about one cubic foot and one-third of water per hour, therefore the boiler should be capable of evaporating 1⅓ cubic feet of water per hour, to allow for unavoidable loss. In the extreme cases of the thermometer being at zero, the consumption of coals to keep up this evaporation will be 12¾ pounds per hour.

Interior Diameter of Pipe in Inches.	Decimal Parts of a Cubic Foot of Steam in each Foot of Pipe.
1	0.0545
1½	0.1225
2	0.2185
2½	0.34
3	0.49
4	0.873
5	1.063
6	1.964
7	2.67
8	3.49
9	4.42
10	5.45

These calculations are all founded upon the supposition that the condensed water is returned to the boiler whilst hot; but if this cannot be effected, then one-twelfth more fuel will be required. The boiler for the supply either of steam or hot water should be covered with the best available non-conductor of heat, and this is either charcoal or sand.

A case of brickwork, with pulverised charcoal between this and the boiler, is to be preferred to any other. A boiler having a surface of 70 feet exposed to the air, in a temperature of 32°, requires an extra bushel of coals to be consumed per day, to compensate for the heat radiated and conducted from that surface; and the smaller the boiler, the greater is the proportionate waste. The surface of the pipes should be painted black, because a surface of this colour gives out more heat in a given time than any other.

Bark or Moist Stove.—Mr. J. Claudius Loudon gives the following description of a moist stove, warmed on the old plan of deriving heat by the combined agency of bark and flues. Instead of a stage in the centre it has a pit, which may be from 2½ to 4 feet deep, according as bark or leaves are to be used, the latter material requiring the greatest depth. It is commonly surrounded by a thin brick wall; but planks of stone, or plates of slate or cast iron, are to be preferred. The roof, when necessary, may be supported by iron columns from the middle of the pit. Shelves may be placed against the back wall, and occasionally a narrow-leaved creeper run up the roof. We may add, that houses of this description are generally placed east and west against walls, on account of the shelter thereby obtained during winter, when a high degree of heat is kept up within, while the cold is excessive without.

STRANVÆ'SIA. (Named after the *Hon. W. F. Strangways, F.R.S.* Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*. Allied to Cratægus.)

Beautiful and nearly evergreen shrubs, but not quite hardy, except in the south of England. Grafting on the thorn; in cold places would like a little protection in winter.

S. glauce'scens (grey-*leaved*). 20. White. June. Nepaul. 1828.

„ *undula'ta* (waved). 3–6. White. Fruit orange-red. Central China. 1910.

STRATIO'TES. Water Soldier. (From *stratiotes*, a soldier; sword-like leaves. Nat. ord. *Hydrocharads* [Hydrocharidaceæ]. Linn. 22-*Dioecia*, 10-*Dodecandria*.)

Hardy aquatic. Useful to plant in ponds, where it will soon cover a large space. Seeds and divisions; ponds and lakes.

S. alismoi'des (plantain-like). See OTTELIA ALISMOIDES.

„ *aloi'des* (Aloe-like). 2. White. June. England.

STRAVA'DIUM. (From the native name in Malabar. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Stove evergreen trees. Cuttings of ripened shoots in sand, under a bell-glass, and in a good, moist bottom-heat; fibrous loam and peat, with a little charcoal and silver sand. Winter temp., 60° to 65°; summer, 65° to 90°.

S. acuta'ngulum (sharp-angled). See BARRINGTONIA ACUTANGULA.

„ *insi'gne* (remarkable). See BARRINGTONIA INSIGNIS.

„ *racemo'sum* (racemed). See BARRINGTONIA RACEMOSA.

„ *ru'brum* (red). See BARRINGTONIA ACUTANGULA.

STRAWBERRY. *Fraga'ria.*

Superior Kinds.—(1) Black Prince; (2) Keen's Seedling; (3) British Queen; (4) Elton; (5) Old Pine; (6) Alpine; (7) Kitley's Goliath; (8) Eliza; (9) Carolina superba. For early heavy crops none can exceed the Keen's; for size, the British Queen and Goliath; for earliness, the Black Prince probably takes the lead; for very late purposes, the Elton and Alpines; and for forcing, the Keen's and the British Queen. Of modern varieties Vicomtesse Hericart de Thury and Royal Sovereign are first early varieties for outdoor culture and for forcing. Superior maincrop varieties are President, Sir Joseph Paxton, Dr. Hogg, Bedford Champion, and Louis Gauthier. Late varieties, of good flavour, are Givon's Late Prolific, Olympia, Laxton's Latest, and Waterloo. The best perpetual Strawberry is St. Antoine de Padoue.

Soil.—A good loam of some depth is best adapted to high culture; for although strawberry walls are found to be highly conducive to flavour, yet they will not succeed well in such situations, unless a special provision of this kind be made for them. Therefore, loose and sandy soils must be mixed with marls or clays, and clayey soils must be rendered open by applying sand, road-scrapings, cinder-ashes (fine), burnt or charred material, &c. Boggy or peaty soils will require consolidation by burning, or the application of sound soil, and by thorough draining, if wet.

Propagation: by Runners and Seed.—Their propagation by runners is well known. Seed-sowing is resorted to for raising new varieties, and for heightening the culture of the Alpine class, which is by most cultivators treated as an annual.

Culture during the Growing Period.—Very little is necessary besides keeping them clear of weeds, and trimming all those runners away which are not required for future stock. All operations connected with root-culture should be carried out during the rest period. At the end of May the runners will begin to ramble freely, and at this time a very general spring-dressing should take place. This consists in hoeing and raking the ground thoroughly, choosing a dry period for the operation, in order that every weed may be destroyed; at the same time trimming away all the wires or strings on which the runners are produced. The next proceeding will be to place clean straw, grass-mowings, or tan beneath the trusses of fruit; this process requires a little nicety of handling. When the bloom trusses make their appearance, the next great point is to see that the plants never suffer from drought from this period to the moment they commence ripening.

Culture during the Rest Period.—We date our rest season from the period at which the last fruit is gathered, or soon after, say the end of August. At this period it will be found that, in spite of the trimming the plants received in May, a profusion of runners will have been produced, the rambling foliage from which will obstruct the light from the older and principal leaves, which have, from this time forward, the important office of preparing for the formation of the ensuing year's blossom. The waste runners should therefore be trimmed away as soon as possible, for they also exhaust the soil by their roots. In cutting away these runners, great care must be exercised in preserving all the true leaves, which must by no means be cut. No further trimming need be practised until the following March, in the early part of which all the decayed and injured foliage may be cut away. The rows being 3 feet apart, at the end of October, one foot in the centre only is to be dug, thus leaving the plants one foot of roots on each side entirely undisturbed. Introduce some decayed manure annually in this centre, and the small amount of loss of root is more than compensated by the volume of new white fibres which, by the month of May following, have fully invested the new ground. The dung or vegetable matter should be somewhat fresh; such is preferable to rotten manure.

Making new Plantations.—Trenching should be had recourse to, going as deep as the good soil will permit, placing the manure necessary principally between the two spits. If the soil be shallow, of course the manure will be dug down with a single spit. If good runners can be obtained early in July, and carefully cultivated, they may be expected to bear a respectable crop the following summer. From those planted in February, of course, little can be expected. It is by far the best to keep a little nursery for runners in a very open situation, and the plants a long way apart.

Strawberry Walls or Banks.—These have been highly recommended, and are, doubtless, very useful, as heightening flavour. They have, however, never become very general, owing to their being rather expensive in constructing. A strawberry wall, in the direction of east and west, would be a useful adjunct in high gardening if properly managed. On the south side plant the Black Prince and the Keen's Seedling; and on the north side the Elton. The former would ripen a fortnight earlier than ordinary ones, and the latter continue bearing until October. These walls may be built of any kind of material which will maintain its position, and should be as near to an angle of 45° as can be approached.

Strawberry Forcing.—One principal point here is to obtain very early runners, which is generally effected by laying the earliest in small pots, in a sound compost. These, when full of roots, are repotted into larger ones; and the whole business henceforth is to give them kindly cultivation, as to regular waterings, &c., and to keep them in an open situation. By the end of September they will possess stout buds, and must be plunged up to their rims for the winter. Forcing must be commenced very gently, with plenty of atmospheric moisture—say, commence with the temperature at 55° and rise gradually, by the time the leaf is thoroughly developed, to 60°, and the less advance that is made beyond this the better, except in sunny weather. They love to be near the glass, and to have abundance of air.

Culture of the Alpines.—Sow seed from choice fruit at the end of January in gentle heat, and prick the seedlings out into boxes, still under glass, in rich soil. Towards the end of April, the plants, having been hardened off may be planted out finally; and an elevated bed, in a sunny situation, should be chosen. They may be planted in double rows, half a yard apart in the row, and the rows 2 feet apart. The soil should be a rich loam; and when they are fruiting, some slates or tiles may be placed beneath them, as the autumn rains are apt to rot them. They should be liberally watered during dry weather.

STRAWBERRY-BLITE. *Chenopo'dium capita'tum.*

STRAWBERRY-SPINACH. *Chenopo'dium capita'tum.*

STRAWBERRY-TREE. *A'rbutus.*

STREBLORRHI'ZA. (From *streblos*, twisted or tortuous, and *rhiza*, a root; the roots are tortuous. Nat. ord. Leguminosæ.)

Greenhouse or half-hardy shrub. Cuttings of side-shoots in sand under a bell-glass. Fibrous loam, a little peat and sand.

S. specio'sa (showy). 2–4. Flesh. Norfolk Island. 1840.

STRE'BLUS. (From *streblos*, tortuous; the branches being flexuous. Nat. ord. Urticaceæ.)

Stove shrub or small tree. Cuttings in sand, in a close frame, with bottom-heat; seeds. Fibrous loam and fibrous peat, with sand.

S. a'sper (rough). 10–20. Pale green. Trop. Asia. "Paper Tree."

STRELI'TZIA. (Named after Charlotte, queen to George III, of the house of *Mecklenburgh-Strelitz*. Nat. ord. *Musads* [Scitaminaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove, yellow-flowered, herbaceous perennials, from South Africa. By seeds in a good, moist heat, in spring; generally by suckers and dividing the plant; fibrous loam and a little peat. Winter temp., 45° to 55°; summer, 60° to 80°.

S. a'lbiflos (white-flowered). See S. QUENSONI.
„ *angustifo'lia* (narrow-leaved). See S. PARVIFOLIA.
„ *Augu'sta* (grand). 18. White. March. 1791.
„ *farino'sa* (mealy-*stalked*). See S. REGINÆ FARINOSA.
„ *hu'milis* (humble). See S. REGINÆ.
„ *ju'ncea* (rush-*leaved*). See S. PARVIFOLIA JUNCEA.
„ *Nicola'i* (Nicola's). 20–25. White, pale blue. May. 1879.
„ *ova'ta* (egg-*leaved*). See S. REGINÆ OVATA.
„ *parvifo'lia* (small-leaved). 6. June. 1778
„ „ *ju'ncea* (rush-like). 6. May.
„ *proli'fera* (proliferous). See S. REGINÆ PROLIFERA.
„ *Quenso'ni* (Quenson's). Rosy-violet. 1863.
„ *Regi'næ* (queen's). 8. April. 1773.
„ „ *citri'na* (citron). Citron-yellow. 1887.
„ „ *farino'sa* (mealy). 5. Stalks mealy. February. 1795.
„ „ *hu'milis* (low). 3. May. A dwarf form.
„ „ *Lemoinie'rii* (Lemoinier's). 3. Yellow, blue. 1880.
„ „ *ova'ta* (egg-shaped). 8. March. 1777.
„ „ *proli'fera* (proliferous). Spathes double or twin. 1869.
„ „ *pu'mila* (dwarf). A dwarf, compact variety. 1879.

STREPTANTHE'RA. (From *streptos*, twisted, and *anthera*, an anther; the anthers are twisted in their final stages. Nat. ord. Iridaceæ.)

Greenhouse bulbous plants. Offsets; seeds. Loam, leaf-mould, and plenty of sand

S. cu'prea (copper). ½. Copper. June. S. Africa. 1825.
„ *e'legans* (elegant). ½. White, blue. May. S. Africa. 1827.

STREPTA'NTHUS. (From *streptos*, twisted, and *anthos*, a flower; the claws of the petals are twisted. Nat. ord. Cruciferæ.)

Hardy annuals. Seeds. Ordinary garden soil.

S. hyacinthoi'des (hyacinth-like). 2–3. Bluish-purple. September. North-western Amer. 1834.
„ *macula'tus* (blotched). 1–2. Velvety-purple. August. North-western Amer. 1833.

STRETPO'CALYX. (From *streptos*, twisted, and *kalux*, the calyx. Nat. ord. Bromeliaceæ.)

Stove, evergreen herbs. Offsets or suckers. Fibrous loam, lumpy peat, some bits of charcoal and sand.

S. Furstenbe'rgi (Furstenberg's). 1½. Pink. Autumn. Brazil. 1877.
„ *Vallera'ndi* (Vallerand's). Violet; bracts deep red. Brazil. 1876.

STREPTOCA'RPUS. (From *streptos*, twisted, and *carpos*, a fruit; the long seed-pod twisted. Nat. ord. *Gesnerworts* [Gesneraceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Greenhouse herbaceous perennials. By seeds in a gentle hotbed, in spring; also by dividing the plant; light, rich, sandy loam. Winter temp., 40° to 50°.

S. Armita'gei (Armitage's). Rose. Leaves four. Transvaal. 1902. This may be *S. monophylla*.
„ *caule'scens* (stemmed). 1. Pale lilac. Stem swollen leafy. Trop. Africa. 1885.
„ *Du'nnii* (Dunn's). 1. Red. Leaf one, 2–3 ft. long. May. S. Africa. 1884.
„ *Galpi'ni* (Galpin's). Mauve-blue, with white throat. S. Africa. 1891.
„ *Garde'ni* (Capt. Garden's). ¾. Blue. July. Natal. 1854.
„ *gra'ndis* (grand). Light blue; white, marked violet inside. Leaf one. Zululand. 1905.
„ *Ho'lstii* (Holst's). 1½. Dark violet-blue. Stems leafy. German E. Africa. 1904.
„ *Juno'dii* (Junod's). ½. Blue-lilac; lip with citron blotch. Transvaal. 1907.
„ *Ki'rkii* (Kirk's). 1. Lilac. Stem leafy. Summer. Trop. Africa. 1884.
„ *lu'tea* (yellow). ½. White; lip with yellow lines. Summer. S. Africa. 1882.
„ „ *ma'jor* (larger). Flowers much larger.
„ *Maho'ni* (Mahon's). Violet-blue. Leaf one. British Central Africa. 1902.
„ *parvifo'ra* (small-flowered) of E. Meyer. ½ White, yellow, pale violet. S. Africa. 1888.
„ *parvifo'ra* (small-flowered) of B.M., t. 6636. See S. LUTEA.
„ *pauciflo'rus* (few-flowered). See S. LUTEA.
„ *polya'ntha* (many-flowered). 1. Purple. S. Africa. 1853.
„ *Re'xii* (Rex's) ½. Blue. June. S. Africa. 1824.
„ *Saunde'rsii* (Saunders'). 1. Pale blue. Summer. S. Africa. 1860.
„ *Wendla'ndii* (Wendland's). 1–1½. Clear blue. Leaf one. Natal. 1890.

STRE'PTOPUS. (From *streptos*, twisted, and *pous*, a foot; flower-stalks twisted. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Uvularia.)

Hardy herbaceous perennials. Seeds or divisions in spring; any good garden soil.

S. amplexifo'lius (leaf-stem-clasping). See S. DISTORTUS.
„ *disto'rtus* (distorted). 1. Yellow. May. Europe; N. Amer. 1758.
„ *lanugino'sus* (woolly). See DISPORUM LANUGINOSUM.
„ *ro'seus* (rosy). 1½. Pink. June. N. Amer. 1806.
„ *si'mplex* (simple). 1½. June. Nepaul. 1822.

STREPTOSO'LEN. (From *streptos*, twisted, and *solen*, a tube; the corolla tube is twisted. Nat. ord. Solanaceæ.)

Evergreen, greenhouse shrub, used for bedding in summer. Cuttings in sand, under a bell-glass; seeds in heat in early spring. Fibrous loam, peat, or leaf-mould, and sand.

S. Jameso'ni (Jameson's). 2–4. Orange. Summer. Colombia. 1847.

STRICKLA'NDIA. (Commemorative of *Sir C. W. Strickland, Bart.*, a cultivator of Amaryllidaceæ.)
Stove bulb. Offsets. Fibrous loam, leaf-mould, a little well-rotted manure and sand.
S. eucrosioi'des (Eucrosia-like). 1. Green, red. Spring. Andes of Ecuador. 1877.

STRIKING. The process of causing cuttings to emit roots.

STRINGY BARK TREE. *Eucaly'ptus obli'qua* and several other species.

STROBILA'NTHES. (From *strobilos*, a pine-cone, and *anthos*, a flower; resemblance of the head of flower. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Ruellia.)
Stove evergreen shrubs. Cuttings any time during spring and summer in sandy soil, under a hand-light, in heat; fibrous loam and sandy peat. Winter temp., 48° to 55°; summer, 60° to 80°.
S. ala'tus (winged). Java.
„ *anisophy'llus* (unequal-leaved). 1–3. Lilac. Winter. Himalaya. 1823.
„ *attenua'tus* (attenuated). Violet-blue, yellow in throat. Himalaya. 1887.
„ *auricula'tus* (auricled). Burma.
„ *callo'sus* (beautiful). 6. Blue. May. India. 1840.
„ *Champio'nii* (Champion's). See S. FLACCIDIFOLIUS.
„ *colora'tus* (coloured). Lilac-purple. Himalaya. 1887.
„ *consangui'neus* (related). Blue. E. Ind. 1873.
„ *cuspida'tus* (short-pointed). India.
„ *dyeria'nus* (Dyerian). 2–4. Violet-blue. Leaves with rich rosy-purple markings. Burma. 1893.
„ *flaccidifo'lius* (flabby-leaved). Lilac-purple. India and China. 1887. Yields a blue dye.
„ *glomera'tus* (clustered). 2–6. Purple. November. Himalaya; Burma. 1838.
„ „ *specio'sus* (showy). Flowers more showy.
„ *gossy'pinus* (Gossypium-leaved). Pale blue. Nilghiri Hills. 1901.
„ *isophy'llus* (equal-leaved). 1½–2. Lavender. Autumn. India. 1845.
„ *kunthia'nus* (Kunthian). India.
„ *lacta'tus* (milky-*leaved*). 1. Pale lilac. September. Brazil. 1847.
„ *macula'tus* (spotted-*leaved*). 1½. Pale lilac. September. Himalaya. 1846.
„ *Micholi'tzi* (Micholitz's). 3–4. White. Sumatra. 1907.
„ *sabinia'nus* (Sabine's). 4. Blue, purple. March. Nepaul. 1826.
„ *sca'ber* (rough). 4. Yellow. May. Himalaya. 1836.
„ *se'ssilis* (stalkless). 4. Blue. April. Bombay. 1833.
„ *Walli'chii* (Wallich's). 1–2. Blue. October. Himalaya. 1858.

STROBILO'RHACHIS GLA'BRA. See APHELANDRA PRISMATICA.

STROMA'NTHE. (From *stroma*, a couch or bed, and *anthos*, a flower; the form of the inflorescence. Nat. ord. Scitaminaceæ.)
Evergreen stove herbs. Seeds; division of the rhizomes in spring. Fibrous loam, lumpy, fibrous peat, charcoal and sand.
S. ama'bilis (lovely). Brazil. 1875.
„ *lubbersia'na* (Lubbersian). See MYROSMA LUBBERSII.
„ *lu'tea* (yellow). Venezuela.
„ *portea'na* (Portean). Leaves green above, pale below. Brazil. 1859.
„ *sangui'nea* (blood-red). 6. Red. February. Brazil. 1854.
„ *specta'bilis* (showy). See S. SANGUINEA.
„ *To'nckat* (Tonckat). 2. Red. July. Guiana. 1819.

STROPHA'NTHUS. (From *strophos*, twisted, and *anthos*, a flower; divisions of petals twisted. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Nerium.)
Stove evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass, in heat, in spring; fibrous loam and sandy peat. Winter temp., 50° to 55°; summer, 60° to 85°.
S. bullenia'nus (Bullenian). Yellow, purple. Trop. Africa. 1870.
„ *cape'nsis* (Cape). Orange, yellow. S. Africa. 1855.
S. chine'nsis (Chinese). See S. DIVERGENS.
„ *dicho'tomus* (forked). 3. Rosy. June. India; Malaya. 1816.
„ *dive'rgens* (spreading). 3. Yellow. February. China. 1816.
„ *hi'spidus* (hispid). Trop. Africa. "Kombe."
„ *Ledie'nii* (Ledien's). Yellow, with purple throat. Congo. 1887.
„ *longicauda'tus* (long-tailed). See S. DICHOTOMUS.
„ *petersia'nus* (Petersian). Red and yellow. Trop. Africa. Climber.
„ „ *grandiflo'rus* (large-flowered). Red and yellow, larger. S. Africa.
„ *Preu'ssii* (Preuss'). 2. Yellow-white or pale orange; tube reddish. W. Trop. Africa. 1909. Climber.
„ *sarmento'sus* (trailing). 6. Red. June. Sierra Leone. 1824.
„ *sca'ndens* (climbing). Malacca.

STROPHOLI'RION. (From *strophos*, twisted, and *lirion*, a lily; the stems are tortuous or twining. Nat. ord. Liliaceæ. Allied to Brodiæa.)
Hardy bulb, requiring a warm situation or protection in winter. Offsets. Light, rich, well-drained soil.
S. califo'rnicum (Californian). 4–12. Rose. July. California. 1874.

STRUMA'RIA. (From *struma*, a tubercle; the style is enlarged at the bottom. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Nerine and Hessea.)
Bulbs, from South Africa. For culture, see NERINE.
S. angustifo'lia (narrow-leaved). ½. Pink. April. 1795.
„ *cri'spa* (curled-*flowered*). See HESSEA CRISPA.
„ *filifo'lia* (thread-leaved). See HESSEA FILIFOLIA.
„ *gemma'ta* (jewel-*flowered*). See HESSEA GEMMATA.
„ *linguæfo'lia* (tongue-leaved). See S. TRUNCATA.
„ *rube'lla* (pale red). ½. Pink. May. Trop. Africa. 1795.
„ *spira'lis* (spiral). See CARPOLYZA SPIRALIS.
„ *stella'ris* (starry). See HESSEA STELLARIS.
„ *trunca'ta* (abrupt-ended-*leaved*). ½. White. April. Trop. Africa. 1795.
„ *undula'ta* (wavy-*flowered*). ½. White. May. 1820.

STRUTHI'OLA. (From *strouthion*, a little sparrow; resemblance of seeds to a beak. Nat. ord. *Daphnads* [Thymeleaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Gnidia.)
Greenhouse evergreens, from South Africa. Cuttings of the points of shoots, 2 or 3 inches in length, in sand, under a bell-glass, in May; sandy, fibrous peat and a little charcoal. Winter temp., 40° to 47°.
S. angustifo'lia (narrow-leaved). 3. Yellow. July. 1816.
„ *cilia'ta* (hair-fringed). See S. LUCENS.
„ *ere'cta* (upright). 1½. White. June. 1798.
„ *gla'bra* (smooth). See S. ERECTA.
„ *imbrica'ta* (tiled-*leaved*). See S. STRIATA.
„ *inca'na* (hoary). See S. VIRGATA.
„ *juniperi'na* (juniper-*leaved*). See S. LINEARILOBA.
„ *lateriflo'ra* (side-flowered). See S. STRIATA.
„ *linearilo'ba* (linear-podded). 2. White. June. 1758.
„ *longiflo'ra* (long-flowered). 2. Yellow. July 1823.
„ *lu'cens* (shining). 2. Yellow. June. 1779.
„ *ova'ta* (egg-*leaved*). 2. White. April. 1792.
„ *pube'scens* (downy). See S. VIRGATA.
„ *stria'ta* (streaked). 2. Yellow. July. 1794.
„ *stri'cta* (upright). See S. LINEARILOBA.
„ *tomento'sa* (woolly-*leaved*). 2. Yellow. August. 1799.
„ *virga'ta* (twiggy). 2. Red. June. 1779.

STRUTHIO'PTERIS. (From *strouthion*, an ostrich, and *pteris*, a fern; resemblance of the leaves, or fronds, to its feathers. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Onoclea.)
S. germa'nica (German). See ONOCLEA GERMANICA.
„ *orienta'lis* (oriental). See ONOCLEA ORIENTALIS.
„ *pennsylva'nica* (Pennsylvanian). See ONOCLEA GERMANICA.

STRYCHNODA'PHNE. (From *struchne* or *struchnos*, a name given by Dioscorides and other old writers to several members of the Solanaceæ, and *Daphne*, from the resemblance of the undermentioned plants to a Daphne. Nat. ord. Lauraceæ. Now referred to Ocotea.)

S. floribu'nda (free-flowering). See OCOTEA BOTRYOPHYLLA.
„ *pube'rula* (finely-downy). See OCOTEA PUBERULA.

STRY'CHNOS. (From *struchne* or *struchnos*, a name given by Dioscorides and other classical writers to several members of the Solanaceæ, some of which were poisonous. Nat. ord. Loganiaceæ.)

Stove and greenhouse evergreen shrubs, chiefly valuable for their medicinal properties. The seeds of *S. Nu'x-vo'mica* contain strychnia, a powerfully poisonous alkaloid. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, leaf-mould, or peat and sand.

S. Athersto'nei (Atherstone's). White. S. Africa. Greenhouse.
„ *Igna'tii* (Ignat's). White. Philippines. "St. Ignatius' Beans."
„ *lu'cida* (shining). White. Australia.
„ *Nu'x-vo'mica* (Nux-vomica). White. India. "Nux-vomica."
„ *Potato'rum* (drinkers'). White. India; Burma. "Clearing Nut."

STRYPHNODE'NDRON. (From *struphnos*, sour, and *dendron*, a tree; the properties of the tree. Nat. ord. Leguminosæ. Allied to Adenanthera.)

Stove shrubs or small trees. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

S. floribu'ndum (free-flowering). 10. White. Brazil. 1823.
„ *guiane'nse* (Guiana). 20–40. White. November. Guiana. 1803.

STUA'RTIA. (Named after *John Stuart*, Marquis of Bute. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Gordonia.)

Hardy, white-flowered, deciduous shrubs, from North America. Generally by layers; moist peat soil, or deep, moist, sandy loam.

S. grandiflo'ra (large-flowered). See S. PSEUDO-CAMELLIA.
„ *maryla'ndica* (Maryland). See S. VIRGINICA.
„ *ova'ta* (egg-*leaved*). See S. PENTAGYNA.
„ *penta'gyna* (five-styled). 8–10. Creamy-white. July to September. S. United States. 1785.
„ *Pseu'do-came'llia* (false-Camellia). 8–12. Creamy-white. July to September. Japan. 1879.
„ *virgi'nica* (Virginian). 10. July. 1843.

STYLA'NDRA PU'MILA. See PODOSTIGMA PUBESCENS.

STYLI'DIUM. (From *stulos*, a column; the stamens and style joined into a column. Nat. ord. *Styleworts* [Stylidiaceæ]. Linn. 20-*Gynandria*, 2-*Diandria*.)

All Australian plants. Herbaceous, by divisions, and by seeds in spring; shrubs, by cuttings of young shoots in sand, under a bell-glass; fibrous, sandy loam, and a little peat and vegetable mould. Winter temp., 40° to 45°.

GREENHOUSE EVERGREENS.

S. brunonia'num (Dr. Brown's). 1. Rose. June. 1841.
„ *fascicula'tum* (bundled). ½. Pink. August. 1838.
„ *frutico'sum* (shrubby). See S. GLANDULOSUM.
„ *glandulo'sum* (glandular). 1½. Pink. July. 1803.
„ *sca'ndens* (climbing). 2. Rose. July. 1803.

GREENHOUSE HERBACEOUS.

S. adna'tum (adhering). ½. Pink. July. 1824.
„ *amæ'num* (lovely). Pink.
„ *androsa'ceum* (Androsace-like). See S. CALCARATUM.
„ *Arme'ria* (Armeria). See S. GRAMINIFOLIUM.
„ *bi'color* (two-coloured). See S. PILIFERUM.
„ *bulbi'ferum* (bulb-bearing). ½. Green, purple, or pink. May, June. 1839.
„ *calcara'tum* (spurred). White.
„ *canalicula'tum* (channelled-*leaved*). Yellow. July.
„ *caricifo'lium* (sedge-leaved). See S. REDUPLICATUM.
„ *carno'sum* (fleshy). White.
„ *caule'scens* (*long*-stemmed). See S. AMŒNUM.
„ *cilia'tum* (hair-fringed). 1. Yellow. May. 1840.
„ *compre'ssum* (flattened). See S. BRUNONIANUM.
„ *crassifo'lium* (thick-leaved). 2. Pink. 1899.
„ *dicho'tomum* (forked). ½. Yellow. August.
S. Drummo'ndi (Drummond's). See S. REDUPLICATUM.
„ *glau'cum* (sea-green). White. June. 1840.
„ *graminifo'lium* (grass-leaved). 1. Pink. July. 1803.
„ *hirsu'tum* (hairy-*scaped*). ½. Rose. June. 1830.
„ *hi'spidum* (bristly). See S. CILIATUM.
„ *Hoo'keri* (Hooker's). See S. DICHOTOMUM.
„ *ju'nceum* (rush-like). ½. Rose. 1830.
„ *laricifo'lium* (larch-leaved). 1. Pink. July. 1818.
„ *leptosta'chyum* (narrow-spiked). See S. CARNOSUM.
„ *linea're* (narrow-*leaved*). 1. Red. June. 1812.
„ *mucronifo'lium* (hard-pointed-leaved). See S. DICHOTOMUM.
„ *nu'dum* (naked-*stemmed*). See S. GLAUCUM.
„ *pili'ferum* (pile-bearing). White, purple. 1843.
„ *pilo'sum* (hairy). 1. Pink, white. June. 1841.
„ *proli'ferum* (proliferous). See S. BULBIFERUM.
„ *pycnosta'chyum* (dense-spiked). Pink. June. 1843.
„ *recu'rvum* (curled-back). See S. BULBIFERUM.
„ *reduplica'tum* (twice-folded). 2. White or pink. July to November. 1838.
„ *saxifragoi'des* (saxifrage-like). See S. CILIATUM.
„ *sca'bridum* (rather-rough). White. July. 1841.
„ *spathula'tum* (spathulate). ½. Straw. 1872.
„ *stria'tum* (channelled). White. May.
„ *tenuifo'lium* (fine-leaved). See S. LARICIFOLIUM.

STYLOCO'RYNA. (From *stulos*, a column, and *korune*, a club; shape of the style. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove, white-flowered, East Indian evergreens. Cuttings of young shoots in sand, under a bell-glass, in heat; fibrous, sandy loam and peat. Winter temp., 45° to 55°; summer, 60° to 85°.

S. coria'cea (leathery-*leaved*). 1828.
„ *corymbo'sa* (corymbed). See OLOSTYLA CORYMBOSA.
„ *cymo'sa* (cymed). 1811.
„ *We'bera* (Webera). 6. White. July. Trop. Asia. 1817.

STYLO'LEPIS GRA'CILIS. See PODOLEPIS GRACILIS.

STYLO'PHORUM. (From *stulos*, a style, and *phoreo*, to bear; the capsule is crowned with a style. Nat. ord. Papaveraceæ.)

Hardy perennial herbs. Seeds; divisions in spring. Well-drained garden soil.

S. diphy'llum (two-leaved). 1. Yellow. June. N. Amer. 1854. "Celandine Poppy."
„ *japo'nicum* (Japanese). 1–1½. Yellow. June. Japan. 1870.
„ *ohioe'nse* (Ohio). See S. DIPHYLLUM.
„ *petiola'tum* (long-stalked). See S. DIPHYLLUM.

STYLOPHY'LLUM. (From *stulos*, a style or column, and *phullon*, a leaf. Nat. ord. Crassulaceæ.)

Greenhouse, evergreen herb, said to be a new genus by the *Bulletin of the New York Botanic Garden*. Cuttings in sand, kept dry overhead. Loam, finely broken bricks, a little leaf-mould and sand.

S. Orcu'ttii (Orcutt's). California. 1905. Syn. *Cotyledon attenuata*.

STYPA'NDRA. (From *stupe*, tow, and *aner*, an anther; resemblance of the anthers. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Dianella.)

Greenhouse Australian plants. Division of the plant in spring; sandy loam and fibrous peat; require the protection of a dry, cold pit in winter.

S. cæspito'sa (tufted). 1–2. Blue or pale yellow. June. 1824.
„ *frute'scens* (shrubby). See S. GLAUCA.
„ *glau'ca* (sea-green). 1–2. Azure or violet. June to September. 1833.
„ *propi'nqua* (related). See S. GLAUCA.
„ *umbella'ta* (umbelled). 1. White or pale yellow. June. 1826.

STYPHE'LIA. (From *stuphelos*, hard; referring to the wood. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse, Australian evergreens. Cuttings of young shoots in sand, under a bell-glass, in April; sandy, fibrous peat, and only a little fibrous loam. Winter temp., 38° to 48°.

S. amplexicau'lis (stem-clasping). See LEUCOPOGON AMPLEXICAULIS.

S. epacrioi'des (Epacris-like). 6. Crimson. July. 1823.
„ *glau'ca* (sea-green). See MONOTOCA LINEATA.
„ *læ'ta* (bright-green). 4. Pink. June. 1823.
„ *latifo'lia* (broad-leaved). See S. LÆTA.
„ *longifo'lia* (long-leaved). 2–3. Green. June. 1807.
„ *parviflo'ra* (small-flowered). See LEUCOPOGON RICHEI.
„ *Ri'chei* (Riche's). See LEUCOPOGON RICHEI.
„ *splé'ndens* (splendid). See ASTROLOMA DIVARICATUM.
„ *triflo'ra* (three-flowered). 6. Pink. July. 1796.
„ *tubiflo'ra* (tube-flowered). 6. Scarlet. July. 1802.
„ *viridiflo'ra* (green-flowered). See S. VIRIDIS.
„ *vi'ridis* (green). 2–4. Green. May. 1791.

STYPHNOLO'BIUM JAPO'NICUM. See SOPHORA JAPONICA.

STY'RAX. Storax. (From the Arabic. Nat. ord. *Storaxworts* [Styraceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Hardy deciduous, white-flowered shrubs. By imported seeds, and cuttings and layers; light, rich, sandy loam, and a little peat; should be planted against a wall to bloom profusely, and it is well worthy of such protection; next to that a dry, protected situation.

S. americа'num (American). 4–6. July. N. Amer. 1765.
„ *Benzo'in* (Benzoin). Summer. Malaya. Stove.
„ *califo'rnicum* (Californian). 5–8. Fragrant. April to September. California. 1885.
„ *grandifo'lium* (large-leaved). 6. July. N. Amer. 1765.
„ *hemsleya'num* (Hemsleyan). 20–30. Central China. 1910.
„ *japo'nicum* (Japanese). 5–6. White; buds pale pink. China; Japan. 1868.
„ *læviga'tum* (smooth) of Aiton. See S. AMERICANUM.
„ *læviga'tum* (smooth) of Sims. See S. PULVERULENTUM.
„ *Oba'ssia* (Obassia). 6–10. Fragrant. May, June. Japan. 1888.
„ *officina'le* (shop). 12. July. Levant. 1597.
„ *pulverule'ntum* (powdery). 4. June. N. Amer. 1794.
„ *serrula'tum* (finely-sawed). 20–40. April, May. Eastern India.

SUCCO'WIA. (A commemorative name. Nat. ord. Cruciferæ.)

Hardy annual. Seeds. Ordinary soil.

S. balea'rica (Balearic). June, July. Mediterranean region.

SUCCULENT PLANTS are so characterised on account of their thick juicy leaves. They are formed to exist, says Mr. Fortune, in countries and situations where they are often exposed to intense light and dryness; their skins are thick; they have few evaporating pores; and they have, likewise, few roots to gorge their tissue with food during the rainy season. Therefore, we find the dry, sandy plains of the Cape abounding in *aloes* and *mesembryanthemums;* and the bare volcanic rocks of Mount Etna covered, in many places, with the common *prickly pear*. In Mexico, also, and in many other parts of Central and South America, the extensive race of *cacti*, with their curious un-vegetable-like forms, are at home, and flourish even in those dry and parched seasons when the whole face of nature besides seems withered and destroyed. The natural circumstances in which these plants are found are sure and certain guides in cultivation.

SUCKERS are branches naturally thrown up by a plant from its base, when the onward current of growth of the stem is stopped.

SUFFOCATION is a term employed by Keith and others to describe any stopping of the transpiratory organs of plants, whether it arises from extravasated sap, mosses, fungi, or from a deficient supply of sap.

SUGAR BAKERS' REFUSE. See ANIMAL MATTERS.

SUGAR CANE. *Sa'ccharum officina'rum.*

SULLIVA'NTIA. (A commemorative name. Nat. ord. Saxifragaceæ.)

Hardy perennial herb. Seeds; divisions. Well-drained soil.

S. Ohio'nis (Ohio). ½. White. June, July. Ohio.

SUMACH. *Rhu's.*

SUMBUL. *Fe'rula Su'mbul.*

SUMMER SNOWFLAKE. *Leuco'jum æsti'vum.*

SUN-DEW. *Dro'sera.*

SUNFLOWER. *Helia'nthus.*

H. a'nnuus, Annual Sunflower, is now much cultivated for its oil, and as a food for cattle and poultry.

The earlier the seed can be got into the ground the better, say the beginning of April, as the crop will be ready to harvest the latter part of August, which will be of the greatest importance to growers. The necessary quantity of seed required for an acre depends upon the conditions of the soil, and varies from four pounds to five pounds; but, of course, it is advisable to sow a little more than is actually wanted, to provide against accidents. The seed should be drilled into the ground, and the distance from row to row 18 inches; the plants to be thinned out to 30 inches from plant to plant, and the number of plants at this distance would be about 14,500 per acre; at 18 inches from plant to plant, 25,000 per acre; and at 12 inches from plant to plant, 32,000. The produce of this kind of grain, like that of most others, varies considerably, according to the state of the soil, climate, and the cultivation that is employed; but the average quantity of seed is about fifty bushels per acre. This will produce fifty gallons of oil, and of oilcake, 1500 pounds. The stalks, when burnt for alkali, give ten hundredweight of potash.

SUN-FRUIT. *Helioca'rpus.*

SUN-PLANT. *Portula'ca grandiflo'ra.*

SUN-ROSE. *Helia'nthemum.*

SURFACE GRUBS, or **CATERPILLARS,** are the larvæ of several species of *Noctua* (Argotis), or Night Moths. Gardeners thus name them because they attack the roots of the turnip, mangold wurzel, &c., just at the surface of the soil.

SUSA'RIUM SEGE'THI. See SOLENOMELUS LECHLERI.

SU'SUM. (The native name of the plant. Nat. ord. Flagellariaceæ.)

A stove evergreen plant with leaves like those of a Dracæna. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat and sand.

S. anthelmi'nthicum (anthelmintic). Reddish. Sumatra; Java. 1889.

SUTHERLA'NDIA. (Named after *James Sutherland*, author of a botanical catalogue. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Clianthus.)

Half-hardy, scarlet-flowered evergreens, from South Africa. Seeds in spring, or cuttings of young shoots in May, under a hand-light; requires protection in hard winters.

S. frute'scens (shrubby). 3. June to September. 1683.
„ „ *cane'scens* (hoary). June. 1816.
„ „ *microphy'lla* (small-leaved). 3. June. 1816.
„ „ *obcorda'ta* (reverse-heart-shaped). 1839.

SUTTO'NIA AUSTRA'LIS (SOUTHERN). See MYRSINE URVILLEI.

SUWARROW-NUT. *Ca'ryocar.*

SWAINSO'NIA. (Named after *Isaac Swainson, F.R.S.* Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Colutea.)

Greenhouse, Australian, evergreen shrubs. Seeds in a slight hotbed in April, after being soaked in warm water, or they may be sown when ripe; cuttings of young shoots in sand, under a bell-glass, and kept in a cool frame or pit any time in summer; sandy, fibrous loam, and a third of peat. Winter temp., 38° to 45°. They would no doubt succeed against a protecting wall.

S. astragalifo'lia (Astragalus-leaved). See A. LESSERTIÆFOLIA ASTRAGALIFOLIA.
„ *atrococci'nea* (dark-scarlet). Garden variety. 1887.
„ *cane'scens* (hoary). 1–2. Blue to violet-purple. May. Swan River.
„ *coronillæfo'lia* (Coronilla-leaved). 2. Purple. July, 1800.
„ „ *albiflo'ra* (white-flowered). 2. White. July. 1826.
„ *ecallo'sa* (non-callused). Like *S. coronillæfolia*, but callosities of standard absent. Western Australia. 1903.

S. Ferra'ndi a'lba (Ferrand's white). Buds cream, pure white when open. Garden variety. 1886.
„ *Frœbe'lii* (Frœbel's). See S. LESSERTIÆFOLIA FRŒBELII.
„ *galegifo'lia* (Galega-leaved). See S. CORONILLÆFOLIA.
„ *greya'na* (Capt. Grey's). 2. Pink. July. 1844.
„ „ *magni'fica* (magnificent). Purple. 1866.
„ *lessertiæfo'lia* (Lessertia-leaved). 2. Purple. July. 1824.
„ „ *astragalifo'lia* (Astragalus-leaved). White. July. 1802.
„ „ *Frœbe'lii* (Frœbel's). 1. Violet. 1854.
„ *M'Cullockia'na* (M'Cullockian). Reddish-brown; eye pure white, edged chocolate. 1901.
„ *magni'fica* (magnificent). See S. GREYANA MAGNIFICA.
„ *occidenta'lis* (western). Purple. W. Australia. 1865.
„ *Osbo'rnii* (Osborn's). See S. CORONILLÆFOLIA.
„ *procu'mbens* (lying-down). Purple. June to September. 1862.
„ *purpu'rea* (purple). See S. CORONILLÆFOLIA.
„ *viola'cea* (violet). See S. PROCUMBENS.

SWALLOWWORT. *Ascle'pias.*

SWAMMERDA'MIA. (Named after J. *Swammerdam*, the naturalist. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to Helichrysum.)
S. Antenna'ria (Antennaria-like). See HELICHRYSUM ANTENNARIUM.
„ *glomera'ta* (clustered). See HELICHRYSUM GLOMERATUM.

SWAMP DOGWOOD. *Pte'lea trifolia'ta.*

SWAMP HICKORY. *Ca'rya ama'ra.*

SWAMP LOCUST TREE. *Gledi'tschia monospe'rma.*

SWAMP POST. *Que'rcus lyra'ta.*

SWAMP ROSE-MALLOW. *Hibi'scus Moscheu'tos.*

SWAMP SASSAFRAS or **LAUREL.** *Magno'lia glau'ca.*

SWAMP SAXIFRAGE. *Saxi'fraga pennsylva'nica.*

SWAMP WHITE OAK. *Que'rcus bi'color.*

SWAN'S-NECK ORCHID. *Cycno'ches.*

SWAN RIVER DAISY. *Brachy'come iberidifo'lia.*

SWA'RTZIA. (Named after *Olof Swartz*, a German botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 11-*Decandria*, 1-*Monogynia*. Allied to Cassia.)
Stove evergreen shrubs. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in the beginning of summer; sandy, fibrous loam and peat in equal proportions. Winter temp., 50°; summer, 60° to 85°.
S. grandiflo'ra (large-flowered). 6. Yellow. Trinidad. 1821.
„ *pinna'ti* (pinnate). 6. Pale yellow. June. Guiana. 1817.
„ *simpliciflo'lia* (simple-leaved). See S. GRANDIFLORA.

SWEDE. A species of Turnip. *Bra'ssica Rutaba'ga.*

SWEDISH BEAM-TREE. *Py'rus interme'dia.*

SWEDISH JUNIPER. *Juni'perus commu'nis fastigia'ta.*

SWEEPING. (See BESOM.) It is best done in calm weather, and early, whilst the dew is strong enough to allay the dust, and keep the light refuse from blowing about.

SWEET ACORN OAK. *Que'rcus Ballo'ta.*

SWEET ALYSSUM. *Aly'ssum mari'timum.*

SWEET AMBER. *Hype'ricum Androsæ'mum.*

SWEET BASIL. *O'cimum basi'licum.*

SWEET BAY. *Lau'rus no'bilis.*

SWEET BRIER. *Ro'sa rubigino'sa.*

SWEET BROOM. *Scopa'ria du'lcis.*

SWEET CALABASH. *Passiflo'ra malifo'rmis.*

SWEET CASSAVA. *Ma'nihot Ai'pi.*

SWEET CHESTNUT. *Casta'nea sati'va.*

SWEET CICELY. *Chærophy'llum aroma'ticum.* See CHERVIL. See also MYRRHIS ODORATA.

SWEET FLAG. *A'corus Ca'lamus.*

SWEET GALE. *My'rica Ga'le.*

SWEET GUM. *Liquida'mbar styraci'flua.*

SWEE'TIA. (Commemorative of *Robert Sweet*, a nurseryman at Stockwell, and an English botanist, author of several botanical works, and best remembered by *Sweet's Geraniaceæ*. Nat. ord. Leguminosæ. Now referred to Galactia.)
S. bi'juga (two-paired). 20. Brazil. 1822.
„ *filifo'rmis* (thread-formed). See GALACTIA FILIFORMIS.
„ *ligno'sa* (woody). 5. Purple. St. Domingo. 1824. Stove twiner.
„ *longifo'lia* (long-leaved). See GALACTIA JUSSIÆANA.

SWEET JOHN. Narrow-leaved forms of *Dia'nthus barba'tus.*

SWEET LIME. *Ci'trus me'dica Lime'tta.*

SWEET MARJORAM. *Ori'ganum Majora'na.*

SWEET MAUDLIN. *Achille'a Agera'tum.*

SWEET ORANGE. *Ci'trus Aura'ntium.*

SWEET PEA. *La'thyrus odora'tus.*

SWEET POTATO. *Bata'tas edu'lis.*

SWEET SCABIOUS. *Scabio'sa atropurpu'rea.*

SWEET-SCENTED CRAB. *Py'rus corona'ria.*

SWEET-SCENTED VERBENA. *Li'ppia citrio'dora.*

SWEET SOP. *Ano'na squamo'sa.*

SWEET SULTAN. *Centau'rea mosch a'ta.*

SWEET SULTAN, YELLOW. *Centau'rea moscha'ta fla'va.*

SWEET WILLIAM. *Dia'nthus barba'tus.*

SWE'RTIA. Felwort. (Named after *E. Swert*, a Dutch florist. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
Hardy plants. Seeds in spring; a marshy, peaty soil.
S. ala'ta (winged). 2. Greenish-yellow, veined purple. July to September. Himalaya. 1868.
„ *angustifo'lia* (narrow-leaved). 2. White, with blue spots. July to September. Himalaya. 1868.
„ *conna'ta* (joined). Siberia.
„ *corda'ta* (heart-shaped). Himalaya.
„ *cornicula'ta* (small-horned). See HALENIA SIBIRICA.
„ *corymbo'sa* (corymbed). 1. Light blue or white. May, June. Himalaya. 1836.
„ *longifo'lia* (long-leaved). Persia.
„ *michauxia'na* (Michaux's). See HALENIA DEFLEXA.
„ *paniculata* (panicled). White to green or purple. Himalaya. 1868.
„ *pere'nnis* (perennial). 1. Purple. July. North temperate regions (England). Perennial. "Marsh Felwort."
„ *puncta'ta* (dotted). Eastern Europe; Caucasus.
„ *purpura'scens* (purplish). 1–3. Purple. May, June. Himalaya. 1836.
„ *rota'ta* (wheel-shaped). See PLEUROGYNA CARINTHIACA.
„ *tricho'toma* (thrice-forked). 1½. White. June to August. Himalaya. 1863.

SWIETE'NIA. Mahogany. (Named after *Von Swieten*, a Dutch botanist. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)
Stove evergreen tree. Cuttings of half-ripened shoots in sand, under a hand-light, and in bottom-heat; sandy, fibrous loam. Winter temp., 50° to 60°; summer, 60° to 85°.
S. Chloro'xylon (Chloroxylon). See CHLOROXYLON SWIETENIA.
„ *febri'fuga* (fever-conquering). See SOYMIDA FEBRIFUGA.
„ *Maha'goni* (mahogany). 80. Red, yellow. S. Amer. 1734. "Mahogany."

SWIFT MOTH, GHOST MOTH, GOST SWIFT, or **OTTER MOTH.** *He'pialus Hu'muli.*

SWORD FERN. *Xipho'pteris.*

SWORD LILY. *Gla'diolus.*

SYA'GRUS. (After an ancient poet. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Diœcia*, 5-*Pentandria*.)

Stove Palms. Seeds; sandy loam, in a warm, moist plant-stove.

S. ama'ra (bitter). See Cocos AMARA.
„ *botryo'phora* (bunch-bearing). See Cocos BOTRYOPHORA.
„ *campe'stris* (field). 10. Pale yellow. Brazil.
„ *cocoi'des* (Cocos-like). See Cocos SYAGRUS.
„ *como'sa* (long-haired). See Cocos COMOSA.
„ *mikania'na* (Mikanian). See Cocos MIKANIANA.
„ *Sanco'na* (Sancona). 40–60. Colombia.
„ *Wa'llisi* (Wallis's). Colombia. 1861.

SYCAMINE. *Mo'rus.*

SYCAMORE. *A'cer Pseu'do-pla'tanus.*

SYCAMORE TREE OF SCRIPTURE. *Fi'cus Sycomo'rus.*

SYCOMO'RUS. (From *sukon*, a fig, and *moros*, a mulberry; it is a fig-tree with leaves like a mulberry. Nat. ord. Urticaceæ. Now referred to Ficus.)

S. antiquo'rum (ancients'). See FICUS SYCOMORUS.
„ *cape'nsis* (Cape). See FICUS CAPENSIS.

SYCO'PSIS. (From *sukon*, a fig, and *opsis*, resemblance; leaves resemble those of a fig, but more like those of the hazel. Nat. ord. Hamamelidaceæ.)

A hardy evergreen shrub. Layers; seeds. Ordinary garden soil.

S. sine'nsis (Chinese). 10–20. Stamens red. China. 1909.

SYMPHO'NIA. (From *sumphonia*, regularity; in reference to the regularity of the flowers. Nat. ord. Guttiferæ.)

An evergreen stove tree. Cuttings of ripe wood, in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

S. globuli'fera (globe-bearing). 20–40. Scarlet. Guiana; Trop. Africa. 1825.

SYMPHO'RIA GLOMERA'TA. See SYMPHORICARPUS ORBICULATUS.

SYMPHO'RIA MONTA'NA. See SYMPHORICARPUS MICROPHYLLUS.

SYMPHO'RIA RACEMO'SA. See SYMPHORICARPUS RACEMOSUS.

SYMPHORICA'RPUS. (From *symphoreo*, to accumulate, and *karpos*, a fruit; clustered fruit. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy deciduous shrubs, from North America. Cuttings in autumn, and freely by suckers; good, common soil. The flowers of *racemo'sus* are hunted after by bees, and its masses of white fruit are grateful to many birds, besides looking very pretty in winter.

S. acu'tus (acute). North-western Amer. 1888.
„ *Heye'ri* (Heyer's). Rosy. Western United States. 1888.
„ *microphyll'us* (small-leaved). 6. Pink. August. Mexico. 1829.
„ *mo'llis cilia'tus* (soft, eyelashed). California.
„ *monta'nus* (mountain). See S. MICROPHYLLUS.
„ *occidenta'lis* (western). 6. Pinkish. July. Western N. Amer. "Wolf-berry."
„ „ *Heye'ri* (Heyer's). See S. HEYERI.
„ *orbicula'tus* (orbicular). 3–6. White. August. 1730. "Indian Currant," "Coral Berry."
„ „ *variega'tus* (variegated). 3–6. Pink. August.
„ *oreo'philus* (mountain-loving). Western N. Amer.
„ *ova'tus* (egg-shaped). Rose. Berry white. Habit pendulous. 1909.
„ *puni'ceus* (scarlet). 4. Red. July. 1815.
„ *racemo'sus* (racemed). 6. Yellowish. August. 1817. "Snowberry."
„ „ *pauciflo'rus* (few-flowered). Flowers one or two in the axils of the top leaves.
„ *rotundifo'lius* (round-leaved). Western United States.
„ *vulga'ris* (common). See S. ORBICULATUS.
„ „ *fo'liis-variega'tis* (variegated-leaved). See S. ORBICULATUS VARIEGATUS.

SYMPHYA'NDRA. (From *sumphuo*, to cohere, and *aner, andros*, a stamen; the stamens cohere by their anthers. Nat. ord. Campanulaceæ.)

Hardy perennial herbs for the rockery. Seeds; divisions. Ordinary well-drained, rather sandy soil.

S. arme'na (Armenian). 2. Blue. June. Caucasus. 1836.
„ *Hofma'nni* (Hoffmann's). 1–2. White, drooping. Bosnia. 1884.
„ *osse'tica* (Ossetic). 1. Pale blue, drooping. July. Caucasus. 1900.
„ *pe'ndula* (drooping). 2. Creamy-white. July. Caucasus. 1823.
„ *Wa'nneri* (Wanner's). ½–¾. Blue. June to September. Transsylvania.

SYMPHYOGLO'SSUM. See CYNANCHUM.

SYMPHYOSTE'MON. (From *sumphuo*, to cohere, and *stemon*, a stamen; the stamens cohere by their filaments at the base. Nat. ord. Iridaceæ.)

Hardy or half-hardy tufted, fibrous-rooted herb. Seeds; divisions. Fibrous loam, peat, or leaf-mould and sand.

S. narcissoi'des (Narcissus-like). 1–1½. Pale yellow. June. S. Chili; Magellan. 1828.

SY'MPHYTUM. Comfrey. (From *sumphuo*, to make unite; healing qualities. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Division of the plant, chiefly in spring; good, common soil, and a rather shady situation, where few herbaceous plants would flourish.

HARDY TUBEROUS-ROOTED.

S. bohe'micum (Bohemian). See S. OFFICINALE BOHEMICUM.
„ *officina'le* (shop). 4. White. June. Europe (Britain). "Common Comfrey."
„ „ *bohe'micum* (Bohemian). 3. Red. May. Bohemia. 1810.
„ „ *lu'teo-margina'tum* (yellow-margined). Leaves edged with yellow. 1870.
„ „ *pa'tens* (spreading). 4. Purple. June. Britain.
„ „ *variega'tum* (variegated). See S. OFFICINALE LUTEO-MARGINATUM.
„ *tubero'sum* (tuberous). 4. Yellow. July. Europe (Scotland).

HARDY HERBACEOUS.

S. anato'licum (Anatolian). Anatolia.
„ *aspe'rrimum* (roughest). 6. Red, blue. July. Caucasus. 1799. "Forage Comfrey."
„ „ *au'reo-variega'tum* (golden-variegated). Leaves margined with yellow.
„ *bulbo'sum* (bulbous). Europe.
„ *bulla'tum* (blistered). See S. TAURICUM BULLATUM.
„ *cauca'sicum* (Caucasian). 4. Azure. June. Caucasus. 1820.
„ *corda'tum* (heart-*leaved*). 2. Cream. June. Transsylvania. 1813.
„ *Do'nii* (Don's). 2. Azure blue. June. Caucasus.
„ *echina'tum* (hedgehog). See S. ASPERRIMUM.
„ *orienta'le* (eastern). 3. White. May. Turkey. 1752.
„ „ *angu'stior* (narrower). Leaves oval-lanceolate, waved.
„ *ottoma'num* (Ottoman). Roumelia.
„ *peregri'num* (spreading). See S. ASPERRIMUM.
„ *racemo'sum* (racemed). See S. CAUCASICUM.
„ *tau'ricum* (Taurian). 3. White. June. Tauria. 1806.
„ „ *bulla'tum* (blistered-*leaved*). 2½. Pale yellow. June. Caucasus. 1818.

SYMPIE'ZA. (From *sumpiezo*, to press; the stamens compressed in the tube. Nat. ord. *Heathworts* [Ericaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Greenhouse evergreen. Cuttings of the points of shoots a couple of inches long, the base part being a little firm, in sand, under a bell-glass; sandy, fibrous peat. Winter temp., 38° to 45°.

S. capitella'ta (small-headed). 1½. July. S. Africa. 1812.

SYMPLOCA'RPUS. (From *sumploke*, connection, and *karpos*, a fruit; the fruits are united in a mass. Nat. ord. Araceæ.)

A hardy, tuberous-rooted herb, chiefly notable for the fetid smell of the flowers. Offsets; seeds. Ordinary garden soil.

S. fœ'tidus (fetid). 1. Green, brown. June. N. Amer. "Skunkweed," "Skunk Cabbage."

SY'MPLOCOS. (From *sumploke*, a connection; stamens united. Nat. ord. *Storaxworts* [Styraceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass; sandy, fibrous loam, and a little fibrous peat. Winter temp., 40° to 45°. The *cocci'nea* will require 10° more heat, but similar treatment otherwise. *Si'nica* should have a place on a protecting wall.

S. cocci'nea (scarlet). Rose. Mexico. 1825.
„ *cratægoi'des* (Cratægus-like). White. April. Himalaya to Japan. 1824.
„ *japo'nica* (Japanese). Yellow. Japan. 1850.
„ *si'nica* (Chinese). 3. White. May. China. 1822.
„ *Sumu'ntia* (Sumuntia). Whitish. June to September. Himalaya. 1883.
„ *tincto'ria* (dyer's). 3. Yellow. Carolina. 1780.

SYNADE'NIUM. (From *sun*, together, or united, and *aden*, a gland; the glands of the involucral leaves are united, forming a cup. Nat. ord. Euphorbiaceæ.)

A succulent or fleshy stove shrub. Cuttings in sand in a dry stove or warm greenhouse. Fibrous loam, a little peat or leaf-mould, finely broken bricks, and sand.

S. Gra'ntii (Grant's). 2–3. Crimson. Trop. Africa. 1867.

SYNA'NDRA. (From *sun*, together, and *aner*, *andros*, anther; the anthers in pairs. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Melittis.)

Hardy herbaceous perennial. Seeds, and division in spring; dry, sandy soil.

S. grandiflo'ra (large-flowered). Yellow. June. N Amer. 1827.

SYNANDROSPA'DIX. (From *sun*, together, *aner*, *andros*, anther, and *spadix*, the spadix or axis bearing the fruit; the spadix is entirely covered with male flowers. Nat. ord. Araceæ.)

A stove perennial herb, with tuberous roots. Seeds; offsets. Fibrous loam, lumpy, fibrous peat or leaf-mould not too much decayed, and sand.

S. vermito'xicus (worm-poisoning). 1. Spathe green, flesh inside. Tucuman, Argentina.

SYNANTHE'RIAS. (From *sun*, together, and *anthera*, an anther; the anther cells are separated in two pairs, making four cells on the top of the filament. Nat. ord. Araceæ.)

A stove herb, with tuberous roots, the leaves developing after the flowers. Offsets; seeds; imported tubers. Fibrous loam, leaf-mould, some dried cow-dung rubbed up finely, and sand.

S. sylva'tica (wood). Spathe whitish, spotted with green. May. India.

SYNAPHLE'BIUM. (From *sun*, together, and *phlebs*, a vein; the veins on the fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove, brown-spored Ferns. See FERNS.

S. lobulo'sum (small-lobed). May. E. Ind.
„ *obtu'sum* (blunt). See LINDSAYA NITENS.
„ *pectina'tum* (comb-like). See LINDSAYA PECTINATA.
„ *recurva'tum* (curled-back). See LINDSAYA NITENS.

SYNCA'RPIA. (From *sun*, together, and *karpos*, a fruit; the fruits are united in a globose head or cluster. Nat. ord. Myrtaceæ.)

Greenhouse evergreen trees. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.

S. Hi'llii (Hill's). Australia.
„ *laurifo'lia* (laurel-leaved). 15. Yellow, green. May. Australia. 1805.

SYNECHA'NTHUS. (From *suneches*, closely crowded, and *anthos*, a flower; the flowers are crowded together. Nat. ord. Palmaceæ.)

A graceful stove palm. Seeds. Fibrous loam, peat, and sand.

S. fibro'sus (fibrous). 4–6. Fruit orange-red. Leaves 4 ft. long. Guatemala.

SYNEDRE'LLA. (From *sun*, together, and *edrella*, the diminutive of *hedra*, a seat; in allusion to the flowers being produced in clusters in the axils of the forks or at the apices of the branches. Nat. ord. Compositæ.)

Half-hardy annuals, which may be grown in the open in summer. Seeds. Well-drained, light garden soil.

S. nodiflo'ra (node-flowering). 1–2. Yellow. July. Trop. Amer.

SYNEILE'SIS ACONITIFO'LIA. See SENECIO ACONITIFOLIUS.

SYNGO'NIUM. (From *sun*, together, and *gone*, the ovary; the ovaries are united. Nat. ord. Araceæ.)

Evergreen, stove climbers. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, lumpy peat, some charcoal and sand.

S. affi'ne (related). Green, yellowish. Trop. Amer.
„ *albolinea'tum* (white-lined). Leaves with silvery-grey nerves. Central Amer. 1871.
„ *auri'tum* (eared). Purple; spadix yellow. Mexico. "Five Fingers."
„ *gra'cile* (slender). See S. AFFINE.
„ *podophy'llum* (stalk-leaved). Mexico.
„ *riedelia'num* (Riedelian). See S. VELLOZIANUM RIEDELIANUM.
„ *vellozia'num* (Vellozian). Green, pale yellow. Brazil.
„ „ *riedelia'num* (Riedelian). Green, white. Brazil. 1860.
„ *Wendla'ndii* (Wendland's). Costa Rica.

SYNNO'TIA. (Commemorative of *W. Synnot*, a collector of plants in South Africa. Nat. ord. Iridaceæ.)

Greenhouse bulbs from South Africa. Seeds; offsets. Fibrous loam, leaf-mould, and sand.

S. bi'color (two-coloured). ½. Yellow, flushed violet. March. 1786.
„ *galea'ta* (helmeted). See S. BICOLOR.
„ *variega'ta* (variegated). ½. Dark violet, flushed yellow on the lower segment. May. 1825.

SYNO'UM. (From *sun*, together, and *oon*, an egg; the seeds are adnate on both sides to the placenta. Nat. ord. Meliaceæ.)

Greenhouse, evergreen tree. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.

S. glandulo'sum (glandular). 20. White. July. Australia. 1821.

SYNTHY'RIS. (From *sun*, together, and *thuris*, *thuridos*, a small aperture; the valves of the seed-vessel are small. Nat. ord. Scrophulariaceæ.)

Hardy perennial herbs for the rockery. Divisions in early autumn or spring. Well-drained garden soil.

S. pinnati'fida (pinnately-cut). ½. Deep blue. June to August. North-western Amer. 1889.
„ *renifo'rmis* (kidney-shaped). ½. Blue. April, May. North-western Amer. 1885.

SYRE'NIA. (Probably commemorative. Nat. ord. Cruciferæ.)

Hardy biennial. Seeds. Ordinary garden soil.

S. Lama'rckii (Lamarck's). See S. SESSILIFLORA.
„ *sessiliflo'ra* (stalkless-flowered). 1½. Yellow. Southern Russia.

SYRIAN THISTLE. See CNICUS SYRIACUS.

SYRI'NGA. The Lilac. (From *surigx*, *suriggos*, a pipe or reed; in allusion to the hollow stems. Nat. ord. *Oliveworts* [Oleaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Hardy deciduous shrubs. Layers and suckers generally; scarce kinds by budding or grafting; close-headed ones, grafted standard-high on the ash, would look very interesting; common garden soil.

S. affi'nis (related). White. June. China. 1901.
„ *amure'nsis* (Amurland). 6–8. White. June. China; Japan; Manchuria. 1889.
„ *Bretschnei'deri* (Bretschneider's). See S. EMODI ROSEA.
„ *chine'nsis* (Chinese). 4–6. Violet-purple. May. Garden origin. 1795. "Rouen Lilac."
„ „ *mete'nsis* (Metan).
„ „ *ru'bra* (red). Red. May.
„ „ *saugea'na* (Saugean).

S. Emo'di (Mount Emodus). 10. White. April. Himalayas. 1845.
„ „ *au'rea* (golden). Leaves splashed with yellow. 1886.
„ „ *fo'liis ru'bris* (red-leaved). Leaves red.
„ „ *ro'sea* (rosy). Rosy-lilac. China. 1888.
„ „ *variega'ta* (variegated). Leaves variegated. 1886.
„ *Gira'ldi* (Girald's). Considered the same as *S. villosa*.
„ *japo'nica* (Japanese). Creamy-white. Japan. 1886.
„ *Josika'a* (Josika's). 8. Deep lilac. June. Transylvania. 1833.
„ „ *exi'mia* (choice). Bright red in bud, rose when open. 1899.
„ „ *Julia'næ* (Julian's). 3–4. Purple-lilac, fragrant. May, June. W. China. 1901.
„ *obla'ta* (widened). 6–10. Purple. China. 1859.
„ „ *a'lba* (white). White.
„ *pekine'nsis* (Pekin). 5–10. White. Mountains of N. China.
„ „ *pe'ndula* (pendulous). Branches drooping.
„ *pe'rsica* (Persian). 5. Purple. May. Persia. 1640. "Persian Lilac."
„ „ *a'lba* (white). 2. White. May. Persia.
„ „ *laciniа'ta* (cut-*leaved*). 5. Purple. May. Persia.
„ „ *ru'bra* (red). Red. 1908.
„ „ *salvifo'lia* (sage-leaved). 5. May.
„ *pinnatifo'lia* (pinnate-leaved). 6–8. White. Western China. 1906.
„ *pube'scens* (downy). See S. VILLOSA.
„ *rothomage'nsis* (Rouen). See S. CHINENSIS.
„ *Sweginzow'ii* (Sweginzow's). Yellowish-red. Eastern Asia (?). 1910.
„ *tomente'lla* (finely-felted). Bright rose. June. Corea; W. China. 1909.
„ *veluti'na* (velvety). See S. TOMENTELLA.
„ *villo'sa* (shaggy). 4–6. Blue-purple. May. N. China. 1880.
„ *vulga'ris* (common). 8. Blue. May. Persia. 1597. "Common Lilac."
„ „ *a'lba* (white). 5. White. May. Persia.
„ „ *a'lba-ma'jor* (larger-white). 5. White. May.
„ „ *a'lba-ple'na* (double-white). 5. White. May.
„ „ *cæru'lea* (blue). Blue.
„ „ *fo'liis au'reis* (golden-leaved). Leaves yellow.
„ „ *grandiflo'ra* (large-flowered). Red, large.
„ „ *purpu'rea* (purple). Violet-purple.
„ „ *ru'bra* (red). 10. Red. May.
„ „ *ru'bra-ma'jor* (larger-red). 10. Red. May.
„ „ *ru'bra-ple'na* (double-red). 10. Red. May.
„ „ *viola'cea* (violet). 8. Purple. May. Persia. "Scotch Lilac."
„ *Wo'lfi* (Wolf's). 4–6. Lilac, fragrant. May. N. China (?). 1910.

SYRINGA, MOCK. *Philade'lphus corona'rius.*

SYRINGE. This is a most useful implement for impelling water over plants in pots, wall-trees, &c. When the object is merely to refresh the plants, the operator should stand at some distance from the plants, so that the water may spread and fall upon them like a shower. But if aphides have to be destroyed, he may be closer to the plants, and drive forth the water with greater force. Some nozzles are made so as to allow the water to pass through many minute holes; but the syringe is sold with spare nozzles, so as to deliver the water in a greater body; and with elbows, so that the opposite sides of plants in greenhouses may be syringed without moving them. See ENGINE.

SYRINGO'DEA. (From *suriggodes*, having the form of a tube, or tubular; in allusion to the long, slender tube of the flower. Nat. ord. Iridaceæ.)
Greenhouse bulb. Offsets; seeds. Fibrous loam, leaf-mould, and sand.
S. pulche'lla (pretty). ½. Purple. S. Africa. 1873.

SYZY'GIUM. (From *suzugios*, that joins, copulative; branches and leaves in pairs. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*.)
Stove, white-flowered, evergreen shrubs. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a moist bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 85°.
S. caryophyllifo'lium (clove-leaved). See EUGENIA JAMBOLANA.
„ *frutico'sum* (shrubby). See EUGENIA FRUTICOSA.
S. glomera'tum (crowded). See EUGENIA GLOMERATA.
„ *inophy'llum* (fibrous-leaved). See EUGENIA INOPHYLLA.
„ *Jambola'num* (Jambolana-*tree*). See EUGENIA JAMBOLANA.
„ *obova'tum* (reversed-egg-*leaved*). See EUGENIA OBOVATA.
„ *panicula'tum* (panicled). See EUGENIA PANICULATA.
„ *veno'sum* (veiny). See EUGENIA FRONDOSA.
„ *zeyla'nicum* (Ceylon). See EUGENIA ZEYLANICA.

T

TABEBU'IA. (A native name in Brazil. Nat. ord. Bignoniaceæ.)
Stove shrubs or small trees. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
T. æsculifo'lia (Æsculus-leaved). 10–20. Orange, spotted yellow. June. Mexico.
„ *chrysa'ntha* (golden-flowered). See TECOMA CHRYSANTHA.
„ *Do'nnell-Smi'thii* (Donnell-Smith's). Mexico.
„ *leuco'xyla* (white-wood). 8–12. White to blush. Trop. Amer. 1759.
„ *pentaphy'lla* (five-leaved). 6. Orange. July. Panama.
„ *serratifo'lia* (saw-leaved). See TECOMA SERRATIFOLIA.
„ *specta'bilis* (showy). See TECOMA SPECTABILIS.
„ *triphy'lla* (three-leaved). 10. White. W. Ind. 1783.

TABERNÆMONTA'NA. (Named after *J. T. Tabernæmonta'nus*, a celebrated botanist. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Plumieria.)
Stove evergreens, all white-flowered, unless otherwise mentioned. Cuttings of half-ripened shoots in the beginning of summer, in sand, under a bell-glass, and in a moist bottom-heat; fibrous peat and lumpy loam, with a fair portion of silver sand, and small pieces of charcoal. Winter temp., 55°; summer, 60° to 85°.
T. a'lba (white). See T. CITRIFOLIA.
„ *amygdalæfo'lia* (almond-leaved). 6. Yellow. July. S. Amer. 1780.
„ *Amso'nia* (Amsonia). See AMSONIA TABERNÆMONTANA.
„ *arcua'ta* (arched). 40. Cream. Peru. 1824.
„ *Barte'ri* (Barter's). 6. Trop. Africa.
„ *citrifo'lia* (citron-leaved). 15. Yellow. Jamaica. 1784.
„ *corona'ria* (garland). 4. July. India. 1770.
„ „ *cri'spa* (crisped).
„ „ *flo're-ple'no* (double-flowered). 4. July. W. Ind. 1770.
„ *cra'ssa* (thick). Trop. Africa.
„ *cri'spa* (curled). 6. July. Andaman Islands. 1818.
„ *cymo'sa* (cymed). 10. Carthagena. 1820.
„ *densiflo'ra* (dense-flowered). See RAUWOLFIA DENSIFLORA.
„ *dicho'toma* (forked). 12. September. Ceylon. 1820.
„ *di'scolor* (two-coloured). 10. Cream. April. Jamaica. 1822.
„ *grandiflo'ra* (large-flowered). 6. Trinidad. 1823.
„ *grati'ssima* (most grateful). See T. RECURVA.
„ *laurifo'lia* (laurel-leaved). 13 Yellow. May. W. Ind. 1768.
„ *longiflo'ra* (long-flowered). White. Trop. Africa. 1849.
„ *multiflo'ra* (many-flowered). Mascarene Islands.
„ *odora'ta* (sweet-scented). See MALOUETIA TAMAQUARINA.
„ *persicariæfo'lia* (Persicaria-leaved). 6. Cream. Mauritius. 1819.
„ *recu'rva* (recurved). 6. June. India; Burma. 1824.
„ *Tamaquari'na* (Tamaquarina). See MALOUETIA TAMAQUARINA.
„ *undula'ta* (waved). 10. Orange. Trinidad. 1824.
„ *wallichia'na* (Wallichian). White. Sumatra. 1873.

TA'CCA. (The Malay name. Nat. ord. *Taccads* [Taccaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Stove, East Indian tuberous-rooted plants, except where otherwise stated. Division of the roots in spring; sandy loam and a little fibrous peat. Winter temp., 60°; summer, 60° to 90°, and plenty of moisture.

T. artocarpifo'lia (Artocarpus-leaved). 5. Green, brown. Madagascar. 1872.
„ *a'spera* (rough). See T. INTEGRIFOLIA.
„ *Chantrie'ri* (Chantrier's). Flowers much larger than those of *T. crista'ta*. Malaya. 1901.
„ *crista'ta* (crested). 1½–2. Maroon-purple. June to August. Malaya. 1812.
„ *guinee'nsis* (Guinea). 2. July. Trop. Africa.
„ *integrifo'lia* (entire-leaved). ½. Purple. June. 1810. Herbaceous.
„ *læ'vis* (smooth). 2. Brown. July. 1820.
„ *palma'ta* (hand-shaped). Java.
„ *phali'fera* (crest-bearing). See T. PINNATIFIDA.
„ *pinnati'fida* (leaflet-cut). 2. Purple. Trop. Asia. 1793.
„ *vi'ridis* (green). Green. India.

TACCA'RUM. (From *Tacca*, and *Arum;* because they are aroids, resembling Tacca. Nat. ord. Araceæ.)
Stove tuberous perennials. Offsets. Fibrous loam, peat, and sand.
T. cyli'ndricum (cylindrical). 3. Spathe olive-green. Java.
„ *peregri'num* (wandering). See T. CYLINDRICUM.
„ *Warmi'ngii* (Warming's). Spathe olive-green, with white lines. December. Brazil. 1881.

TA'CHIA. (The Guianan name. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Referred to Leianthus.)
T. cordifo'lia (heart-leaved). See LEIANTHUS LONGIFOLIUS.
„ *longifo'lia* (long-leaved). See LEIANTHUS LONGIFOLIUS.
„ *Swa'rtzii* (Swartz's). See LEIANTHUS EXSERTUS.

TACHIADE'NUS. (From *Tachia*, and *aden*, a gland; referring to the glands around the ovary, as in Tachia. Nat. ord. Gentianaceæ.)
A dwarf, evergreen subshrub. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
T. carina'tus (keeled). 1. Blue. Autumn. Madagascar. 1858.
„ *radia'tus* (rayed). Seems to be *T. carina'tus*.

TACHIGA'LIA. (The Guianan name *Tachigali*. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Alliance near the Tamarind.)
Stove, yellow-flowered, evergreen trees. Cuttings of ripened shoots in sand, under a glass, in March, in bottom-heat; also seeds in a hotbed; sandy, fibrous loam. Winter temp., 50° to 55°; summer, 60° to 80°.
T. bi'juga (two-paired). See SWEETIA BIJUGA.
„ *panicula'ta* (panicled). 60. Guiana. 1827.

TACSO'NIA. (From *tacso*, the name of one of them in Peru. Nat. ord. *Passionworts* [Passifloraceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*.)
Half-hardy evergreen climbers. Cuttings of young shoots any time in summer; fibrous loam and a little sandy peat and leaf-mould. Fruit of *molli'ssima* is eatable.
T. adulteri'na (spurious). Colombia.
„ *Buchana'ni* (Buchanan's). See PASSIFLORA VITIFOLIA.
„ *eria'ntha* (woolly-flowered). See T. MIXTA ERIANTHA.
„ *exonie'nsis* (Exeter). Rosy, with violet throat. (*T. mollissima* × *Van-Volxemii*.) 1872.
„ *i'gnea* (fiery). See T. MANICATA.
„ *insi'gnis* (remarkable). Crimson. S. Amer. 1873.
„ *manica'ta* (sleeved). 20. Scarlet. September. Peru. 1843.
„ *mi'xta* (mixed). Pink. July, August. Trop. Amer.
„ „ *eria'ntha* (woolly-flowered). Pink. Plant felted with grey down.
„ „ *quite'nsis* (Quitan). Rosy. Peru. 1867.
„ „ *specio'sa* (showy). Carmine. Colombia. 1871.
„ *molli'ssima* (softest-*leaved*). 20. Rose. September. Colombia. 1844.
„ *Parri'æ* (Mrs. Parrit's). Orange. Colombia. 1882.
„ *peduncula'ris* (*long*-flower-stalked). 10. Rose. Peru. 1815.
„ *pinnatisti'pula* (leafleted-stipuled). 30. Pale rose. September. Chili. 1828.
„ *quadridenta'ta* (four-toothed). See PASSIFLORA QUADRIGLANDULOSA.
T. quadriglandulo'sa (four-glanded). See PASSIFLORA QUADRIGLANDULOSA.
„ *quite'nsis* (Quitan). See T. MIXTA QUITENSIS.
„ *sangui'nea* (blood-coloured). See PASSIFLORA VITIFOLIA.
„ *smythia'na* (Smythian). See T. MOLLISSIMA.
„ *specio'sa* (showy). See T. MIXTA SPECIOSA.
„ *tomento'sa* (felted). Red. Peru. 1870.
„ *Va'n-Volxe'mii* (Van Volxem's). Crimson. Colombia. 1866.

TÆNIO'PSIS. (From *tainia*, a fillet, and *opsis*, like; the resemblance of the leaf, or frond. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Referred to Vittaria.)
T. linea'ta (narrow-*leaved*). See VITTARIA LINEATA.
„ *revolu'ta* (curled-back). See VITTARIA REVOLUTA.

TÆNI'TIS. (From *tainia*, a fillet; the resemblance of the fronds, or leaves. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Stove, brown-spored Ferns. See FERNS.
T. angustifo'lia (narrow-leaved). ½. July. Jamaica. 1816.
„ *blechnoi'des* (Blechnum-like). May. India.
„ *chine'nsis* (Chinese). June. China. 1828.
„ *furca'ta* (forked). June. Trinidad. 1824.
„ *graminifo'lia* (grass-leaved). ½. July. Trinidad. 1820.
„ *lanceola'ta* (spear-head-*fronded*). 1. August. W. Ind. 1818.

TAGE'TES. (Named after a Tuscan divinity. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Yellow-flowered, Mexican annuals, except where otherwise mentioned. Annuals, sown in open ground in May; or better still, in a hotbed in the beginning of April, and planted out in the middle of May. Perennials, by seed, division, and cuttings. *Lu'cida* is pretty either for a cool greenhouse or a bed on the lawn in summer.
T. angustifo'lia (narrow-leaved). 3. August. 1826.
„ *caracasa'na* (Caracas). 3. August. Caracas. 1819.
„ *clandesti'na* (concealed). See T. CORONOPIFOLIA.
„ *coronopifo'lia* (Buckshorn-leaved). 3. July. 1823.
„ *corymbo'sa* (corymbed). See T. PATULA.
„ *daucoi'des* (carrot-like). June. Chili.
„ *ere'cta* (erect). 3. July. 1596. "African Marigold."
„ *filifo'lia* (thread-leaved). See T. MULTIFIDA.
„ *flo'rida* (florid). See T. LUCIDA.
„ *gigante'a* (gigantic). 6–9. Bolivia. 1886.
„ *glanduli'fera* (gland-bearing). See T. MINUTA.
„ *glandulo'sa* (glanded). See T. MINUTA.
„ *la'cera* (torn). Orange-chrome or yellow. California. 1898. Half-hardy perennial.
„ *Lemmo'ni* (Lemmon's). 3. Southern Arizona. 1900. Perennial.
„ *lu'cida* (shining-*leaved*). 1. August. 1798. Herbaceous. "Mexican Marigold."
„ *micra'ntha* (small-flowered). 3. August. 1822.
„ *minu'ta* (minute-*flowered*). 2. August. Trop. Amer. 1728.
„ *multi'fida* (much-cut). 3. August. 1826.
„ *pa'tula* (spreading). 2. August. 1573. "French Marigold."
„ *pusi'lla* (puny). 1. Ecuador.
„ *signa'ta* (notable). 1–1½. Summer.
„ „ *pu'mila* (dwarf). ½–1. Summer.
„ *subvillo'sa* (slightly-shaggy). 2. September. 1823.
„ *tenuifo'lia* (fine-leaved). 3. August. Peru. 1797.

TAIL FLOWER. *Anthu'rium.*

TAI'NIA. (From *tainia*, a fillet; the lip is strap-shaped. Nat. ord. Orchidaceæ.)
Stove epiphytical Orchids. Offsets. Fibre of peat, sphagnum, and crocks.
T. angustifo'lia (narrow-leaved). Dull brownish-yellow. Burma.
„ *bico'rnis* (two-horned). Green, pale red; lip yellow, red. March. E. Ind. 1841.
„ *fuerstenbergia'na* (Fuerstenbergian). 2–3. Yellow and brown. Country unknown. 1906.
„ *latifo'lia* (broad-leaved). 2. Green, brown. April. N. India. 1852.
„ *penangia'na* (Penang). 1. Yellow and brown. Penang. 1897.
„ *specio'sa* (showy). Malaya.

TALAU'MA. (Its South American name. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Stove evergreens. Cuttings of ripe shoots, thinly, in sand, under a large bell-glass, in heat; grafting and inarching on *Magno'lia obova'ta*; fibrous peat and a little loam and sand. Winter temp., 45° to 55°; summer, 60° to 80°.

T. Cando'llei (Decandolle's). 15. Striped. April. Java. 1827.
„ „ *galeottia'na* (Galeottian). Pale yellow, fragrant. Java.
„ *Hodgso'ni* (Hodgson's). Calyx purple; petals white, fragrant. Himalaya. 1857.
„ *Plumie'ri* (Plumier's). 60. White. Antilles. 1829.
„ *pu'mila* (dwarf). See MAGNOLIA PUMILA.

TALBO'TIA. See VELLOZIA.

TALEWORT. *Bora'go officina'lis.*

TALIE'RA. (The Indian name. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Referred to Corypha.)

T. bengale'nsis (Bengal). See CORYPHA TALIERA.

TALIGA'LEA CAMPE'STRIS. See AMASONIA ERECTA.

TALIGA'LEA PUNI'CEA. See AMASONIA CALYCINA.

TALI'NUM. (From *thalia*, a green branch; its durable verdure. Nat. ord. *Purslanes* [Portulaceæ]. Linn. 11-*Dodecandria*, 1-*Monogynia*.)

Annuals and biennials, sown in a hotbed early in spring, pricked out, and bloomed in the greenhouse, or a sheltered place out of doors; the others are undershrubs, easily propagated by cuttings of the succulent shoots, dried at the base before inserting them in sandy soil; peat, loam, sand, and brick-rubbish. Winter temp., 45° to 58°, and dryish; summer, 60° to 80°.

ANNUALS, &c.

T. polya'ndrum (many-stamened). See CALANDRINIA POLYANDRA.
„ *purpu'reum* (purple). Purple. August. Mexico. 1826.
„ *refle'xum* (bent-back). 1. Yellow. September. S. Amer. 1800. Biennial.

EVERGREENS, &c.

T. Anaca'mpseros (Anacampseros). See ANACAMPSEROS TELEPHIASTRUM.
„ *Andre'wsii* (Andrews'). See CALANDRINIA ANDREWSII.
„ *Arno'ttii* (Arnott's). Yellow. S. Africa. 1867. Greenhouse perennial.
„ *ca'ffrum* (Caffer). Damaraland.
„ *cilia'tum* (eyelashed). See T. TERETIFOLIUM.
„ *crassifo'lium* (thick-leaved). See T. TRIANGULARE.
„ „ *albiflo'rum* (white-flowered). See T. TRIANGULARE ALBIFLORUM.
„ *cuneifo'lium* (wedge-leaved). 1. Purple. August. Egypt. 1820.
„ *panicula'tum* (panicled). See CALANDRINIA PANICULATA.
„ *pa'tens* (spreading-*flowered*). 1. Red. September. S. Amer. 1776 Herbaceous.
„ *ro'seum* (rosy). Rose. Abyssinia. 1892. Succulent shrub.
„ *teretifo'lium* (cylindric-leaved). 1. Pink. August. N. Amer. 1823. Herbaceous.
„ *triangula're* (triangular). ¾. Yellow. August. Trop. Amer. 1739.
„ „ *albiflo'rum* (white-flowered). White. July. S. Amer. 1819.

TALIPOT PALM. *Co'rypha umbraculi'fera.*

TALI'SIA. (From *Toulichi*, the name in Guiana. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings of ripened wood, with leaves, thinly inserted in sand, under a glass, in moist bottom-heat; sandy peat and fibrous loam. Winter temp., 50° to 60°; summer, 60° to 85°.

T. guiane'nsis (Guiana). 8. Rose. Guiana. 1824.
„ *olivæfo'rmis* (olive-formed). 20. Yellow. Colombia. 1824.
„ *Pri'nceps* (chief). Whitish. Leaves 6 ft. long. Venezuela. 1888.

TALLOW SHRUB. *My'rica ceri'fera.*

TALLOW TREE, CHINESE. *Stilli'ngia sebi'fera.*

TALLOW TREE, SIERRA LEONE. *Pentade'sma butyra'cea.*

TAMARIND TREE. *Tamari'ndus i'ndica.*

TAMARI'NDUS. Tamarind-tree. (From *Tamarlindy*, the Arabic name. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

Stove, yellow-flowered, evergreen tree. Seeds soaked, and sown in a hotbed; cuttings in sand, in heat; sandy loam and leaf-mould. Winter temp., 50° to 60°; summer, 60° to 85°.

T. i'ndica (Indian). 60. July. E. Ind. 1633.
„ *occidenta'lis* (western). See T. INDICA.
„ *officina'lis* (officinal). See T. INDICA.

TA'MARIX. Tamarisk. (From *Tamaris*, now Tambro, the name of a river where it grows, on the borders of the Pyrenees. Nat. ord. *Tamarisks* [Tamaricaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

Hardy, by cuttings under a hand-light, or even in the open air, in spring or autumn, and any common soil; the tender species require a warm greenhouse or a cool plant-stove, and to be grown in peat and loam; increased by cuttings under a hand-glass, in sand, and in heat.

HARDY EVERGREENS.

T. a'nglica (English). 3–6. Pink. Seashores of Western Europe (England). "Tamarisk."
„ *chine'nsis* (Chinese). China and Japan.
„ *daku'rica* (Dahurian). See MYRICARIA DAVURICA.
„ *ga'llica* (French). 10. Flesh. July. Mediterranean region. Deciduous.
„ *germa'nica* (German). See MYRICARIA GERMANICA.
„ *hi'spida kashga'rica* (Kashgar). Leaves glaucous. 1893.
„ „ *æstiva'lis* (summer). A seedling which blooms in July instead of September. 1901.
„ *kashga'rica* (Kashgar). See T. HISPIDA KASHGARICA.
„ *odessa'na* (Odessan). Odessa, Russia. 1891.
„ *Palla'sii* (Pallas's). See T. PENTANDRA.
„ *parviflo'ra* (small-flowered). See T. PENTANDRA.
„ *penta'ndra* (five-stamened). 4–8. Bright rose. July. E. Europe to Afghanistan. 1827.
„ „ *macrosta'mon* (large-stamened). Stamens large.
„ „ *molda'vica* (Moldavian).
„ „ *ro'sea* (rosy). Flowers rosy-pink.
„ *rube'lla* (red). 5–8. Rose. Branches sombre red. Algeria. 1907. Half-hardy.
„ *tetra'ndra* (four-stamened). 6. White. July. Eastern Europe; Tauria. 1821.

STOVE EVERGREENS.

T. articula'ta (jointed). 10. Pink. July. Arabia; Persia; India.
„ *dioi'ca* (diœcious). 6. E. Ind. 1823.
„ *i'ndica* (Indian). See T. GALLICA.
„ *orienta'lis* (eastern). See T. ARTICULATA.

TAMO'NEA. (From *tamone*, the Guianan name. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Lantana.)

Tender, blue-flowered biennials. By seed in a hotbed in spring; pricked out, and potted off, and bloomed in the greenhouse.

T. curassa'vica (Curassoa). See T. SPINOSA.
„ *mu'tica* (awnless). See T. SPICATA.
„ *spica'ta* (spiked). September. Trinidad. 1824.
„ *spino'sa* (spiny). 1. July. W. Ind. 1823.
„ *verbena'cea* (Verbena-like). See T. SPINOSA.

TA'MUS. (Derivation doubtful. Nat. ord. Dioscoreaceæ.)

Hardy twining herb, with tuberous rootstock, red berries, and bronzy-black leaves in autumn. Seeds; offsets. Ordinary garden soil.

T. commu'nis (common). 8–12. Green. May, June. Europe (England), &c.
„ *Elepha'ntipes* (elephant's-foot) See TESTUDINARIA ELEPHANTIPES.

TAN. See BARK.

TANACE'TUM. Tansy. (Derivation uncertain. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Hardy herbaceous. Divisions in spring, and cuttings under a hand-light in summer; any soil. *Grandiflo'rum* requires a cool greenhouse or a cold pit in winter, and a sandy, fibrous loam.

T. alpi'num (alpine). See CHRYSANTHEMUM ALPINUM.
„ *arge'nteum* (silvery). 1. White. Leaves silvery-grey. Asia Minor.
„ *aucheria'num* (Aucherian). 1. White. July. Asia Minor.
„ *Balsami'ta* (Balsamita). See CHRYSANTHEMUM BALSAMITA.
„ *camphora'tum* (camphorated). Yellow. California.
„ *corymbo'sum* (corymbose). See CHRYSANTHEMUM CORYMBOSUM.
„ *e'legans* (elegant). See T. CAMPHORATUM.
„ *flabellifo'rme* (fan-formed). See PENTZIA CRENATA.
„ *fruticulo'sum bractea'tum* (long-bracted-shrubby). Pale yellow. Himalaya; Soongaria. 1877.
„ *grandiflo'rum* (large-flowered). See MATRICARIA GRANDIFLORA.
„ *Herde'ri* (Herder's). 1. White. Turkestan.
„ *hurone'nse* (Lake-Huron). Yellow. July. N. Amer. 1857.
„ *leptophy'llum* (slender-leaved). 1. White. August. Caucasus. 1821.
„ *leucophy'llum* (white-leaved). 1. Deep yellow. June to August. Turkestan. 1880.
„ *millefolia'tum* (milfoil-like). 2. Yellow. July. Armenia. 1739.
„ *pa'llens* (pale). See CHRYSANTHEMUM PALLENS.
„ *purpu'reum* (purple). See CYATHOCLINE LYRATA.
„ *vulga're* (common). 2. Yellow. June. Europe (Britain).
„ „ *cri'spum* (crisped). Leaves crisped, used for garnishing.
„ „ *variega'tum* (striped-*leaved*). 2. Yellow. July. Britain.

TANAKÆ'A. (A Japanese commemorative name. Nat. ord. Saxifragaceæ.)

A hardy, evergreen herb for the rockery. Divisions. Ordinary, well-drained soil.

T. radi'cans (rooting). ½. White. June. Japan.

TANGHI'NIA. (From the native Madagascar name. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Cerbera.)

T. dicho'toma (forked). See TABERNÆMONTANA DICHOTOMA.
„ *laurifo'lia* (laurel-leaved). See CERBERA ODOLLAM.
„ *Ma'nghas* (Manghas). See CERBERA ODOLLAM.
„ *Odo'llam* (Odollam). See CERBERA ODOLLAM.
„ *veneni'flua* (poison-flowing). See CERBERA TANGHIN.

TANGIER PEA. *La'thyrus tingita'nus.*

TANNER'S TREE. *Coria'ria myrtifo'lia.*

TANSY. *Tanace'tum vulga're.*

TAPE GRASS. *Vallisne'ria spira'lis.*

TAPEINA'NTHUS. (From *tapeinos*, low or humble, and *anthos*, a flower; the plant is very dwarf in stature. Nat. ord. Amaryllidaceæ.)

A hardy bulb. Offsets; seeds. Light, sandy soil.

T. hu'milis (low). ¼–½. Yellow. Spain; Tangiers. 1820.

TAPEINO'TES. (From *tapeinotes*, lowliness. Nat. ord. Gesneraceæ. Now referred to Sinningia.)

T. barba'ta (bearded). See SINNINGIA CAROLINÆ.
„ *Caroli'næ ma'jor* (greater). See SINNINGIA CAROLINÆ MAJOR.

TAPI'SCIA. (From *tapis*, a coverlet or housing. Nat. ord. Sapindaceæ.)

A hardy or half-hardy deciduous tree. Seeds, layers; cuttings of half-ripe shoots in sandy soil in a close frame, with gentle bottom-heat. Ordinary garden soil.

T. sine'nsis (Chinese). 20–30. Yellow, small, fragrant. Central and W. China. 1909.

TAPOGO'MEA PURPU'REA. See CEPHAËLIS PURPUREA.

TAPOGO'MEA VIOLA'CEA. See CEPHAËLIS VIOLACEA.

TARA'XACUM. (From *tarasso*, to disturb or stir; in reference to its supposed medicinal effect. Nat. ord. Compositæ.)

Hardy perennial herbs. Seeds; divisions. Ordinary garden soil. *T. officinale* is sometimes grown and blanched as a salad, in the same way as Chicory. Its roots are sometimes dried, ground, and used to adulterate coffee, as is the case with Chicory.

T. gymna'nthemum (naked-flowered). Yellow. June. Mediterranean region.
„ *monta'num* (mountain). Yellow. August. Asia Minor; Persia. 1834.
„ *officina'le* (officinal). ½–1. Yellow. May to October. Temperate regions (Britain). "Common Dandelion."

TARCHONA'NTHUS. (From *tarchos*, burial or interment, and *anthos*, a flower; the corolla and fruits are densely buried or enveloped in long woolly hairs. Nat. ord. Compositæ.)

Greenhouse evergreen little tree or shrub. Cuttings in sand, under a bell-glass, in spring or early summer. Fibrous loam, a little peat or leaf-mould, and sand.

T. camphora'tus (camphor-scented). 10. Purple. S. Africa. 1690. "African Fleabane."
„ *denta'tus* (toothed). See BRACHYLÆNA NEREIFOLIA.
„ *elli'pticus* (elliptic). See BRACHYLÆNA ELLIPTICA.

TARE'NNA. (Derivation not obvious. Nat. ord. Rubiaceæ. Allied to Randia.)

Small evergreen stove tree. Cuttings in sand, in a close case, with bottom-heat. Loam, peat, and sand.

T. zeyla'nica (Cingalese). White. July to September. Ceylon.

TA'RO. The tuberous rootstock of *Colocasia antiquorum* are variously known as Taro, Eddoes, and Cocoes in tropical countries, where they are grown as food. The sliced tubers are known as White Coco Biscuits, or Red Coco Biscuits, according to the variety of *Colocasia antiquorum*, from which they are made. The roots are grown in the West Indies, and ground into meal, or the starch is extracted from them and used as food. The roots are extensively used as food in India, under the above names, Taro, Eddoes, and Cocoes. In the raw state they are acrid and poisonous, but these properties are destroyed by the heat applied in cooking or preparing them for food.

TARRAGON. (*Artemi'sia Dracu'nculus.*) Used in salads to correct the coldness of the other herbs; and its leaves are excellent when pickled.

Soil.—Poor, dry soil is essential to produce it in perfection, and hardy.

Propagated by parting the roots. To have green Tarragon during the winter and spring, strong-rooted plants must be planted, small portions at a time, once or twice a month, from the close of October to the end of January. For the main crop, it may be planted any time from the end of February until the conclusion of May.

Plant 10 inches apart, and, if dry weather, water must be given regularly every evening until they are rooted. They soon establish themselves, and may be gathered from the same year. As they run up, the stems should be cut down, which causes them to shoot afresh.

At the end of autumn, if some established plants are set beneath a south fence, they will often afford leaves throughout the winter, or, at all events, come early in the spring. Some of the leaves should be gathered in the summer, and dried for winter's use.

TASMA'NNIA. (Named after *C. Tasmann*, a Dutch navigator. Nat. ord. *Magnoliads* [Magnoliaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Now referred to Drimys.)

T. aroma'tica (aromatic). See DRIMYS AROMATICA.
„ *dipe'tala* (two-petaled). See DRIMYS DIPETALA.

TASTELESS MOUNTAIN CURRANT. *Ri'bes alpi'num.*

TAUSCHE'RIA. (Commemorative of *Ignatius F. Tauscher*, a Professor of Botany at Prague. Nat. ord. Cruciferæ.)

A hardy annual. Seeds. Ordinary garden soil.

T. lasioca'rpa (woolly-fruited). 1–2. Yellow. Central Asia and N. India.

TAVERNIE'RA. (Commemorative of *J. B. Tavernier*, a traveller in the East. Nat. ord. Leguminosæ.)

Greenhouse shrubby plants. Seeds; cuttings in sand under a bell-glass. Loam, leaf-mould, and sand.

T. lappa'cea (bur-like). Yellow. July. Arabia. 1820.
„ *nummula'ria* (money-wort). 1–2. Red. June. Arabia; N.W. India. 1826. "Indian Moneywort."

TAXA'NTHEMA. (From *taxis*, order, arrangement, and *anthemon*, a flower. Nat. ord. Plumbaginaceæ. Now referred to Statice.)

T. auriculæfo'lia (auricula-leaved). See STATICE AURICULÆFOLIA.
„ *austra'lis* (southern). See STATICE AUSTRALIS.
„ *inca'na* (hoary). See STATICE INCANA.
„ *specio'sa* (showy). See STATICE SPECIOSA.
„ *tata'rica* (Tartarian). See STATICE TATARICA.

TAXO'DIUM. Deciduous Cypress. (From *taxus*, the yew, and *oides*, like. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 8-*Octandria*.)

Hardy Conifers. Seeds in April; cuttings in autumn or spring, in a moist, shady place; layers, also, root the first season; a low, moist situation suits all the hardy varieties best; cuttings will also strike in water as freely as the Nerium. The evergreens should have a little peat added, and will require a little protection in winter, such as a cold pit would give, or surrounding them with a frame of Spruce-branches.

T. cape'nse (Cape). See CALLITRIS ARBOREA.
„ *di'stichum* (two-ranked-*leaved*) 50. May. N. Amer. 1640. "Deciduous Cypress."
„ „ *denuda'tum* (denuded).
„ „ *exce'lsum* (lofty). May.
„ „ *fastigia'tum* (upright). Florida.
„ „ *microphy'llum* (small-leaved). See T. DISTICHUM.
„ „ *na'num* (dwarf). 8–10.
„ „ *nuci'ferum* (nut-bearing). See T. HETEROPHYLLUM.
„ „ *nu'tans* (nodding). 20. May.
„ „ *pa'tens* (spreading). 20. May.
„ „ *pe'ndulum* (drooping). 20. May. China.
„ „ *sempervi'rens* (evergreen). See SEQUOIA SEMPERVIRENS.
„ „ *sine'nse* (Chinese). See T. DISTICHUM PENDULUM.
„ *heterophy'llum* (various-leaved). 10. May. China. "Embossed Cypress."
„ *japo'nicum* (Japanese). See CRYPTOMERIA JAPONICA.
„ *mexica'num* (Mexican). See T. MUCRONATUM.
„ *mucrona'tum* (small-pointed). 100–120. Mexico.
„ *sine'nse* (Chinese). See T. DISTICHUM PENDULUM.

TAXUS. The Yew. (From *taxon*, a bow; being used for bows. Nat. ord. *Conifers* [Coniferæ]. Linn. 22-*Dioecia*, 13-*Polyandria*.)

Evergreen Conifers. Seed, gathered in October, either sown directly, or taken to the rot-heap until spring, when the plants, many of them, will appear the following year; cuttings, 10 inches in length, lower half deprived of leaves, in sand, in a shady border, in April and August, taken off with a heel; deep, loamy soil, with a fair portion of moisture.

T. adpre'ssa (close-pressed). See T. BACCATA ADPRESSA.
„ *bacca'ta* (berried). 20. February. Europe (Britain). Northern Asia. "Common Yew." "English Yew."
„ „ *adpre'ssa* (close-pressed). 2–8. Japan. 1844.
„ „ *adpre'ssa au'rea* (golden).
„ „ *adpre'ssa stri'cta* (upright).
„ „ *adpre'ssa variega'ta* (variegated).
„ „ *a'lbo-variega'ta* (white-variegated).
„ „ *arge'ntea* (silvery).
„ „ *au'rea* (golden).
„ „ *au'rea variega'ta* (golden-variegated).
„ „ *Barro'ni* (Barron's). Leaves edged with yellow. Fruits freely.
„ „ *brevifo'lia* (short-leaved).
„ „ *cheshunte'nsis* (Cheshunt).
„ „ *Dovasto'ni* (Dovaston's). Twigs drooping. "Westfelton Yew." 1861.
„ „ *Dovasto'ni au'reo-variega'ta* (golden-variegated). Young leaves edged yellow.
„ „ *elegantí'ssima* (very-elegant).
„ „ *elvastone'nsis* (Elvaston). Young leaves orange. "Elvaston Yew."
„ „ *epacridio'des* (Epacris-like).
„ „ *ere'cta* (erect). "Fulham Yew."
„ „ *ericoi'des* (Erica-like).
T. bacca'ta expa'nsa (spreading).
„ „ *fastigia'ta* (tapering). 20. April. Ireland. 1780. "Irish Yew." "Florence Court Yew."
„ „ *fastigia'ta arge'ntea* (upright-silvery).
„ „ *fastigia'ta au'rea* (upright-golden).
„ „ *fastigia'ta Standi'shii* (Standish's-upright).
„ „ *Fishe'ri* (Fisher's).
„ „ *Fo'xi* (Fox's).
„ „ *fru'ctu-lu'teo* (yellow-berried). April. Ireland.
„ „ *glau'ca* (sea-green).
„ „ *gra'cilis pe'ndula* (slender-drooping).
„ „ *horizonta'lis* (horizontal).
„ „ *horizonta'lis elegantí'ssima* (very-elegant-horizontal).
„ „ *imperia'lis* (imperial).
„ „ *Jackso'ni* (Jackson's).
„ „ *na'na* (dwarf). 2. Leaves shining.
„ „ "*Nei'dpath.*" Tree columnar.
„ „ *procu'mbens* (lying-down). 8. February. Europe.
„ „ *pyramida'lis* (pyramidal).
„ „ *pyramida'lis variega'ta* (variegated-pyramidal).
„ „ *recurva'ta* (recurved). Edges of leaves inrolled.
„ „ *semperau'rea* (always-golden).
„ „ *Siebo'ldi* (Siebold's).
„ „ *sine'nsis* (Chinese). China.
„ „ *sparsifo'lia* (scattered-leaved). March.
„ „ *variega'ta* (variegated). 20. February. Europe.
„ „ *wallichia'na* (Wallichian). Himalaya.
„ „ *Washingto'ni* (Washington's).
„ *brevifo'lia* (short-leaved). 40. Western N. Amer. "Californian Yew."
„ *canade'nsis* (Canadian). 20. February. Canada. 1800. "Canadian Yew."
„ „ *au'rea* (golden).
„ „ *variega'ta* (variegated). Leaves with white edges.
„ *cuspida'ta* (short-pointed). 20. Mountains of Japan. "Japanese Yew."
„ „ *compa'cta* (compact).
„ *empetrifo'lia* (Empetrum-leaved). See T. BACCATA ERICOIDES.
„ *florida'na* (Florida). 20–30. Florida. 1896. "Florida Yew."
„ *Fortu'nei* (Fortune's). See CEPHALOTAXUS PEDUNCULATA FASTIGIATA.
„ *globo'sa* (globose). Mexico. "Mexican Yew."
„ *Harringto'nia* (Harrington's). See CEPHALOTAXUS PEDUNCULATA.
„ *hibe'rnica* (Irish). See T. BACCATA FASTIGIATA.
„ *Inuka'ja* (Inukaja). See CEPHALOTAXUS PEDUNCULATA.
„ *lindleya'na* (Lindleyan). See T. BREVIFOLIA.
„ *Mako'ya* (Makoy's). See PODOCARPUS MACROPHYLLA.
„ *nuci'fera* (nut-bearing). See TORREYA NUCIFERA.
„ *tardi'va* (late). See T. BACCATA ADPRESSA.
„ *wallichia'na* (Wallichian). See T. BACCATA WALLICHIANA.

TCHIHATCHE'WIA. (Commemorative of the Russian botanist, *Tchihatcheff*. Nat. ord. Cruciferæ.)

A handsome perennial herb for the rockery. Seeds. Well-drained, light soil.

T. isati'dea (Isatis-like). Rosy-pink, fragrant. Armenia. 1892.

TEA. The leaves of *Camellia thei'fera*.

TEA BERRY. *Gaulthe'ria procu'mbens.*

TEA, BOTANY BAY. *Smi'lax glycyphy'lla.*

TEA, PARAGUAY. *I'lex parague'nsis.*

TEA TREE. *Ly'cium ba'rbarum.*

TEAK TREE, AFRICAN. *Oldfie'ldia africa'na.*

TEAK TREE, INDIAN. *Te'ctona gra'ndis.*

TEAK TREE, NEW ZEALAND. *Ví'tex littora'lis.*

TEASEL, TEAZEL or **TEAZLE.** *Di'psacus.*

TECO'MA. (A contraction of the Mexican name, *Tecomaxochili*. Nat. ord. *Bignoniads* [Bignoniaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Mostly by cuttings; the hardy *T. radi'cans* and its varieties by cuttings of the shoots, and very freely by pieces of the roots; all the others are the better for a glass being placed over them, and flourish in loam and peat. The *T. cape'nsis* makes a neat pot-plant.

HARDY EVERGREEN CLIMBERS.

T. radi'cans (rooting). 30. Orange. July. N. Amer. 1640.
„ „ *ma'jor* (greater). 30. Orange. July. N. Amer. 1640. "Greater Ash-leaved Tecoma."
„ „ *mi'nor* (smaller). 20. Scarlet. July. N. Amer. 1640. Lesser Ash-leaved Tecoma."

GREENHOUSE EVERGREEN CLIMBERS, &c.

T. austra'lis (southern). Orange. June. N.S. Wales. 1793.
„ „ *meona'ntha* (less-flowered). 12. Blush. April. Australia. 1815.
„ *Bry'cei* (Bryce's). Rose-crimson, scented. Mashonaland. 1906.
„ *cape'nsis* (Cape). 8. Orange. August. S. Africa. 1823.
„ *diversifo'lia* (various-leaved). See T. AUSTRALIS.
„ *grandiflo'ra* (large-flowered). 30. Orange. July. China; Japan. 1800. Deciduous, nearly hardy on a wall.
„ *jasminoi'des* (jasmine-like). Pink. August. N.S. Wales.
„ *Macke'nii* (Macken's). Rosy-pink, with richer veins. S. Africa. 1887.
„ *Mangle'sii* (Mangles'). See T. AUSTRALIS.
„ *meona'ntha* (less-flowered). See T. AUSTRALIS MEONANTHA.
„ *mo'llis* (soft). 6. Yellow. Mexico. 1824. Deciduous.
„ *Regi'næ-Sa'bæ* (Queen of Sheba). See T. BRYCEI.
„ *ricasolia'na* (Ricasolian). See T. MACKENII.
„ *shire'nsis* (Shire). 4–10. Orange. Nyasaland. 1904. Erect shrub.
„ *Smi'thii* (Smith's). Yellow, tinted red. (*C. capensis* × *velutina.*) 1889. Erect shrub.

STOVE EVERGREEN SHRUBS.

T. amboine'nsis (Amboynian). Orange-red. Amboyna, Malaya. Climber.
„ *au'stro-caledo'nica* (Southern-Caledonian). White. New Caledonia.
„ *chile'nsis* (Chilian). Scarlet. March to May. Chili. 1870.
„ *chrysa'ntha* (golden-flowered). 10. Yellow. Venezuela. 1823.
„ (*Campsi'dium*) *filicifo'lia* (fern-leaved). Fiji. 1873.
„ *digita'ta* (hand-*leaved*). 6. Yellow. Mexico. 1813.
„ *fu'lva* (tawny). Tawny-red, yellow. Autumn. Peru; Bolivia.
„ *inci'sa* (incised). See T. STANS APIIFOLIA.
„ *leuco'xylon* (white-wood). 12. Pink. W. Ind. 1759.
„ *mira'bilis* (wonderful). See T. VALDIVIANA.
„ *pentaphy'lla* (five-leaved). 6. Orange. July. W. Ind.
„ *rosæfo'lia* (rose-leaved). 6. Yellow. Peru.
„ *sambucifo'lia* (elder-leaved). See T. STANS.
„ *serratifo'lia* (saw-leaved). 20. Yellow. W. Ind. 1822.
„ *sorbifo'lia* (Sorbus-leaved). See T. MOLLIS.
„ *specta'bilis* (showy). 10. Purple. W. Ind.; Venezuela. 1820.
„ *sple'ndida* (splendid). See ESTERHAZYA SPLENDIDA.
„ *sta'ns* (standing). 12. Yellow. August. S. Amer. 1730.
„ „ *apiifo'lia* (Celery-leaved). 10. Yellow. August. S. Amer. 1820.
„ „ *inci'sa* (cut-leaved). See T. STANS APIIFOLIA.
„ *undula'ta* (waved). Orange. June to August. Orient; N.W. India.
„ *valdivia'na* (Valdivian). Orange. April, May. Chili. 1870.
„ *veluti'na* (velvety). Central Amer.
„ *xyloca'rpa* (woody-fruited). See STEREOSPERMUM XYLOCARPUM.

TECOPHILÆ'A. (Commemorative of *Tecophila*, a daughter of Bertero. Nat. ord. Hæmodoraceæ.)

Greenhouse or half-hardy bulbs. Seeds; offsets. Loam, leaf-mould, and plenty of sand. The bulbs should be kept dry and resting for a period after the leaves die down.

T. cyanocro'cus (blue-crocus). ½. Blue, with white throat. Juan Fernandez, Chili. 1872.
„ „ *Leichtli'nii* (Leichtlin's). Dark blue, without yellow. Chili. 1882.
„ „ *Rege'lii* (Regel's). Blue, with narrower segments.

TE'CTONA. Teak-tree. (The Malabar name is *tekka.* Nat ord. *Verbenas* [Verbenaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia.*)

For shipbuilding this gives the best timber. Stove evergreen tree. Cuttings of ripened shoots in sand, under a bell-glass, in April, and in a moist bottom-heat; sandy loam and fibrous peat. Winter temp., 50° to 55°; summer, 60° to 85°.

T. gra'ndis (great). 100. White. India; Burma. 1777. "Teak."

TEE'DIA. (Named after some person unknown. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia.* Alliance near to Phygelius.)

Greenhouse, purple-flowered biennials, from South Africa. Seeds in a slight hotbed in March; cuttings of side-shoots, taken off in April or August, and inserted in sandy soil, under a hand-light; sandy loam and vegetable mould.

T. lu'cida (shining). 2. April. 1774.
„ *pube'scens* (downy). 2. May. 1816.

TEESDA'LIA. (Named after *R. Teesdale*, author of a Flora about Castle Howard. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia.* Allied to Candytuft.]

Hardy, white-flowered annuals. Seeds; common soil.

T. Ibe'ris (candytuft-like). See T. NUDICAULIS.
„ *Lepi'dium* (cress-like). See T. REGULARIS.
„ *nudicau'lis* (naked-stemmed). ½. May. Europe (Britain).
„ *regula'ris* (regular). ½. March. Mediterranean region. 1824.

TELANTHE'RA. (From *teleos*, or *teleios*, complete or perfect, and *anthera*, an anther; in reference to the five perfect anthers. Nat. ord. Amarantaceæ.)

Stove plants, most of which are used for carpet bedding during the summer, but a few pot plants must be kept in heat during winter to supply cuttings in spring. The cuttings root quickly in sand, leaf-mould, and sand, or cocoanut fibre forming the hot-bed. When rooted they should be hardened off in a greenhouse, finally in a frame, and planted in the beds in June.

T. amœ'na (lovely). Leaves bronzy-purple and rose. Brazil. 1865.
„ „ *ama'bilis* (lovely). Leaves bronzy-green, red, and rose. Brazil. 1868.
„ „ *tri'color* (three-coloured). Leaves bronzy-green, rose, purple, and yellow. Brazil. 1862.
„ *bettzichia'na* (Bettzichian). Leaves olive-green and red. Brazil. 1862.
„ „ *au'rea* (golden). Leaves golden-yellow all the season.
„ „ *magnifica* (magnificent). Leaves rich bronze and red.
„ „ *ma'jor* (larger). Leaves larger, bronze, with orange tips.
„ „ *spathula'ta* (spathulate). Leaves and stems red. Brazil. 1865.
„ *cane'scens* (hoary). 1. White. July. Venezuela. 1825.
„ *caracasa'na* (Caracasan). 1. White. July. Venezuela. 1819.
„ *ficoi'dea* (fig-like). Leaves marked with rose and red on green. Trop. Amer. 1865.
„ *polygonoi'des* (Polygonum-like). 1. White. July. Trop. Amer. 1731.
„ *versi'color* (changeable-coloured). Leaves rosy-pink and crimson, shaded bronze. Brazil. 1865.

TELEGRAPH PLANT. *Desmo'dium gy'rans.*

TELE'KIA. (Name not explained. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua.* Referred to Buphthalmum.)

T. specio'sa (showy). See BUPHTHALMUM SPECIOSUM.

TELFAI'RIA. (Named in honour of *Mrs. Telfair.* Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 22-*Diœcia*, 13-*Monadelphia.*)

Stove twiners. Cuttings of the flowering shoots, if procurable; if not, other young shoots, getting firm, in sand, and in heat; peat and loam. Summer temp., 60° to 85°; winter, 50° to 58°.

T. occidenta'lis (western). White, with purple eye; fruit 2 ft. long. W. Trop Africa. 1870.
„ *peda'ta* (doubly-lobed). 20. Pink. July. Zanzibar. 1825.

TELIPO'GON. (From *telos*, the end, and *pogon*, a beard; the column is bearded to the end. Nat. ord. Orchidaceæ.)

Stove epiphytical Orchid. Offsets. Should be tied on rafts with sphagnum.

T. Crœ'sus (Crœsus). Yellow, netted with dark lines. Colombia. 1877.

TE'LLIMA. (An anagram of *Mitella*; separated from the genus Mitella. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*.)

Hardy herbaceous plants. Division; sandy loam and peat.

T. affi'nis (allied). White. California. 1907. Half-hardy.

„ *grandiflo'ra* (large-flowered). 1. Pink. April. N.W. Amer. 1826.

„ *parviflo'ra* (small-flowered). 1. White. N.W. Amer.

TELO'PEA. Warratah. (From *telopas*, seen at a distance; conspicuous flowers. Nat. ord. *Proteads* [Proteaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

This is the finest of all the Proteads. Greenhouse evergreens. Cuttings of ripe shoots with leaves on, unless the one at the base, in sand, under a glass, and kept cool until the base swells, when a little heat may be given; also by layering the suckers that rise from the roots; sandy loam and peat, with a third of broken stone, potsherds, and charcoal, and the pot extra well drained. Winter temp., 45° to 55°, and not much water; summer, 60° to 75°, and a good supply of moisture, the pot being defended from the sun.

T. orea'des (mountain-nymph). Australia.

„ *speciosi'ssima* (most showy). 10. Scarlet. June. N.S. Wales. 1789.

„ *trunca'ta* (truncate). Tasmania.

TEMPERATURE is one of the most important circumstances connected with the cultivation of plants; for upon its proper regulation and just accommodation to the intensity of light depend, in the chief degree, whether a plant is healthy, and capable of performing its functions. Every seed has its appropriate temperature for germinating (see GERMINATION); every root has a temperature in which it imbibes food most favourably (see BOTTOM-HEAT); and every leaf has a temperature in which it respires most vigorously. (See LEAVES and NIGHT TEMPERATURE.)

TEMPLES dedicated to some deity of the heathen mythology, as to Pan in a grove, or to Flora among bright, sunny parterres, are not inappropriate, if the extent of the grounds and the expenditure on their management allow them to be of that size and of that correctness of style, which give the classic air and dignity that are their only sources of pleasure.

TEMPLETO'NIA. (Named after *J. Templeton*, an Irish botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Bossiæa.)

Greenhouse, red-flowered evergreen, from Australia. Cuttings of half-ripened wood in sand, under a bell-glass; fibrous peat and sandy loam, most of the first, with a little charcoal. Winter temp., 40° to 48°.

T. glau'ca (milky-green). See T. RETUSA.

„ *retu'sa* (bent-back-*leaved*). 2. May. 1803.

TE'NARIS. (Derivation not obvious. Nat. ord. Asclepiadaceæ.)

Greenhouse perennial, to be kept rather dry in winter. Cuttings in sand under a bell-glass. Loam, peat, broken bricks, and sand.

T. rostra'ta (beaked). 1–2. White, dotted with purple. E. Trop. Africa. 1885.

TENO'RIA. (Commemorative of *Professor Tenore*, an Italian botanist. Nat. ord. Umbelliferæ. Now referred to Bupleurum.)

T. arbore'scens (tree-like). See HETEROMORPHA ARBORESCENS.

„ *coria'cea* (leathery). See BUPLEURUM GIBRALTARICUM.

„ *frutice'scens* (shrubby). See BUPLEURUM FRUTICESCENS.

„ *frutico'sa* (shrubby). See BUPLEURUM FRUTICOSUM.

„ *plantagi'nea* (plantain-like). See BUPLEURUM PLANTAGINEUM.

TENTACULATE, furnished with thread-like appendages.

TEPHRI'TIS ONOPO'RDINIS. See CELERY FLY.

TEPHRO'SIA. (From *tephros*, ash-grey; colour of some of the species. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Dodecandria*. Allied to Galega.)

Seeds, steeped in water at 130° for a day before sowing in a hotbed; cuttings of young, stubby side-shoots in sand, under a bell-glass, in May, the stove species in a hotbed; sandy, fibrous loam and peat. Greenhouse or stove temperatures.

GREENHOUSE EVERGREENS, &c.

T. bre'vipes (short-footed). 6. Yellow. July. Trop. Amer. 1629.

„ *cape'nsis* (Cape). 1. Purple. July. S. Africa. 1825.

„ *chine'nsis* (Chinese). Purple. July. China. 1822.

„ *grandiflo'ra* (large-flowered). 4. Pink. June. S. Africa. 1774.

„ *mucrona'ta* (spine-pointed). See LESSERTIA MUCRONATA.

„ *seri'cea* (silky). 1. Red. July. S. Africa. 1800.

„ *stri'cta* (erect-*podded*). 3. Pink. June. S. Africa. 1774.

„ *virginia'na* (Virginian). N. Amer. Hardy.

STOVE EVERGREENS, &c.

T. Apolli'nea (Apollinis). 2. Blue. July. Egypt. 1816.

„ *biflo'ra* (two-flowered). 2. Purple. July. 1816.

„ *ca'ndida* (white-*leaved*). 4. Pale red. Bengal. 1816.

„ *capitula'ta* (small-headed). 1½. Red. July. Sandwich Islands. 1823. Herbaceous.

„ *caribæ'a* (Caribæan). 3. Red, white. June. W. Ind. 1786.

„ *cine'rea* (grey). 1. Purple. July. Trop. Amer. 1824.

„ *Colonn'la* (Colonil). See T. PURPUREA.

„ *filifo'lia* (thread-leaved). See ARGYROLOBIUM FILIFORME.

„ *frutico'sa* (shrubby). 6. Red. July. E. Ind. 1816.

„ *grandiflo'ra* (large-flowered). S. Africa.

„ *heynea'na* (Heyne's). See T. TINCTORIA.

„ *lanceæfo'lia* (lance-leaved). See T. PURPUREA.

„ *linea'ris* (narrow-*leaved*). 1. Red. July. Trop. Africa. 1823.

„ *littora'lis* (shore). See T. CINEREA.

„ *longifo'lia* (long-leaved). 3. Red. June. S. Amer. 1820.

„ *ochroleu'ca* (pale yellow). See CRACCA OCHROLEUCA.

„ *purpu'rea* (purple). 3. Purple or pale yellow. July. Tropics of both Worlds. 1818.

„ *tincto'ria* (dyer's). 3. Purple. June. E. Ind. 1822.

„ *toxica'ria* (*fish*-poison). 3. Pale red. W. Ind. 1791.

„ *villo'sa* (shaggy). 2. White. July. E. Ind. 1779.

„ *Voge'lii* (Vogel's). Trop. Africa.

TERMINA'LIA. (From *terminus*; leaves in clusters at the end of the branches. Nat. ord. *Myrobalans* [Combretaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*. Includes Bucida.)

Stove evergreens. Cuttings of ripe shoots, with most of the leaves, in sand, thinly, under a bell-glass, and in a sweet bottom-heat; sandy loam and fibrous peat. Winter temp., 55° to 60°; summer, 65° to 85°. The juice of *Cata'ppa* is a chief ingredient in Indian-ink.

T. angustifo'lia (narrow-leaved). 20. White, green. Malaya. 1692.

„ *Arbu'scula* (shrub). 1. White, green. S. Amer. 1822.

„ *Arju'na* (Arjuna). 50–70. Pale green. India.

„ *belle'rica* (Belleric). 20. Yellow, green. E. Ind. 1818.

„ *bengale'nsis* (Bengal). White. June. E. Ind. 1826.

„ *Benzo'in* (Benzoin). See T. ANGUSTIFOLIA.

„ *Bitica'ria* (Biticaria). See T. BELLERICA.

„ *Bu'ceras* (Buceras). 25. Yellow. August. W. Ind.; Central Amer. 1793.

„ *Cata'ppa* (Catappan). 20. White. E. Ind. 1778.

„ „ *subcorda'ta* (slightly-heart-*leaved*). 20. Yellow, green. S. Amer. 1796.

„ *Che'bula* (Chebula). 20. White. E. Ind. 1796.

„ *citri'na* (citron-like). 20. Yellow, green. E. Ind. 1823,

T. di'sticha (two-rowed). 20. Yellow, green. E. Ind. 1823.
„ *e'legans* (elegant). See POLYSCIAS PANICULATA.
„ *Fatræ'a* (Fatræa). 20. Yellow, green. Madagascar. 1826.
„ *gange'tica* (Gangetic). See T. CHEBULA.
„ *latifo'lia* (broad-leaved). 25. W. Ind. 1800.
„ *mauritia'na* (Mauritian). 20. Yellow, green. Mauritius. 1824.
„ *molucca'na* (Molucca). 20. White, green. E. Ind. 1804.
„ *pro'cera* (tall). 40. Yellow, green. E. Ind. 1818.
„ *rotundifo'lia* (round-leaved). 20. Yellow, green. E. Ind. 1824.
„ *seri'cea* (silky). 4–8. White. S. Africa. 1816.
„ *Tanibou'ca* (Tanibouca). White. June. Guiana. 1826.

TERNSTRÖ'MIA. (Named after *M. Ternström*, a Swedish botanist. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Stove evergreen shrubs. Cuttings of ripe young shoots in sandy soil, under a bell-glass, in heat; fibrous loam and sandy peat. Winter temp., 55° to 60°; summer, 65° to 85°.

T. bre'vipes (short-*flower*-stalked). See T. ELLIPTICA.
„ *elli'ptica* (elliptic). 6. White or red. July. W. Ind.; Mexico. 1818.
„ *pedunculata'ris* (*long*-flower-stalked). See T. ELLIPTICA.
„ *puncta'ta* (dotted). 6. Yellowish. July. W. Ind. 1820.
„ *serra'ta* (saw-*leaved*). White. June. Sumatra. 1820.
„ *sylva'tica* (wood). Green, purple. Winter. Mexico.
„ *veno'sa* (veiny). 6. White. July. Brazil. 1824.

TERPNA'NTHUS JASMINOI'DES. See SPIRANTHERA ODORATISSIMA.

TERRACES are not permissible anywhere but around the mansion, and they are noble and effective almost in proportion to their breadth.

TESTACE'LLA. The Ear-shelled Slugs, three in number, to be met with in Britain are interesting and useful to the gardener, inasmuch as they are entirely carnivorous and feed on worms and other slugs. These friends of the gardener are easily recognised by their yellow colour and the small shell on the tail of the creatures. Even when contracted, the small shell covers but a small portion of the body. The vegetable feeding slugs have no shell. The most common of the ear-shelled slugs and that with the largest shell is *T. Maugei*, which is yellow, banded with brown. *T. scutulum* is bright yellow, and has the smallest shell. *T. halioti'dea* appears to be the least common, and is tawny yellow. All of these snails should be encouraged in the garden.

TESTUDINA'RIA. Elephant's Foot. (From *testudo*, a tortoise; the hard, outside covering of the corm, or root. Nat. ord. *Yams* [Dioscoreaceæ]. Linn 22-*Dioecia*, 6-*Hexandria*.)

Greenhouse, yellow-flowered deciduous climbers, from South Africa. Cuttings of firm side-shoots, or cuttings of the young shoots when growth commences, in spring, in sandy loam, under a bell-glass, and care taken to prevent damping; might be tried by cuttings of the roots; sandy, fibrous loam and turfy peat. Winter temp., 43° to 48°, and kept rather dry.

T. Elepha'ntipes (elephant's-foot). 8. July. 1774.
„ *monta'na* (mountain). 8. July. 1816.
„ *sylva'tica* (wood).

TETRA'CENTRON. (From *tetra*, four, and *kentron*, a spur. Nat. ord. Trochodendraceæ.)

A hardy deciduous tree resembling Cercidophyllum. Seeds; layers. Ordinary garden soil.

T. sine'nse (Chinese). 80. Yellowish. Central and W. China. 1909.

TETRA'CERA. (From *tetras*, fourfold, and *keras*, a horn; the four capsules, or divisions of seed-pod, recurved. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia*. Allied to Delima.)

Stove, yellow-flowered, evergreen climbers. Cuttings of young shoots, getting firm, in sand, under a bell-glass, thinly, and in bottom-heat; sandy loam and fibrous peat. Winter temp. 55°; summer, 65° to 85°.

T. alnifo'lia (alder-leaved). 20. Guinea. 1793.
„ *obova'ta* (reversed-egg-*leaved*). See T. ALNIFOLIA.
„ *potato'ria* (drinking). See T. ALNIFOLIA.
„ *sarmento'sa* (twiggy). 10 China. 1820.
„ *volu'bilis* (twining). 12. S. Amer. 1818.

TETRA'CME. (From *tetra*, four, and *akme*, a point or edge; in allusion to the four angles or edges of the seed-vessel. Nat. ord. Cruciferæ.)

Hardy perennial herb. Seeds; divisions. Ordinary garden soil.

T. quadrico'rnis (four-horned). 1. Yellow. June. Turkestan. 1821.

TETRA'DIUM TRICHO'TOMUM. See EVODIA FRAXINIFOLIA.

TETRAGO'NIA. New Zealand Spinach. (From *tetra*, four, and *gonia*, an angle; fruit four-angled. Nat. ord. *Aizoons* [Ficoidaceæ]. Linn. 12-*Icosandria*, 2-*Di-pentagynia*.)

Half-hardy trailing annuals. Seeds. Rich, light soil. See NEW ZEALAND SPINACH.

T. crystalli'na (crystalline). Green. Summer. Peru. "Peru Ice Plant."
„ *expa'nsa* (expanded). Green. Summer. Australasia. 1772. "New Zealand Spinach."

TETRAGONO'LOBUS. (From *tetra*, four, *gonia*, an angle, and *lobos*, a pod; shape of seed-pod. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Referred to Lotus.)

T. bifo'rus (two-flowered). See LOTUS BIFLORUS.
„ *conjuga'tus* (joined). See LOTUS CONJUGATUS.
„ *edu'lis* (edible). See LOTUS TETRAGONOLOBUS.
„ *mari'timus* (sea). See LOTUS SILIQUOSUS.
„ *purpu'reus* (purple). See LOTUS TETRAGONOLOBUS.
„ *Requie'ni* (Requien's). See LOTUS REQUIENI.
„ *siliquo'sus* (long-podded). See LOTUS SILIQUOSUS.

TETRAGO'NOTHE'CA. (From *tetragonos*, square, and *theke*, a capsule; the fruits are four-angled. Nat. ord. Compositæ.)

Hardy perennial herb. Seeds; divisions. Ordinary garden soil.

T. helianthoi'des (Helianthus-like). 3–4. Yellow. August. N. Amer. 1726.

TETRAME'RIUM. (From *tetra*, four, and *meris*, a part. Nat. ord. Acanthaceæ.)

Stove herb. Seeds; cuttings in light soil, with bottom-heat. Loam, leaf-mould, and sand.

T. scorpioi'des (scorpion-like). 2. July. Central Amer. 1802.

TETRAME'RIUM ODORATI'SSIMUM. See FARAMEA ODORATISSIMA.

TETRAME'RIUM PANICULA'TUM. See COFFEA PANICULATA.

TETRAMI'CRA. (From *tetra*, four, and *micros*, small; the four pollen masses. Nat. ord. Orchidaceæ.)

Cool stove Orchids. Offsets; divisions. Fibre of peat, sphagnum, and crocks in small baskets.

T. bi'color (two-coloured). ½. White, red. April. Brazil. 1831.
„ „ *bre'vis* (short).
„ „ *glaucophy'lla* (sea-green-leaved). White, purple. February. Organ Mountains. 1838.
„ *minu'ta* (minute). A tiny plant under two inches high. 1889.
„ *ri'gida* (rigid). W. Ind.

TETRANE'MA. (From *tetra*, four, and *nema*, a filament; four stamens instead of five, as in Pentstemon, which it much resembles. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 1-*Angiospermia*.)

Stove herb. Seed sown in a slight hotbed in March; cuttings of young shoots, a little firm, in sandy soil, under a bell-glass, in April and August; sandy loam and leaf-mould. Winter temp., 45° to 50°. In summer the shelter of the greenhouse or a warm place out of doors.

T. mexica'na (Mexican). 1. Purple, white. June. Mexico. 1843.

TETRANTHE'RA. (From *tetra*, four, and *anthera*, anther; four out of nine stamens fertile. Nat. ord. *Laurels* [Lauraceæ]. Linn. 9-*Enneandria*, 1-*Monogynia*.)

Cuttings of young shoots, nearly ripe, in sand, under a bell-glass, and the stove ones in bottom-heat; fibrous, sandy loam and turfy peat. Greenhouse and stove temperatures.

GREENHOUSE EVERGREENS.

T. ape'tala (no-petaled). 8. Green, yellow. April. N. Holland. 1824.
„ *genicula'ta* (jointed). See LITSEA GENICULATA.
„ *japo'nica* (Japan). See LITSEA JAPONICA.
„ *laurifo'lia* (laurel-leaved) of Jacquin. See LITSEA SEBIFERA.
„ *Lhuy'sii* (Lhuys's). Japan. 1869.

STOVE EVERGREENS.

T. sebi'fera (tallowy). See LITSEA SEBIFERA.
„ *trine'rvis* (three-nerved). 10. Yellow, green. May. Ceylon. 1821.

TETRA'NTHUS. (From *tetra*, four, and *anthos*, a flower; four-flowered. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Stove evergreen trailer. Division and cuttings; sandy loam and a little peat; requires the stove in winter.
T. littora'lis (shore). ½. White. August. W. Ind. 1820.

TETRAPE'LTIS. (From *tetra*, four, and *pelte*, a small shield; form of flower. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*. Now referred to Otochilus.)
T. fra'grans (sweet-scented). See OTOCHILUS PORRECTUS.

TETRAPO'GON. (From *tetra*, four, and *pogon*, a beard; the flowering glumes are bearded. Nat. ord. Gramineæ.)
Hardy perennial grass. Seeds; divisions. Ordinary garden soil.
T. villo'sus (shaggy). 1. Yellowish. N. Africa.

TETRA'PTERIS. (From *tetra*, four, and *pteron*, a wing; the carpels four-winged. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*. Allied to Hiræa.)
Stove, evergreen, yellow-flowered climbers. For culture, see MALPIGHIA.
T. acapulce'nsis (Acapulcan). May. Mexico. 1824.
„ *acutifo'lia* (pointed-leaved). May. Cayenne. 1826.
„ *citrifo'lia* (citron-leaved) of Swartz. See T. INÆQUALIFOLIA.
„ *di'scolor* (two-coloured). May. Guiana. 1827.
„ *inæqualifo'lia* (unequal-leaved). Yellow. May. Trop. Amer. 1818.

TETRATHE'CA. (From *tetra*, four, and *theke*, a cell; anthers four-celled. Nat. ord. *Poreworts* [Tremandraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
Greenhouse, Australian evergreens, and purple-flowered, where not otherwise specified. Cuttings of young shoots, the side ones are the best, in sand, under a bell-glass, and great care taken to prevent damping; fibrous peat, a little turfy loam, and a good portion of charcoal and broken pots. Winter temp., 43° to 50°; summer, an airy situation, but the pot saved from direct sun and heavy rains, or careless waterings.
T. cilia'ta (eyelashed). Pink.
„ *ericæfo'lia* (heath-leaved). 1. Rose. July. 1820.
„ *ericoi'des* (heath-like). See T. PILOSA.
„ *glandulo'sa* (glanded). 1. July. 1822.
„ *hirsu'ta* (hairy). 2. Pink. March. 1834.
„ *ju'ncea* (rushy). 2. July. 1803.
„ *nu'da* (naked). 2. Crimson. May. 1843.
„ *pili'fera* (shaggy). 2. June.
„ *pilo'sa* (shaggy). 1. July. 1823.
„ *rubioi'des* (Rubia-like). See T. ERICÆFOLIA.
„ *rubrise'ta* (red-bristled). See T. HIRSUTA.
„ *thymifo'lia* (thyme-leaved). 1. July. 1824.
„ *verticilla'ta* (whorled-*leaved*). See PLATYTHECA GALIOIDES.
„ *vimi'nea* (twiggy). 2. July.

TETRAZY'GIA. (From *tetra*, four, and *zugos*, a yoke; the parts of the flower in fours. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
Stove, white-flowered evergreens, from the West Indies. Cuttings of side-shoots, getting firm, in sand, under a bell-glass, in heat; sandy loam and fibrous peat. Winter temp., 55° to 60°; summer, 65° to 85°.
T. a'lbicans (whitish). 10. White. Mexico. 1815.
„ *angustifo'lia* (narrow-leaved). 5. May. 1823.
„ *di'scolor* (two-coloured-*leaved*). 5. May. 1793.
„ *elæagnoi'des* (Elæagnus-like). 4. March.
„ *tetra'ndra* (four-stamened). See MICONIA TETRANDRA.

TETTIGO'NIA SPUMA'RIA of some entomologists, and the *Cercopis*, *Cicada*, or *Aphrophora spumaria* of others, Froth insect, Cuckoo-spit, Froth-hopper, or Frog-hopper. Its larva enveloped in its froth is especially prevalent upon the young shoots of the white-thorn or quick; but it also infests the stems of pinks, carnations, lilacs, and many other plants. If the froth be removed, one and sometimes two small, pale green, aphis-like insects are detected. These are the larva or young of the Froth-fly. By means of its sharp rostrum or beak it extracts the sap of the plant, and voids it as an excrement in the frothy form, which is its characteristic. About the end of July it sheds its skin, leaving it in the froth, and comes forth the perfect insect. About the beginning of August the males and females may be found in pairs numerously on the plants they frequent. They are of a dirty-white colour, thickly dotted and clothed with short hairs; head broad and bluntly triangular, with black lines down its centre and sides; eyes, one on each side, near the base of the head; rostrum long, bent underneath its body when not in use; antennæ ending in a fine bristle; thorax and shield (scutellum), adjoining the back of the head, brownish. The wing-cases are brown, mottled with ochre, with four whitish patches on the margin; the under wings are transparent and iridescent. The legs, six in number, short, but two hind-legs longest, and formed for leaping. So effectual are they for the purpose, that, as Mr. Kirby states, after showing their mode of leaping, they will spring five or six feet at a time, being more than 250 times their own length, or "as if a man of ordinary height should be able to vault through the air to the distance of a quarter of a mile." It is not ascertained where the eggs of this insect are deposited, but probably on the stems of the plants on the shoots of which the larva feeds. It appears, however, that they can travel after hatching, for seedlings and plants raised from root-cuttings are often affected. We know of no better plan for destroying the insect than drawing the affected shoots between the fingers, and then dipping these into a bowl of water after each grasp. In the case of carnation stems and other flowers, requiring more tender treatment, all the froth may be taken from the insect by means of a piece of sponge, and itself then removed by a camel's hair brush.

TEU'CRIUM. Germander. (Named after *Teucer*, a Trojan prince, who first used it medicinally. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)
Annuals, seeds in the open ground in April; perennials, by seeds and division; shrubs, by cuttings in sandy soil, under a bell-glass, in spring, and a hand-light in summer. Most of them in the atmosphere of London, and farther north, require a cold pit or a greenhouse in winter. In dry places in the south of England they will frequently stand our winters uninjured. They are not at all particular as to soil.

HARDY EVERGREENS.

T. angusti'ssimum (narrowest-*leaved*). See T. POLIUM.
„ *brevifo'lium* (short-leaved). 1. Pink. June. Crete. 1824.
„ *orienta'le* (eastern). 1. Blue. July. Levant. 1725.
„ *Po'lium* (poly). 1. Pale. August. S. Europe. 1562. "Poly Germander."
„ „ *angustifo'lium* (narrow-leaved). Purple. July. Spain. 1732.
„ „ *flave'scens* (yellowish). Yellow. July. S. Europe. 1731.
„ *saxa'tile* (rock). ½. Pale yellow. July. Valentia. 1820.
„ *Scorodo'nia* (Scorodonia). 1. Pale yellow. June. Europe (Britain). "Wood Sage."
„ „ *cri'spum* (crisped). Leaves crisped. 1865.
„ *thymifo'lium* (thyme-leaved). ½. Reddish. August. Spain. 1816.

HARDY HERBACEOUS.

T. Arduí'ni (Arduin's). 1½. Yellow. July. S. Europe. 1823.
„ *au'reum* (golden). See T. POLIUM.
„ *Bo'trys* (Botrys). 1. Purple. June to August. Europe (England). "Jerusalem Oak." Biennial.
„ *campanula'tum* (bell-*flowered*). 1. Blue. July. Levant. 1728.
„ *canade'nse* (Canadian) 2. Purple. August. N. Amer. 1768.
„ *Chamæ'drys* (*common*-Germander). ¾. Purple. July. Europe (England). "Germander."
„ *divarica'tum* (spreading) Greece; Asia Minor, &c.
„ *fla'vum* (yellow). 2. Yellow. August. Mediterranean region. 1640.
„ *græ'cum* (Grecian). See T. DIVARICATUM.
„ *hirca'nicum* (Hyrcanian). 1½. Purple. September. Persia. 1763.
„ *Laxma'nni* (Laxmann's). See AJUGA LAXMANNI.
„ *lu'cidum* (shining). 1½. Purple. August. S. Europe. 1730.
„ *lu'cidum* (shining) of Sibthorp and Smith. See T. DIVARICATUM.
„ *lusita'nicum* (Portuguese). 1½. Purple. August. Portugal. 1822.
„ *massilie'nse* (Marseilles). 2. Purple. France. 1732.
„ *monta'num* (mountain). Europe.
„ *multiflo'rum* (many-flowered). 1. Light red. August. Spain. 1732.
„ *pycnophy'llum* (close-leaved). See T. POLIUM.
„ *pyrena'icum* (Pyrenean). Pyrenees.
„ *virgi'nicum* (Virginian). See T. CANADENSE.

GREENHOUSE HERBACEOUS.

T. bi'color (two-coloured). Yellow, red. July. Peru; Chili. 1826.
„ *infla'tum* (swollen). 2. Red. September. Jamaica. 1778. Stove.
„ *nissolia'num* (Nissolian). See T. PSEUDO-CHAMÆPITYS.
„ *Pseu'do-chamæ'pitys* (Pseudo-chamæpitys). 1. Purple. July. Mediterranean region. 1752.

GREENHOUSE EVERGREENS.

T. abutiloi'des (Abutilon-like). 1½. Yellow. April. Madeira. 1777.
„ *africa'num* (African). 1½. Purple. July. S. Africa. 1791.
„ *asia'ticum* (Asiatic). See T. LANCIFOLIUM.
„ *beto'nicum* (betony-like). 1½. Lilac. July. Madeira. 1775.
„ *ca'num* (hoary). See T. CHAMÆDRYS.
„ *cre'ticum* (Cretan). 1½. Purple. July. Crete. 1824.
„ *fru'ticans* (shrubby). 2–4. Lavender. August. Western Mediterranean region. 1869.
„ *heterophy'llum* (various-leaved). 2. Purple. June. Madeira. 1759.
„ *lancifo'lium* (lance-leaved). 2. Pink. August. Balearic Islands. 1777.
„ *latifo'lium* (broad-leaved). See T. FRUTICANS.
„ *macrosta'chyum* (large-spiked). See LEUCOSCEPTRUM CANUM.
„ *Ma'rum* (marum). 1½. Pale purple. August. Spain. 1640. "Cat Thyme."
„ *orchi'deum* (Orchis-like). See T. BICOLOR.
„ *pu'milum* (dwarf). ½. Purple. July. Spain. 1816.
„ *re'gium* (royal). 1½. Purple. July. Spain. 1699.
„ *tri'fidum* (three-cleft-*leaved*). See T. AFRICANUM.

TEYSMA'NNIA. (Commemorative of *J. E. Teysmann*, a Dutch horticulturist. Nat. ord Palmaceæ.)

A stove Palm. Seeds. Fibrous loam, one-third peat, and sand.

T. a'ltifrons (tall-leaved). 5–10. Pale yellow. Java.

THALA'MIA ASPLENIFO'LIA. See PHYLLOCLADUS RHOMBOIDALIS.

THA'LIA. (Named after *J. Thalius*, a German physician. Nat. ord. *Marants* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*. Allied to Maranta.)

Blue-flowered evergreens. Divisions; rich, sandy loam. *Genicula'ta* requires a cool, plant stove in winter; *dealba'ta*, a greenhouse, in a tub of water, or the roots in a pond out of doors, so deep that the frost will not reach them.

T. dealba'ta (white). 4. July. Carolina. 1791.
„ *genicula'ta* (jointed). 2. August. W. Ind. 1823.
„ *sangui'nea* (blood-red). See STROMANTHE SANGUINEA.

THALI'CTRUM. Meadow Rue. (From *thallo*, to grow green; the bright green colour of the young shoots. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Hardy herbaceous perennials. Division of the plant in spring; sandy loam and a little leaf-mould. Beautiful for the back of herbaceous borders.

T. acuti'lobum (sharp-lobed). See T. FŒTIDUM.
„ *adiantifo'lium* (Adiantum-leaved). See T. MINUS ADIANTIFOLIUM.
„ *alpi'num* (alpine). ½. White, yellow. June. Britain.
„ *anemonoi'des* (Anemone-like). 1. White. April. N. Amer. 1768. "Rue Anemone."
„ „ *flo're-ple'no* (double-flowered). ½. April. N. Amer. 1768.
„ *angustifo'lium* (narrow-leaved). 3. Pale yellow. June. Europe. 1793.
„ *apicula'tum* (bee-like-*flowered*). Yellow. June. 1838.
„ *appendicula'tum* (appendaged). See T. MINUS.
„ *aquilegifo'lium* (columbine-leaved). 3. Light purple. June. Austria. 1731.
„ „ *atropurpu'reum* (dark purple). 3. Dark purple. June. Austria. 1731.
„ „ *formo'sum* (beautiful). 3. Purple. June. S. Europe. 1800.
„ „ *ro'seum* (rosy). Rose. June. 1880.
„ *atropurpu'reum* (dark-purple). See T. AQUILEGIFOLIUM ATROPURPUREUM.
„ *Bauhi'ni* (Bauhin's). See T. ANGUSTIFOLIUM.
„ *cala'bricum* (Calabrian). 3. Yellow. July. Sicily. 1800.
„ *carolinia'num* (Carolina). 1. White. June. N. Amer. 1808.
„ *Chelido'nii* (swallowwort). 2. Purplish. June. Nepaul. 1823.
„ „ *cultra'tum* (coulter-shaped). See T. CULTRATUM.
„ *cine'reum* (grey). 2. Yellow. June. 1810.
„ *clava'tum* (club-*leaved*). 2. White. June. N. Amer. 1720.
„ *colli'num* (hill). See T. MINUS COLLINUM.
„ *conci'nnum* (neat). See T. MINUS.
„ *conto'rtum* (curled-*seeded*). See T. AQUILEGIFOLIUM.
„ *Cornu'ti* (Cornuti's). 3. White, yellow. May. N. Amer. 1806.
„ „ *revolu'tum* (curled-back). See T. REVOLUTUM.
„ *coryne'llum* (Corynella-like). 2. Yellow. June. N. Amer. 1819.
„ *crena'tum* (scolloped-*leaved*). See T. GLAUCUM.
„ *cultra'tum* (knife-shaped). Green, yellow. June. Himalayas.
„ *cynapiifo'lium* (Cynapium-leaved). 2. Purple, yellow. June. Siberia. 1823.
„ *cystica'rpum* (hollow-fruited). See T. CHELIDONII.
„ *Delava'yii* (Delavay's). 2–8. Pale purple. June to August. Yunnan, China. 1890.
„ *dioi'cum* (dicœcious). 1. Light yellow. June. N. Amer. 1759.
„ „ *occidenta'le* (western).
„ *dipteroca'rpum* (two-wing-fruited). 4–7. Rose-purple; anthers yellow. Western China. 1907.
„ *divarica'tum* (straggling). See T. ANGUSTIFOLIUM.
„ *dive'rgens* (spreading). See T. CORYNELLUM.
„ *ela'tum* (tall). See T. MINUS ELATUM.
„ „ *ambi'guum* (ambiguous). See T. MINUS ELATUM AMBIGUUM.
„ *exalta'tum* (lofty). See T. SIMPLEX.
„ *Fe'ndleri* (Fendler's). North-western Amer.
„ *fla'vum* (*common*-yellow). 4. Orange. June. Britain.
„ „ *vagina'tum* (sheathed). 2. Yellow. June. Siberia. 1810.
„ *flexuo'sum* (zigzag). See T. MINUS FLEXUOSUM.
„ *fœ'tidum* (stinking). ¾. White, yellow. June. Europe; Siberia. 1640.
„ *foliolo'sum* (small-leafy). 2. Purple, yellow. June. Nepaul. 1819.
„ *galioi'des* (Galium-like). 1. Yellow. June. Alsace. 1816.
„ *glauce'scens* (milky-greenish). See T. MINUS GLAUCESCENS.
„ *glau'cum* (milky-green-*leaved*). 5. Yellow. June. Spain. 1798.

T. jacquinia'num (Jacquinian). See T. MINUS ELATUM.
„ *læviga'tum* (smooth). See T. DIOICUM.
„ *laserpitiifo'lium* (Laserpitium-leaved). 3. Yellow. June. Europe. 1810.
„ *lu'cidum* (shining). See T. ANGUSTIFOLIUM.
„ *ma'jus* (greater). 3–5. Greenish-yellow. May, June. Europe (Britain).
„ *me'dium* (intermediate). See T. MINUS MEDIUM.
„ *microca'rpum* (small-podded). See T. ANGUSTIFOLIUM.
„ *mi'nus* (less). 1. Pale yellow. June. Britain.
„ „ *adiantifo'lium* (Adiantum-leaved). 1½. Green. June.
„ „ *affi'ne* (related). 2. Greenish-yellow. June.
„ „ *colli'num* (hill). 1½. Pale yellow. June. Europe (Britain).
„ „ *conci'nnum* (neat). 1½–3. White, green. June.
„ „ *ela'tum* (tall). 4. Light yellow. August. Hungary. 1794.
„ „ *ela'tum ambi'guum* (doubtful). 2. Pale yellow. June. Switzerland. 1819.
„ „ *flexuo'sum* (flexuous). 1½. Yellow. June. Europe. 1820.
„ „ *glauce'scens* (sea-green). 2. Green, yellow. June. Russia. 1818.
„ „ *me'dium* (intermediate). 1½. Greenish-yellow. June. Europe. 1789.
„ „ *pube'scens* (downy). 1½. Pale yellow. June. Switzerland. 1819.
„ „ *purpura'scens* (purplish). 1½. Purplish. June. Europe.
„ „ *rosmarinifo'lium* (rosemary-leaved). 2. Purple, yellow. June. S. Europe. 1816.
„ „ *saxa'tile* (rock). 1½. White, red. June. Europe. 1819.
„ *ni'gricans* (blackening) of Decandolle. See T. ANGUSTIFOLIUM.
„ *odora'tum* (scented). Green, yellow. June. France.
„ *oligospe'rmum* (few-seeded). See T. SQUARROSUM.
„ *orienta'le* (oriental). 3. White. June. Greece; Asia Minor. 1902.
„ *petaloi'deum* (petal-like). 3. White, yellow. June. Dauria. 1799.
„ *poly'gamum* (polygamous). See T. CORYNELLUM.
„ *prate'nse* (meadow). See T. FLAVUM.
„ *pube'scens* (downy). See T. MINUS PUBESCENS.
„ *purpura'scens* (purplish). 3. Light purple. June. N. Amer. 1699.
„ *purpu'reum* (purple). See T. CALABRICUM.
„ *revolu'tum* (revolute). 1½. Light yellow. June. N. Amer. 1806.
„ *rhynchoca'rpum* (beak-fruited). 3. Leaves like those of Maidenhair Fern. Transvaal. 1892.
„ *rosmarinifo'lium* (rosemary-leaved). See T. MINUS ROSMARINIFOLIUM.
„ *rugo'sum* (wrinkly). 4. White, yellow. July. N. Amer. 1774.
„ „ *di'scolor* (two-coloured). 6. Yellow. June. N. Amer. 1810.
„ *saxa'tile* (rock). See T. MINUS SAXATILE.
„ *Schwei'ggeri* (Schweigger's). See T. MINUS.
„ *sibi'ricum* (Siberian). See T. SQUARROSUM.
„ *si'mplex* (simple-*stalked*). 1. Lilac, yellow. May. Sweden. 1778.
„ *sparsiflo'rum* (scattered-flowered). Yellow. June. Siberia. 1838.
„ *specio'sum* (showy). See T. GLAUCUM.
„ *squarro'sum* (spreading). 1. Yellow. June. Siberia. 1775.
„ *stipula'ceum* (*large*-stipuled). 2. White,yellow. June. Europe. 1820.
„ *tri'gynum* (three-carpelled). See T. SQUARROSUM.
„ *tubero'sum* (tuberous). 1½. White. June. Western Europe. 1713.

THA'MNEA. (From *thamnos*, a shrub. Nat. ord. *Bruniads* [Bruniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrub. Cuttings of the young shoots in sand, under a bell-glass, in April, and then set in a close pit; fibrous, sandy peat, and a little charcoal and freestone. Winter temp., 40° to 48°.

T. uniflo'ra (one-flowered). White. April. S. Africa. 1810.

THA'PSIA. Deadly Carrot. (From *Thapsos*, the name of an island, where *T. garganica* grew. Nat. ord. Umbelliferæ.)

Tall greenhouse perennials, or subshrubby in the case of *T. edulis*. Seeds; offsets from the roots. Loam, leaf-mould, and sand. *T. garganica* has enjoyed a great reputation amongst the Greeks and Moors for its healing powers. The roots of *T. edulis* are eaten in Madeira.

T. deci'piens (deceiving). 6. White. June, July. Madeira. 1867.
„ (*Moni'zia*) *edu'lis* (edible). 4. White. May. Madeira. 1857. "Tree Carrot."
„ *garga'nica* (Garganic). 2–4. Yellow. July, August. Mediterranean region. 1683. "Drias-plant."
„ *villo'sa* (shaggy). 3–4. Yellow. June, July. S. Europe. 1710.

THA'SIUM. Meadow Parsnip. (Meaning not clear Nat. ord. Umbelliferæ.)

Hardy perennial herbs. Seeds; divisions. Ordinary garden soil.

T. au'reum (golden). Yellow. N. Amer.
„ *trifolia'tum* (three-leaved). Yellow. N. Amer.

THATCH PALM. *Eute'rpe. Sa'bal. Thri'nax.*

THAUMATOCO'CCUS. (From *thaumatos*, wonderful, and *kokkos*, a berry; the fruit is fleshy, and the seeds covered with a thick, very glossy aril. Nat. ord. Scitaminaceæ.)

A stove herb with a creeping, woody root. Divisions. Loam, peat, charcoal, and sand.

T. Danie'lli (Daniell's). W. Trop. Africa. "Katemphe."

THE'A. Tea. (From *tcha*, the Chinese name for tea. Nat. ord. *Theads* [Ternströmiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Greenhouse, white-flowered, evergreen shrubs. Cuttings of ripened young shoots, taken off at a joint, and inserted in silver sand, under a bell-glass, and placed in a close pit, the glass being opened at night to prevent damping; also by layers from shoots thrown up by the roots; also, we believe, by grafting the tenderer kinds on *vi'ridis*. Equal parts of fibrous peat and sandy, turfy loam packed tight. Winter temp., 38° to 48°. As the roots run deep, they thrive best when planted out in a cool conservatory. Plants have survived many winters round London in the open ground with the protection of a mat in cold weather.

T. assame'nsis (Assam). See CAMELLIA THEIFERA ASSAMICA.
„ *Bohe'a* (Bohea). See CAMELLIA THEIFERA.
„ *vi'ridis* (green). See CAMELLIA THEIFERA.
„ *chine'nsis* (Chinese). See CAMELLIA THEIFERA.
„ *malifio'ra* (Apple-flowered). See CAMELLIA ROSÆFLORA.

THEEZAN TEA. *Rha'mnus Thee'zans.*

THELESPE'RMA. From *thele*, a nipple, and *sperma*, a seed; in reference to the nipple-like outgrowths from the seeds or achenes. Nat. ord. Compositæ.)

Hardy or half-hardy perennial herbs or subshrubs. Seeds; divisions. Well-drained soil.

T. ambi'guum (ambiguous). 2. Yellow. North-western Amer.
„ *filifo'lium* (thread-leaved). 2. Yellow. August. North-western Amer. 1835.

THELYMI'TRA. (From *thelus*, feminine, and *mitra*, a cap; the column is hooded. Nat. ord. Orchidaceæ.)

Greenhouse terrestrial Orchids. Offsets. Fibrous loam, peat, and sand.

T. ca'rnea (fleshy). 1. Pink. May. Australia. 1820.
„ *Forste'ri* (Forster's). See *T. longifolia*.
„ *grami'nea* (grassy). See T. LONGIFOLIA.
„ *grandiflo'ra* (large-flowered). 1. Australia.
„ *ixioi'des* (Ixia-like). 1. Blue. May. Australia. 1810.
„ *longifo'lia* (long-leaved). 1. Rose, pink, or blue. May. Australia. 1824.
„ *pauciflo'ra* (few-flowered). See T. LONGIFOLIA.
„ *variega'ta* (variegated). 1. Purple. May. Australia.
„ *veno'sa* (veiny). 1½. Blue. April. Australia. 1826.

THEMISTOCLE'SIA. (Commemorative of *Themistocles*, an ancient Greek statesman. Nat. ord. Vaccinaceæ.)

Evergreen stove shrub. Cuttings in sandy peat in bottom-heat. Peat and sand.

T. corom'lla (little-crown). Red. Colombia. 1866.

THENA'RDIA. (Named after *M. Thenard*, a French chemist. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreen climber. Cuttings of stubby side-shoots in sand, under a bell-glass, and in heat; sandy, fibrous loam and peat, with a little charcoal. Winter temp., 55° to 60°; summer, 65° to 85°.

T. floribu'nda (bundled-flowered). 10. Blue. Mexico. 1823.

THEOBRO'MA. Chocolate-tree. (From *theos*, a god, and *broma*, food; poetically, food for the gods. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 18-*Polyadelphia*, 1-*Decandria*.)

The seed of *T. Caca'o* is the chief ingredient in chocolate and cocoa. Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; fibrous loam and sandy peat. Winter temp., 55° to 65°; summer, 65° to 88°.

T. angustifo'lia (narrow-leaved). See T. SPECIOSA.
,, *bi'color* (two-coloured). 16. Brown. New Grenada. 1820.
,, *Caca'o* (cacao). 16. Brown. Trop. Amer. 1739. "Cocoa."
,, *caribæ'a* (Caribæan). Yellow. W. Ind. 1821.
,, *Guazu'ma* (Guazuma). See GUAZUMA ULMIFOLIA.
,, *guiane'nsis* (Guiana). See T. CACAO.
,, *specio'sa* (showy). Brazil.

THEODO'REA. (A commemorative name. Nat. ord. Orchidaceæ.)

Stove epiphytal orchid. Offsets. Sphagnum, fibre of peat, and crocks.

T. gomezoi'des (Gomezia-like). ½. White, with orange-buff blotch. Brazil. 1903.

THEOPHRA'STA. (Named after *Theophrastus*, the father of natural history. Nat. ord. *Ardisiads* [Myrsinaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Stove evergreens. Cuttings of ripe young shoots in sand, under a bell-glass, in heat; sandy loam and fibrous peat. Winter temp., 50° to 58°; summer, 60° to 85°.

T. argyræ'a (silvery). 1860.
,, *imperia'lis* (imperial). W. Ind. 1864.
,, *Jussieu'i* (Jussieu's). 3. White. St. Domingo. 1818.
,, *latifo'lia* (broad-leaved). See CLAVIJA LATIFOLIA.
,, *longifo'lia* (long-leaved). See CLAVIJA ORNATA.
,, *macrophy'lla* (large-leaved). See CLAVIJA MACROPHYLLA.
,, *pinna'ta* (pinnate). See TALISIA PRINCEPS.
,, *smara'gdina* (emerald green). See DEHERAINIA SMARAGDINA.
,, *umbro'sa* (shady). See CLAVIJA UMBROSA.

THERE'SIA PE'RSICA. See FRITILLARIA PERSICA.

THERMOMETER. This instrument is the only unfailing guide for the gardener in regulating the heat to which he allows the roots and foliage of his plants to be subjected.

Fahrenheit's is used chiefly in Britain, Holland, and North America, the freezing point of water on which is at 32°; and its boiling point, 212°. *Reaumur's* thermometer was that chiefly used in France before the Revolution, and is that now generally used in Spain, and in some other continental states. In its scale the freezing point is 0°; and the boiling point, 80°. On *Celsius* or the *Centigrade* thermometer, now used throughout France, and in the northern kingdoms of Europe, the freezing point is 0°; and the boiling point, 100°. Hence, to reduce degrees of temperature of the Centigrade thermometer and of that of Reaumur to degrees of Fahrenheit's scale, and conversely:

RULE 1.—Mutiply the Centigrade degrees by 9, and divide the product by 5; or multiply the degrees of Reaumur by 9, and divide by 4; then add 32 to the quotient in either case, and the sum is the degrees of temperature of Fahrenheit's scale.

RULE 2.—From the number of degrees on Fahrenheit's scale subtract 32; multiply the remainder by 5 for Centigrade degrees, or by 4 for those of Reaumur's scale, and the product, in either case, being divided by 9, will give the temperature required according to Fahrenheit's.

To ascertain the internal temperature of a hothouse, the thermometer should be fixed near its centre, against a pillar, and under a cupola, or little roof, shading it from the sun.

A self-registering thermometer should be in every house, for it shows the highest and lowest degrees of heat which have occurred in the twenty-four hours; and therefore serves as a check upon those to whose care they are entrusted.

Bregazzi's bark-bed thermometer is an excellent instrument for ascertaining the bottom-heat of hot-beds, bark-pits, &c. It is a thermometer inclosed in a metal tube, perforated to admit the heat, pointed, so as to be easily thrust down, and with a small door in the side, for observing the degree of temperature shown by the scale.

THERMO'PSIS. (From *thermos*, a lupine, and *opsis*, like; lupine-like. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Piptanthus.)

Hardy herbaceous yellow-flowered perennials. Chiefly by seeds sown in April; light, sandy loam.

T. barba'ta (bearded). 1½. Purple. June. Himalaya. 1855.
,, *carolinia'na* (Carolinian). 1½. Yellow. N. Amer.
,, *corgone'nsis* (Corgon). 1. July. Altaia. 1820.
,, *faba'cea* (bean-like). 2. June. Kamtchatka. 1811.
,, *laburnifo'lia* (Laburnum-leaved). See PIPTANTHUS NEPALENSIS.
,, *lanceola'ta* (spear-head-*leaved*). 1. June. Siberia. 1779.
,, *lupinoi'des* (Lupine-like). See T. LANCEOLATA.
,, *mo'llis* (soft). 1½. Blue. June. N. Amer. 1824.
,, *monta'na* (mountain). 1. Yellow. June. N. Amer. 1818.
,, *nepaule'nsis* (Nepaul). See PIPTANTHUS NEPALENSIS.
,, ,, *au'rea* (golden). See PIPTANTHUS NEPALENSIS AUREA.
,, *rhombifo'lia* (rhombus-leaved). 2. Yellow. June N. Amer.

THEROPO'GON. (From *theros*, summer, and *pogon*, a beard; the plant resembles Ophiopogon. Nat. ord. Liliaceæ. Allied to Polygonatum.)

T. pa'llidus (pale). ½. Pink. Himalaya. 1875.

THE'SIUM. (An old Greek word, *thesion*. Nat. ord. Santalaceæ.)

Hardy perennial herb parasitic on the roots of various things. Seeds; divisions. Should be planted amongst grass or other low plants.

T. drupa'ceum (berried). See LEPTOMERIA BILLARDIERI.
,, *humifu'sum* (spread-on-ground). ¼–½. Green. Summer. Europe (Britain). "Bastard Toad-flax."
,, *linophy'llum* (flax-leaved). See T. HUMIFUSUM.

THESPE'SIA. (From *thespesios*, divine; one of the trees often planted round places of worship in India. Nat. ord. *Mallowworts* [Malvaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*.)

Stove evergreen trees. Cuttings of stubby side-shoots in sand, in May, under a bell-glass, in bottom-heat; fibrous, sandy loam, and a little leaf-mould. Winter temp., 48° to 55°; summer, 65° to 85°.

T. grandiflo'ra (large-flowered). 30. Scarlet. Point Rico. 1837.
,, *La'mpas* (lamp). See T. MACROPHYLLA.
,, *macrophy'lla* (large-leaved). 10. Pink. Trop. Asia and Africa. 1806.
,, *popu'lnea* (poplar-*leaved*). 30. White. Trop. Asia and Africa. 1770.
,, ,, *guadalupe'nsis* (Guadaloupe). 30. Guadaloupe.
,, *tomento'sa* (felted). Mexico.

THEVE'TIA. (Commemorative of *M. Thevet*. Nat. ord. Apocynaceæ.)

Evergreen stove shrubs. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

T. Ahou'ai (Ahouai). 15–20. Yellow. June. Brazil. 1739.
,, *nereifo'lia* (Nerium-leaved). 12. Yellow. June.
,, *ova'ta* (egg-shaped). 3. Yellow. Mexico. Trop. Amer. 1735.
,, *Ycco'tli* (Yccotli). 5–8. Yellow. June. Mexico. 1800.

THIBAU'DIA. (Named after *Thiebaut de Berneaud*, a French botanist. Nat. ord. *Whortleberries* [Vacciniaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Stove evergreens. Cuttings of half-ripe shoots in sand, under a bell-glass, and in moist heat; sandy loam and fibrous peat. Winter temp., 50° to 60°; summer, 60° to 85°.

T. acumina'ta (long-pointed). See CAVENDISHIA ACUMINATA.
„ *angustifo'lia* (narrow-leaved). See EURYGANIA ANGUSTIFOLIA.
„ *cordifo'lia* (heart-leaved). See CAVENDISHIA CORDIFOLIA.
„ *corona'ria* (garland). See THEMISTOCLESIA CORONILLA.
„ *floribu'nda* (free-flowering). Scarlet. Colombia.
„ *Je'ssicæ* (Jessica's). Pale red. September. Venezuela (?). 1865.
„ *macra'ntha* (large-flowered). See AGAPETES MACRANTHA.
„ *macrophy'lla* (large-leaved). See PSAMMISIA MACROPHYLLA.
„ *microphy'lla* (small-leaved). 2. September. Peru. 1847.
„ *myrtifo'lia* (myrtle-leaved). See PENTAPTERYGIUM SERPENS.
„ *ocane'nsis* (Ocana). Colombia. 1851.
„ *penduliflo'ra* (pendulous-flowered). See PSAMMISIA PENDULIFLORA.
„ *pichinche'nsis* (Pinchincha). 12 Scarlet. Colombia. 1849.
„ „ *gla'bra* (smooth). See PSAMMISIA HOOKERIANA.
„ *pulche'rrima* (beautiful). See AGAPETES VARIEGATA.
„ „ *gla'bra* (smooth). See AGAPETES GLABRA.
„ *sarca'ntha* (fleshy-flowered). See PSAMMISIA SARCANTHA.
„ *scabriu'scula* (rather-scabrous). 3–5. Crimson. April. Ecuador. 1850.
„ *seti'gera* (bristly). See AGAPETES SETIGERA.
„ *vaccina'cea* (cranberry-like). See AGAPETES SETIGERA.
„ *variega'ta* (variegated). See AGAPETES VARIEGATA.

THINNING. The exhaustion consequent upon the production of seed is a chief cause of the decay of plants. This explains why fruit-trees are weakened or rendered temporarily unproductive, and even killed, by being allowed to ripen too large a crop of fruit, or to "overbear themselves."

The thinning of fruit is, consequently, one of the most important operations of the garden, though one of the least generally practised. It is equally important to be attended to in all fruit-bearers, but especially the vine, nectarine, peach, apricot, apple, and pear. It should be done with a bold, fearless hand; and the perfection of that which is allowed to remain will amply reward the grower, in harvest time, for the apparent sacrifice made. But he will not reap his reward only in this year, for the trees, thus kept unweakened by over-production, will be able to ripen their wood, and deposit their store of sap in their vessels, so absolutely necessary for their fruitfulness next season.

Thinning is a most necessary operation with plants as well as with the fruit they bear. The roots of a plant extend in a circle round it, of which the stem is the centre. If the roots of adjoining plants extend within each other's circle, they mutually rob one another of nutriment, and check each other's growth. Thinning in the seed bed is generally applied with too timid a hand.

THISTLE. *Ca'rduus. Cni'cus.*
THISTLE, BLESSED. *Si'lybum Maria'num.*
THISTLE, COTTON. *Onopo'rdon Aca'nthium.*
THISTLE, GLOBE. *Echi'nops.*
THISTLE, GOLDEN. *Sco'lymus hispa'nicus.*
THISTLE, HEDGEHOG. *Echinoca'ctus.*
THISTLE, HOLY. *Si'lybum Maria'num.*
THISTLE, MELON. *Meloca'ctus.*
THISTLE, OUR LADY'S MILK. *Si'lybum Maria'num.*
THISTLE, SCOTCH. *Cni'cus lanceola'tus.*
THISTLE, SOW. *So'nchus.*

THLADIA'NTHA. (From *thladias*, a eunuch, and *anthos*, a flower. Nat. ord. Cucurbitaceæ.)

Hardy, deciduous climbers, with tuberous roots. Seeds; divisions of the tubers. Well-drained soil.

T. du'bia (doubtful). 10–15. Yellow. China. 1864.
„ *Olive'ri* (Oliver's). 30–35. Yellow. Summer. Central China. 1903. Tubers absent.

THLA'SPI. Bastard Cress. (From *thlaspis*, an old Greek name for cress. Nat. ord. Cruciferæ.)

Hardy annuals or perennial herbs.

T. alpe'stre (alpine). ¼–½. White. June to August. Europe (Britain). Perennial.
„ *ara'bicum* (Arabian). See ÆTHIONEMA CAPPADOCICUM.
„ *cepæfo'lium* (onion-leaved). ½. Pink. June, July. Tyrol, &c. 1824.
„ *lu'teum* (yellow). See BIVONÆA LUTEA.
„ *occita'nicum* (Occitanian). See T. ALPESTRE.
„ *pu'milum* (dwarf). May, June. Caucasus. 1821.
„ *rotundifo'lium* (round-leaved). ½. White, purple. June, July. Europe. 1759.
„ *saxa'tile* (rock). See ÆTHIONEMA SAXATILE.
„ *sylve'stre* (wood). See T. ALPESTRE.
„ *viola'scens* (violet). Purple-violet. June. Asia Minor.

THOMA'SIA. (Named after *Messrs. Thomas*, two brothers, collectors of Swiss plants. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Lasiopetalum.)

Greenhouse, Australian, evergreen shrubs. Cuttings of firm, stubby, young side-shoots in sand, under a bell-glass, in April; sandy, fibrous loam and peat, with a little charcoal and broken pots, and pots extra well-drained. Winter temp., 40° to 48°; a sheltered, airy place in summer.

T. cane'scens (hoary). See T. GLUTINOSA.
„ *diffu'sa* (straggling). White. April. 1822.
„ *dumo'sa* (bushy). See RULINGIA PARVIFLORA.
„ *folio'sa* (leafy). 3. June. 1823.
„ *glutino'sa* (clammy). Red. May. 1835.
„ „ *latifo'lia* (broad-leaved). Pink, dark brown. Summer. 1885.
„ *grandiflo'ra* (large-flowered). Red. 1840.
„ *panicula'ta* (panicled). See T. PAUCIFLORA.
„ *pauciflo'ra* (few-flowered). Red. June. 1842.
„ *purpu'rea* (purple). 3. Purple. June. 1803.
„ *quercifo'lia* (oak-leaved). 3. Purple. May. 1803.
„ *solana'cea* (potato-like). 3. White. June. 1803.
„ *stipula'cea* (large-stipuled). See T. TRIPHYLLA.
„ *triphy'lla* (three-leaved). 3. June. 1824.
„ *macroca'rpa* (large-fruited). 3. Red. June. 1842.

THOMSO'NIA. (Commemorative of *Dr. A. T. Thomson*. Nat. ord. Araceæ.)

Stove perennial herbs, with tuberous roots. Offsets. Fibrous loam, peat, and sand.

T. Hoo'keri (Hooker's). See T. NEPALENSIS.
„ *nepale'nsis* (Nepaul). 4. Greenish-yellow. Himalaya. 1816.

THORN. *Cratæ'gus.*
THORN APPLE. *Datu'ra Stramo'nium.*
THORN, CHRIST'S. *Paliu'rus austra'lis.*
THORN, GARLAND. *Paliu'rus austra'lis.*
THORN, JERUSALEM. *Parkinso'nia aculea'ta.*
THOROUGH-WAX. *Bupleu'rum rotundifo'lium.*

THOUI'NIA. (Named after *A. Thouin*, professor of agriculture, &c., in Paris. Nat. ord. *Soapworts* [Sapindaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Cupania.)

Stove evergreen shrub. Cuttings of firm side-shoots in sand, under a bell-glass, in heat; sandy, fibrous loam and a little peat or leaf-mould. Winter temp., 50° to 58°; summer, 60° to 85°.

T. pinna'ta (leafleted). 8. White. Domingo. 1823.

THREE BIRDS ORCHID. *Pogo'nia pe'ndula.*
THRIFT. *Arme'ria mari'tima.* See EDGING.

THRI'NAX. (From *thrinax*, a fan; shape of the leaves. Nat. ord. *Palms* [Palmaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Stove Palms. Seeds in a moist, sweet hotbed, in spring; rich, loamy soil. Winter temp., 55° to 60°; summer, 60° to 90°.

T. arbo'rea (tree-like). See ACANTHORHIZA ARBOREA.
„ *arge'ntea* (silvery). 15. W. Ind. 1830.
„ *barbade'nsis* (Barbados). 12. Barbados. 1875.
„ *crini'ta* (bristly). 8. Cuba.

T. e'legans (elegant). See T. RADIATA.
„ *eleganti'ssima* (very-elegant). 1871.
„ *exce'lsa* (lofty). Jamaica. 1800.
„ *ferrugi'nea* (rusty). Jamaica. 1840.
„ *Ga'rberi* (Garber's). Florida.
„ *gra'cilis* (graceful). See T. RADIATA.
„ *graci'llima* (very-graceful). 1877.
„ *graminifo'lia* (grass-leaved). See T. MULTIFLORA.
„ *gra'ndis* (grand). Cuba. 1870.
„ *havane'nsis* (Havana). W. Ind. 1869.
„ *Ma'rtii* (Martius'). Cuba.
„ *Miragua'na* (Miraguan). Cuba. 1852.
„ *Morri'sii* (Morris'). 3–5. W. Ind. 1891.
„ *multiflo'ra* (many-flowered). 8. Dominica. 1847.
„ *parviflo'ra* (small-flowered). 15. White, green. Jamaica. 1778.
„ *Pumi'lio* (Pumilio). Jamaica. 1738.
„ *radia'ta* (rayed). 5–10. W. Ind. 1824.
„ *stella'ta* (starry). See T. MIRAGUANA.

THRIPS. *Thrips Adonidum* is one of the worst pests that can gain a footing in our stoves and greenhouses. The larvæ and pupæ are yellowish-white, and the perfect insect is of a dull, deep black, with the point, and sometimes the whole of the abdomen, of a rust colour; the wings are dirty white; the horns and legs yellowish, the extremity of the former black. It attacks plants by piercing the under side of the leaves; and one often sees, at the tip of the tail, a globule of blackish fluid, which it soon deposits, and, by innumerable spots of this glutinous matter, the pores of the leaves are stopped up, and large portions of the surface become blotched. During March the full-grown larvæ and pupæ, which are as large as the perfect insect, are found in groups, feeding on the under side of the leaves; and at this time the recently-hatched but perfect insect either lies close under the ribs, or roves about in search of a mate (*Curtis*). Flowers of sulphur have been recommended as destructive of this plague, but we believe that Scotch snuff, applied by means of a dredging-box (perhaps Brown's Fumigator would answer), is as effectual an application as any. Prevention, however, is better than cure; and if the plants are kept healthy by due ventilation, and by moisture both in the air and soil, this insect may be usually banished.

T. ochraceus infests the ripe fruit of plums, peaches, and nectarines, piercing the stalks, and causing their fall, and rendering the fruit disgusting. It was first noticed and described by Mr. Curtis. It is narrow and linear, of a bright and deep ochreous colour, the eyes are black, the horns appear to be only six-jointed and brownish at the tips, it has three ocelli in the crown, the body is hairy, the tip pointed and bristly, the wings are shorter than the body in the male, lying parallel on the back when at rest, narrow, especially the under ones, and fringed, the hairs longest beneath and at the point, tips of feet dusky. It is destroyed by the same means as *T. Adonidum*.

THRIXSPE'RMUM. (From *thrix*, a hair, and *sperma*, a seed; the seeds are hair-like. Nat. ord. Orchidaceæ. Now referred to Sarcochilus.)
T. Berkele'yi (Berkeley's). See SARCOCHILUS BERKELEYI.
„ *Freema'nii* (Freeman's). See SARCOCHILUS FREEMANII.
„ *Hartma'nni* (Hartmann's). See SARCOCHILUS HARTMANNI.
„ *indusia'tum* (indusiate). See SARCOCHILUS INDUSIATUS.
„ *luni'ferum* (crescent-bearing). See SARCOCHILUS LUNIFERUS.
„ *Moo'rei* (Moore's). See SARCOCHILUS MOOREI.
„ *muricula'tum* (finely-warted). See SARCOCHILUS MURICULATUS.
„ *sillemia'num* (Sillemian). See SARCOCHILUS SILLEMIANUS.
„ *unguicula'tum* (clawed). See SARCOCHILUS UNGUICULATUS.

THROATWORT. *Campa'nula Trache'lium* and *Trache'lium cæru'leum*.

THRYA'LLIS. (An old Greek name. Nat ord Malpighiaceæ.)
Evergreen stove shrub. Cuttings in sand in bottom-heat Loam, peat, and sand.

T. brachy'stachys (short-spiked). 4. August. Brazil. 1823.

THRYPTO'MENE. (From *thrupto*, to break to pieces, and *mene*, the moon. Nat. ord. Myrtaceæ.)
A slender, heath-like shrub. Cuttings in sand under a hand-light. Loam, peat, and plenty of sand.
T. saxi'cola (rock-dwelling). 2–3. White. July. Australia. 1824.

THU'JA. See THUYA.

THUJO'PSIS. See THUYA.

THUNBE'RGIA. (Named after *C. P. Thunberg*, the celebrated botanist. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)
Stove evergreen climbers. Seeds in early spring, in a strong, moist, sweet hotbed; cuttings, any time before the end of August, in sandy soil, under a bell-glass; fibrous loam and peat, with a little rotten dung and lime-rubbish. Winter temp., 48° to 60°; summer, 60° to 80°. As they are very subject to red spider, perhaps the best mode of treating these fine plants is to grow them as annuals, throwing the plants away in the end of autumn. If preserved, the flowers of sulphur and the syringe must hardly ever have a holiday. Indeed, the syringe and a little shade are necessary to their health in summer.
T. affi'nis (related). Purple-blue, with yellow throat. September. Trop. Africa. 1887.
„ *ala'ta* (winged). 4. Yellow. June. E. Ind. 1823.
„ „ *a'lba* (white-*flowered*). 4. White. May. Madagascar.
„ „ *auranti'aca* (orange-*flowered*). 4. Orange. May.
„ „ *Do'ddsii* (Dodds's). Golden yellow; throat violet.
„ *angula'ta* (angular). 4. June. Madagascar. 1823.
„ *cape'nsis* (Cape). 3. Yellow. June. S. Africa. 1824.
„ *chry'sops* (golden-eyed). 3. Blue. Violet. June. Sierra Leone.
„ *cocci'nea* (scarlet). 4. Scarlet. June. Himalaya; Burma. 1823.
„ *corda'ta* (heart-*leaved*). See T. FRAGRANS.
„ *Do'ddsii* (Dodds's). See T. ALATA DODDSII.
„ *dregea'na* (Dregean). S. Africa.
„ *ere'cta* (erect). 4–6. Blue; orange in throat. July. Trop. Africa. 1857. Shrub.
„ „ *a'lba* (white). White, with yellow throat.
„ *fra'grans* (fragrant). 4. White. June. Trop. Asia. 1796.
„ *grandiflo'ra* (large-flowered). 6. Blue. June. India. 1820.
„ „ *a'lba* (white). White. 1892.
„ „ *læ'vis* (smooth). Scentless.
„ *Harri'sii* (Harris'). See T. LAURIFOLIA.
„ *hawtaynea'na* (Hawtayne's). 10. Scarlet. June. Nepaul. 1826.
„ *Ki'rkii* (Kirk's). 2–4. Purple. September. Trop. Africa. 1876.
„ *laurifo'lia* (laurel-leaved). Blue. Summer. Malaya. 1856.
„ *mysore'nsis* (Mysore). Yellow, pale purple. June. S. India. 1854.
„ *natale'nsis* (Natal). 2–3. Blue. July. S. Africa. 1858.
„ *primuli'na* (primrose-like). Primrose. August. E. Trop. Africa. 1904. Herbaceous.
„ *vogelia'na* (Vogelian). Purple. Summer. Trop. Africa. 1863.

THUNDER PLANT. *Sempervi'vum tecto'rum*.

THU'NIA. (Meaning not clear. Nat. ord. Orchidaceæ. Now referred to Phaius.)
T. a'lba (white). See PHAIUS ALBUS and varieties.
„ *Benso'niæ* (Mrs. Benson's). See PHAIUS BENSONÆ.
„ *brymeria'na* (Brymerian). See PHAIUS BRYMERIANUS.
„ *candidi'ssima* (whitest). See PHAIUS CANDIDISSIMUS.
„ *Marsha'lliæ* (Mrs. Marshall's). See PHAIUS MARSHALLIÆ.
„ *marshallia'na* (Marshallian). See PHAIUS MARSHALLIÆ.
„ *pu'lchra* (fair). See PHAIUS ALBUS.

THU'YA. Arborvitæ. (From *thuon*, a sacrifice; the resin used as incense in Eastern sacrifices. Nat. ord. *Conifers* [Coniferæ]. Linn. 21-*Monœcia*, 10-*Decandria*.)
Hardy evergreen trees. Seeds, which ripen freely, or by cuttings; the seeds are best sown in April, slightly

covered, and if a frame or hand-light can be set over them, all the better; moist soil suits most of them; a few of the tenderest will require protection until they become some size.

T. acu'ta (acute). See T. ORIENTALIS.
„ *articula'ta* (jointed). See CALLITRIS QUADRIVALVIS.
„ *austra'lis* (southern). See CALLITRIS RHOMBOIDEA.
„ *chile'nsis* (Chilian). See LIBOCEDRUS CHILENSIS.
„ *craigia'na* (Craigian). See T. PLICATA.
„ *cupressoi'des* (cypress-like). See CALLITRIS CUPRESSOIDES.
„ *dolabra'ta* (axe-shaped). 40–50. Mountains of Japan.
„ „ *alti'ssima* (tallest). Habit nearly columnar. 1906.
„ „ *crista'ta* (crested). Plant globose, with fan-shaped branches. 1906.
„ „ *na'na* (dwarf). 1–1½. Japan 1862.
„ „ *plica'ta* (plaited). The branches appear folded. 1906.
„ „ *variega'ta* (variegated. Some twigs are variegated with pale yellow.
„ *donia'na* (Don's). See LIBOCEDRUS DONIANA.
„ *filifo'rmis* (thread-*leaved*). See T. ORIENTALIS PENDULA.
„ *gigante'a* (gigantic). See T. PLICATA.
„ *japo'nica* (Japanese). 10–30. Japan. 1862.
„ *lætevi'rens* (bright-green). See T. DOLABRATA NANA.
„ *Lo'bbi* (Lobb's). See T. PLICATA.
„ *Menzie'sii* (Menzies'). See T. PLICATA.
„ *nepale'nsis* (Nepaul). See THUYA ORIENTALIS NEPALENSIS.
„ *occidenta'lis* (western). 50. May. N. Amer. 1596. "American Arborvitæ."
„ „ *a'lba* (white). Tips of young twigs silvery.
„ „ *argе'ntea* (silvery). Twigs silvery.
„ „ *au'rea* (golden). Golden-yellow.
„ „ *Betera'msii* (Beterams'). Young growths copper-coloured. 1910.
„ „ *Bodme'ri* (Bodmer's).
„ „ *Buchana'ni* (Buchanan's).
„ „ *cauca'sica* (Caucasian).
„ „ *compa'cta* (compact). Habit conical.
„ „ *crista'ta* (crested). Twigs crowded at ends of branches.
„ „ *decussa'ta* (decussate). Leaves spreading like a juniper.
„ „ *de'nsa* (dense).
„ „ *Dickso'ni* (Dickson's).
„ „ *dorkine'nsis* (Dorking).
„ „ *Dougla'sii* (Douglas's).
„ „ *ellwangeria'na* (Ellwangerian). A pigmy.
„ „ *ellwangeria'na au'rea* (golden). Foliage golden-yellow, not burning in summer. 1896.
„ „ *ere'cta* (erect). Habit upright.
„ „ *ere'cta vi'ridis* (green). Upright, green.
„ „ *ericoi'des* (heath-like). Dwarf, heath-like bush.
„ „ *fiabella'ta* (fan-shaped). Twigs fan-shaped.
„ „ *globo'sa* (globose). Habit dwarf, globular.
„ „ *globo'sa compa'cta* (compact).
„ „ *gra'cilis* (graceful). Twigs slender.
„ „ *Ho'vei* (Hove's). Twigs arranged in flat branches.
„ „ *lu'tea* (yellow). Twigs pale yellow.
„ „ *pe'ndula* (drooping). Principal branches drooping.
„ „ *pulverule'nta* (powdery).
„ „ *Rive'rsii* (Rivers').
„ „ *Spæ'thii* (Spæth's). Twiglets slender, thread-like. 1890.
„ „ *variega'ta* (variegated-*leaved*). 25. May.
„ „ *vervæne'a* (Vervænean). Whole plant pale yellow.
„ „ *Wagne'ri* (Wagner's). Habit dense, narrow, pyramidal. 1896.
„ „ *walthame'nsis* (Waltham). Habit pyramidal.
„ „ *warea'na* (Warean).
„ „ *warea'na lute'scens* (yellowish).
„ „ *Waxen* (Waxen).
„ *orienta'lis* (eastern). 25. May. China. 1752. "Chinese Arborvitæ."
„ „ *argе'nteo-variega'ta* (silver-variegated). Branchlets variegated with white.
„ „ *ascote'nsis* (Ascot). Twigs golden.
„ „ *athrotaxoi'des* (Athrotaxis-like). Dwarf, with stout twigs.
„ „ *au'rea* (golden). 3. Golden-yellow.
„ „ *au'reo-variega'ta* (golden-variegated).
„ „ *compa'cta* (compact). Bright green, conical, dwarf.
T. orienta'lis decussa'ta (decussate). Leaves spreading like those of a Juniper.
„ „ *de'nsa* (dense). Sea-green.
„ „ *eleganti'ssima* (very-elegant). Twigs erect, compressed, golden-yellow when young.
„ „ *falca'ta* (sickle-shaped).
„ „ *falca'ta na'na* (dwarf).
„ „ *falca'ta no'va* (new).
„ „ *frenclоi'des* (Frenela-like).
„ „ *Frœbe'li* (Frœbel's).
„ „ *funicula'ta* (stalked). Twigs bright green.
„ „ *glau'ca* (sea-green).
„ „ *globo'sa* (globose).
„ „ *gra'cilis* (slender). Twigs slender.
„ „ *Hove'yi* (Hovey's).
„ „ *incurva'ta* (incurved).
„ „ *interme'dia* (intermediate).
„ „ *macroca'rpa* (large-fruited).
„ „ *melde'nsis* (Melden).
„ „ *mi'nima* (smallest).
„ „ *monstro'sa* (monstrous). Branches twisted, few.
„ „ *nepale'nsis* (Nepaulese). 20. May. Nepaul. 1824.
„ „ *pekine'nsis* (Pekin). 60. Pekin. 1861.
„ „ *pe'ndula* (drooping). 15–20. Twigs whip-like, drooping. May. Japan. 1828.
„ „ *pyramida'lis* (pyramidal). 12–30. May. Tartary. 1820.
„ „ *semperaure'scens* (always-golden). Retains its colour always.
„ „ *Siebo'ldii* (Siebold's). See T. ORIENTALIS COMPACTA.
„ „ *stri'cta* (erect). See T. ORIENTALIS PYRAMIDALIS.
„ „ *tata'rica* (Tartarian). See T. ORIENTALIS PYRAMIDALIS.
„ „ *triangula'ris* (triangular).
„ „ *zuccarinia'na* (Zuccarinian). See T. ORIENTALIS COMPACTA.
„ *pe'ndula* (drooping-*branched*). See T. ORIENTALIS PENDULA.
„ *plica'ta* (plaited). 100–150. May. N.W. Amer. 1796. "Red" or "Canoe Cedar."
„ „ *atrovi'rens* (dark green).
„ „ *au'rea* (golden).
„ „ *compa'cta* (compact).
„ „ *fastigia'ta* (upright).
„ „ *gra'cilis* (slender).
„ „ *mi'nima* (smallest).
„ „ *pe'ndula* (drooping).
„ „ *pu'mila* (dwarf).
„ „ *pyramida'lis* (pyramidal).
„ „ *recu'rva na'na* (dwarf-recurved).
„ „ *recurva'ta* (recurved).
„ „ *semperaure'scens* (always-golden).
„ „ *umbraculi'fera* (umbrella-bearing).
„ „ *variega'ta* (variegated). Variegated with light yellow.
„ „ *zebri'na* (zebra-striped). Twigs striped at intervals.
„ *Standi'shii* (Standish's). See T. JAPONICA.
„ *tetrago'na* (four-sided). See LIBOCEDRUS TETRAGONA.
„ *warea'na* (Warean). See T. OCCIDENTALIS WAREANA.

THUYO'PSIS. (From *Thuya*, the Arborvitæ, and *opsis*, likeness. Nat. ord. Coniferæ. Now referred to Thuya.)
T. borea'lis nidi'fera (nest-bearing northern). See CUPRESSUS NOOTKATENSIS NIDIFICA.
„ *dolabra'ta* (axe-shaped). See THUYA DOLABRATA.
„ „ *lætevi'rens* (bright-green). See THUYA DOLABRATA NANA.
„ „ *variega'ta* (variegated). See THUYA DOLABRATA VARIEGATA.
„ *Standi'shii* (Standish's). See THUYA JAPONICA.

THY'MBRA. (An ancient name applied to a thyme-like plant. Nat. ord. *Lipworts* [Labiatæ]. Linn. *14-Didynamia, 1-Gymnospermia*. Allied to Melissa.)
Half-hardy evergreen. Seeds in April, or cuttings under a hand-light in June; sandy, gravelly loam. Nice rock-work plants. They require a cold pit in winter.
T. carolinia'na (Carolinian). See MACBRIDEA PULCHRA.
„ *cilia'ta* (hair-fringed). See THYMUS CILIATUS.
„ *spica'ta* (spike-*flowered*). 1½. Pale purple. June. Levant. 1699.

THYME. *Thy'mus.*

THYME, BASIL. *Calami'ntha A'cinos.*

THYME, WATER. *Elo'dea.*

THYMELÆ'A. (From *thumos*, thyme, and *elaia*, the olive; the leaves are comparable to those of thyme, and the berries to olive berries. Nat. ord. Thymeleaceæ.)

Hardy or nearly hardy shrubs. Cuttings in a cold frame. Loam, peat, and sand.

T. arve'nsis (field). 1½. Pale yellow. Mediterranean region, &c.
„ *dioi'ca* (diœcious). 2. Yellow. July. Europe. 1834.
„ *hirsu'ta* (hairy). See PASSERINA HIRSUTA.
„ *Sanamu'nda* (Sanamunda). 3. Yellow. March. Europe. 1815.
„ *Tartonrai'ra* (Tartonraira). 3. White. Yellow. S. Europe. 1640.

THY'MUS. Thyme. (From *thuo*, to perfume. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*.)

Hardy evergreen trailers, and purple-flowered, except where otherwise mentioned. Seeds, cuttings, or divisions in March or April; sandy loam suits them all best. *T. vulga'ris* is our common pot-herb thyme. For culture, see SAGE.

T. angustifo'lius (narrow-leaved). ½. June. S. Europe. 1771.
„ *azo'ricus* (Azorean). July. Azores. 1820.
„ *azu'reus* (azure). ½. June. S. Europe. 1830.
„ *capita'tus* (headed). June. S. Europe. 1596.
„ *carno'sus* (fleshy). ½. Spain.
„ *Cephalo'tes* (*great*-headed). ½. July. Portugal. 1759.
„ *Chamæ'drys* (Chamædry's). ½. July to September. Europe (Britain).
„ „ *como'sus* (long-haired). ½. Transsylvania.
„ „ *monta'nus* (mountain). ½. Flower-spikes large.
„ „ *nummula'rius* (moneywort-like). Leaves large, round.
„ *cilia'tus* (hair-fringed). Violet. July. N. Africa. 1824.
„ *citriodo'rus* (citron-scented). See T. SERPYLLUM CITRIODORUS.
„ *colli'nus* (hill). See T. CHAMÆDRYS MONTANUS.
„ *co'rsicus* (Corsican). See MENTHA REQUIENI.
„ *croa'ticus* (Croatian). See MICROMERIA CROATICA.
„ *elonga'tus* (lengthened). See T. TOMENTOSUS.
„ *ericæfo'lius* (heath-leaved). See MICROMERIA VARIA.
„ *fruticulo'sus* (shrubby). See MICROMERIA APPROXIMATA.
„ *glabra'tus* (smooth). See T. SERPYLLUM.
„ *grandiflo'rus* (large-flowered). See CALAMINTHA GRANDIFLORA.
„ *He'rba-baro'na* (Herba-barona). 1. July. Corsica. 1820. "Seedy Cake."
„ *hirsu'tus* (hairy). See T. SERPYLLUM.
„ *lanceola'tus* (spear-head-*leaved*). ½. July. N. Africa. 1823.
„ *lanugino'sus* (woolly) of gardens. See T. VILLOSUS.
„ *monta'nus* (mountain). See T. CHAMÆDRYS MONTANUS.
„ *nummula'rius* (moneywort-like). See T. CHAMÆDRYS NUMMULARIUS.
„ *panno'nicus* (Pannonian). See T. SERPYLLUM.
„ *patavi'nus* (Paduan). See CALAMINTHA PATAVINA.
„ *Pipere'lla* (small peppermint). ½. July. Spain. 1810.
„ *rotundifo'lius* (round-leaved). ½. Pink. Leaves round. Pyrenees. 1879.
„ *Serpy'llum* (wild-thyme). ½. July. Britain.
„ „ *a'lbus* (white-*flowered*). ½. July. Britain.
„ „ *atropurpu'reus* (dark-purple). Dark purple. England. 1888.
„ „ *Chamæ'drys* (Chamædrys). See T. CHAMÆDRYS.
„ „ *citra'tus* (citron-scented). July.
„ „ *citriodo'rus* (citron-scented). ½. July. Tauria. 1820. "Lemon Thyme."
„ „ *citriodo'rus-argе'nteo-margina'ta* (silver-edged). Leaves edged with creamy-white.
„ „ *citriodo'rus au'reo-margina'tus* (golden-margined). Leaves edged with yellow. 1871.
„ „ *citriodo'rus au'reus* (golden). Leaves golden-yellow. 1870.
„ „ *cocci'neus* (scarlet). Bright red. 1888.
„ „ *lanugino'sus* (woolly). ½. July. Britain.
„ „ *mi'cans* (glittering). ½. Erect in habit. Europe.
„ „ *monta'nus* (mountain). See T. CHAMÆDRYS MONTANUS.
„ „ *pulche'llus* (pretty). Europe.
„ „ *splе'ndens* (splendid). Brilliant red. 1904.
„ „ *variega'tus* (variegated-*leaved*). ½. July. Britain.
T. Serpy'llum vulga'ris (common). See T. SERPYLLUM CITRIODORUS.
„ *spica'tus* (spiked). 1. June. Pyrenees. 1832.
„ *stria'tus* (striped). S. Europe; Asia Minor.
„ *tomento'sus* (felted). 1. August. Spain. 1816.
„ *transsilva'nicus* (Transsylvanian). See T. CHAMÆDRYS COMOSUS.
„ *villo'sus* (shaggy). ½. Purple. July. Portugal. "Woolly Thyme."
„ *vulga'ris* (common). 1. June. S. Europe. 1548. "Garden Thyme."
„ „ *latifo'lius* (broad-leaved). 1. June.
„ „ *variega'tus* (variegated-*leaved*). 1. July. Gardens.
„ *Zy'gis* (Zygis). Spain and Portugal.

THYRSACA'NTHUS. (From *thursos*, a thyrse, and *Acanthus*; thyrse-flowered Acanthus. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Stove evergreen shrub. For culture, see GEISSOMERIA. It must be spurred in closely. Flowers nearly all the year.

T. barlerioi'des (Barleria-like). Red. Brazil.
„ *bracteola'tus* (small-bracted). 1½. Red. July. Colombia. 1823.
„ *callista'chyus* (beautiful-spiked). 1½. Purple. Mexico.
„ *cocci'neus* (scarlet). See T. LEMAIRIANUS.
„ *i'ndicus* (Indian). See ERANTHEMUM INDICUM.
„ *lemairia'nus* (Lemairian). 3. Red. February. Country unknown. 1840.
„ *lilaci'nus* (lilac). See T. CALLISTACHYUS.
„ *ni'tidus* (shining). 3–4. Red. W. Ind.
„ *ru'tilans* (orange-red). 2. Glowing red. Winter. Colombia. 1851.
„ *schomburgkia'nus* (Schomburgk's). 3. Scarlet. Winter. Guiana. 1855.
„ *stri'ctus* (upright). 2–3. Red. Winter. Honduras.

THYRSO'PTERIS. (From *thursos*, a thyrse, and *pteris*, a fern; in reference to the fruiting portion of the frond. Nat. ord. Filices.)

Stove fern with much divided fronds. Spores. Fibrous loam, peat, and sand.

T. e'legans (elegant). 10–15. Fronds two and three times pinnate. Juan Fernandez.

THYSANO'TUS. (From *thysanotos*, fringed; the flower much fringed. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Greenhouse, purple-flowered, from Australia. By division of the plant in the herbaceous, and dividing the tuberous-rooted; sandy loam and leaf-mould. Winter temp., 38° to 45°, and very little water.

GREENHOUSE HERBACEOUS.

T. dicho'tomus (forked). ½. July. 1838.
„ *intrica'tus* (intricate-*stemmed*). See T. DICHOTOMUS.
„ *ju'nceus* (rush-like). ½. 1804.
„ *multiflo'rus* (many-flowered). 1. August. 1838.
„ *proli'ferus* (proliferous). See T. MULTIFLORUS.
„ *te'nuis* (slender). Lilac. May. 1836.

GREENHOUSE TUBERS.

T. ela'tior (taller). See T. TUBEROSUS.
„ *isanthe'rus* (even-anthered). ½. August. 1822.
„ *tubero'sus* (tuberous). 1. June. 1823.

TIARE'LLA. (From *tiara*, a little diadem; form of seed-pod. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 10-*Decandria*, 2-*Digynia*.)

Hardy, white-flowered herbaceous. Divisions of the root; common soil; dry borders, and the front of them, or elevated places in rock-works.

T. colo'rans (colouring). See HEUCHERA GLABRA.
„ *cordifo'lia* (heart-leaved). ½. April. N. Amer. 1731. "Foam Flower."
„ *Menzie'sii* (Menzies'). See TOLMIEA MENZIESII.
„ *polyphy'lla* (many-leaved). 1. April. Nepaul. 1820.
„ *unifolia'ta* (one-leaved). 2–3. Rose-tinted. N.W. Amer. 1907.

TIARI'DIUM. (From *tiara*, a diadem, and *eidos*, like; form of seed-pod. Nat. ord. *Boragewort*s [Boraginaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. United to Heliotropium.)

T. anisophy'llum (anise-leaved). See HELIOTROPIUM INDICUM.
,, *i'ndicum* (Indian). See HELIOTROPIUM INDICUM.
,, *veluti'num* (velvet). 1. Blue. June. W. Ind. 1820.

TIBOUCHI'NA. (The native name in Guiana. Nat. ord. *Melastomads* [Melastomaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Pleroma.)

Stove and greenhouse evergreens. Cuttings of firmish side-shoots in sand, under a bell-glass, and in a mild bottom-heat, any time between April and August; fibrous peat and sandy loam, with a little charcoal and broken pots, and extra care in draining. Winter temp., 55° to 60°; summer, 65° to 88°.

T. a'spera (rough). Purple. April. Guiana. 1820.
,, *barbi'gera* (beard-bearing). Violet-purple. Brazil.
,, *benthamia'na* (Benthamian). 6. Purple. August. Brazil. 1841.
,, *e'legans* (elegant). 5. Purple. June. Organ Mountains. 1844.
,, *floribu'nda* (free-flowering). Violet-blue. Brazil. 1870.
,, *gaudichaudia'na* (Gaudichaudian). 5. Rosy-violet. June. Brazil. 1836.
,, *gra'cilis* (slender). 1. Red, lilac. Brazil. 1834. Stove perennial.
,, *granulo'sa* (granular). 6. Brazil. 1816.
,, *gro'ssa* (thick). Trop. Amer.
,, *heteroma'lla* (variable-haired). 4. July. Brazil. 1819.
,, *holoseri'cea* (wholly-silky). 5. July. Brazil. 1816.
,, *langsdorffia'na* (Langsdorffian). Brazil.
,, *lepido'ta* (scaly). Violet-purple. Trop. Amer.
,, *longifo'lia* (long-leaved). 1. White. January. Trop. Amer. 1820. Stove annual.
,, *Mathæ'i* (Matha's). Violet-purple. Peru.
,, *mei'odon* (small-toothed). 6. Purple. Brazil. 1895.
,, *mo'llis* (soft). Purple. Trop. Amer. 1864.
,, *moricandia'na* (Moricandian). Brazil.
,, *ni'tida* (shining). Pale lilac. June. Trop. Amer. 1830.
,, *ochype'tala* (wheel-petaled). Peru.
,, *orna'ta* (adorned). ½. Rosy-purple. August. Trop. Amer. 1848.
,, *semideca'ndra* (half-ten-anthered). 2–10. Rich purple. July to November. Brazil. 1847. Greenhouse.
,, *versi'color* (changeable-coloured). Pink. September. Brazil. 1825.
,, *vimi'nea* (twiggy). 6. Purple. July. Brazil. 1821.

TICO'REA. (The native name of *T. fœ'tida*. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Galipea.)

Stove, white-flowered, evergreen tree. Cuttings of ripe young shoots in sand, under a bell-glass, in heat, in March; fibrous loam and sandy peat. Winter temp., 50° to 55°; summer, 60° to 80°.

T. fœ'tida (stinking). 10. Guiana. 1825.
,, *jasminiflo'ra* (jasmine-flowered). See GALIPEA MULTIFLORA.

TIGA'REA TRIDENTA'TA. See PURSHIA TRIDENTATA.

TIGER FLOWER. *Tigri'dia.*

TIGER IRIS. *Tigri'dia.*

TIGER LILY. *Li'lium tigri'num.*

TIGRI'DIA. Tiger Flower. (From *tigris*, a tiger, and *eidos*, like; resemblance of the spotted flowers. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Having yielded to cross-breeding, this genus may be expected to run into varieties of very gay colours. Hardy bulbs. Seeds in a slight hotbed, in spring; also by offsets; sandy loam and leaf-mould; protected in the ground from frost and wet, or taken up at the end of autumn, and kept in a dry, cool place, the roots being covered with earth until planting-out time in the middle of April.

T. atra'ta (dark). 2. Deep purple. August. Mexico. 1843.
,, *au'rea* (golden). See T. PAVONIA AUREA.
,, *bucci'fera* (trumpet-bearing). 1. Greenish-yellow and purple, dotted with purple. Mexico. 1889.
,, *conchiflo'ra* (shell-flowered). See T. PAVONIA CONCHIFLORA.
T. curva'ta (curved). Purple. April. Mexico. 1843.
,, *grandiflo'ra* (large-flowered). See T. PAVONIA and varieties.
,, *Hou'ttei* (Van Houtte's). 1. Yellow, lilac. Spring. Mexico. 1875.
,, *lu'tea* (yellow). 1. Yellow. June. Chili; Peru.
,, *Melea'gris* (guinea-hen). See HYDROTÆNIA MELEAGRIS.
,, *Pavo'nia* (peacock). 1. Orange, red. June. Mexico. 1796. "Peacock Tiger Iris."
,, ,, *a'lba* (white). White, spotted with red-brown on the yellow base. 1882.
,, ,, *a'lba immacula'ta* (spotless). Snow-white, spotless. 1896.
,, ,, *au'rea* (golden). Golden-yellow and spotted.
,, ,, *conchiflo'ra* (shell-flowered). 1. Dark yellow. June. 1823.
,, ,, *fla'va* (yellow). Pale yellow. 1896.
,, ,, *leo'na* (lion). 1. Orange, red. June. 1823.
,, ,, *lilia'cea* (lilac). Reddish-purple, with nearly white markings. 1893.
,, ,, *ro'sea* (rosy). Yellow, tinged with rose. 1893.
,, ,, *specio'sa* (showy). Richly coloured.
,, *Prí'nglei* (Pringle's). 1. Bright scarlet-red, blotched with crimson. Chihuahua, Mexico. 1888.
,, *Van-Hou'ttei* (Van Houtte's). See T. HOUTTEI.
,, *viola'cea* (violet-coloured-*flowered*). 1. Purple. May. Mexico. 1838.

TIGRIS, FLOWER OF. *Tigri'dia Pavo'nia.*

TILE-ROOT. *Geissorhi'za.*

TI'LIA. Lime or Linden-tree. (Derivation unknown. Nat. ord. *Lindenblooms* [Tiliaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*.)

Hardy, deciduous, yellowish-green-flowered trees. Seeds, gathered and preserved in moist sand until March or April, and then some will generally vegetate that and the following season; principally, however, by layers in autumn, which may be removed in a twelvemonth. To save layering, old trees are sometimes cut down; shoots spring up in abundance; among these six inches or a foot of fine soil is thrown, and in two or three years nice-rooted plants are obtained. Deep, loamy soil suits all the varieties, as well as the species, best. The *white lime* is propagated chiefly by layers and grafting. *T. americа'na* and its many varieties are very ornamental, but not so hardy as the European in our moist climate.

T. a'lba (white-*wooded*). See T. ARGENTEA.
,, ,, *pe'ndula* (drooping). See T. PETIOLARIS.
,, *americа'na* (American). 30. June. N. Amer. 1752.
,, ,, *heterophy'lla* (various-leaved). See T. HETEROPHYLLA.
,, ,, *laxiflo'ra* (loose-flowered). See T. PUBESCENS.
,, ,, *pube'scens* (downy). See T. PUBESCENS.
,, ,, *pube'scens leptophy'lla* (thin-leaved-downy). See T. PUBESCENS LEPTOPHYLLA.
,, *argе'ntea* (silvery). 20–50. Pale yellow. July. East Europe. 1767. "White Lime."
,, ,, *orbicula'ris* (orbicular). See T. ORBICULARIS.
,, ,, *pe'ndula* (drooping). See T. PETIOLARIS.
,, *corda'ta* (heart-shaped). 10–40. Yellowish-white. Europe (Britain).
,, ,, *argе'ntea* (silvery). Leaves edged with creamy-white. Silesia. 1862.
,, ,, *japo'nica* (Japanese).
,, *dasy'styla* (thick-styled). 25–60. Pale yellow. July. Caucasus. Reintroduced 1883.
,, *euchlo'ra* (bright-green). See T. DASYSTYLA.
,, *europæ'a* (European, *or common*). See T. PLATYPHYLLOS and T. VULGARIS.
,, ,, *au'rea* (golden-*twigged*). See T. VULGARIS AUREA.
,, ,, *dasy'styla* (hairy-styled). See T. DASYSTYLA.
,, ,, *lacinia'ta* (cut-*leaved*). See T. PLATYPHYLLOS ASPLENIIFOLIA.
,, ,, *microphy'lla* (small-leaved). See T. CORDATA.
,, ,, *pe'ndula* (drooping). See T. PETIOLARIS.
,, ,, *platyphy'lla* (broad-leaved). See T. PLATYPHYLLOS.
,, ,, *platyphy'lla au'rea* (golden-broad-leaved). See T. PLATYPHYLLOS AURANTIA.
,, ,, *ru'bra* (red-*twigged*). See T. VULGARIS RUBRA.
,, ,, *variega'ta* (variegated-*leaved*). See T. VULGARIS VARIEGATA.
,, ,, *vitifo'lia* (vine-leaved). See T. PLATYPHYLLOS VITIFOLIA.

T. flave'scens (yellowish). Garden origin. (*T. americana* × *cordata.*)
„ *henrya'na* (Henryan). Leaves with rusty tufts of hairs beneath. Central China. 1903.
„ *heterophy'lla* (various-leaved). 30–50. Pale yellow. June. N. Amer. 1811. "Bee Tree." "White Basswood."
„ *interme'dia* (intermediate). See T. VULGARIS.
„ *mandschu'rica* (Mandshurian). Manchooria.
„ *microphy'lla* (small-leaved). See T. CORDATA.
„ *miquelia'na* (Miquelian). Allied to *T. argentea.* Japan. 1893.
„ *Miya'bei* (Miyabe's). 80–100. Japan. 1909.
„ *mongo'lica* (Mongolian). 25–35. Yellow-white. Mongolia. 1902.
„ *Olive'ri* (Oliver's). Leaves white-felted beneath. Central China. 1909.
„ *orbicula'ris* (orbicular). Leaves leathery, silvery beneath. (*T. petiolaris* × *dasystyla.*) 1890.
„ *parvifo'lia* (small-leaved). See T. CORDATA.
„ „ *arge'ntea* (silvery). See T. CORDATA ARGENTEA.
„ *petiola'ris* (long-stalked). 40–55. Pale yellow. July. East Europe.
„ *platyphy'llos* (broad-leaved). 50–60. Pale yellow. June. Europe (England).
„ „ *asplenifo'lia* (Asplenium-leaved). 50. Leaves deeply cut into narrow segments.
„ „ *aura'ntia* (orange). 20. Pale yellow. June. Leaves yellow.
„ „ *cora'llina* (coral).
„ „ *filicifo'lia no'va* (new-fern-leaved). Leaves deeply cut.
„ „ *obli'qua* (oblique).
„ „ *oxyca'rpa* (sharp-fruited).
„ „ *pyramida'lis* (pyramidal). Branches erect.
„ „ *pyramida'lis au'rea* (golden). Leaves yellow. 1888.
„ „ *sphæroca'rpa* (spherical-fruited).
„ „ *tortuo'sa* (twisted). Branches flexuous.
„ „ *vitifo'lia* (vine-leaved). 40–50. Pale yellow. June. Leaves lobed at the apex. 1846.
„ „ *wratislawie'nsis* (Breslauian). Leaves fine golden-yellow. 1904.
„ *pube'scens* (downy). 20–50. White. June, July. E. United States. 1726.
„ „ *leptophy'lla* (thin-leaved). 20–30. Yellow. July. N. Amer.
„ *specta'bilis* (showy). Leaves very large, silvery beneath. (*T. petiolaris* × *americana.*)
„ *sublana'ta variega'ta* (rather woolly variegated). E. Europe.
„ *Tu'an* (Tuan). 40. Leaves membranous, covered with starry hairs beneath. Central China. 1903.
„ *ulmifo'lia* (elm-leaved). See T. CORDATA.
„ *vitifo'lia* (vine-leaved). See T. PLATYPHYLLOS VITIFOLIA.
„ *vulga'ris* (common). 50–120. Pale yellow. June. Europe (England). "Common Lime."
„ „ *au'rea* (golden). 50. Twigs golden. June.
„ „ *cauca'sica* (Caucasian).
„ „ *ru'bra* (red). 50. Twigs red. June.
„ „ *variega'ta* (variegated). 50. Leaves blotched with creamy-white. 1847.

TILLÆ'A. (Commemorative of *M. A. Tilli*, an Italian botanist. Nat. ord. Crassulaceæ.)
Hardy annual or perennial herbs. Seeds. Light, well-drained or sandy soil.
T. moscha'ta (musky). ¼. White. September. New Zealand and other Antarctic Islands. 1794.
„ *musco'sa* (mossy). ¼. White. June, July. Europe (England); N. Africa.

TILLA'NDSIA. (Named after *E. Tillands*, physician at Abo. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monoygnia.*)
Stove epiphytes. Divisions and suckers. The weaker kinds do best in baskets very shallow, in sphagnum, turfy peat, broken pots, and charcoal; the stronger-growing ones may be potted high in turfy peat, a little turfy loam, and charcoal. Winter temp., 55° to 60°; summer, 60° to 80°.
T. acau'lis (stemless). See CRYPTANTHUS UNDULATUS.
„ „ *zebri'na* (zebra). See CRYPTANTHUS ZONATUS.
„ *Alexa'ndræ* (Queen Alexandra's). Leaves with longitudinal yellow stripes. Trop. Amer. 1903.
T. aloi'des (Aloe-like). See CATOPSIS ALOIDES
„ *aloifo'lia* (aloe-leaved). See T. FLEXUOSA.
„ *amethysti'na* (amethyst). Yellow. Brazil. 1884.
„ *a'nceps* (two-edged). ¾. Blue. April. W. Ind. 1820.
„ *angustifo'lia* (narrow-leaved). ½. Blue. August. W. Ind. 1822.
„ *arge'ntea* (silvery). 1. Pale blue. Cuba. 1865.
„ *Arma'dæ* (Armada's). Leaves pale violet. S. Colombia. 1883.
„ *balbisia'na* (Balbisian). 1–1½. Violet; bracts rose. W. Indies. 1879.
„ *Barille'tii* (Barillet's). Yellow. Ecuador. 1883.
„ *Bartra'mi* (Bartram's). See T. UTRICULATA.
„ *Billbe'rgiæ* (Billbergia-like). 1. White, rose. Mexico. 1869.
„ *brachycau'los* (short-stemmed). ¾. Purple. Mexico. 1878.
„ *brachy'stachys* (short-spiked). See T. CARINATA.
„ *bractea'ta* (bracted). 1. August. W. Ind. 1824.
„ *bryoi'des* (moss-like). Leaves moss-like. Argentina. 1880.
„ *bulbo'sa* (bulbous). ½. Blue. November. Trinidad. 1823.
„ „ *e'minens* (eminent). 1850.
„ „ *paucifo'lia* (few-leaved). ¼. Violet. 1878.
„ „ *pi'cta* (painted). ¾. Pink. December. Jamaica. 1845.
„ „ *variega'ta* (variegated).
„ *cane'scens* (hoary). ½. Blue. June. W. Ind. 1824.
„ *Ca'put-Medu'sæ* (Medusa's-head). Leaves grey. Mexico. 1880.
„ *carina'ta* (keeled). Yellow; bracts red. Brazil. 1866.
„ *chryso'stachys* (golden-spiked). Yellow. Peru. 1881.
„ *circina'lis* (circular). See T. DURATII.
„ *circina'ta* (rounded). See T. STREPTOPHYLLA.
„ *coarcta'ta* (straitened). See T. FLORIBUNDA.
„ *complana'ta* (flattened). See T. XIPHOSTACHYS.
„ *compre'ssa* (flattened). 1. June. Chili. 1823.
„ *confertifo'ra* (crowded-flowered). Ecuador.
„ *cora'llina* (coralline). Green; bracts purple-red. Brazil. 1870.
„ „ *ro'seum* (rosy). Rose.
„ „ *splе'ndens* (splendid). Highly coloured.
„ *cordobe'nsis* (Cordovan). See T. RECURVATA.
„ *croca'ta* (saffron), Saffron-yellow. Brazil. 1880.
„ *cya'nea* (blue). Blue. Guatemala. 1852.
„ *decurva'ta* (decurved). 1½. Yellow. Brazil.
„ *dianthoi'dea* (Dianthus-like). 1. Blue; bracts pink. Brazil.
„ „ *ro'sea* (rosy). White; bracts pink.
„ *didi'sticha* (two-ranked). See T. LORENTZIANA.
„ *dista'chya* (two-spiked). 1. White. Honduras. 1880.
„ *Duge'sii* (Duges's). Deep purple; bracts and rachis crimson. Central Mexico. 1897.
„ *Dura'tii* (Durat's). Violet. S. Amer. 1879.
„ *duvalia'na* (Duvalian). 1. Yellow, green. Brazil. 1884.
„ *e'minens* (eminent). See T. BULBOSA EMINENS.
„ *ensifo'rmis* (sword-shaped). 1½. Red-yellow. Brazil.
„ *ere'cta* (erect). 1. June. Chili. 1823.
„ *erube'scens* (reddish). See T. BULBOSA.
„ *fascicula'ta* (fascicled). 1. Blue. June. W. Ind. 1820.
„ *fenestra'lis* (window). Yellow. Parana. 1875.
„ *filifo'lia* (thread-leaved). Light blue. Mexico.
„ *flexuo'sa* (zigzag). 1. Blue. W. Ind. 1790.
„ „ *pa'llida* (pale). 1. Yellow. June. W. Ind. 1815.
„ *floribu'nda* (free-flowering). 1. June. Peru. 1823.
„ *folio'sa* (leafy). Violet. Mexico. 1885.
„ *Furstenbe'rgii* (Furstenberg's). Bracts rosy, mealy. 1882.
„ *Gardne'ri* (Gardner's). Rose. February. Brazil. 1842.
„ *Gei'ssei* (Geisse's). ¾. Rosy; bracts carmine above. Chili. 1889.
„ *geminiflo'ra* (twin-flowered). ½. Red, yellow. February. Brazil. 1840.
„ *gigante'a* (giant). See T. REGINA.
„ *gladioliflo'ra* (Gladiolus-flowered). Green, violet. Costa Rica. 1863.
„ *glaucophy'lla* (sea-green-leaved). 1½. Whitish, purple. Santa Martha. 1847.
„ *Glazio'vii* (Glaziou's). S. Brazil.
„ *gra'cilis* (slender). 1. June. Chili. 1823.
„ *gutta'ta* (spotted). 2. Yellow. Leaves spotted with red. Brazil. 1875.

T. hamelea'na (Hamelean). Violet, white. Ecuador. 1870.
„ *heliconioi'des* (Heliconia-like). 1. White. Bracts carmine, white. Colombia. 1880.
„ *heterophy'lla* (various-leaved). See T. VIRGINALIS.
„ *hieroglyphica* (hieroglyphical). Leaves variously banded with purple below and dark green above. Brazil. 1884.
„ „ *variega'ta* (variegated). Leaves striped with white. 1903.
„ *hillegeeria'na* (Hillegeerian). See T. REGINA.
„ *imperia'lis* (imperial). See T. REGINA.
„ *ina'nis* (empty). See T. BULBOSA.
„ *incarna'ta* (flesh-coloured). S. Amer.
„ *incurva'ta* (incurved). Yellow, green. Bracts orange-red. Brazil. 1882.
„ *infla'ta* (inflated). See T. INCURVATA.
„ *iona'ntha* (violet-flowered). ½. Violet. Mexico. 1871.
„ *ixioi'des* (Ixia-like). ½. Orange. Panama.
„ *Jo'nghei* (Jonghe's). Yellow. Brazil. 1874.
„ *juncifo'lia* (rush-leaved). See T. SETACEA.
„ *karwinskia'na* (Karwinskian). 1. Violet. Mexico. 1878.
„ *kirchoffia'na* (Kirchoffian). Blue; bracts coral-red Mexico. 1889.
„ *Kra'meri* (Kramer's). See T. PSITTACINA.
„ *Li'ndeni* (Linden's). Violet; bracts rose. Peru. 1867.
„ „ *flo're ple'no* (double-flowered). Partially double. 1880.
„ „ *interme'dia* (intermediate). Bracts rosy-green. 1871.
„ „ *koutsinskya'na* (Koutsinskyan). See T. LINDENI FLORE PLENO.
„ „ *luxu'rians* (luxuriant). Stem branched.
„ „ *ma'jor* (greater). Flowers larger. Peru. 1871.
„ „ *mi'nor* (smaller). A small form.
„ „ *regelia'na* (Regelian). Blue, white; bracts red. Ecuador. 1869.
„ „ *sple'ndida* (splendid). See T. LINDENI MAJOR.
„ „ *tri'color* (three-coloured). Violet, with white blotch; bracts rose. Ecuador. 1883.
„ „ *viola'cea* (violet). Violet; bracts rosy. Ecuador. 1883.
„ *lindenia'na* (Lindenian). See T. LINDENI REGELIANA.
„ *linea'ta* (lined). Leaves lined with violet above, violet below. Colombia. 1883.
„ *lorentzia'na* (Lorentzian). White. Brazil. 1881.
„ *Malzi'nei* (Malzine's). 1. White. Mexico. 1874.
„ *Marte'lli* (Martell's). Leaves narrower than in *T. zebrina*, and whitish at base. 1898.
„ *massangea'na* (Massangean). Leaves barred with bronze. 1892.
„ *microxi'phion* (small-Xiphion). ½. Deep blue; bracts pink. Monte Video.
„ *mœnsia'na* (Mœnsian). Allied to *T. Regina*, 5 ft. high. Leaves cream-yellow. 1898.
„ *Mœ'nsii* (Mœns'). Leaves mottled pale green on yellow-green. 1892.
„ *monade'lpha* (one-bundled). White, pale purple. Guiana. 1882.
„ *Morre'ni* (Morren's). 1. Brown, yellow-green. Brazil.
„ *morrenia'na* (Morrenian). See T. LINDENI.
„ *musa'ica* (mosaic). See CARAGUATA MUSAICA.
„ *narthecioi'des* (Narthecium-like). 1–2. Yellowish-white. Ecuador. 1878.
„ *ni'tida* (shining). See CATOPSIS NITIDA.
„ *nu'tans* (nodding). See CATOPSIS NUTANS.
„ *obscu'ra* (obscure). 2. July. S. Amer. 1820.
„ *panicula'ta* (panicled). 1. Blue. June. W. Ind. 1820.
„ *paraba'ica* (Parabaic). 1. Yellow; bracts purple. Brazil. 1885.
„ *pastuchoffia'na* (Pastuchoffian). Leaves with a mosaic of dark green lines. Brazil. 1885.
„ *paucifo'lia* (few-leaved). See T. BULBOSA PAUCIFOLIA.
„ *Philippicobu'rgi* (Philipp-Coburg's). 1. Bright yellow. Brazil.
„ *pi'cta* (painted). See T. SPLENDENS.
„ *Platzma'nni* (Platzmann's). 2½. Yellow. Brazil. 1875.
„ *polysta'chya* (many-spiked). See T. FASCICULATA.
„ *polytrichoi'des* (Polytrichum-like). See T. BRYOIDES.
„ *pro'cera* (tall). 1. June. Brazil. 1823.
„ *pruino'sa* (frosted). ½. Blue. W. Ind.; Venezuela. 1876.

T. psittaci'na (parrot-like). Scarlet. July. Rio Janeiro. 1826.
„ „ *Kra'meri* (Kramer's). Bracts wholly red. Brazil. 1884.
„ *pulche'lla* (pretty). ½. Pink. Autumn. Brazil. 1823.
„ „ *amœ'na* (lovely). ½. Blue. Brazil. 1883.
„ *pu'lchra* (fair). See T. PULCHELLA.
„ *pu'mila* (dwarf). See T. BULBOSA.
„ *punctula'ta* (finely-dotted). 1½. Violet, tipped white. Winter. Mexico. 1877.
„ *quintusia'na* (Quintusian). 3. Bracts purple-red, or red-brown. 1901.
„ *ramo'sa* (branchy). See T. UTRICULATA.
„ *recurva'ta* (curled-back-*leaved*). ½. Purple. July. Jamaica. 1793.
„ *recurvifo'lia* (recurved-leaved). See T. DIANTHOIDEA ROSEA.
„ *Regi'na* (queen). White, fragrant. Trop. Amer. 1867.
„ „ *imperia'lis* (imperial). Rosette of leaves 4½ ft. in diameter. Brazil. 1888.
„ *reticula'ta* (netted). 1½–2. White. Brazil. 1870.
„ *revolu'ta* (revolute). See T. DURATII.
„ *ri'gida* (stiff). See T. ERECTA.
„ *rodigasia'na* (Rodigasian). Lemon. Brazil. 1882.
„ *Rœ'zlii* (Rœzl's). Rosy. Leaves with black blotches at the top. Peru. 1877.
„ *ro'sea* (rosy). See T. DIANTHOIDEA ROSEA.
„ *ru'bida* (madder-coloured). See T. GEMINIFLORA.
„ *sanguinole'nta* (blood-coloured). Leaves with red eye-like blotches. Colombia. 1874.
„ *Saunde'rsii* (Saunders'). 1½. Light yellow. Brazil. 1872.
„ *scala'ris* (ladder-like). ½. Yellow, green; bracts rose. Brazil. 1877.
„ *Schlechtenda'lii* (Schlechtendal's). 1. Mexico. 1883.
„ *serra'ta* (saw-*leaved*). 2. Yellow. June. Jamaica. 1793.
„ *seta'cea* (bristly). ½. Blue. June. W. Ind. 1824.
„ *specio'sa* (showy). See T. SPLENDENS.
„ *spiculo'sa* (finely-spiny). Mexico. 1878.
„ *sple'ndens* (splendid). 1½. Yellow. March. Guiana. 1847.
„ *staticefo'ra* (Statice-flowered). See T. FILIFOLIA.
„ *streptophy'lla* (twisted-leaved). Violet; bracts red. Central Amer. 1878.
„ *stri'cta* (erect). ½. Blue. September. Brazil. 1810.
„ „ *caule'scens* (caulescent). Stems taller.
„ *tecto'rum* (roofs'). White, blue. Peru. 1865.
„ *tenuifo'lia* (slender-leaved). See T. SETACEA.
„ *tessella'ta* (tessellated). Leaves with square markings outlined with dark green. Brazil. 1873.
„ „ *parisie'nsis* (Parisian). S. Brazil. 1895.
„ „ *ro'seo-pi'cta* (rosy-painted). Leaves with rosy spots. 1884.
„ „ *Sa'ndere* (Mrs. Sanders'). Leaves with white and yellow bands. S. Brazil. 1893.
„ „ *sanderia'na* (Sanderian). Leaves more decidedly zoned and marbled than the type. 1892.
„ *tri'color* (three-coloured). See T. PUNCTULATA.
„ *umbella'ta* (umbelled). 1½. Brilliant blue, with white blotch. Ecuador. 1882.
„ *usneoi'des* (Usnea-like). 6. Purple. July. W. Ind. 1823. "Old Man's Beard." "Spanish Moss."
„ *utricula'ta* (bladdered). 2. Purple, yellow. W. Ind. 1793.
„ *vernico'sa* (varnished). White. Parana. 1887.
„ *vesti'ta* (clothed). ½. Yellow; bracts red. Mexico. 1887.
„ *vimina'lis* (twiggy). 1½. White. Costa Rica. 1873.
„ *virgina'lis* (virginal). 2. White; bracts green. Mexico. 1873.
„ *viridiflo'ra* (green-flowered). See T. VIMINALIS.
„ *vitelli'na* (yolk-of-egg-coloured). Yellow. February. Venezuela.
„ *vitta'ta* (striped). Country unknown.
„ *Warmi'ngii* (Warming's). 3–4. Yellow. Brazil. 1884.
„ *wawra'nea* (Wawra's). 1½. Yellow, green. June, July. Brazil.
„ *xiphioi'des* (Xiphium-like). ½. White. July. Buenos Ayres. 1810.
„ „ *Arequi'tæ* (Arequita's). Flowers and leaves whiter. Uruguay. 1893.
„ *xipho'stachys* (sword-spiked). Purple. August. Mexico. 1861.
„ *zebri'na* (zebra-striped). See T. SPLENDENS.

TILLE'TIA. Bunt. The various species of Tilletia grow upon different grasses, and the most common, *T. tri'tici* (often named *T. ca'ries*), grows upon the young grains of wheat, filling the interior with dark brown spores. When crushed, the grains feel greasy and give off a disagreeable odour. The spores are netted, and on germination give rise to a short hypha or stalk, on the apex of which a cluster of slightly curved, needle-like sporidia are produced. Infected grain may be steeped in solutions of 1 per cent. of carbolic acid, or permanganate of potash, in water.

TIMO'NIUS. (Derived from the Malay name. Nat. ord. Rubiaceæ.)

Evergreen stove trees. Cuttings in sand, in bottom-heat. Fibrous loam, a little peat, and sand.

T. Jambose'lla (Jambosella). See T. Kœnigii.
„ *Kœni'gii* (Kœnig's). 10. White. Malaya. 1810.
„ *Ru'mphii* (Rumphius'). 12. White. Malaya. 1823.

TINA'NTIA. (Commemorative of *Tinant*, a Belgian botanist. Nat. ord. Commelinaceæ.)

Greenhouse perennial herb. Divisions. Loam, leaf-mould, and sand.

T. ere'cta (erect). See T. fugax.
„ *fu'gax* (fugacious). 1½. Blue-purple. July. Trop. Amer. 1794.

TI'NEA. A genus of moths, the larvæ of which are very destructive.

T. daucella. Carrot Moth. Head and back and upper wings reddish-brown; abdomen grey and white. Its caterpillar is greenish-grey, with black tubercles, and lives on the flowers and seeds of the carrot, but prefers the parsnip. The correct name is *Depressaria daucella.*

T. padella, Small Ermine Moth, is white, with black dots on the upper wings. Eggs deposited in June and July near the blossom-buds of the hawthorn, euonymus, apple, and pear-tree. Caterpillars appear in autumn, and inclose the twigs with a web. In the following spring they attack the petals and calyx. Colour, dull lead, with a black head. The proper name is *Hyponomeuta padella.*

T. clerckella. Pear-tree Blister Moth. The caterpillars of this raise dark-brown blisters on the leaves of the pear-tree, and less often on those of the apple. The moth is active and minute, shining like pearly satin, the wings having an orange ground, spotted with black and other colours. It appears in May. Mr. Curtis says: "To check this disease, it will be advisable to wash the tree with soapsuds the end of May or beginning of June, when the moths are pairing and laying eggs for a future progeny; and if a very valuable tree be only partially attacked, the blistered leaves might be gathered and burnt as soon as any spots began to appear in August."

T. capitella. Triple-spotted Currant Tinea. The larvæ of this feed upon the pith of the young shoots of the currant, which they attack in the spring. The moth itself is fuscous; the head with an ochreous tuft; superior wings bronzed, spotted with purple and yellow.

T. porectella, Rocket or Grey-streak Moth, has its habits and forms thus described by Mr. Curtis:

During the middle and latter end of April, as the shoots of the rockets advance, it is found that the leaves adhere firmly together, and those that liberate themselves are perforated with large holes. On forcibly opening a shoot (for the young leaves are connected by silken threads), a small green caterpillar of different shades, varying with its age, is found in or near the centre, feeding upon the tender leaves, and sometimes a little family of four or five inhabit the same head. The head, feelers, and horns of our little moth are white, the latter with a few black spots near the tips; the thorax is cream-coloured, the sides brown, upper wings lance-shaped, very pale clay brown, with whitish streaks. Perhaps the best mode of extirpating them would be to search for the young caterpillars between the leaves on the first symptoms of their presence, and extracting them with a small pair of forceps, such as are used for microscopic objects; but as some might be too minute at that early period to be detected on the first search, this operation must be repeated. Pinching the maggots in the bud is also recommended.

TI'NNEA. (Commemorative of *Mademoiselle Tinné*, a traveller on the Nile. Nat. ord. Labiatæ.)

Stove shrubs. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

T. æthio'pica (Æthiopian). 2–4. Dark maroon or brown, fragrant. Trop. Africa. 1867.
„ „ *denta'ta* (toothed). Differs by having a large calyx. 1884.
„ *Sacleu'xii* (Sacleux's). 2. Dark maroon. Flowers not solitary. Trop. Africa (?). 1909.

TINO'SPORA. (From *tis, tinos,* distinguished or notable, and *spora,* a seed; the seeds are moon-shaped. Nat. ord. Menispermaceæ.)

Stove twiners. Seeds; cuttings in sand, in bottom-heat. Loam, peat, and sand.

T. cordifo'lia (heart-leaved). 20. White, green. E. Ind. 1820.
„ *cri'spa* (crisped). 20. White, green. Java. 1822.
„ *tomento'sa* (felted). 10. White, green. India; Burma. 1819.

TI'PULA. Crane-Fly, or Daddy-long-legs. *T. oleracea,* the grubs, or "leather-jackets," so injurious to the market gardener, are its larvæ. They attack the roots of scarlet beans, lettuces, dahlias, potatoes, &c., from May to August. During the last month and September they become pupæ. Mr. Curtis observes, that it is said that lime-water will not kill them, and suggests that if quicklime was scattered on the ground at night, it would destroy them when they come to the surface to feed; and all the gnats that are found on the walls, palings, ground, or elsewhere, should be killed, especially the female, which would prevent any eggs being deposited in the ground. A mixture of lime and gas-water, distributed by a watering-pot over grass, has completely exterminated the larvæ where they had been exceedingly destructive; and by sweeping the grass with a bag-net, like an angler's landing-net, only covered with canvas, immense numbers of the gnats might be taken and destroyed.

TITHO'NIA. (From *Tithonus,* in mythology, the favourite of Aurora. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia,* 3-*Frustranea.* Allied to Helianthus.)

Stove, yellow-flowered evergreens, from Mexico. Cuttings of young shoots, a little firm at their base, in sand, under a bell-glass, and in a little bottom-heat; rich, sandy, fibrous loam. Winter temp., 50° to 55°; summer, 60° to 80°.

T. diversifo'lia (diverse-leaved). Golden-yellow. August. 1908.
„ *exce'lsa* (tall). See Viguiera excelsa.
„ *ova'ta* (egg-*leaved*). See Zexmenia ovata.
„ *specio'sa* (showy). 4. Rich red. August. 1833.
„ *tagetiflo'ra* (marigold-flowered). 10. August. 1818.
„ *tubæfo'rmis* (tube-formed). 4–5. July. 1799.

TITHY'MALUS. (From *tithumalos,* the Greek name for spurge, seven species of which were described by Dioscorides. Nat. ord. Euphorbiaceæ. Now referred to Euphorbia.)

T. angustifo'lius (narrow-leaved). See Euphorbia Cyparissias.
„ *genicula'tus* (kneed). See Euphorbia geniculata.
„ *pe'ndulus* (drooping). See Euphorbia pendula.

TITTMA'NNIA OVA'TA. See Vandellia crustacea.

TITTMA'NNIA VISCO'SA. See Vandellia hirsuta.

TOAD FLAX. *Lina'ria.*

TOAD FLAX, IVY-LEAVED. *Lina'ria Cymbala'ria.*

TOAD FLOWER, AFRICAN. *Stape'lia.*

TOAD LILY. *Tricy'rtis.*

TOAD RUSH. *Ju'ncus bufo'nius.*

TOAD TOOL. Poisonous members of Agaricus and allied genera.

TOBACCO (*Nicotia'na*), whether in the form of snuff, or its decoction in water, or its smoke whilst burning, is very destructive to insects.

Tobacco-paper is paper saturated with the decoction of tobacco, and when burnt emits a fume nearly as strong. It is an easy mode of generating the smoke. Whenever plants are smoked they should be done so on two following nights, and then be syringed the following morning. Mr. Cameron says: I have always found tobacco-paper the most efficacious substance to fumigate with for destroying the aphis without doing any injury to the plants. If the house is not filled too rapidly with smoke,

and is allowed to reach the glass without coming in contact with any of the plants, it then descends as it cools, without doing any injury. Plants fumigated in frames, or under hand-glasses, are most liable to be injured by the heat of the smoke, if not done cautiously. There is a spurious kind of tobacco-paper sometimes offered in spring by the tobacconists, apparently made to meet the increased demand, and this kind of paper will bring the leaves off plants, without killing many of the aphides. It is of a lighter colour than the genuine sort, and may be readily detected by the smell being very different. Foliage should be perfectly dry when a house is fumigated, and should not be syringed till next morning. If plants are syringed immediately after fumigation, many of the aphides will recover even when they have dropped off the plants, a fact which anyone may soon prove after fumigating a house.

Another very simple mode of fumigating plants in frames, and under hand-glasses turned over them for the purpose, is as follows: "Dissolve a tablespoonful of saltpetre in a pint of water; take pieces of the coarsest brown paper, 6 inches wide and 10 inches long, steep them thoroughly in the solution, dry them, and keep till wanted. To fumigate, roll one of the pieces into a pipe like a cigar, leaving the hollow half an inch in diameter, which fill with tobacco, twist one end and stick it into the soil, light the other, and it will burn gradually away for an hour or more."

Tobacco-smoke should not be admitted to fruit-trees when in bloom, nor when the fruit is ripening, as it imparts to them a flavour. See FUMIGATING and FUMIGATOR.

Tobacco-water is usually made from what is known as *Tobacconists' Liquor*, being a liquor expressed by them, and full of ammonia and the acrid oil of the plant. To every gallon of this add five gallons of water. This mixture with Read's garden-syringe may be sprinkled over the trees, putting it on with the finest rose, and being careful to wet all the leaves. This operation is to be performed only in the hottest sunshine, as the effect is then much greater than when the weather is dull; five gallons of liquor reduced as above stated cleanses seventeen peach and nectarine-trees, averaging 17 feet in length, and 12 in height. The black, glutinous *aphis*, provincially called blight, so destructive to the cherry-trees, and, in fact, every species of aphis, is destroyed in the same way with equal facility. The grubs which attack the apricot may be destroyed almost instantly by immersing the infested leaves in this liquor.

As the tobacconists' liquor cannot be obtained always, tobacco-water may be, in such case, made by pouring half a gallon of boiling water upon one ounce of strong tobacco, allowing it to remain until cold, and then straining it.

TOBACCO, ROCK. *Primuli'na Taba'cum.*

TOBOLEW'SKYA CLAVA'TA. See SOBOLEWSKIA CLAVATA.

TOCO'CA. (The native name in Guiana for *T. guianensis*. Nat. ord. Melastomaceæ.)

Evergreen stove shrubs with large and highly ornamental leaves. Cuttings of side-shoots in sand, in a close frame, with bottom-heat. Fibrous loam and peat in equal parts, with some coarse sand.

T. cinnamo'mea (cinnamon). Leaves cinnamon brown beneath. Brazil. 1865.
„ *ferrugi'nea* (rusty). Brazil. 1868.
„ *formica'ria* (ant). Brazil.
„ *guiane'nsis* (Guianan). 3–4. Pink. August. Guiana. 1826.
„ *imperia'lis* (imperial). Peru. 1869.
„ *latifo'lia* (broad-leaved). Pale red. Brazil. 1862.

TOCOYE'NA. (Name in Guiana. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Posoqueria.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sandy soil, under a glass, in heat, in May; fibrous peat, a little lumpy loam, sand, and charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

T. longiflo'ra (long-flowered). 6 Yellow. Guiana. 1826.

TODDA'LIA. (*Toddali*, the Malabar name of *T. aculea'ta*. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 21-*Monœcia*, 5-*Pentandria*. Allied to Ptelea.)

Stove white-flowered evergreens. Cuttings of young, stubby side-shoots in sand, under a glass, in April, in a sweet bottom-heat; fibrous loam and a little peat or leaf-mould. Winter temp., 50° to 60°; summer, 60° to 80°.

T. aculea'ta (prickly). 6. India; Malaya. 1790.
„ *angustifo'lia* (narrow-leaved). 6. Mauritius. 1824.
„ *lanceola'ta* (lance-shaped). 4. May. Trop. Africa; Mauritius. 1824.
„ *panicula'ta* (panicled). 30. May. Mascarene Islands. 1824.

TODDY PALM. *Caryo'ta u'rens.*

TO'DEA. (Named after *H. J. Tode*, a German student of Ferns. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Allied to Osmunda.)

Greenhouse, brown-spored Ferns. See FERNS.

T. africa'na (African). See T. BARBARA.
„ *austra'lis* (southern). N. Holland. 1831.
„ *barbara* (unpolished). 2–6. New Zealand to S. Africa. 1805.
„ *Fraseri* (Fraser's). 2–4½. Blue Mountains, Australia; New Caledonia.
„ „ *wilkesia'na* (Wilkesian). Fronds larger; lower pinnæ deflexed. Fiji. 1870.
„ *grandipi'nnula* (large-pinnuled). See T. MOOREI.
„ *hymenophyllo'des* (Hymenophyllum-like). 1–2½. New Zealand. 1842.
„ *interme'dia* (intermediate). 1–1½. New Zealand. 1869.
„ *Moo'rei* (Moore's). Fronds tripinnate. Lord Howe's Island. 1886.
„ *pellu'cida* (transparent). See T. HYMENOPHYLLOIDES.
„ *rivula'ris* (river-bank). See T. BARBARA.
„ *supe'rba* (superb). 3–5½. New Zealand. 1861.
„ „ *plumo'sa* (plumy). Ultimate segments turned up. 1879.
„ *wilkesia'na* (Wilkesian). See T. FRASERI WILKESIANA.

TOFIE'LDIA. "False Asphodel." (Named after *Mr. Tofield*, a botanical patron. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

Hardy, North American, herbaceous perennials. Division of the roots in spring; sandy loam and a little vegetable mould.

T. alpi'na (alpine). See T. CALYCULATA.
„ *borea'lis* (northern). See T. PALUSTRIS.
„ *calycula'ta* (large-calyxed). ½. White. Europe.
„ *glutino'sa* (clammy). ½. White. 1825.
„ *palu'stris* (marsh). ½. White. May. North temperate and arctic regions (Scotland). "Scotch Asphodel."
„ *pu'bens* (downy). Green, yellow. July. 1840.
„ *pube'scens* (downy). ½. White. April. 1790.
„ *rufe'scens* (reddish). Country unknown.

TOLMIE'A. (Commemorative of *Mr. Tolmie*, a doctor of the Hudson's Bay Company. Nat. ord. Saxifragaceæ.)

Hardy perennial herb, producing a plantlet at the base of each leaf blade. Divisions. Ordinary soil.

T. Menzie'sii (Menzies'). 1–1½. Greenish. April. N.W. Amer. 1812.

TO'LPIS. (Meaning not known. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*. Allied to Cichorium.)

Hardy, yellow-flowered annuals, from the South of Europe. Seeds in flower-beds or borders in April. The shrubby species may be propagated by cuttings in sandy soil, under a bell-glass in summer.

T. alti'ssima (tallest). 4. June. 1823.
„ *barba'ta* (bearded-*purple-eyed*). 2. Yellow, purple. June. 1620.
„ *coronopifo'lia* (buckhorn-leaved). 1. June. 1777.
„ *filifo'rmis* (thread-formed). 1½. Yellow. June. Madeira. 1777. Greenhouse evergreen shrub.
„ *frutico'sa* (shrubby). Yellow. June. Canaries. 1785. Greenhouse evergreen shrub.
„ *grandiflo'ra* (large-flowered). See T. ALTISSIMA.
„ *macrorhi'za* (large-rooted). Yellow. Madeira. Greenhouse.
„ *umbella'ta* (umbelled). 2. Yellow, purple. 1820.
„ *virga'ta* (twiggy). 2. 1818.

TOLU BALSAM-TREE. *Myro'xylon tolui'ferum.*

TOLUI'FERA BALSAMUM. *Myro'xylon tolui'ferum.*

TOMATO. *Lycope'rsicum escule'ntum.* See LOVE APPLE.

TOMATO, CANNIBAL'S. *Sola'num anthropophago'rum.*

TOMATO DISEASE. This is caused by *Phytophthora infestans*, which is so well known in connection with the potato, and the fungus is described under Potato.

TONGA PLANT. *Epipre'mnum mira'bile.*

TONGUE GRAFTING. See GRAFTING.

TONGUE VIOLET. *Schweigge'ria.*

TONQUIN BEAN. *Di'pterix odora'ta.*

TOOL-HOUSE. Upon this too-much-neglected garden edifice, Mr. Barnes, of Bicton Gardens, says: "Have a place for everything, and everything in its place; kept in good condition, and at all times put away clean; for omission of which have rules and fines placed in each of the tool-houses, regularly enforced, and payment demanded for each fine on the labourers' pay-day. At Bicton, a book is kept for entering each fine, and a separate account given of each fine, and for what, or why, it was enforced; annually, Lady Rolle doubles the amount so collected, and if good order has been kept, and only a small sum so collected, her ladyship trebles the amount. I add my own mite, and each foreman his, as a sort of compound for any matter that may have slipped our memories, &c.; the amount is then placed in the *Savings Bank*, as a reserve sum in case of illness, &c. We have the same order and regulation kept in each tool-shed—that is to say, the tool-shed of each department—that I need here describe only one. The tool-shed of the hothouse and flower-garden department is a lean-to shed at the back of a hothouse, substantially built, and covered with slate; length, 54 feet; width, 13 feet; height at back, 15 feet; and height at front, 9 feet; paved all through with Yorkshire flag-stones, which are neatly swept up every night, the last thing, and washed every Saturday thoroughly. There is a door at each end, and one in the centre of the front wall, and a window on each side of the centre door. Strong beams are thrown across from front to back, and strong planks laid on them, which form a useful loft for placing mats, stakes, laths for tally-making, brooms, nets, canvas for covering and shading, &c. &c. Within two feet of the roof, against the back wall, is placed a row of pegs the whole length of the shed, for hanging the long-handled tools, such as grass and leaf rakes, long-handled Dutch hoes, and iron rakes, &c.; on the next row of pegs, the whole length of the shed, are placed the various kinds of draw hoes, tan forks, dung forks, and prongs, strong forks for digging and surface-stirring, spades and shovels of various kinds, pickaxes, mattocks and bills, dung drags, edging shears, &c.; on a third row of pegs, still lower, are placed the water-pots, all numbered, with initials as well, thus—B, G—45, or 60, whatever the number may run to; underneath those is a row more of pegs, for placing the noses of the water-pots—thus the back wall is furnished. The front wall, half-way, is furnished with shelves for placing shreds and nails, rope yarn, tallies, flower-pegs, whetstones, rubber or scythe-stones, and many other small articles. Underneath those shelves are pegs for hanging the hammers, axes, saws, hatchets, mallets, and stake-drivers, trowels, hand-forks, reels and lines, hedge-clipping shears, scythes, chisels, the various sizes of one-handed crane-necked hoes, crowbars, mops, hair-brushes, and brooms, and various other articles. The scythes are hung up over the end beam, and on the other side, without shelves, the hand-barrows are placed; birch and heath brooms, both round and fan-shaped, that are in daily use; and various other articles. The garden rules are hung in a conspicuous place; also in the tool-house. Every tool is to be put into its proper or allotted place every night thoroughly cleansed, any omission of which subjects the defaulter to a fine. Each tool-house is under the same system. We have separate wheel-barrow sheds; sheds for placing soils in the dry, arranged in old casks; varieties of sand, pebbles, and flints, for potting purposes, with lofts over for flower-pot stowage; a shed for the liquid-manure casks, which is one of the most essential and valuable of all. A shed for placing the charred articles of all kinds, equal to the last; a potting shed; mushroom shed; stove shed; fruit rooms and onion lofts, &c. &c. Each and all are kept under the above regulations."

TOOTH-ACHE-TREE. *Zantho'xylum.*

TOOTHWORT. *Denta'ria.*

TOP-DRESSING. Manure spread over the surface whilst the crop is growing.

TORCH LILY. *Knipho'fia.*

TORCH-THISTLE. *Ce'reus.*

TORE'NIA. (Named after *Rev. O. Toren*, a Swedish botanist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Stove evergreens. Cuttings of the points of shoots, or small side-shoots, in sandy soil, and in a little heat; if far enough from the glass of the frame or pit, they will want no bell-glass; fibrous loam and sandy peat in equal proportions, with another part made up of dried old cow-dung, charcoal, and rough sand. Winter temp., 42° to 50°; summer, 60° to 80°.

T. arracane'nsis (Arracan). Deep purple. June. 1846.
,, *asia'tica* (Asiatic). 1½. Purple. June. Trop. Asia. 1845.
,, *auriculæfo'lia* (auricula-leaved). See CRATEROSTIGMA PUMILUM.
,, *Baillo'ni* (Baillon's). See T. FLAVA.
,, *co'ncolor* (one-coloured). 1½. Purple. July. China. 1844.
,, *cordifo'lia* (heart-leaved). ½. Lilac. July. Malaya; India. 1811.
,, *diffu'sa* (diffuse). See VANDELLIA PEDUNCULATA.
,, *ede'ntula* (toothless). See T. PEDUNCULARIS.
,, *exappendicula'ta* (without appendage). See T. PEDUNCULARIS.
,, *fla'va* (yellow). 1. Yellow, with dark purple blotch. June to September. Trop. Asia. 1823.
,, *Fo'rdii* (Ford's). Straw-coloured, with two purple blotches. China.
,, *Fournie'ri* (Fournier's). 1. Blue, with two black-purple blotches. June to September. Cochin-China. 1876.
,, ,, *compa'cta* (compact). Dwarf, compact variety. 1887.
,, *hirsu'ta* (hairy). White. June. E. Ind. 1823.
,, *pedunculo'ris* (long-stalked). White, with rich blue blotches. Malaya. 1845.
,, *ru'bens* (reddish). See T. VAGANS.
,, *sca'bra* (rough-*leaved*). See ARTANEMA FIMBRIATUM.
,, *va'gans* (wandering). 1½. Purple. July. India; China. 1844.

TORINGO CRAB. *Py'rus Tori'ngo.*

TORMENTIL. *Potenti'lla Tormenti'lla.*

TORRE'YA. (Commemorative of *Dr. Torrey*, an American botanist. Nat. ord. Coniferæ. Allied to Taxus.)

Hardy evergreen trees. Seeds; cuttings. Ordinary garden soil.

T. califo'rnica (Californian). 30–40. California. 1851. "California Nutmeg."
,, *gra'ndis* (grand). 50–80. China.
,, *Humbo'ldtii* (Humboldt's). See PRUMNOPITYS TAXIFOLIA.
,, *Myri'stica* (Nutmeg). See T. CALIFORNICA.
,, *nuci'fera* (nut-bearing). 20–30. Japan. 1822.
,, *taxifo'lia* (yew-leaved). 40–50. W. Florida. 1840. "Stinking Cedar."

TORTOISE PLANT. *Testudina'ria elepha'ntipes.*

TO'RTRIX. A genus of moths.

T. luscana generates a red grub, and *T. cynosbana* a black-spotted, green grub, both very destructive of blossom-buds.

T. vitisana. Vine Tortrix. Found on the vine in April and May; head yellow; upper wings marbled with rusty and grey colours. Caterpillars appear as the blossom-buds open, which they unite with white thread.

T. nigricana. Red Plum Grub Tortrix. Moth black, appearing in June. Eggs deposited on the plum; grub small, red, pierces the fruit, and is found near the stone. Mr. Curtis observes that, "If the plums that have fallen off be examined, a small red caterpillar will be found within it; the caterpillar being generally full grown when

the plum falls off, soon creeps out, and penetrates the loose bark, forming a case, in which it remains during the winter. Early in the spring it changes into a light brown pupa, and the moth emerges about June. The moth is not so large as a house-fly; its wings are almost black, and when the sun is shining on them they have a remarkably metallic lustre; on the outer edge of the fore-wings there is an appearance of fine silver dust. Among the remedies proposed to lessen the ravages of this insect, it is recommended to shake the trees and remove all the fruit that falls off; and another good method is to scrape the rough pieces of bark off the stem under which the cocoons are concealed: this must be done late in the autumn, or early in the spring."

T. bergmanniana. Rose Tortrix. Differs little to a common observer from the preceding. Where bushes are much infested with the larvæ of these insects, it is much better to cut them down, and burn the shoots. This and hand-picking are the only remedies we are acquainted with. Care must be taken not to disturb the maggots when collecting them, for they will let themselves down with threads, and thus escape.

T. ocellana. This is the parent of the red-bud caterpillar, which destroys the buds of the apple and pear. Upper wings grey, with a white transverse band.

T. wœberana. Plum-tree Tortrix. Its larva feeds on the inner bark of the plum, apricot, almond, and peach. The grubs pierce holes through the bark, which may be detected by small heaps of red powder upon it. Moth brown; grub greenish, with a red head. It is also known as *Semasia wœberana.*

T. pomonana. Codling Moth. Its reddish-white grub is common in apples and pears. Moth light grey, streaked with dark grey. Seen of an evening during May, and the grubs appear soon after. All fallen apples should be destroyed, because they usually contain this or other grubs, which will otherwise produce moths, and multiply the evil. It is now usually named *Carpocapsa pomonella.*

T. turionana, T. hyrcyniana, T. resinella, and *T. buoliana,* all infest pine-trees, injuring them by depositing their eggs in the buds, which are subsequently preyed upon by their caterpillars.

TOTA'RA PINE. *Podoca'rpus Tota'ra.*

TOUCH-ME-NOT. *Impa'tiens.*

TOURNEFO'RTIA. (Named after *J. P. Tournefort,* a great systematic botanist. Nat. ord. *Borageworts* [Boraginaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.* Allied to the Heliotrope.)

Cuttings of young shoots in April or August, in sandy soil, under glass, and in a little heat. Some, such as *heliotropioi'des,* make a fair bed out of doors; except for this purpose, they are not worth house room either in a greenhouse or a plant-stove; any light, common soil suits them, and they may be planted out in the middle of May.

Greenhouse Evergreens.

T. frutico'sa (shrubby). See T. MESSERSCHMIDIA.
„ *heliotropioi'des* (Heliotropium-like). See HELIOTROPIUM ANCHUSÆFOLIUM.
„ *Messerschmi'dia* (Messerschmidia). 3–4. Yellow. June. Canaries. 1800.
„ *umbella'ta* (umbelled). White. June. Mexico. 1826.
„ *veluti'na* (velvety). 10. White. June. Mexico. 1826.

Stove Evergreens.

T. caracasa'na (Caracas). White. May. Caracas. 1828.
„ *cordifo'lia* (heart-leaved). White. Colombia. 1887.
„ *gnaphalo'des* (Gnaphalium-like). White. June. W. Ind. 1820.
„ *hirsuti'ssima* (hairiest). 10. Green, yellow. June. W. Ind. 1818.
„ *lævig'ata* (smooth). Trop. Amer.
„ *laurifo'lia* (laurel-leaved). 12. Yellow. July. W. Ind. 1829.
„ *macula'ta* (spotted-*fruited*). Yellow. June. Carthagena. 1828.
„ *peruvia'na* (Peruvian). 10. Green, yellow. July. Peru. 1816.
„ *sca'brida* (rough). S. Amer.
T. sca'ndens (climbing) of Miller. Jamaica.
„ *sca'ndens* (climbing) of Willdenow. See T. PERUVIANA.
„ *volu'bilis* (twining). 10. Green, yellow. July. Jamaica. 1752.

TOURRE'TIA. (Commemorative of *Marc. Ant. Claret de la Tourret,* a botanist. Nat. ord. Bignoniaceæ.)

Hardy or half-hardy twining herb. Seeds. Loam, leaf-mould, and sand.

T. lappa'cea (Lappa-like). See T. VOLUBILIS.
„ *volu'bilis* (twining). 4–6. Violet-purple. July. Peru. 1788.

TOVA'RIA OLERA'CEA. See SMILACINA OLERACEA.

TOVOMI'TA. (*Tovomite,* the name in Cayenne. Nat. ord. *Guttifers* [Guttiferæ]. Linn. 13-*Polyandria,* 5-*Pentagynia.*)

Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; sandy peat and fibrous loam. Winter temp., 58° to 65°; summer, 65° to 90°, and moist atmosphere.

T. amazo'nica (Amazon). Brazil.
„ *choisya'na* (Choisyan). Guiana.
„ *clusiæfo'lia* (Clusia-leaved). 10. Yellow. May. Cayenne. 1823.
„ *fructipe'ndula* (drooping-fruited). 10–15. Pale yellow. January. Peru.
„ *guiane'nsis* (Guianan). Green. Guiana. 1827.

TOWERWORT. *Turri'tis.*

TOWN CRESS. *Lepi'dium sati'vum.*

TOWNSE'NDIA. (Commemorative of *Townsend.* Nat. ord. Compositæ.)

Dwarf, stemless, hardy herbs. Seeds. Ordinary, well-drained soil.

T. grandiflo'ra (large-flowered). Yellow. N.W. Amer.
„ *wilcoxia'na* (Wilcoxian). ½. Yellow. N.W. Amer. 1905.

TOXICODE'NDRON. (From *toxicon,* poison, and *dendron,* a tree; all parts are more or less poisonous. Nat. ord. Euphorbiaceæ.)

A large greenhouse shrub. Cuttings in sand under a bell-glass. Loam, finely broken bricks, and sand.

T. cape'nse (Cape). 6. June. S. Africa. 1783.

TOXICOPHLÆ'A. (From *toxicon,* poison, and *phloios,* the inner bark of woody plants. Nat. ord. Apocynaceæ. Now referred to Acokanthera.)

T. cestroi'des (Cestrum-like). See ACOKANTHERA VENENATA.
„ *specta'bilis* (showy). See ACOKANTHERA SPECTABILIS.
„ *Thunbe'rgii* (Thunberg's). See ACOKANTHERA VENENATA.

TRACHE'LIUM. Throatwort. (From *trachelos,* the neck; supposed efficacy in diseases of the trachea. Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.*)

Hardy herbaceous perennials. Seeds in a slight hotbed in spring; also by cuttings of young shoots in sandy soil, in April, or at the end of summer; sandy loam and a little vegetable mould.

T. cæru'leum (blue). 2. Blue. August. Western Mediterranean region. 1640.
„ „ *a'lbum* (white). White.
„ *rumelia'num* (Roumelian). Blue. Greece.
„ *rume'licum* (Roumelian). See T. RUMELIANUM.

TRACHELOSPE'RMUM. (From *trachelos,* the neck, and *sperma,* a seed; the seeds are furnished with a dense tuft of hairs at one end. Nat. ord. Apocynaceæ.)

Greenhouse or hardy evergreen twiners. Cuttings in sand, under a bell-glass. Fibrous loam, peat, and sand.

T. croco'stomum (saffron-mouthed). 10. Buff, with pale orange mouth. July. China (?). 1903. Hardy.
„ *difo'rme* (two-formed). 8. Pale yellow. July. N. Amer. 1806.
„ *jasminoi'des* (Jasminum-like). 10–12. White. May to August. China; Japan. 1846.
„ „ *angustifo'lium* (narrow-leaved). *T. crocostomum.*
„ „ *variega'tum* (variegated). Leaves edged with creamy-white.

TRACHYCA'RPUS. (From *trachus*, rough, and *karpos*, a fruit; the fruits of some species are felted with hairs. Nat. ord. Palmaceæ. Allied to Chamærops.)

Greenhouse and half-hardy palms. Seeds. Loam, peat, and sand.

T. exce'lsa (tall). 20–30. Yellow, green. July, August. India; China; Japan. 1844. Half-hardy.
„ *Fortu'nei* (Fortune's). See T. EXCELSA.
„ *Griffi'thii* (Griffith's). See T. MARTIANA.
„ *khasya'na* (Khasian). See T. MARTIANA.
„ *martia'na* (Martian). 10–26. Pale yellow. Himalaya. 1879.
„ *Ta'kil* (Takil). Trunk covered with fibrous network, but no bristles. Western Himalaya. 1906.

TRACHYLO'BIUM. (From *trachus*, rough, and *lobos*, a pod; the pods are rough. Nat. ord. Leguminosæ.)

Stove evergreen trees. Seeds; cuttings in sand, in bottom-heat. Loam, peat, and sand.

T. hornemannia'num (Hornemannian). White. Trop. Africa. "Copal."
„ *verruco'sum* (warted). 15–20. White. Mascarene Islands. 1808.

TRACHY'MENE. (From *trachus*, rough, and *hymen*, a membrane; channels of the fruit. Nat. ord. *Umbellifers* [Umbelliferæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

All the following are greenhouse, Australian, evergreen plants, except *cæru'lea*. The annuals never do much good in the open air, however raised; but if sown in a gentle hotbed in March, pricked out and potted, and flowered in the greenhouse in summer, they will reward the trouble; sandy loam and leaf-mould; shrubs, cuttings of young shoots under a bell-glass, in sandy soil; sandy loam and fibrous peat. Winter temp., 40° to 50°.

T. cæru'lea (sky-blue). 1½. Blue. July. 1827. Annual.
„ *compre'ssa* (flat-*stalked*). See SIEBERA COMPRESSA.
„ *lanceola'ta* (lance-shaped). See SIEBERA BILLARDIERI LANCEOLATA.
„ *linea'ris* (narrow-*leaved*). See SIEBERA LINEARIFOLIA.
„ *ova'lis* (oval-*leaved*). See SIEBERA BILLARDIERI.
„ *ova'ta* (egg-*leaved*). See SIEBERA BILLARDIERI.
„ *pilo'sa* (thinly-hairy). 1. Blue. July. Australia.

TRACHYSTE'MON. (From *trachus*, rough, and *stemon*, a stamen; the filaments are hairy. Nat. ord. Boraginaceæ. Allied to Borago.)

Hardy perennial herbs. Seeds; divisions. Well-drained soil.

T. cre'ticum (Cretan). 1. Blue. May. Grecian Archipelago. 1823.
„ *orienta'le* (oriental). 1. Purple. April. Asia Minor. 1752.

TRADESCA'NTIA. Spiderwort. (Named after *J. Tradescant*, gardener to Charles I. Nat. ord. *Spiderworts* [Commelinaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

All blue-flowered, except where otherwise mentioned. Annuals, by seed; perennials, by divisions in spring; rich, light loam; those requiring the greenhouse and stove will thrive better from having a little peat, and they should be well drained.

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T. ere'cta (upright). See TINANTIA FUGAX.
„ *latifo'lia* (broad-leaved). See TINANTIA FUGAX.
„ *re'cta* (upright). See TINANTIA FUGAX.
„ *unda'ta* (waved). See TINANTIA FUGAX.

GREENHOUSE HERBACEOUS, &c.

T. crassifo'lia (thick-leaved). 3. August. Mexico. 1796.
„ *iride'scens* (iridescent). See T. CRASSIFOLIA.
„ *panicula'ta* (panicled). 1. August. E. Ind. 1816. Biennial.
„ *pulche'lla* (neat). 1. July. Mexico. 1825. Evergreen.
„ *tu'mida* (swollen). 1. Red. September. Mexico. 1837.

STOVE HERBACEOUS, &c.

T. cordifo'lia (heart-leaved). ½. June. Jamaica. 1819. Evergreen.
„ *cra'ssipes* (thick-stalked). See T. CRASSULA.
„ *Cra'ssula* (thick). 1. White. July. Brazil. 1825.
T. deco'ra (becoming). Leaves with a median band of silver. Brazil. 1892.
„ *dile'cta* (chosen). Leaves with greenish-white stripes above, violet beneath. 1897.
„ *di'scolor* (various-coloured). See RHŒO DISCOLOR.
„ *diure'tica* (diuretic). See T. ELONGATA.
„ *divarica'ta* (straggling). See DICHORISANDRA AUBLIETIANA.
„ *elonga'ta* (elongated). ½. June. Trop. Amer. 1825.
„ *flumine'nsis* (river). ½. Blue-purple. April to July. Brazil. 1905.
„ *fusca'ta* (browned). See PYRRHEIMA LODDIGESII.
„ *genicula'ta* (knotted). 1. July. W. Ind. 1783.
„ *hypophæ'a* (dusky-beneath). See T. GENICULATA.
„ *malaba'rica* (Malabar). See ANEILEMA NUDIFLORUM.
„ *martensia'na* (Martens'). See CALLISIA MARTENSIANA.
„ *multiflo'ra* (many-flowered). ½. June. Jamaica. 1820.
„ *navicula'ris* (boat-like). Rose. Peru. 1877.
„ *procu'mbens* (trailing). See T. MULTIFLORA.
„ *Regi'næ* (Queen's). 1. Leaves whitish, transversely lined with dark green near margin. Peru. 1892.
„ *specio'sa* (showy). 1. July. Mexico. 1825.
„ *spica'ta* (spiked). 2. Purple. Mexico.
„ *supe'rba* (superb). Leaves dark green with white stripe on each side of the midrib. Peru. 1892.
„ *tri'color* (three-coloured). See ZEBRINA PENDULA.
„ *tubero'sa* (tuberous). See CYANOTIS TUBEROSA.
„ *undula'ta* (waved). See TINANTIA FUGAX.
„ *veluti'na* (velvety). Leaves purple along the middle, with a silvery white band on either side. 1893.
„ *vitta'ta* (striped). Leaves striped with grey.
„ *warscewiczia'na* (Warscewiczian). 2. Purple. May. Guatemala. 1860.
„ *Zano'nia* (Zanonia). See CAMPELIA ZANONIA.
„ *zebri'na* (zebra). See ZEBRINA PENDULA.

HARDY HERBACEOUS.

T. caricifo'lia (sedge-leaved). 1. August. Texas. 1835.
„ *conge'sta* (crowded). 2. August. N. Amer. 1826.
„ *pilo'sa* (hairy-*herbaged*). 2½. Purple. July. Louisiana. 1832.
„ *ro'sea* (rosy). 1. Pink. June. Carolina. 1802.
„ *virginia'na* (Virginian). 1½. July. N. Amer. 1629. "Flower of a Day."
„ „ *a'lba* (white). 1. White. July. N. Amer. 1629.
„ „ *cæru'lea a'lba* (blue-and-white). 1. Blue, white. July. N. Amer. 1629.
„ „ *ela'ta* (tall). 2.
„ „ *latifo'lia* (broad-leaved).
„ „ *pilo'sa* (shaggy). 1. White. July. N. Amer. 1629.
„ „ *ple'na* (double-*flowered*). 1. Blue. July. N. Amer. 1629.
„ „ *ru'bra* (red). 1. Red. July. N. Amer. 1629.
„ „ *sple'ndens* (splendid).

TRA'GIUM ANI'SUM. See PIMPINELLA ANISUM.

TRA'GIUM TAU'RICUM. See PIMPINELLA PEREGRINA.

TRAGOPO'GON. Goat's Beard. (From *tragos*, a goat, and *pogon*, a beard; long, silky beards of the seed. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 1-*Æqualis*.)

Hardy biennials, yellow-flowered, except where otherwise mentioned; seeds in March and August; common garden soil. See SALSAFY.

T. austra'lis (southern). Spain, &c.
„ *du'bius* (doubtful). 3. May. Podolia. 1818.
„ *flocco'sus* (woolly). 3. May. Hungary. 1816.
„ *gla'ber* (smooth). See T. HYBRIDUS.
„ *hirsu'tus* (hairy). See SCORZONERA HIRSUTA.
„ *hy'bridus* (hybrid). 1½. Pink. July. Italy. 1704.
„ *ma'jor* (greater). 6. May. Austria. 1788.
„ *mi'nor* (smaller). 2. June. Britain.
„ *muta'bilis* (changeable). 3. Pale. May. Caucasus. 1816.
„ *orienta'lis* (eastern). 3. June. Levant. 1787.
„ *porrifo'lius* (leek-leaved). 4. Purple. May. England. "Salsafy."
„ *prate'nsis* (meadow). 2. Yellow. June to August. Europe (Britain). "Goat's Beard."
„ *pusi'llus* (small). ½. June. Iberia. 1820.
„ *ro'seus* (rosy). See T. RUBER.

T. ru'ber (red). 1½. Red. May. Siberia. 1826.
„ *virgi'nicum* (Virginian). See KRIGIA AMPLEXICAULIS.

TRAGOPY'RUM. Goat's Wheat. (From *tragos*, a goat, and *puros*, wheat. Nat. ord. *Buckwheats* [Polygonaceæ]. Linn. 8-*Octandria*, 3-*Trigynia*. Now referred to Atraphaxis.)
T. buxifo'lium (box-leaved). See ATRAPHAXIS BUXIFOLIA.
„ *lanceola'tum* (spear-head-*leaved*). See ATRAPHAXIS MICRANTHA.
„ „ *latifo'lium* (broad-leaved). See ATRAPHAXIS LAXMANNI.
„ *poly'gamum* (polygamous). See POLYGONELLA PARVIFOLIA.

TRAILERS. See CREEPERS.

TRAIN OIL. See ANIMAL MATTERS.

TRAINING has for its object the rendering plants more productive either of flowers or of fruit, by regulating the number and position of their branches. If their number be too great they overshadow those below them, and, by excluding the heat and light, prevent that elaboration of the sap required for the production of fructification. If they are too few the sap is expended in the production of more, and in extending the surface of the leaves required for the digestion of the juices.

The position of the branches is important, because, if trained against a wall, they obtain a higher temperature and protection from winds; and if trained with their points below the horizontal the return of the sap is checked. Shy-flowering shrubs, as *Mi'mulus glutino'sus puni'ceus*, are made to blossom abundantly, and freely-flowering shrubs, as *Cy'tisus hy'bridus*, are made to blossom earlier, by having their branches bent *below* the horizontal line.

The reason of this appears in the fact, that a plant propels its sap with greatest force perpendicularly, so much so that the sap rising in a vine branch growing in a right line from the root, with a force capable of sustaining a column of mercury 28 inches high, will, if the branch be bent down to a right angle, support barely 23 inches, and if bent a few degrees below the horizontal the column sustained will not be more than 21 inches. This is the reason why, at such angles, gardeners find the trained branches of their wall-trees rendered more productive of blossoms, and furnished with a smaller surface of leaves. A similar effect is produced by training a branch in a waving form, for two-thirds of its length are placed horizontally.

Besides the usual modes of training—for which see also ESPALIERS and STANDARDS—there are two other modes which deserve notice.

Quenouille Training consists in training one upright central shoot in summer, and shortening it down to 15 inches at the winter pruning, in order that it may, at that height, produce branches forming a tier, to be trained, in the first instance, horizontally. The shoot produced by the uppermost bud is, however, trained as upright as possible during the summer, and is cut back, so as to produce another tier 15 inches above the first, and so on until the tree has reached the desired height. In this climate it is necessary to train the shoot downwards, which is easily done by tying those of the first tier to short stakes, those of each successive tier being fastened to the branches below them. When the shoots are thus arched downwards at full length, or nearly so, they soon come into a bearing state; but in this climate, if cut short, as the French do, they only send up a number of shoots annually. The plan answers very well where it can be at all times properly attended to; but if this cannot be guaranteed, the ordinary form of dwarf is preferable. Quenouilles require more time to be devoted to them than espaliers.

Balloon Training is forcing downwards all the branches of standard trees till the points touch the earth, and they have the merit of producing large crops of fruit in a very small compass. Their upper parts are, however, too much exposed to radiation at night, and the crop from that part of the branches is apt to be cut off.

TRANSPLANTING is most successfully performed whenever the roots are least required for supplying the leaves with moisture. The reason is obvious, because the roots are always in some degree broken, and lessened in their absorbing power, by the process of removal. That such is the *rationale* of seasonable transplanting is proved by the fact, that plants in pots, with reasonable care, may be transplanted at any season. This rule, too, is sanctioned both by theory and practice—transplant as early as possible after the leaves cease to require a supply of sap; the reason for which is, that the vital powers in the roots continue active long after they have become torpid in the branches, and fresh roots are formed during the autumn and winter to succeed those destroyed by transplanting.

For transplanting most *deciduous* trees and shrubs October and November are the most successful months. In transplanting *evergreens*, Mr. Beaton says: "I do not now concur in the general belief that autumn is the best time to plant all kinds of evergreens *indiscriminately*. I have planted evergreens every week in the year, more from necessity than choice it is true, but still the result of the whole convinces me that a dogmatic adherence to this or that given period of the year is just as bad and unphilosophical as the old prejudice in favour of planting all kinds of evergreens late in the spring. That vast assemblage of evergreens belonging to the natural order *Conifers*, from the Cedar of Lebanon down to the trailing Juniper, should be planted from the middle of July to the beginning of October, according to the weather after St. Swithin's Day. November, on the other hand, is as good a time as can be to remove evergreens of all kinds, provided that large balls of earth be removed with them. *Hollies, Laurustinus, Alaternus, Phillyreas*, and *Tree Box* will transplant as well in May and June as at any other time of the year—of that I am quite certain; I have removed hundreds of them in May and June without losing a twig. On the other hand, all these, and many more besides, will answer as well if planted early in November; but that is no reason for giving up the old plan of late spring planting such evergreens as do well at that time, although we need not do so from choice. The whole question amounts to this: All evergreens succeed if planted in the autumn; a great number of them will do better from being planted in the autumn, and will not transplant safely except in the autumn; while a large portion of them may be planted every day in the year with almost equal success.

November and May are the best two months *to remove Roses*. All the young and tender ones in pots turn out in May; but for all those on their own roots November is the best month to remove them.

TRA'PA. Water Caltrops. (From *calcitrapa*, an ancient instrument in warfare with four spikes; fruit armed with four spikes, or horns. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*.)

Aquatics. Seeds; good loam, in a tub or pond of water; *na'tans* will do in the latter; the others require the shelter of a greenhouse.

T. bico'rnis (two-horned). See T. NATANS.
„ *bispino'sa* (two-spined). White. July. E. Ind. 1822. Greenhouse biennial.
„ *na'tans* (floating). White, purple. July. Europe. 1781. Hardy annual. "Water Chestnut."
„ *quadrispino'sa* (four-spined). See T. NATANS.
„ *verbane'nsis* (Verbas). Italy. 1886. Hardy.

TRAUTVETTE'RIA. (Commemorative of *E. R. Trautvetter*, a Russian botanist. Nat. ord. Ranunculaceæ.)

Hardy perennial herb. Divisions. Good garden soil.
T. palma'ta (hand-shaped). 1–1½. White. June. N.W. Amer.; Japan. 1812. False Bugbane.

TRAVELLER'S JOY. *Cle'matis Vita'lba.*

TRAVELLER'S TREE. *Ravena'la madagascarie'nsis.*

TREASURE FLOWER. *Gaza'nia.*

TRECU'LIA. (Commemorative of the botanist *M. A. Trécul*. Nat. ord. Urticaceæ.)

Stove evergreen tree. Cuttings in sand in a close case, with bottom-heat. Loam, leaf-mould, and sand. Moist stove heat.
T. africa'na (African). Pale green. Trop. Africa. 187 " Okwa."

TREE CARROT. *Tha'psia edu'lis.* ◂ Spanish

TREE CELANDINE. *Bocco'nia frute'scens.*

TREE GUARDS. The following are cheap and effectual. Stakes about the thickness of the wrist, 7 feet in length, and tolerably straight, chopped each a little flat on one side, some iron hooping, a little thicker than coopers are in the habit of using for barrels, with punched holes through it 6 inches apart, with one hole near each end. Nail this to the stakes on the chopped side, one foot from the top of them, and one foot from the bottom; then raise it, and bend it circularly round the tree, observing that the hoops are placed inside, nearest the tree; the holes left at each end of the hoop are then clenched up with a nail, and the guard is complete.

The following plan is somewhat similar. Procure stakes of ash or larch, 6 feet in length, or more if requisite, and about 2 inches in diameter, and bore holes through the tops and bottoms about one foot from each end. Get a similar hole drilled up the centre of a stake, and saw it off in lengths of 2 inches, or rather less; pass a strong wire, or thick tarred string, through one stake, by the holes at the top and at the bottom; then pass it through the hole made in one of the 2-inch pieces at each end, and then through another stake, separating each stake at top and bottom by a piece of wood, until you leave enough to surround the tree loosely, leaving plenty of space for growth. Place it round the tree, and fasten the ends of the wire or string. This guard is much the same as a cradle put round the neck of a blistered horse, to prevent his gnawing the irritated part. The stakes merely rest on the ground, and should be cut quite flat at the bottom, to prevent their sticking into the ground. At the upper end they should have a sharp slanting cut with a bill-hook, and threaded with the slope towards the tree. The motion of the tree will not in any degree be impeded; and the bark cannot be injured let the wind blow as it may, for the guard moves freely with the tree in every direction.

TREES are a chief material in landscape gardening. The varieties in their shapes, says Mr. Whately, may be reduced to the following heads. Some, thick with branches and foliage, have almost an appearance of solidity, as the beech, the elm, the lilac, and syringa; others, thin of boughs and of leaves, seem light and airy, as the ash and the abele, the common arbor vitæ and the tamarisk.

There is a mean betwixt the two extremes, very distinguishable from both, as in the bladder-nut and the ashen-leaved maple. They may again be divided into those whose branches begin from the ground, and those which shoot up in a stem before their branches begin. Trees which have some and not much clear stem, as several of the firs, belong to the former class; but a very short stem will rank as a shrub, such as the althæa, in the latter.

Of those, the branches of which begin from the ground, some rise in a conical figure, as the larch, the cedar of Lebanon, and the holly. Some swell out in the middle of their growth and diminish at both ends, as the Weymouth pine, the mountain ash, and the lilac; and some are irregular and bushy from the top to the bottom, as the evergreen oak, the Virginian cedar, and Guelder rose. There is a great difference between one whose base is very large, and another whose base is very small, in proportion to its height. The cedar of Lebanon and the cypress are instances of such a difference; yet in both the branches begin from the ground.

The heads of those which shoot up into a stem before their branches begin sometimes are slender cones, as of many firs; sometimes are broad cones, as of the horse-chestnut; sometimes they are round, as of the stone pine, and most sorts of fruit-trees; and sometimes irregular, as of the elm. Of this kind there are many considerable varieties.

The branches of some grow horizontally, as of the oak; in others they fall, as in the lime and the acacia; and in some of these last they incline obliquely, as in many of the firs; in some they hang directly down, as in the weeping willow.

Some are of a dark green, as the horse-chestnut and the yew; some of a light green, as the lime and the laurel; some of a green tinged with brown, as the Virginian cedar; some of a green tinged with white, as the abele and the sage-tree; and some of a green variegated with yellow, as the ashen-leaved maple and the *Cra'ssi*y arbor vitæ. The variegated plants, also, are entitled to be classed with the white or the yellow, by the strong tincture of the one or the other of those colours on their leaves.

The fall of the leaf is the time to learn the species, the order, and the proportion of tints, which blended will form beautiful masses; and, on the other hand, to distinguish those which are incompatible near together. The peculiar beauty of the tints of red cannot then escape observation, and the want of them throughout the summer months must be regretted; but the want, though it cannot perfectly, may partially be supplied, for plants have a permanent and an accidental colour. The permanent is always some shade of green, but any other may be the accidental colour; and there is none which so many circumstances concur to produce as a red. It is assumed in succession by the bud, the blossom, the berry, the bark, and the leaf. Sometimes it profusely overspreads, at other times it dimly tinges the plant, and a reddish-green is generally the hue of those plants on which it lasts long or frequently returns.

Admitting this, at least for many months in the year, among the characteristic distinctions, a large piece of red-green, with a narrow edging of dark green along the further side of it, and beyond that a piece of light green still larger than the first, will be found to compose a beautiful mass. Another, not less beautiful, is a yellow-green nearest the eye, beyond that a light green, then a brown-green, and lastly a dark green. The dark green must be the largest, the light green the next in extent, and the yellow-green the least of all.

From these combinations the agreements between particular tints may be known. A light green may be next either to a yellow or a brown-green, and a brown to a dark green, all in considerable quantities; and a little rim of dark green may border on a red or a light green. Further observations will show that the yellow and the white-greens connect easily; but that large quantities of the light, the yellow, or the white-greens do not mix well with a large quantity also of the dark green; and that to form a pleasing mass, either the dark green must be reduced to a mere edging, or a brown or an intermediate green must be interposed; that the red, the brown, and the intermediate greens agree among themselves, and that either of them may be joined to any other tint; but that the red-green will bear a larger quantity of the light than of the dark green near it; nor does it seem so proper a mixture with the white-green as with the rest. In massing these tints attention must be constantly given to their forms, so that they do not lie in large stripes one beyond another; but that either they be quite intermingled, or, which is generally more pleasing, that considerable pieces of different tints, each a beautiful figure, be in different proportions placed near together. See CLUMP, AVENUE, and GROVE.

TREE MALLOW. *Lava'tera arbo'rea.*

TREE OF HEAVEN. *Aila'nthus glandulo'sa.*

TREE OF LIFE. *Thu'ya.*

TREE OF SADNESS. *Nycta'nthes A'rbor-tri'stis.*

TREE OR CANADA ONION. (*A'llium proli'ferum.*) This is without a bulbous root, but throws out numerous offsets. Its top bulbs are greatly prized for pickling, being considered of superior flavour to the common onion.

It is *propagated* both by the root offsets, which may be planted during March and April, or in September and October, and from the top bulbs, which are best planted at the end of April. The old roots are best to plant again for a crop of bulbs, as they are most certain to run to stems. Plant in rows 12 inches asunder, in holes 6 inches apart and 2 deep, a single offset or bulb being put in each. Those planted in autumn will shoot up leaves early in the spring, and have their bulbs fit for gathering in June or the beginning of July. Those inserted in the spring will make their appearance later, and will be in production at the close of July or early in August. They must not, however, be gathered for keeping or planting until the stalks decay, at which time, or in the spring also, if only of one year's growth, the roots may be taken up and parted if required for planting; but when of two or three years' continuance, they must, at all events, be reduced in size, otherwise they grow in too large and spindling bunches; but the best plan is to make a fresh plantation annually with single offsets.

The bulbs, when gathered, must be gradually and

carefully dried in a shady place, and if kept perfectly free from moisture will continue in good state until the following May.

TREE PÆONY. *Pæo'nia Mou'tan.*

TREE TOMATO. *Cyphoma'ndra beta'cea.*

TREFOIL. *Trifo'lium.*

TREFOIL, BIRD'S-FOOT. *Lo'tus.*

TREFOIL, GOLDEN. *Ane'mone Hepa'tica.*

TREFOIL, MILK. *Cy'tisus.*

TREFOIL, MOON. *Medica'go arbo'rea.*

TREFOIL, SCENTED. *Melilo'tus.*

TREFOIL, SHRUBBY. *Jasmi'num fru'ticans,* and *Pte'lea trifolia'ta.*

TRELLIS, or **TREILLAGE,** is an arrangement of supporters upon which to train plants.

Espalier Trellis.—The cheapest, the easiest, and the soonest made is that formed with straight poles or stakes of ash, oak, or chestnut, in lengths of from 5 to 6 or 7 feet, driving them in the ground in a range about a foot distant, all of an equal height, and then railed along the top with the same kind of poles or rods, to preserve the whole form in a regular position. They should be full 1½ inch thick, and, having pointed them at one end, drive them with a mallet into the ground in a straight range, close along the row of trees, a foot deep at least. To render treillage still stronger, run two, three, or more ranges of rods, along the back part of the uprights, a foot or 18 inches asunder, fastening them to the upright stakes either with pieces of strong wire twisted two or three times round, or by nailing them.

Espalier trellis made of cast-iron rods is neater and much more durable than that made of wood.

Trellis for Climbers.—These have been greatly improved, or rather, they have been created within these few years, for ten years ago we had nothing but stakes and rods.

Their forms are now various and elegant; but we shall here only explain the manner in which the wire trellis for climbing plants is attached to the pots. It will be seen that a strong wire ring is carried round the pot a little above its bottom. To this a sufficient number of upright wires are attached all round. These upright wires are pressed down upon the surface of the pot till they reach the rim, over which they are firmly bent till they reach the highest point of the rim, or are even bent a little within it. At this point they are secured by a second ring of stout wire, adjusted round about them, which having been done, the uprights are directed upwards, and fashioned into the pattern required. By these means a sort of collar is formed upon the rim of the pot, which prevents the trellis from slipping downwards, while, at the same time, the lowest ring of wire keeps it from swinging and swaying backwards and forwards.

Umbrella Trellis is a form excellently adapted for *Wista'ria chine'nsis,* and other climbers or shrubs having long racemes of flowers.

Hothouse Trellis, for training vines near the glass, is usually made of thin rods of deal or of iron, placed about a foot apart, and fastened to the framework of the building. Mr. Long, Beaufort Place, Chelsea, has invented a movable wire trellis, by which the vines may be lowered from the roof, or placed at any angle, without injuring the vines. This is an excellent mode of removing them from the influence of extreme exterior heat or cold. A still further improvement would be to have the vertical rods movable round the rod horizontally fixed to the rafter or roof, for then the whole trellis might be raised to an angle with, or even close to, the glass, whenever sun to the vine upon the trellis, or shade to the plants within the house, was desirable.

TRE'MA. (From *tremo,* to tremble; in allusion to the movement of the leaves when the air is in motion. Nat. ord. Urticaceæ. Allied to Celtis.)

Greenhouse or stove trees. Seeds; cuttings in sand, in a close case, with bottom-heat. Loam, peat, and sand.

T. Li'ma (Lima). 20. Green, yellow. W. Ind. 1823.
„ *micra'ntha* (small-flowered). 10. Green. Trop. Amer. 1739. Half-hardy.
„ *orienta'lis* (oriental). 50. Yellow-green. Tropics of Old World. 1820.

TREMA'NDRA. (From *tremo,* to tremble, and *aner, andros,* a stamen; the anthers sway with the least current of air. Nat. ord. Tremandraceæ.)

Dwarf Australian shrubs requiring greenhouse treatment. Cuttings in sand under a bell-glass. Peat chiefly, with a little loam and sand.

T. hirsu'ta (hairy). See TETRATHECA HIRSUTA.
„ *Huege'lii* (Huegel's). See TETRATHECA HIRSUTA.
„ *stelli'gera* (star-bearing). 1½. Purple.
„ *verticilla'ta* (whorled). See PLATYTHECA GALIOIDES.

TREMBLING AMERICAN TREE. *Po'pulus tremuloi'des.*

TRENCHING is one of the readiest modes in the gardener's power for renovating his soil. The process is thus conducted. From the end of the piece of ground where it is intended to begin take out a trench two spades deep, and 20 inches wide, and wheel the earth to the opposite end to fill up and finish the last ridge. Measure off the width of another trench, then stretch the line, and mark it out with the spade. Proceed in this way until the whole of the ridges are outlined, after which begin at one end, and fill up the bottom of the first trench with the surface or "top spit" of the second one; then take the bottom "spit" of the latter, and throw it in such a way over the other as to form an elevated sharp-pointed ridge. By this means a portion of fresh soil is annually brought on the surface in the place of that which the crop of the past season may have, in some measure, exhausted.

Bastard Trenching is thus performed. Open a trench 2½ feet or a yard wide, one full spit, and the shovelling deep, and wheel the soil from it to where it is intended to finish the piece; then put in the dung, and dig it in with the bottom spit in the trench; then fill up this trench with the top spit, &c., of the second, treating it in like manner, and so on. The advantages of this plan of working the soil are, the good soil is retained at the top, an important consideration where the subsoil is poor or bad; the bottom soil is enriched and loosened for the penetration and nourishment of the roots, and, allowing them to descend deeper, they are not so liable to suffer from drought in summer; strong soil is rendered capable of absorbing more moisture, and yet remains drier at the surface by the water passing down more rapidly to the subsoil, and it insures a thorough shifting of the soil.

In all trenching, whether one, two, or more spades deep, always, previous to digging, put the top of each trench 2 or 3 inches deep or more, with all weeds and other litter at the bottom of the open one, which not only makes clean digging and increases the depth of loose soil, but all weeds and their seeds are regularly buried at such a depth, that the weeds themselves will rot, and their seeds cannot vegetate.

TREVE'SIA. (Commemorative of the family *Treves de Bonfigli,* patrons of botanical research. Nat. ord. Araliaceæ.)

Stove shrubs with large, fingered, ornamental leaves. Cuttings in sand, in a close frame, with bottom-heat. Loam, leaf-mould, and sand.

T. e'minens (eminent). Leaves with 9–11 segments. Philippines. 1882.
„ *palma'ta* (hand-shaped). 10–15. Whitish. March. India; Burma. 1818.
„ *sunda'ica* (Sundaic). 10. Greenish-white. Java.

TREVIRA'NA. (Commemorative of *Ludolph C. Treviranus,* professor of botany at Rostock and Breslau, in Germany. Nat. ord. Gesneraceæ. Now referred to Achimenes.)

T. ca'ndida (white). See DICYRTA CANDIDA.
„ *cocci'nea* (scarlet). See ACHIMENES COCCINEA.
„ *longiflo'ra* (long-flowered). See ACHIMENES LONGIFLORA.
„ *pulche'lla* (pretty). See ACHIMENES COCCINEA.

TREVO'A. (Commemorative of *Don Trevo,* a Spanish botanist. Nat. ord. Rhamnaceæ.)

Greenhouse shrub or small tree. Cuttings in sand, under a bell-glass. Loam, peat, and sand.

T. trine'rvia (three-nerved). Chili.

TREVO'RIA. (Named in compliment to *Sir Trevor Lawrence*, Bart. Nat. ord. Orchidaceæ. Allied to Stanhopea.)

Stove epiphytal Orchids. Offsets. Fibre of peat, sphagnum, and crocks in baskets.

T. Chlo'ris (Chloris). Green; disc white. Colombia. 1897.

„ *Lehma'nni* (Lehmann's). Green; disc white. Andes of Colombia. 1910.

TRIA'NEA BOGOTE'NSIS. See LIMNO'BIUM BOGOTE'NSE.

TRI'AS. (From *trias*, three, or a triad; the parts of the flower are in threes. Nat. ord. Orchidaceæ.)

Stove, epiphytal Orchids. Offsets. Sphagnum, peat fibre, and crocks.

T. disciflo'ra (disc-flowered). Slam.

„ *oblo'nga* (oblong). ½. Green-brown; lip dull purple. Burma. 1837.

„ *pi'cta* (painted). Amber, densely spotted with red-purple. Burma. 1888.

„ *vitri'na* (glass-like). ½. Pale green; lip with brown spots. Tenasserim. 1895.

TRIA'SPIS. (From *tria*, three, and *aspis*, a shield; the fruit consists of three shield-like pieces. Nat. ord. Malpighiaceæ.)

A stove climber. Cuttings in sand, in a closed frame, with bottom-heat. Loam, peat, and sand.

T. odora'ta (scented). 8. Yellow. Trop. Africa. 1823.

TRIBRA'CHIA PE'NDULA. See BULBOPHYLLUM PENDULUM.

TRI'BULUS. Caltrops. (From *treis*, three, and *ballo*, to project; carpels, or divisions of the seed-vessel, end in three or four projecting points. Nat. ord. *Beancapers* [Zygophyllaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

All yellow-flowered, and annuals, except *cistoi'des*. Sow in a hotbed in March, harden off, and put in a sheltered place in the garden towards the beginning of June, or flower in pots in the greenhouse; rich, light, sandy loam; a little peat will be required for *cistoi'des*, which is easily increased by cuttings in the spring.

T. cistoi'des (Cistus-like). 1½. July. Tropics. 1752. Stove evergreen.

„ *ma'ximus* (greatest). 1½. June. Jamaica. 1728.

„ *terre'stris* (earth). 1. June. Tropics. 1596. "Land Caltrops."

„ *trijuga'tus* (three-paired). See T. MAXIMUS.

TRICHA'NTHA. (From *thrix*, *thrichos*, a hair, and *anthe*, a flower. Nat. ord. Gesneraceæ.)

Small stove shrub, with creeping, rooting, or climbing and slender stems. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

T. mi'nor (lesser). Dull violet or purple. Colombia. 1864.

TRICHE'RA. See SCABIOSA.

TRICHI'LIA. (From *tricha*, in threes, or ternary; the parts of the seed-pods in threes. Nat. ord. *Meliads* [Meliaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

White-flowered, stove evergreen trees. Cuttings of ripened shoots in sand, under a bell-glass, and in a moist, sweet heat, in April or autumn; fibrous loam and sandy peat. Winter temp., 55° to 60°; summer, 60° to 80°.

T. gla'bra (smooth). 30. June. Trop. Amer. 1794.

„ *glandulo'sa* (glanded). See SYNOUM GLANDULOSUM.

„ *havane'nsis* (Havannah). See T. GLABRA.

„ *hi'rta* (hairy). 12. June. Jamaica. 1800.

„ *moscha'ta* (musky). Jamaica.

„ *odora'ta* (scented). 15–20. Pale yellow. June. W. Ind. 1801.

„ *spondioi'des* (Spdionas-like). 10–15. White. W. Ind. 1870.

„ *termina'lis* (terminal). 20. Jamaica. 1825.

„ *trifo'lia* (three-leaved). 8. Venezuela. 1828.

TRICHI'NIUM. (From *trichinos*, hairy; flowers covered with knotted hairs. Nat. ord. *Amaranths* [Amarantaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Australian annuals. Seeds in a hotbed in April; pricked out, and ultimately bloomed in a cool greenhouse; rich, sandy loam and a little peat.

T. alopecuroi'deum (foxtail-like). See T. EXALTATUM.

„ *exalta'tum* (tall). 1. Yellow, red. June. 1838.

„ *Mangle'sii* (Mangles'). White, pink. June. 1838.

„ *Stirli'ngii* (Stirling's). White, pink. June. 1838.

TRICHOCA'RPA MOO'REI. See DEPARIA MOOREI.

TRICHOCAU'LON. (From *thrix*, *thrichos*, a hair, and *caulon*, a stem; the stem has tufts of hairs. Nat. ord. Asclepiadaceæ.)

Dwarf warm and dry greenhouse succulent. Cuttings in sand under a bell-glass. Loam, broken bricks, and sand.

T. Di'nteri (Dinter's). Small, dark brown. German S.W. Africa. 1910.

„ *pili'ferum* (hair-bearing). ½. Dark purple-brown. S. Africa. 1882.

„ *Pilla'nsii* (Pillans's). ½–¾. Small, yellow. S. Africa. 1904.

„ „ *ma'jor* (greater). Plant and flowers larger. S. Africa. 1904.

TRICHOCE'NTRUM. (From *thrix*, *thrichos*, a hair, and *kentron*, a spur; spur slender. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove epiphytal orchids. Offsets. Sphagnum, and fibre of peat on blocks.

T. ala'tum (winged). White; lip yellow, with red veins. Colombia. 1898.

„ *albiflo'rum* (white-flowered). 1½. White, tinted purple. Mexico. 1893.

„ *a'lbo-purpu'reum* (white-purple). Brown, white, purple. N. Brazil. 1866.

„ „ *stria'tum* (striped). Lip with two purple blotches, and apex lined purple. 1887.

„ *ca'ndidum* (white). White, yellow. May. Guatemala. 1840.

„ *capistra'tum* (muzzled). Greenish-white. Costa Rica. 1871.

„ *Cornuco'piæ* (horn of plenty). Greenish-white. Trop. Amer. 1866.

„ *fu'scum* (brown). ½. Green, white. July. Mexico. 1835.

„ „ *Krame'rii* (Kramer's). Spur longer, thinner. Mexico. 1885.

„ *Ha'rtii* (Hart's). ½. Light yellow; lip white, red-brown. Venezuela. 1894.

„ *Hœ'gei* (Hœg's). ½. Greenish-yellow, purple; lip deep purple. Mexico. 1881.

„ *ionophtha'lmum* (violet-eyed). ½. Yellow, maroon-brown; lip with violet blotch. Brazil. 1876.

„ *iridifo'lium* (Iris-leaved). Yellow. September. Demerara. 1830.

„ *macula'tum* (spotted). White, purple. February. New Grenada.

„ *orthople'ctron* (straight-spurred). Brown, ochre; lip white, striped crimson. Central Amer. (?) 1883.

„ *Pfa'vei* (Pfave's). Brown, white; lip white, with red blotch. Central Amer. 1881.

„ „ *zona'le* (zonal). Brown; lip with one or two purple blotches. 1883.

„ *Porphy'rio* (Porphyrio). Purple, light yellow. Central Amer. (?) 1884.

„ *pu'lchrum* (fair). Yellow, white. July. Peru.

„ *purpu'reum* (purple). Green; lip purple. Guiana (?). 1854.

„ *recu'rvum* (curled-back). White, purple. May. Guiana. 1842.

„ *tenuiflo'rum* (slender-flowered). Brown, white. Brazil. 1850.

„ *tigri'num* (tiger-like). Brown, purple, orange, white. Central Amer. 1869.

„ „ *sple'ndens* (splendid). Base of lip rich purple. Central Amer.

„ *trique'trum* (three-sided). ½. Straw; lip marked orange. Peru. 1891.

TRICHO'CEROS. (From *thrix*, *thrichos*, a hair, and *keras*, a horn; the column bears two horns. Nat. ord. Orchidaceæ.)

Epiphytal stove orchid. Offsets. Sphagnum tied on blocks or rafts.

T. parviflo'rus (small-flowered). Purple, brown. Colombia. 1870.

TRICHO'CLADUS. (From *thrix*, *thrichos*, a hair, and *klados*, a branch; the branches are felted with rusty hairs. Nat. ord. Hamamelidaceæ.)

Greenhouse tree allied to the Witch Hazels. Cuttings in sand under a bell-glass. Fibrous loam, peat, and a little sand.

T. grandiflo'rus (large-flowered). 20. White. S. Africa. 1894.

TRICHOCORO'NIS. (From *thrix*, *thrichos*, a hair, and *corona*, a crown; the achenes have a ring of spreading hairs. Nat. ord. Compositæ. Allied to Ageratum.)

Greenhouse diffuse herb. Cuttings in sand under a bell-glass or in heat. Fibrous loam, leaf-mould, and sand.

T. Wri'ghtii (Wright's). 1. White. New Mexico.

TRICHODE'SMA. (From *thrix*, *thrichos*, a hair, and *desmos*, a bond; anthers united by hairs. Nat. ord. Boraginaceæ.)

Stove annuals. Seeds. Fibrous loam, leaf-mould, and sand. May be planted out in June.

T. a'nceps (two-edged). 1½. Trop. Amer.
„ *Bancro'ftii* (Bancroft's). ½. Jamaica.
„ *Bo'jeri* (Bojer's). Mascarene Islands.
„ *physaloi'des* (Physalis-like). White; calyx purple. S. Africa. 1892. Perennial.
„ *zeyla'nicum* (Cingalese). 3–4. Blue. Trop. Asia and Australia. 1855.

TRICHOGLO'TTIS. (From *thrix*, *thrichos*, a hair, and *glottis*, a tongue or lip. Nat. ord. Orchidaceæ.)

Stove epiphytal orchids. Offsets. Sphagnum, peat fibre, and crocks.

T. cochlea'ris (shell-like). ¾. White, with purple bars. Sumatra. 1883.
„ *dawsonia'na* (Dawsonian). Sulphur, orange, brown. Burma. 1868.
„ *fascia'ta* (bundled). See STAUROPSIS FASCIATA.
„ *pa'llens* (pale). See PHALÆNOPSIS PALLENS.
„ *Solere'deri* (Solereder's). ½. Green, brown-purple; lip white with two red spots. Philippines. 1910.

TRICHO'GYNE. (From *thrix*, *thrichos*, a hair, and *gune*, the ovary; the female flowers are slender and hair-like. Nat. ord. Compositæ. This should be placed under Ifloga.)

T. seriphioi'des (Seriphium-like). 2. Yellow. S. Africa. 1825.

TRICHO'LEPIS. (From *thrix*, *thrichos*, a hair, and *lepis*, a scale; the scales or bracts of the head are hair-like. Nat. ord. Compositæ.)

Hardy or half-hardy perennial herb. Seeds; divisions. Ordinary garden soil.

T. furca'ta (forked). 1½–5½. Yellow. Himalaya. 1907.

TRICHO'MANES. (From *thrix*, *thrichos*, a hair, and *manos*, soft; the shining stems appear like fine hair. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)

Stove, brown-spored Ferns. See FERNS.

T. achilleæfo'lium (milfoil-leaved). See T. RIGIDUM.
„ *acule'atum* (prickly). May. Isle of Luzon.
„ *ala'tum* (winged). June. W. Ind. 1824.
„ „ *attenua'tum* (attenuated). Fronds elongated at the apex.
„ *a'nceps* (two-edged). W. Ind. 1863.
„ *angusta'tum* (narrowish). See T. TENERUM.
„ *apiifo'lium* (Celery-leaved). 1–2. Polynesia, &c.
„ *auricula'tum* (eared). 1. Trop. Asia, &c. 1871.
„ *Bancro'ftii* (Bancroft's). ½–1. Trop. Amer.
„ *bipuncta'tum* (two-spotted). See T. FILICULA.
„ *Bo'jeri* (Bojer's). See T. CUSPIDATUM.
„ *boschia'num* (Boschian). See T. RADICANS BOSCHIANUM.
„ *botryoi'des* (bunch-like). ½–1. Trop. Amer.
„ *brevise'tum* (short-bristled). See T. RADICANS.
„ *cri'spum* (curled). May. W. Ind. 1828.
„ „ *pilo'sum* (hairy). Covered with rufous hairs. S. Amer. 1863.
„ *curva'tum* (curved). April. Isle of Luzon.
„ *cuspida'tum* (short-pointed). Mauritius and Bourbon.
„ *disse'ctum* (cut-*leaved*). See T. AURICULATUM.
„ *elonga'tum* (elongatum). See T. RIGIDUM ELONGATUM.
„ *exse'ctum* (cut-out). 1–1½. Chili, &c.
T Fili'cula (little-fern). ½. Trop. Asia and Africa.
„ *fimbria'tum* (fringed). W. Ind. 1862.
„ *floribu'ndum* (many-flowered). See T. PINNATUM.
„ *fœnicula'ceum* (fennel-like). ½–1. Mauritius, &c.
„ *Fra'seri* (Fraser's). ½. Fronds pale green, fan-shaped. W. Ind. 1890.
„ *fu'sco-glauce'scens* (brownish-milky-green). May. Isle of Luzon.
„ *gemma'tum* (budded). April. Malacca.
„ *Ha'rtii* (Hart's). ½–¾. Fronds tripinnatifid. Sierra Leone. 1882.
„ *hu'mile* (low). May. Polynesia.
„ *java'nicum* (Javan). ½–1. May. Malaya; India, &c.
„ *Kalbre'yeri* (Kalbreyer's). ½. Colombia. 1881.
„ *Kaulfu'ssii* (Kaulfuss'). 1. W. Ind.
„ *Krau'ssii* (Krauss'). 1/12–½. W. Ind. to Brazil and Peru.
„ *labia'tum* (lipped). British Guiana. 1885.
„ *luschnathia'num* (Luschnathian). See T. RADICANS LUSCHNATHIANUM.
„ *ma'ximum* (largest). 1½–2. Malaya and Polynesia.
„ *meifo'lium* (Meum-leaved). April. Isle of Luzon.
„ *meifo'lium* (Meum-leaved) of Gardens. See T. APIIFOLIUM.
„ *membrana'ceum* (membranous). ½. May. W. Ind. 1820.
„ *millefo'lium* (thousand-leaved). S. Amer.
„ *muscoi'des* (moss-like). ½. Tropics.
„ *obscu'rum* (obscure). See T. RIGIDUM.
„ *parvifo'rum* (small-flowered). See T. FŒNICULACEUM.
„ *pa'rvulum* (very small). April. Tropics of Old World.
„ *Pete'rsii* (Peters'). 1/12. Alabama. 1875.
„ *pinnatine'rve* (pinnate-nerved). ½. Bright green. British Guiana. 1886.
„ *pinna'tum* (pinnate). May. Trop. Amer. 1823.
„ *Prieu'rii* (Prieur's). 1½–2. Trop. Amer.
„ *pulche'rrimum* (fairest). New Zealand.
„ *puncta'tum* (dotted). 1/12. Trop. Amer.
„ *pusi'llum* (petty). ½–¾. April. Trop. S. Amer. 1844.
„ *pyxidi'ferum* (small-box-bearing). ½–½. Tropics everywhere.
„ „ *oliva'ceum* (olive-green). Trop. Amer.
„ *quercifo'lium* (oak-leaved). See T. PUSILLUM.
„ *radi'cans* (rooting). ½–1½. April. Tropical and subtropical regions (Britain).
„ „ *alabame'nse* (Alabaman).
„ „ *Andrew'sii* (Andrews'). ½–1. Frond lanceolate. Ireland.
„ „ *boschia'num* (Boschian).
„ „ *cri'spum* (crisped).
„ „ *dilata'tum* (widened).
„ „ *frondo'sum* (leafy).
„ „ *luschnathia'num* (Luschnathian). Frond stalkless. Brazil.
„ „ *specio'sum* (showy). See T. RADICANS.
„ *renifo'rme* (reniform). ½. New Zealand.
„ *re'ptans* (creeping). 1/12. Trop. Amer.
„ *rhomboi'deum* (diamond-shaped). May. Isle of Luzon.
„ *ri'gidum* (rigid). ½–1½. April. Tropics everywhere.
„ „ *elonga'tum* (elongated). Pinnæ imbricated. New Zealand.
„ *saxa'tile* (rock). Borneo. 1862.
„ *sca'ndens* (climbing). ½–1½. Central Amer.
„ *seti'gerum* (bristle-bearing). Borneo. 1862.
„ *sinuo'sum* (sinuous). ½–¾. Trop. Amer.
„ *spica'tum* (spiked). May. Trop. Amer. 1844.
„ *stri'ctum* (upright). New Zealand.
„ *supe'rbum* (superb). ½–1½. Trinidad; British Guiana.
„ *te'nerum* (slender). ½–¾. May. Trop. Amer.
„ *thujioi'des* (Thuya-like). ¾. Mauritius.
„ *trichoi'deum* (hair-like). ½–¾. Trop. Amer.
„ *trichophy'llum* (hair-leaved). Borneo. 1862.
„ *veno'sum* (veiny). ½–¾. Australia and New Zealand.

TRICHONE'MA. (From *thrix*, *thrichos*, a hair, and *nema*, a filament; stamens clothed with minute hairs. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Romulea.)

T. Bulboco'dium (Bulbocodium). See ROMULEA BULBOCODIUM.
„ *caule'scens* (stemmed). See ROMULEA BULBOCODIOIDES.
„ *chlorolew'cum* (greenish-white). See ROMULEA CHLOROLEUCA.
„ *cælesti'num* (celestial). See NEMASTYLA CŒLESTINA.

T. Colu'mnæ (Columna's). See ROMULEA COLUMNÆ.
„ *crucia'tum* (cross-shaped). See ROMULEA LONGIFOLIA.
„ *edu'le* (eatable). See ROMULEA RAMIFLORA.
„ *filifo'lium* (thread-leaved). See ROMULEA FILIFOLIA.
„ *longifo'lium* (long-leaved). See ROMULEA LONGIFOLIA.
„ *pu'dicum* (blushing). See ROMULEA ROSEA PUDICA.
„ *purpura'scens* (purplish). See ROMULEA RAMIFLORA.
„ *py'lium* (gate). See ROMULEA BULBOCODIUM PYLIA.
„ *quadra'ngulum* (four-angled). See GEISSORHIZA QUADRANGULA.
„ *ramiflo'rum* (branched-flowered). See ROMULEA RAMIFLORA.
„ *recu'rvum* (curled-back). See ROMULEA BULBOCODIOIDES.
„ *ro'seum* (rosy). See ROMULEA ROSEA.
„ *specio'sum* (showy). See ROMULEA ROSEA SPECIOSA.
„ *subpalu'stre* (rather boggy). See ROMULEA BULBOCODIUM SUBPALUSTRE.
„ *tortuo'sum* (twisted-*leaved*). See ROMULEA TORTUOSA.

TRICHOPE'TALUM. (From *thrix*, a hair, and *petalon*, a petal; flowers fringed inside. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. See BOTTIONEA.)

T. gra'cile (slender). See BOTTIONEA THYSANTHOIDES.
„ *stella'tum* (starry-*flowered*). See BOTTIONEA THYSANTHOIDES.

TRICHOPI'LIA. (From *thrix*, a hair, and *pilon*, a cap; summit of the column with tufts of hair. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*]. Allied to Aspasia.)
Stove orchids, grown in baskets. See ORCHIDS.

T. a'lbida (whitish). White, yellow. Venezuela. 1851.
„ *backhousia'na* (Backhousian). White, yellow. Colombia. 1876.
„ *bre'vis* (short). Yellow, red-brown; lip white. Peru. 1895.
„ *cocci'nea* (red-flowered). Red, purple. April. Central Amer. 1849.
„ „ *cri'spa* (crisped). Edge of lip strongly crisped. Colombia. 1857.
„ „ *fla'veola* (yellowish). Greenish-yellow; lip white. Costa Rica. 1880.
„ „ *le'pida* (slender). Claret. Leaves longer, narrower. Costa Rica. 1873.
„ „ *margina'ta* (margined). Claret, with white edges; lip crimson. Central Amer. 1849.
„ „ *oliva'cea* (olive-green). Olive-green.
„ *cri'spa* (crisped). See T. COCCINEA CRISPA.
„ *fra'grans* (fragrant). 1. White, yellow. May. Colombia. 1843.
„ „ *no'bilis* (noble). 1. Flowers larger, white, yellow. Venezuela. 1872.
„ „ *no'bilis a'lba* (white). 1. Pure white. 1908.
„ *galeottia'na* (Galeottian). Yellow, white, purple, brown. Mexico. 1859.
„ „ *co'ncolor* (one-coloured).
„ *gra'ta* (grateful). Green, white, yellow, fragrant. Peru (?). 1868.
„ *hennisia'na* (Hennisian). Pure white, with two golden zones on the lip. Colombia. 1908.
„ *hymena'ntha* (marriage-flower). White, red. Colombia. 1854.
„ *kienastia'na* (Kienastian). White, with a few yellow lines and spots. 1883.
„ *la'xa* (loose). ¾. White, green, brownish-red. Colombia. 1844.
„ „ *fla'veola* (yellowish). Whitish-yellow. Colombia. 1884.
„ *Lehma'nni* (Lehmann's). White, with yellow spot in throat. 1888.
„ *le'pida* (slender). See T. COCCINEA LEPIDA.
„ *margina'ta* (margined). See T. COCCINEA MARGINATA.
„ *mu'tica* (snipped). White, flushed with red. Trinidad. 1821.
„ *no'bilis* (noble). See T. FRAGRANS NOBILIS.
„ *pi'cta* (painted). See T. GALEOTTIANA.
„ *puncta'ta* (dotted). Sepals and petals dotted with reddish-purple. Costa Rica. 1890.
„ *rostra'ta* (beaked). ½. White, orange. Colombia. 1866.
„ *sanguinole'nta* (blood-coloured). Olive, dusky crimson; lip white, with crimson veins. Central Amer. 1843.
T. sua'vis (sweet). White, purple. April. Central Amer. 1851.
„ „ *a'lba* (white). White, yellow. Central Amer. 1882.
„ „ *ca'ndida* (white). Pure white; lip with yellow blotch at its base. 1902.
„ „ *grandiflo'ra* (large-flowered). White, crimson, orange.
„ „ *Lama'rchæ* (Lamarcha's). White, rose. Costa Rica. 1874.
„ „ *sple'ndens* (splendid). White, purple, carmine. Costa Rica. 1868.
„ *to'rtilis* (twisted-*petaled*). ¾. White, red. January. Mexico. 1835.
„ „ *pa'llida* (pale). White. January. Guatemala. 1844.
„ *Turia'lvæ* (Turialva's). See T. GALEOTTIANA.
„ *Wa'generi* (Wagener's). Venezuela.
„ *Warscewi'czii* (Warscewicz's). Country unknown.

TRI'CHOPUS. (From *thrix*, *thrichos*, a hair, and *pous*, a foot; in reference to the thread-like flower-stalks. Nat. ord. Dioscoreaceæ.)
A dwarf stove perennial. Offsets or divisions of the root-stock. Loam, leaf-mould, and sand.
T. zeyla'nicus (Cingalese). Purple. S. India; Ceylon.

TRICHOSA'CME. (From *thrix*, *thrichos*, a hair, and *acme*, a point; in allusion to the plumy appendage of the corolla lobes. Nat. ord. Asclepiadaceæ.)
Stove climber. Cuttings in sand under a bell-glass. Loam, leaf-mould, finely broken bricks and sand, to be kept dry in winter.
T. lana'ta (woolly). Purple. Plant very woolly. Mexico. 1850.

TRICHOSA'NTHES. Snake Gourd. (From *thrix*, *thrichos* a hair, and *anthos*, a flower; flowers fringed. Nat. ord. *Cucurbits* [Cucurbitaceæ]. Linn. 21-*Monœcia*, 10-*Decandria*.)
Stove, white-flowered annuals. Seeds in a sweet hotbed in March, potted and grown in a plant-stove; sandy loam, leaf-mould, and fibrous peat. The great length of the cucumber-like seed-vessel is interesting.
T. Angui'na (snake). 20. August. China. 1735. "Common Snake Gourd."
„ *colubri'na* (serpent-like). See T. ANGUINA.
„ *cucumeri'na* (cucumber-like). August. Trop. Asia.
„ *cuspida'ta* (short-pointed). August. India.
„ *fœtidi'ssima* (very-fetid). See KEDROSTIS FŒTIDISSIMA.
„ *japo'nica* (Japanese). Greenish-white. Japan. 1872.
„ *Kirilo'wii* (Kirilow's). Fruit orange-red. Mongolia. 1872.
„ *palma'ta* (hand-*leaved*). July. India. 1825.
„ *vitifo'lia* (vine-leaved). See T. KIRILOWII.

TRICHO'SMA. Hair Orchis. (From *thrix*, a hair, and *kosmos*, ornament. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchid, grown in a basket. See ORCHIDS.
T. sua'vis (sweet). 1. White, yellow. June. Himalaya. 1840.
„ „ *meulenærea'na* (Meulenærian). Lip without yellow, but lined with violet-purple. Himalaya. 1894.

TRICHOSTE'MA. (From *thrix*, *thrichos*, a hair, and *stema*, a stamen; the stamens have hair-like filaments. Nat. ord. Labiatæ.)
Hardy or half-hardy perennial. Divisions; cuttings under a bell-glass in summer. Well-drained soil or the protection of a frame.
T. lana'tum (woolly). 1–1½. Bluish-purple, with projecting stamens. S. California. 1882.
„ *Pari'shii* (Parish's). See T. LANATUM.

TRICHOTO'SIA. See ERIA.

TRICO'RYNE. (From *treis*, three, and *korune*, a club; form of the seed-pod. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Johnsonia.)
Half-hardy, white-flowered, herbaceous perennials, from Australia. Division and seeds; rich, sandy loam; a very sheltered place, or a cold pit, or a cool greenhouse in winter.
T. ela'tior (taller). 2. June. 1824.
„ „ *sca'bra* (rough). 1. 1826.
„ *si'mplex* (simple-*stemmed*). 1. July. 1823. Biennial.

TRI'CRATUS ADMIRA'BILIS. See ABRONIA UMBELLATA.

TRICUSPIDA'RIA. (From *tricuspis*, having three points; the petals have three teeth or three short points. Nat. ord. Tiliaceæ.)

Greenhouse evergreen shrubs or small trees. Cuttings in sand under a bell-glass. Loam, peat, and sand.

T. depe'ndens (drooping). 3–6. White. April, May. Central Chili. 1907.
„ *hexape'tala* (six-petaled). See T. DEPENDENS.
„ *lanceola'ta* (lance-shaped). 3–8. Scarlet. April. May. Peru. 1880.

TRICY'RTIS. Toad Lily. (From *treis*, *tria*, three, and *kurtos*, bent or convex; the three outer parts of the flower are convex at the base. Nat. ord. Liliaceæ.)

Hardy or half-hardy bulbs, requiring protection in winter in the colder parts of the country. Offsets. Well-drained garden soil mixed with peat and sand.

T. e'legans (elegant). See T. PILOSA.
„ *hi'rta* (hairy). 2. White, spotted with purple. October. Japan. 1863.
„ *japo'nica* (Japanese). See T. HIRTA.
„ *macro'poda* (long-stalked). Yellowish, spotted with purple. China; Japan. 1869.
„ „ *stria'ta* (striated). Leaves lined with creamy-white.
„ *pilo'sa* (hairy). 1½. Green, marked with red. October. Himalaya. 1851.

TRI'DAX. (From *treis*, *tria*, three, and *akis*, a point; the female rays have three points, or sometimes three lobes. Nat. ord. Compositæ.)

Hardy or half-hardy perennial herbs. Seeds; divisions. Ordinary garden soil.

T. bi'color ro'sea (two-coloured-rosy). Rosy-lilac; disc yellow. Mexico. 1887. Annual.
„ *coronopifo'lium* (stag's-horn-leaved). 1. Yellow. June. Mexico.
„ *gaillardioi'des* (Gaillardia-like). See LAYIA GAILLARDIOIDES.
„ *trilcba'ta* (three-lobed). 1. Yellow. June. Mexico.

TRIENTA'LIS. Winter-green. From *triens*, one-third; low growth. Nat. ord. *Primeworts* [Primulaceæ]. Linn. 7-*Heptandria*, 1-*Monogynia*.)

Hardy, white-flowered, herbaceous perennials. Seeds under a hand-light; divisions of the plant in spring; light, rich soil. Pretty little plants, requiring a shady situation.

T. alsinæflo'ra (Alsine-flowered). See T. EUROPÆA.
„ *america'na* (American). ½. July. N. Amer. 1816. "Star-flower."
„ *europæ'a* (European). ½. May. Britain. "Chickweed Winter-green."

TRIFO'LIUM. Trefoil. (From *tres*, *tria*, three, and *folium*, a leaf; three-leaved. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Seeds in the open ground, and divisions of the herbaceous perennials; light, rich loam.

HARDY HERBACEOUS.

T. ala'tum (winged). See T. PHYSODES.
„ *alpe'stre* (alpine). S. Europe, &c.
„ *alpi'num* (alpine). ½. Purple. July. Europe. 1775.
„ *angustifo'lium* (narrow-leaved). Mediterranean region, &c.
„ *armeni'acum* (Armenian). See T. PENNYANUM.
„ *arme'nium* (Armenian). 1. Cream. August. Armenia. 1820.
„ *ba'dium* (brown). ½. Yellow. July. Pyrenees.
„ *Bala'nsæ* (Balansa's). Asia Minor.
„ *Boissie'ri* (Boissier's). Greece; Asia Minor.
„ *cæspito'sum* (turfy). See T. ELEGANS.
„ *cane'scens* (hoary). Cream. May. Asia Minor. 1803.
„ *carolinia'num* (Carolinian). ½. White. June. N. Amer. 1798.
„ *clypea'tum* (round-shielded). Greece; Asia Minor.
„ *como'sum* (tufted). See T. CAROLINIANUM.
„ *Cusso'nii* (Cusson's). 1. Blue. July. Sicily. 1826.
„ *diffu'sum* (diffuse). Europe.
„ *e'legans* (elegant). ½. Pale red. July. Europe. 1815.
„ *exi'mium* (choice). ½. Purple. June. Dahuria. 1820.
T. exi'mium albiflo'rum (white-flowered). ½. White. June. Altai.
„ *fragi'ferum* (strawberry-bearing). ½. Rose-purple. July, August. Europe (Britain). "Strawberry Clover."
„ *hy'bridum* (hybrid). 1. Rosy-purple. July, August. S. Europe (Britain). "Alsike Clover."
„ *Johnsto'ni* (Johnston's). Uganda.
„ *lati'num* (Latin). 1. White, red. June. Italy.
„ *lo'ngipes* (long-stalked). North-western Amer.
„ *Lupina'ster* (Lupinaster). 1½. Purple. July. Siberia. 1741. "Bastard Lupine."
„ „ *albiflo'rum* (white-flowered). White. July, Siberia. 1818.
„ „ *purpura'scens* (purplish). Purple.
„ *me'dium* (mediate). 2. Purple. June. Europe (England). "Cow-grass," "Meadow Clover."
„ *no'ricum* (Noric). 1. Cream. July. Carinthia. 1821.
„ *ochroleu'cum* (yellowish-white). 1. Sulphur. May. Europe (England).
„ *panno'nicum* (Pannonian). 1. White, yellow. June. Hungary. 1752.
„ *pennsylva'nicum* (Pennsylvanian). See T. MEDIUM.
„ *pennya'num* (Pennyan). 1. Red. July. Armenia. 1830.
„ *physo'des* (bladdery). ½. Reddish. June. Hungary. 1805.
„ *polyphy'llum* (many-leaved). ½. Purple. July. Caucasus. 1897.
„ *prate'nse* (meadow). 2. Purple. July. Britain. "Common Clover."
„ „ *vagina'tum* (sheathing). 1. Pale yellow. Switzerland. 1819.
„ *purpura'scens* (purplish). 1. Purple. June. Siberia. 1816.
„ *re'pens* (creeping). 1½. White. July. Europe (Britain). "White Clover," "Dutch Clover."
„ „ *pentaphy'llum* (five-leaved). ½. White. June. Britain.
„ *ru'bens* (red). 1½. Dark red. S. Europe. 1633.
„ *rupe'stre* (rock). 1. White. June. Naples. 1820.
„ *trichoce'phalum* (hairy-headed). 1. Cream. June. Caucasus. 1827.
„ *uniflo'rum* (one-flowered). ½. Blue. June. Italy. 1800.
„ „ *sternbergia'num* (Sternberg's). ½. White. June. S. Europe. 1822.
„ *vagina'tum* (sheathed). See T. PRATENSE VAGINATUM.

HARDY ANNUALS.

T. agra'rium (field). 1. Yellow. July, August. Europe.
„ *alexandri'num* (Alexandrian). ½. Yellow. June. Egypt; Asia Minor. 1820.
„ *arve'nse* (field). 1. Pink. June to August. Europe (Britain). "Hare's-foot Trefoil."
„ *au'reum* (golden). See T. AGRARIUM.
„ *Beckur'thii* (Beckurth's). California.
„ *bi'fidum deci'piens* (deceiving). California.
„ *Bocco'ni* (Boccon's). ½. Pale purple. June. Spain. 1820.
„ *bractea'tum* (*large*-bracted). 1. Purple. June. Morocco. 1804. Biennial.
„ *cæru'leum* (sky-blue). See TRIGONELLA CÆRULEA.
„ *ce'rnuum* (drooping). 1. Pale purple. June. Spain. 1820.
„ *Che'rleri* (Cherler's). ½. White. June. Mediterranean region. 1820.
„ *ci'nctum* (girded). 1. Pale yellow. June. France. 1820.
„ *conge'stum* (crowded). See T. FRAGIFERUM.
„ *constantinopolita'num* (Constantinople). See T. ALEXANDRINUM.
„ *du'bium* (doubtful). ½. Yellow. June to September. Europe (Britain). "Shamrock."
„ *erina'ceum* (prickly). See T. PHLEOIDES.
„ *filifo'rme* (thread-formed). ½. Yellow. June to August. Europe (Britain).
„ *fimbria'tum* (fringed). See T. INVOLUCRATUM.
„ *fuca'tum* (tinted). 1. Yellow. June. California. 1834.
„ *geme'llum* (twin-*spiked*). ½. Yellow. June. Spain. 1818.
„ *globo'sum* (globe-shaped). 1. Purple. July. Levant. 1713.
„ *glomera'tum* (crowded). ½–1. Blue-purple. June. Europe (England).

T. gra'cile (slender). See T. ARVENSE.
„ *hi'rtum* (hairy). 1. Purple. July. Barbary. 1817.
„ „ *pi'ctum* (painted). 1. Purple. July. 1800.
„ *incarna'tum* (flesh-coloured). 1. Flesh. July. Italy. 1596. "Crimson Clover."
„ „ *Moline'rii* (Moliner's). 1. White, red. July. S. Europe. 1820.
„ *interme'dium* (intermediate). 1. White. June. Italy. 1820.
„ *involucra'tum* (involucred). Purple. September. North-western Amer. 1825.
„ *kitaibelia'num* (Kitaibel's). See T. STRIATUM.
„ *Lago'pus* (hare's-foot). 1. Red. July. Spain. 1827.
„ *lappa'ceum* (burr-like). ½. Pale red. July. Montpelier. 1787.
„ *leuca'nthum* (white-flowered). 1. Purple. June, July. S. Europe. 1824.
„ *ligu'sticum* (lovage-like). ½. White, red. June. Spain. 1816.
„ *malaca'nthum* (dark-flowered). See T. LEUCANTHUM.
„ *mari'timum* (sea). ½. Pale purple. June. Britain. "Teasel-headed Clover."
„ *mi'nus* (lesser). See T. DUBIUM.
„ *monta'num* (mountain). 1. White. July. S. Europe. 1786.
„ *multistria'tum* (many-striped). Eastern Europe.
„ *obscu'rum* (obscure). See T. LEUCANTHUM.
„ *pa'llidum* (pale-*flowered*). 1. White. June. Hungary. 1803.
„ *Parisie'nse* (Parisian). See T. PATENS.
„ *parviflo'rum* (small-flowered). ½. White. June. Hungary. 1820.
„ *pa'tens* (spreading). ½. Yellow. June. S. Europe.
„ *Perreymo'ndi* (Perreymond's). Southern France.
„ *phleoi'des* (Phleum-like). ½. Pale red. June. Mediterranean region. 1818.
„ *procu'mbens* (lying-down). 1. Yellow. June. Europe (Britain). "Hop Trefoil."
„ *purpu'reum* (purple). 1. Purple. June. France. 1816.
„ *refle'xum* (bent-back). 1. Purple. July. Virginia. 1794.
„ *resupina'tum* (lying-on-its-back). ½. Rosy-purple. July. Europe. 1820.
„ *ro'scidum* (dewy). California.
„ *saxa'tile* (rock). ½. Pale white. June. Switzerland. 1818. Biennial.
„ *sca'brum* (rough). ½. White. May to July. Europe (Britain).
„ *spadi'ceum* (large-spiked). Europe; Asia Minor.
„ *specio'sum* (showy). 1. Yellow. June. Candia. 1752.
„ *spheroce'phalum* (round-headed). See T. CHERLERI.
„ *spumo'sum* (foaming). Mediterranean region.
„ *squarro'sum* (spreading). ½. Pale purple. July. Spain. 1640.
„ „ *fla'vicans* (yellowish). ½. Pale yellow. July. Pisania. 1817.
„ *stella'tum* (starry). Mediterranean region. "Star Trefoil."
„ *stria'tum* (striped). ½–1. Rosy. June, July. Europe (Britain).
„ *stri'ctum* (erect). 1. White. July. S. Europe (England). 1805.
„ *suave'olens* (sweet-scented). See T. RESUPINATUM.
„ *subterra'neum* (subterranean). ½. White. June. Mediterranean region (England).
„ *sufloca'tum* (suffocated). ½–½. Whitish. June, July. Mediterranean region (England).
„ *supi'num* (flat-lyihg). ½. Pale purple. June. S. Europe. 1816.
„ *tenuiflo'rum* (fine-flowered). ½. Pale red. July. Italy. 1823.
„ *tenuifo'lium* (fine-leaved). ½. June. Italy. 1826.
„ *tomento'sum* (downy). ½. Purple. June. S. Europe. 1640.
„ *tridenta'tum* (three-toothed). North-western Amer.

TRIFU'RCIA CÆRU'LEA. See HERBERTIA DRUMMONDIANA.

TRIFU'RCIA PULCHE'LLA. See HERBERTIA PULCHELLA.

TRIGLO'CHIN. Arrow Grass. (From *treis*, three, and *glochin*, the point of an arrow; in reference to the three points of the fruit. Nat. ord. Naiadaceæ.)

Hardy and greenhouse herbs for wet places or the bog garden. Divisions. Wet or boggy soil.
T. Barrelie'ri (Barrelier's). See T. BULBOSUM.
„ *bulbo'sum* (bulbous). 1. Purplish. October. S. Europe; Trop. and S. Africa. 1806. Greenhouse.
„ *mari'timum* (maritime). ½–1. Green. May to September. N. temperate regions (Britain). "Sea Arrow Grass."
„ *palu'stre* (marsh). ½–1. Green. June to August. Europe (Britain), &c. "Marsh Arrow Grass."

TRIGLO'SSUM. See ARUNDINARIA.

TRIGONE'LLA. Fenugreek. (From *treis*, *tria*, three, and diminutive of *gonu*, an angle; the flowers have a triangular outline when open. Nat. ord. Leguminosæ.)
Hardy annuals. Seeds. Good garden soil.
T. brachyca'rpa (short-fruited). ½. June. Orient. 1822.
„ *cæru'lea* (blue). 1–2. Sky-blue, white. July. Eastern Europe. 1562. "Balm of Gilead."
„ *cornicula'ta* (small-horned). S. Europe.
„ *cre'tica* (Cretan). Crete.
„ *Fœ'num-græ'cum* (fenugreek). 1–2. White. July to September. S. Europe. "Common Fenugreek."
„ *ova'lis* (oval). Spain.
„ *polycera'ta* (many-horned). S. Europe.
„ *radia'ta* (rayed). 1. Yellow. Asia Minor; Persia.
„ *ruthe'nica* (Russian). See MEDICAGO RUTHENICA.

TRIGO'NIA. (From *treis*, three, and *gonu*, an angle; the fruit three-angled. Nat. ord. *Vochysiads* [Vochysiaceæ]. Linn. 16-*Monadelphia*, 2-*Pentandria*.)
Stove evergreens. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; sandy, fibrous loam, and a little rough peat and leaf-mould. Winter temp., 55° to 65°; summer, 60° to 85°.
T. læ'vis (smooth). White. June. Guiana. 1828.
„ *villo'sa* (shaggy). Yellow, red. Guiana. 1820.

TRIGONI'DIUM. (From *trigona*, a triangle, and *eidos*, like; resemblance of several parts of the plant. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids, from Demerara, grown in pots. See ORCHIDS.
T. acumina'tum (pointed). 1. Straw-coloured. 1834.
„ *acu'tum* (sharp). Chocolate.
„ *egertonia'num* (Sir P. Egerton's). 1½. Pale brown. Year. Honduras.
„ *latifo'lium* (broad-leaved). ½. Yellow and purple. Brazil. 1894.
„ *monophy'llum* (one-leaved). See LAELIA MONOPHYLLA.
„ *obtu'sum* (blunt-*petaled*). 1. Orange, brown. June. 1834.
„ *ri'ngens* (gaping). See MORMOLYCE LINEOLATA.
„ *spatula'tum* (spathulate). Yellowish-purple. Colombia. 1903.
„ *subre'pens* (somewhat-creeping). Greenish-yellow, whitish, brown. 1906.
„ *te'nue* (slender). Brown, purple. May. 1836.

TRIGONO'TIS. (From *treis*, *tria*, three, *gonu*, an angle, and *ous*, *otos*, an ear. Nat. ord. Boraginaceæ. Allied to Mertensia.)
T. clava'ta (clubbed). 1½. Blue. June. Temperate Asia. 1824.

TRILI'SA. (From *trilix*, triple; the pappus is divided into barbs at the apex. Nat. ord. Compositæ. Allied to Liatris.)
Hardy perennial herbs. Divisions in spring or autumn; seeds. Good garden soil.
T. odorati'ssima (sweetest-scented). 3. Purple. September. N. Amer. 1786. "Vanilla Plant."
„ *panicula'ta* (panicled). 3. Purple. August. N. Amer. 1826.

TRI'LLIUM. (From *trilix*, triple; the parts of the flower in threes. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Paris.)
Hardy, North American tuberous-rooted perennials. Division of the tuberous roots, and by seeds; sandy peat-border, or kept as alpine plants.
T. califo'rnicum (Californian). See T. OVATUM.
„ *Catesbæ'i* (Catesby's). See T. STYLOSUM.
„ *ce'rnuum* (drooping). 1½. White. April. 1758.
„ *di'scolor* (two-coloured). See T. SESSILE.

T. ere'ctum (erect). 1. Deep purple. May. 1759. "Birth-root."
„ „ *a'lbum* (white). ½. White. April. 1700.
„ „ *ochroleu'cum* (yellow-white). Yellow-white.
„ *erythroca'rpum* (red-fruited) of Curtis. See T. GRANDIFLORUM.
„ *erythroca'rpum* (red-fruited) of Michaux. ½. Red, white. April, May. 1811. "Painted Wood Lily."
„ *fœ'tidum* (fetid). See T. ERECTUM.
„ *grandiflo'rum* (large-flowered). ½. White. July. 1799.
„ „ *ro'seum* (rosy). Pink. 1905.
„ *nervo'sum* (*large*-nerved). See T. STYLOSUM.
„ *niva'le* (snowy). ½. White. April. 1879.
„ *obova'tum* (reversed-egg-*leaved*). ½. Red. April. 1810.
„ *ova'tum* (egg-shaped). North-western Amer.
„ *pe'ndulum* (drooping). See T. ERECTUM.
„ *petiola'tum* (*long*-leaf-stalked). ½. Brown. April. 1811.
„ *pi'ctum* (painted). See T. ERYTHROCARPUM.
„ *pu'milum* (dwarf). See T. PUSILLUM.
„ *pusi'llum* (puny). ½. Red. May. 1812.
„ *recurva'tum* (recurved). N. Amer.
„ *rhomboi'deum* (rhombus-shaped). See T. ERECTUM.
„ *se'ssile* (sessile). ½–1. Dark purple, erect. March, April. 1759.
„ „ *califo'rnicum* (Californian). Robust variety, with large flowers. California. 1890.
„ *stylo'sum* (*long*-styled). ½. Red. April. 1820.
„ *undula'tum* (wavy-*petaled*). See T. ERYTHROCARPUM.

TRIME'ZIA. (From *treis, tria,* three, and *merizo,* to divide; the parts of the flower in threes. Nat. ord. Iridaceæ. Allied to Cypella.)
Stove bulbous plants. Offsets; seeds. Loam, leaf-mould, and sand.
T. lu'rida (lurid). 1–1½. Yellow. April. Mexico to W. Ind. and Brazil. 1848.
„ *martinice'nsis* (Martinique). See T. LURIDA.
„ *meride'nsis* (Merida). Yellow, large, spotted at the base. Venezuela. 1844.

TRIO'LENA. (From *treis, tria,* three, and *olene,* the elbow; in reference to the elbow-like base of the anthers. Nat. ord. Melastomaceæ. Allied to Monolena.)
Stove perennial herbs. Seeds; cuttings in sand in bottom-heat. Fibrous loam, leaf-mould, and sand. Keep the atmosphere moist.
T. hirsu'ta (hairy). Trop. Amer.
„ *scorpioi'des* (scorpion-like). ½. Rose. Chiapas, Mexico. 1859.

TRIO'PTERIS. (From *treis,* three, and *pteron,* a wing; carpels, or divisions of seed-vessel, three-winged. Nat. ord. *Malpighiads* [Malpighiaceæ]. Linn. 16-*Monadelphia,* 6-*Decandria.*)
Stove twiners. Cuttings of stubby side-shoots, any time in summer, in sand, under a bell-glass, and in a brisk, sweet, moist bottom-heat; sandy loam and fibrous peat. Winter temp., 48° to 58°; summer, 60° to 85°.
T. jamaice'nsis (Jamaica). 10. Yellow. Jamaica. 1822.
„ *lu'cida* (shining-*leaved*). Pink. May. Cuba. 1822.
„ *ova'ta* (egg-shaped). 10. Purple. June. St. Domingo. 1820.
„ *seri'cea* (silky-*leaved*). See GAUDICHAUDIA SCHIEDEANA.

TRIO'STEUM. Feverwort Horse Gentian. (From *treis,* three, and *osteon,* a bone; three bony seeds. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria,* 1 *Monogynia.* Allied to the Honeysuckle.)
Hardy, North American, herbaceous perennials. Division of the plant in spring, or cuttings of the young shoots under a hand-light in the beginning of the summer; light, sandy soil and a little leaf-mould.
T. angustifo'lium (narrow-leaved). 1. Yellow. June. 1699.
„ *perfolia'tum* (leaf-stem-pierced). 2. Dark red. June. 1730.

TRIPHA'SIA. (From *triphasios,* triple; calyx three-toothed, and three petals. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 5-*Pentandria,* 1-*Monogynia.*)
Greenhouse evergreen shrub. Cuttings of ripened shoots, at least those getting firm at the base, in sandy soil, in May, under a bell-glass, with a sweet bottom-heat; fibrous, sandy loam and a little peat and dried cow-dung. Winter temp., 40° to 50°; summer, 60° to 80°.

T. Aura'ntiola (little-orange). 2. White. June. Trop. Asia. 1798. "Little Orange."
„ *trifolia'ta* (three-leaved). See T. AURANTIOLA.

TRIPHYSA'RIA VERSI'COLOR. See ORTHOCARPUS ERIANTHUS ROSEUS.

TRIPLA'RIS. (From *triplex,* triple; the parts of the flower are in threes. Nat. ord. Polygonaceæ.)
Stove evergreen tree. Cuttings of firm shoots in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
T. suriname'nsis (Surinam). 30–40. Surinam, Guiana. "Long John."

TRIPLET LILY. Tritelei'a now referred to Brodiæa.

TRIPOLY. *A'ster Tripo'lium.*

TRI'PSACUM. (From *tribo, tripso,* to rub, to thresh; in reference to which the grain may be applied. Nat. ord. Gramineæ.)
Hardy grass. Seeds. Loam, leaf-mould, and sand, or garden soil.
T. dactyloi'des (finger-like). Purple, green. N. Amer. 1875. Hardy. "Buffalo Grass."
„ *hermaphro'ditum* (hermaphrodite). See ANTHEPHORA ELEGANS.

TRI'PTERIS. (From *treis, tria,* three, and *pteron,* a wing; the fruits or achenes are three-winged. Nat. ord. Compositæ. Allied to Calendula.)
Herbs or shrubs requiring greenhouse protection. Seeds; cuttings in sand under a bell-glass. Loam, peat, and sand.
T. arbore'scens (tree-like). 3. Yellow. December. S. Africa. 1774.
„ *cheiranthifo'lia* (wallflower-leaved). See T. VAILLANTII.
„ *Vailla'ntii* (Vaillant's). Yellow. Arabia.

TRIPTERY'GIUM. (From *treis, tria,* three, and *pterugion,* a small wing; the fruit has three wings. Nat. ord. Celastraceæ.)
Hardy, somewhat climbing shrub. Cuttings in sand under a hand-light or frame. Well-drained soil.
T. Wilfo'rdii (Wilford's). Greenish-white, fragrant. China; Japan. 1867.

TRIPTI'LION. (From *treis,* three, and *ptilon,* a feather; the divisions of the pappus, or seed-crown. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia,* 1-*Æqualis.*)
Hardy annuals, from Chili. Seeds in a slight hotbed in the beginning of April; plants pricked out, and either planted out in a sheltered place at the end of May, or bloomed in pots in a cool, airy greenhouse; rich, light soil.
T. cordifo'lium (heart-leaved). ½. White. July. 1824.
„ *spino'sum* (spiny). ½. Blue. July. 1827.

TRISTA'GMA. (From *treis, tria,* three, and *stagma,* a drop of fluid; there are three honey glands in the flower. Nat. ord. Liliaceæ.)
Greenhouse bulb. Seeds; offsets. Loam, leaf-mould, a little dried cow-manure, and sand.
T. narcissoi'des (Narcissus-like). ½. White, orange. Chili. 1875.

TRISTA'NIA. (Named after *Tristan,* a French botanist. Nat. ord. *Myrtleblooms* [Myrtaceæ]. Linn. 18-*Polyadelphia,* 2-*Polyandria.*)
Hardy, yellow-flowered evergreens, from Australia. Cuttings of young, stubby side-shoots, or the points of shoots, two or three inches long, when getting a little firm at the base, in sand, under a glass, in April or May; sandy, fibrous loam, and a little peat and charcoal. Winter temp., 35° to 45°.
T. arbore'scens (tree-like). 10. 1820.
„ *confe'rta* (crowded). 50. White. June. 1800.
„ *densiflo'ra* (dense-flowered). Crimson. 1881.
„ *depre'ssa* (depressed). See T. SUAVEOLENS.
„ *macrophy'lla* (large-leaved). See T. CONFERTA.
„ *nereifo'lia* (oleander-leaved). 6. July. 1804.
„ *suave'olens* (sweet-smelling). August. 1820.

TRISTELLATEI'A. (From *treis, tria,* three, and *stello,* to array, or adorn. Nat. ord. Malpighiaceæ.)

A rampant stove climber. Cuttings of short, firm shoots in sand, in a close frame, with bottom-heat. Loam, peat, and sand.

T. austra'lis (southern). Yellow; filaments finally red. Malaya; Australasia. 1910.

TRITELEI'A. (From *treis*, *tria*, three, and *teleios*, complete; parts of the flower and fruit in threes. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Referred to Brodiæa.)

T. au'rea (golden). See MILLA AUREA.
„ *conspi'cua* (conspicuous). See BRODIÆA UNIFLORA CONSPICUA.
„ *grandiflo'ra* (large-flowered). See BRODIÆA DOUGLASII.
„ *la'xa* (loose-*umbelled*). See BRODIÆA LAXA.
„ *Leichtli'nii* (Leichtlin's). See BRODIÆA LEICHTLINII.
„ *porrifo'lia* (leek-leaved). See BRODIÆA PORRIFOLIA.
„ *uniflo'ra* (one-flowered). See BRODIÆA UNIFLORA.
„ „ *cæru'lea* (sky-blue). See BRODIÆA UNIFLORA CÆRULEA.

TRITHRI'NAX. (From *treis*, *tria*, three, and *thrinax*, a trident; in reference to the divisions of the leaves. Nat. ord. Palmaceæ.)

Stove palms. Seeds. Loam, one-third peat, and sand.

T. acantho'coma (spiny-haired). Brazil. 1878.
„ *acule'ata* (prickly). See ACANTHORHIZA ACULEATA.
„ *brasilie'nsis* (Brazilian). 10. Brazil. 1875.
„ *campe'stris* (field). Argentina. 1889.
„ *mauritiæfo'rmis* (Mauritia-formed). See SABAL MAURITIÆFORMIS.

TRI'TOMA. (From *treis*, three, and *temno*, to cut; three sharp edges of the ends of the leaves. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Kniphofia.)

T. Burche'llii (Burchell's). See KNIPHOFIA BURCHELLII.
„ *Cana'ri* (Canary). See KNIPHOFIA ALOIDES CANARI.
„ *fla'mmea* (flame). See BLANDFORDIA FLAMMEA.
„ *gra'ndis* (grand). See KNIPHOFIA ALOIDES MAXIMA.
„ *marocca'na* (Moroccan). See KNIPHOFIA PUMILA.
„ *me'dia* (intermediate). See KNIPHOFIA SARMENTOSA.
„ *no'bilis* (noble). See KNIPHOFIA ALOIDES NOBILIS.
„ *pu'mila* (dwarf). See KNIPHOFIA PUMILA.
„ *Roo'peri* (Rooper's). See KNIPHOFIA ROOPERI.
„ *ru'fa venu'sta* (lovely-rufous). See KNIPHOFIA RUFA VENUSTA.
„ *Saunde'rsii* (Saunders'). See KNIPHOFIA ALOIDES SAUNDERSII.
„ *Uva'ria* (Uvaria). See KNIPHOFIA ALOIDES.

TRITOMA'NTHE UVA'RIA. See KNIPHOFIA ALOIDES.

TRITO'NIA. (From *triton*, a weathercock; variable direction of the stamens. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Ixia.)

Bulbs, from South Africa. For culture, see I'XIA. Montbretia is included in this genus.)

T. anigozanthiflo'ra (Anigozanthos-flowered). ¾. Yellow. June. 1825.
„ *au'rea* (golden). See CROCOSMA AUREA.
„ *bractea'ta* (bracted). 1. Tawny-red. 1906.
„ *cape'nsis* (Cape). See ACIDANTHERA CAPENSIS.
„ *clusia'na* (Clusian). 1. S. Africa. 1905.
„ *co'ncolor* (one-coloured). See IXIA PANICULATA.
„ *cri'spa* (curled-*leaved*). ½. Flesh. April. 1787.
„ „ *pectina'ta* (comb-like). Leaves not crisped.
„ *croca'ta* (saffron). ½. Orange. June. 1758.
„ „ *minia'ta* (vermilion). ½. Scarlet. August. 1795.
„ *deu'sta* (blasted). ½. Fulvid. May. 1774.
„ *fenestra'ta* (windowed). See T. HYALINA.
„ *fla'va* (yellow). ½. Yellow. February. 1780.
„ *fuca'ta* (painted). See ANTHOLYZA FUCATA.
„ *hyali'na* (hyaline). 1½. Bright fulvous yellow. May. 1801.
„ *linea'ta* (lined). 2. Variegated. May. 1774.
„ *longiflo'ra* (long-flowered). See IXIA PANICULATA.
„ *minia'ta* (vermilion). See T. CROCATA MINIATA.
„ *odora'ta* (fragrant). See FREESIA REFRACTA.
„ *pa'llida* (pale). 1. White. August. 1806.
„ *pectina'ta* (comb-*leaved*). See T. CRISPA PECTINATA.
„ *Po'ttsii* (Potts'). 2–3. Bright yellow, tinted red. 1877.
„ *refra'cta* (refracted). See FREESIA REFRACTA.
T. roche'nsis (De la Roche). See IXIA PANICULATA ROCHENSIS.
„ *ro'sea* (rosy). 1½–2. Rosy-red. B. Mag., t. 7280.
„ *ro'sea* (rosy) of Aiton. See ACIDANTHERA CAPENSIS.
„ *scario'sa* (dry).
„ *scilla'ris* (Scilla-like). ½. Pink. May.
„ *securi'gera* (axe-bearing). ½. Brown. May. 1774.
„ *squa'lida* (squalid). ½. Rufous. May. 1774.
„ *stria'ta* (channelled). See GLADIOLUS STRIATUS.
„ *Templema'nni* (Templemann's). 1½–2. Bright red. 1887.
„ *tenuiflo'ra* (slender-flowered). See IXIA PANICULATA.
„ *undula'ta* (wavy). ½–1 Pink. April. 1787.
„ *ve'ridis* (green). ½. Green. July. 1788.
„ *Wilso'ni* (Wilson's). 1½. White, flushed with purple. Port Elizabeth.
„ *watsonioi'des* (Watsonia-like). 2–3. Creamy-white. Swaziland.
„ *xanthospi'la* (yellow-spotted). 1. Red, yellow. June. 1825.

TRIUMPHE'TTA. (Commemorative of *G. B. Triontetti*, an Italian botanist. Nat. ord. Tiliaceæ.)

Stove annual or subshrubby plants. Cuttings in sand, in bottom heat. Loam, peat, and sand.

T. a'nnua (annual). Pale yellow. August. Trop. Asia and Africa.
„ *micrope'tala* (small-petaled). See T. RHOMBOIDEA.
„ *rhomboi'dea* (rhombus-like). Yellow. Tropical regions.

TRI'XIS. (From *trixos*, triple; triangular seed-vessel. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*. 4-*Necessaria*.)

White-flowered evergreen. *T. divarica'ta*, by cuttings in sand, under a bell-glass, in May; sandy loam and leaf-mould, and the protection of a warm greenhouse in winter.

T. auricula'ta (eared). See T. DIVARICATA.
„ *divarica'ta* (divaricate). 1. White. Brazil. March. 1827.
„ *senecioi'des* (groundsel-like). See LÆUCERIA SENECIOIDES.

TRIZEU'XIS. (From *treis*, *tria*, three, and *zeuxis*, the act of uniting; the three sepals are united. Nat. ord. Orchidaceæ.)

Stove epiphytal orchid. Divisions. Sphagnum, tied on a raft or piece of wood.

T. falca'ta (sickle-shaped). ½–1. Green. Colombia. 1820.

TROCHE'TIA. (Named after *Dutrochet*, the celebrated French physiologist. Nat. ord. *Sterculiads* [Sterculiaceæ]. Linn. 16-*Monadelphia*, 8-*Polyandria*. Allied to Dombeya.)

Stove evergreen shrubs. Cuttings of ripened shoots in sand, under a bell-glass, in March, and inserted in a sweet bottom-heat; sandy peat and fibrous loam, with a little charcoal and broken freestone. Winter temp., 55° to 65°; summer, 65° to 88°.

T. blackburnia'na (Blackburnian). White and crimson. Mauritius.
„ *grandiflo'ra* (large-flowered). See T. TRIFLORA.
„ *triflo'ra* (three-flowered). 6. White, yellow. Mauritius. 1844.

TROCHOCA'RPA. (From *trochos*, a wheel, and *karpos*, a fruit. Nat. ord. *Epacrids* [Epacridaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Styphelia.)

Greenhouse evergreen tree. Cuttings of the points of young shoots, or stubby, short side-shoots getting firm at the base, in sand, under a bell-glass, and kept close in a frame or pit, any time in spring or summer; sandy, fibrous peat. Winter temp., 40° to 48°. More heat and moisture after flowering, and plenty of air and light before the end of autumn.

T. lauri'na (laurel-like). 25. Yellow. June. Australia. 1829.

TROCHODE'NDRON. (From *trochos*, a wheel, and *dendron*, a tree; the flowers are star-like, or like the radii of a wheel. Nat. ord. Trochodendraceæ.)

Hardy evergreen shrub. Seeds; layers. Good garden soil.

T. aralioi'des (Aralia-like). 3. Green. May. Japan. 1894.

TRO'LLIUS. Globe-Flower. (From *trol*, the German for round; the globular flowers. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*. Allied to Helleborus.)

Hardy, yellow-flowered, herbaceous plants. Divisions of the plant in spring; light, loamy soil, rather moist.

T. acau'lis (stemless). ½. July. Cashmere. 1841.
„ *aconitifo'lius* (Aconitum-leaved). See T. EUROPÆUS NAPELLIFOLIUS.
„ *alta'icus* (Altaian). May. Altai. 1836.
„ *america'nus* (American). ¾. May. N. Amer. 1805.
„ *asia'ticus* (Asiatic). 1½. Dark orange. May. Siberia. 1759.
„ „ *Fortu'nei* (Fortune's). 1½. Deep orange.
„ „ *Loddige'sii* (Loddiges'). „
„ *cauca'sicus* (Caucasian). 1½. May. Caucasus. 1817.
„ *chine'nsis* (Chinese). 2. Flowers flat, golden-yellow. June, July. China. 1907.
„ *dschunga'ricus* (Dschungaric). 1½. Deep-yellow. May. Turkestan.
„ *europæ'us* (European). 2. May. Europe (Britain). "Mountain Globe Flower."
„ „ *a'lbidus* (white). 1. Whitish. June. Britain.
„ „ *denya'nus* (Denyan). 1–2. Yellow. May.
„ „ *hu'milis* (dwarf). 1. May. Austria. 1800.
„ „ *napellifo'lius* (Napellus-leaved). 2. Yellow. May. Europe. 1829.
„ *la'xus* (loose). See T. AMERICANUS.
„ *Ledebou'rii* (Ledebour's). 2. May. Siberia. 1827.
„ *napellifo'lius* (Napellus-leaved). See T. EUROPÆUS NAPELLIFOLIUS.
„ *pa'tulus* (spreading). 1. Orange. May. Siberia. 1800.
„ *polyse'palus* (many-sepaled). 1½. Yellow. ℰ Origin doubtful.
„ *pu'milus* (dwarf). 1. Yellow.
„ „ *yunnane'nsis* (Yunnan).
„ *riederia'nus* (Rieder's). See T. PATULUS.
„ *sine'nsis* (Chinese) of gardens. See T. ASIATICUS.
„ *Smo'ntei* (Smonte's) of gardens. See T. ASIATICUS.

TROMSDO'RFFIA SPECIO'SA. See CHIRITA HORSFIELDII.

TROPÆ'OLUM. Indian Cress. (From *tropaion*, a trophy. Nat. ord. *Crane's-bills* [Geraniaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)

Annuals, by seed in the open ground in April; tuberous, by division of the roots, and by cuttings; the others by seeds; also by cuttings in sandy loam any time during spring and summer and early autumn; a rich, light soil suits them best. The best tuberous kinds multiply their tubers if the young shoots are laid in the ground as they commence growing. A tuber will generally form at the bends: none of them will stand frost, unless the hardy tuberous ones, and they had better be lifted and kept in dry sand until spring.

HARDY ANNUALS.

T. adu'ncum (hooked). 3–12. Yellow. July to October. Peru. 1810. "Canary Creeper."
„ *albiflo'rum* (white-flowered). White. Peru and Chili.
„ *canarie'nse* (Canary) of gardens. See T. ADUNCUM.
„ *hy'bridum* (hybrid). See T. MAJUS.
„ *ma'jus* (greater). 6. Orange, yellow. July. Peru. 1686.
„ „ *a'tro-sangui'neum* (dark red). 3. Dark red. August. Peru.
„ *mi'nus* (smaller). 1. Orange, yellow. August. Peru. 1596.
„ *peregri'num* (straggling). See T. ADUNCUM.
„ *Smi'thii* (Smith's). See T. ADUNCUM.

HALF-HARDY TUBERS.

T. Beu'thii (Beuth's). Yellow. June. Bolivia. 1850.
„ *brachy'ceras* (short-horned). Yellow. Chili. 1830.
„ *edu'le* (eatable). 6. Orange. March. Chili. 1841.
„ *Leichtli'nii* (Leichtlin's). Orange. (*T. edule*×*polyphyllum*.) 1897.
„ *moritzia'num* (Mr. Moritz's). 6. Yellow, red. July. Venezuela. 1839.
„ *pentaphy'llum* (five-leaved). Argentina.
„ *tubero'sum* (tuberous-rooted). 3. Yellow, red. September. Peru. 1836.
„ *umbella'tum* (umbelled). 3. Rose, orange. June. Ecuador. 1846.

GREENHOUSE EVERGREENS, &c.

T. azu'reum (azure). 3. Blue. October. Chili. 1842. Herbaceous.
„ *chrysa'nthum* (golden-flowered). Yellow. July to October. Colombia. 1874.
„ *crenatiflo'rum* (scolloped-flowered). 3. Yellow. June. Peru. 1845. Herbaceous.
„ *deckeria'num* (Deckerian). Blue, green, scarlet. Venezuela.
„ *digita'tum* (fingered). Yellow, with long red spur. July. Venezuela. 1852.
„ *gærtneria'num* (Gærtnerian). See T. DIGITATUM.
„ *Jarra'ttii* (Jarratt's). 12. Scarlet, yellow. Santiago. 1836.
„ *lobbia'num* (Lobb's). 6. Orange. November. Colombia. 1843. Herbaceous.
„ „ *fimbria'tum* (fringed). Petals fringed. Hybrid. 1856.
„ „ *minia'tum* (vermilion). Lively vermilion. 1903.
„ „ *Regi'na* (queen). Salmon-red or salmon-orange. 1902.
„ *ma'jus flo're-ple'no* (larger double-flowered). 6. Orange, yellow. August. Peru. 1686.
„ *mi'nus flo're-ple'no* (smaller double-flowered). 1. Orange, yellow. Peru. 1596.
„ *pe'ndulum* (drooping). Yellow. July. Central Amer. 1850.
„ *pinna'tum* (leafleted-*flowered*). 2. Yellow. June. Peru.
„ *polyphy'llum* (many-leaved). 3. Orange, yellow. June. Chili. 1827.
„ *sessilifo'lium* (stalkless-leaved). Red, with a violet tint. Chili. 1868.
„ *specio'sum* (showy). 6. Scarlet. June. Chili. 1846. Herbaceous. "Flame Flower."
„ *tricolo'rum* (three-coloured). Orange, purple. July. Chili. 1828.

TROTTLES. *Sy'mphytum aspe'rrimum.*

TROWEL. This implement, made of iron, from 12 to 6 inches long in the plate, and half as broad, hollowed like a scoop, and fixed on a short handle to hold with one hand, is convenient in removing small plants with a ball or lump of earth about their roots; lifting bulbous flower-roots after the flowering is past in summer, planting bulbs in patches or little clumps about the borders, for digging small patches, also, in the borders, and sowing hardy annual flower-seeds; likewise for filling mould into small pots, stirring the surface of the earth in pots, and fresh earthing them when necessary.

TRO'XIMON. (From *troximos*, that may be eaten; the leaves might be blanched, like those of the Dandelion, but offer little temptation in this respect. Nat. ord. Compositæ. Allied to Taraxacum.)

Annual and perennial nearly stemless herbs. Seeds; divisions. Light, sandy soil.

T. glau'cum (sea-green). 1. Deep yellow. May. North-western Amer. 1811.
„ „ *dasyce'phalum* (thick-headed). Yellow. May. North-western Amer.
„ *grandiflo'rum* (large-flowered). Yellow. North-western Amer.
„ *heterophy'llum* (various-leaved). Yellow. North-western Amer.

TRUE LOVE. *Pa'ris quadrifo'lia.*

TRUFFLE. *Tu'ber magna'tum*, Piedmontese Truffle; *T. Bo'rchii*, Italy; *T. moscha'tum*, Musk Truffle, near Bath; *T. ciba'rium*, Common Truffle, England. But, besides the tubers, there are other edible fungi known as truffles, viz., *Hydrobo'lites Tula'snei*, Spye Park, Wilts; *Melagona'ster broomeia'nus*, Red Truffle, near Bath.

These edible fungi have not yet been cultivated in England, though the Prussians have succeeded in making them a garden tenant, and Comte de Borch has been equally successful in Italy. The latter cultivates the Piedmont Truffle, and his process is this. He either employs the soil where the truffle is found, or he prepares an artificial soil of seven parts good garden earth, two well-pulverised clayey soil, and one oak sawdust, intimately mixed. Decayed oak or beech leaves would be better, probably, than the sawdust. If the natural soil was used, he trenched it 2 feet deep, removing all the large stones, and adding oak sawdust if necessary, and

about one-tenth of powdered snail-shells if the soil was too stiff.

Choosing an aspect rather exposed to the north than the south, where no reflected rays could fall upon it, with every precaution to insure its being thoroughly soaked with pure rain-water, and after waiting a day or two, till it was in a proper state of moisture, he made rows half a foot deep, and in these, at 6 inches distance, he placed good and sound truffles, each of them being surrounded with two or three handfuls of oak sawdust, taking care to mark the rows accurately. Ridges were then made over each row, to prevent the truffles being injured by too abundant moisture. The bed was then left till the following autumn, with no other precaution than, in dry weather, to take care that it did not become too dry. The result, we are informed, was an abundant harvest every year from October to January.

Bradley, writing, in 1726, of the cultivation f the truffle in England, says, that the truffle may be *easily* cultivated where there are woods or coppices of oak or hazel, and where the soil is not too stiff, or inclining to chalk. The soil where they are most found is a reddish sandy loam; this will then be the best for our purpose, especially if it has lain long uncultivated. When we are thus provided with the proper soil, we must be sure to let it lie undisturbed till we are ready to plant, which will be in the months of October, November, and December, if the weather be open; for then the truffles are to be found in their full ripeness, and then, likewise, one may find them in a state of putrefaction, which is the time when the seeds are prepared for vegetation. It is in the last state that one ought to gather truffles for planting, or, at least, they should be in perfect ripeness. The proper soil and these rotten truffles being found, we may begin our work as follows. Open a spot of ground of a convenient space, and take out the earth about 8 inches deep, and screen it, that it may be as fine as possible; then lay about 2 or 3 inches thick of this fine earth at the bottom of the trench or open ground, and upon it lay some of the over-ripe truffles, about 1½ feet distance from one another; and, as soon as possible, prepare a thin mud, made of the screened earth and water, well-stirred and mixed together, and pour it on the truffles till the open ground is quite filled up. By this means, in a few hours, the ground will be as closely settled about the truffles as if it had never been dug or disturbed at all, and you may expect a good crop in due time. You must, however take care to choose your spots of ground in woods or coppices, or such places as are shaded with trees. Their favourite tree is the oak, or the ilex or evergreen oak, as the elm is the favourite of the morelle. Notwithstanding these statements, it is quite certain that, at present, the art of cultivating the truffle is not known in England; and it will remain unknown, probably, until we have discovered how its spawn can be prepared as for cultivating the mushroom.

Mr. Gower says he recommended an old truffle-hunter to bury, at the proper depth, some of his truffles that were in a state of decay and unfit for the table under one of the unproductive trees sufficient in stature and in umbrageous development. At the beginning of next winter, when his visit was repeated, he sought for Mr. G., and told him, with great satisfaction, that the scheme had answered; for he had found two or three pounds of excellent truffles beneath the hitherto barren tree. By following this example, proprietors of trees adapted to truffles, and where the proper trees have been planted, may, in a short period, do that which a lapse of years, unassisted, would not effect. Of all trees the cedar of Lebanon is the most favourable to the growth of the truffle.

TRUMPET CREEPER. *Teco'ma radi'cans.*

TRUMPET FLOWER. *Bigno'nia.*

TRUMPET HONEYSUCKLE. *Lonice'ra sempervi'rens.*

TRUMPET LILY. *Richa'rdia africa'na.*

TRUSS is the florist's name for what botanists call an umbel of flowers, where several flowers have their stalks united at one common centre, and thus spring from the root or branch on one stem, as in the auricula, polyanthus, and cowslip. See PIP.

TRYMA'LIUM. (From *trumalia*, a hole; the fruit has three valves or openings at the top. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Greenhouse evergreen shrubs, from Australia. Cuttings in sand, under a bell-glass, or in a gentle heat in the stove. Loam, peat, and sand.

T. Billardie'ri (Billardière's). Australia.
„ *capsula're* (capsular). See COLUBRINA ASIATICA.
„ *odorati'ssimum* (sweetest-scented). White. February. 1837.
„ *spathula'tum* (spathulate). See SPYRIDIUM SPATHULATUM.

TSU'GA. (The Japanese name of *T. Sieboldii*. Nat. ord. Coniferæ.)

Hardy trees most nearly allied to Picea. Seeds. Good loamy soil.

T. albertia'na (Albertian). See T. MERTENSIANA.
„ *brunonia'na* (Brownian). 60–70. East and Central Himalaya. 1886. "Indian Hemlock Fir."
„ *canade'nsis* (Canadian). 50–70. N.E. Amer. 1736. "Hemlock Spruce."
„ „ *argе'ntea* (silvery). Leaves silvery at tips of young growths.
„ „ *macrophy'lla* (large-leaved).
„ „ *milfordie'nsis* (Milford). Dwarf and drooping.
„ „ *na'na* (dwarf). 3. Of low spreading habit.
„ „ *parvifo'lia* (small-leaved). Oregon.
„ „ *pe'ndula* (drooping). "Weeping Hemlock Spruce."
„ „ *pe'ndula argе'ntea* (silvery-weeping).
„ „ *Sargе'ntii pe'ndula* (Sargent's-weeping).
„ „ *variega'ta* (variegated).
„ *carolinia'na* (Carolinian). 50–60. Southern Alleghanies. 1886.
„ *hookeria'na* (Hookerian). See T. PATTONIANA GLAUCA.
„ *mertensia'na* (Mertensian). 80–150. North-western Amer.
„ *pattonia'na* (Pattonian). 5–30. Mountains of California. 1852.
„ „ *glau'ca* (sea-green). 5–10. Mountains of California. 1852.
„ *Rœzlii* (Rœzl's). 40–60. California. 1870.
„ *Siebo'ldii* (Siebold's). 10–100. Japan. "Japanese Hemlock Spruce."
„ „ *na'na* (dwarf). 2–3. Japan. 1872.
„ *Tsu'ja* (Tsuja). See T. SIEBOLDII.
„ *yunnane'nsis* (Yunnan). Cones subglobose, large. South-western to Central China. 1906.

TUBE FLOWER. *Clerode'ndron Siphona'nthus.*

TUBER. A short, thickened underground stem, like the tubers of Caladium and Richardia, with buds on the apex; or a thickened, fleshy underground branch, like the tuber of the Potato, with buds or eyes on various parts of it.

TU'BER CIBA'RIUM. See TRUFFLE.

TUBEROSE. *Polya'nthes tubero'sa.* The name Tuberose is not derived from *tube rose*, but is a corruption of *tuberosa*, the specific name.

TULBA'GIA. (Commemorative of *Tulbagh*, a Dutch governor of the Cape. Nat. ord. Liliaceæ. Allied to Agapanthus.)

Greenhouse herbs with creeping rhizomes. *T. alliacea* is so nearly hardy that it can be grown in narrow, warm borders at the base of hothouse walls outside, like Agapanthus, some Crinums, and the Belladonna Lily. Offsets. Light, rich, well-drained soil.

T. acuti'loba (acute-lobed). S. Africa.
„ *affi'nis* (allied). See T. ALLIACEA AFFINIS.
„ *allia'cea* (Allium-like). 1–1½. Lilac-purple. June. S. Africa. 1820.
„ „ *affi'nis* (allied). 1½. Flowers larger; plant more robust.
„ „ *ludwigia'na* (Ludwigian). 1½–2. Leaves very broad.
„ *allia'cea* (Onion-scented) of Sims. See T. CAPENSIS.
„ *cape'nsis* (Cape). 1½–2. Greenish-purple. June. S. Africa. 1774.
„ *ludwigia'na* (Ludwigian). See T. ALLIACEA LUDWIGIANA.
„ *natale'nsis* (Natal). Greenish-white, fragrant. Natal. 1891.
„ *Si'mmleri* (Simmler's). 1–1½. Rose. Transvaal. 1908.
„ *viola'cea* (violet). 1–2. Purple-violet. March, April S. Africa. 1838.

TULIP. *Tu'lipa.*

TULIPA. The Tulip. (From its Persian name, *thoulyban.* Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia.*)

Hardy bulbs. Seeds for new varieties; offsets; a rich compost, made of loam, sand, and vegetable mould, suits them best; common kinds may remain for years in the same place if you top-dress them, and do not want to separate the bulbs.

T. acumina'ta (long-pointed). Petals very narrow, yellow, red. Garden origin. 1810. "Turkish Tulip."
„ *Albe'rtii* (Albert's). Scarlet, scarlet-yellow, or purple. Turkestan. 1877.
„ *aleppe'nsis* (Aleppan). See T. OCULIS-SOLIS ALEPPICA.
„ *alpi'na* (alpine). See T. PULCHELLA.
„ *alta'ica* (Altaian). 1. Scarlet red, yellow. April. Altai.
„ *armeni'aca* (Armenian). See T. MONTANA.
„ *aucheria'na* (Aucherian). ½–¾. Lilac, yellow. April. Persia. 1880.
„ *austra'lis* (southern). 1–1½. Yellow, shaded with red outside. June. South-western Europe.
„ *Batali'nii* (Batalin's). 1. Light yellow. Asia Minor. 1889.
„ *bieberstеinia'na* (Bieberstein's). 1. Yellow. June. Caucasus. 1820.
„ *biflo'ra* (two-flowered). ½. Yellow. April. Caucasus. 1806.
„ „ *afgha'nica* (Afghanistan). ½–¾. Green, white, three-flowered. Afghan.
„ „ *turkesta'nica* (Turkestan). Larger in all its parts, with 4 to 5 flowers. Turkestan. 1910.
„ *billietia'na* (Billietian). Lemon-yellow. May. Europe. 1888.
„ *bithy'nica* (Bithynian). ½–¾. Brilliant red. Asia Minor.
„ *bonarotia'na* (Bonaroti's). See T. STRANGULATA.
„ *Borczczo'wi* (Borczczow's). See T. KOLPAKOSKIANA.
„ *brachyste'mon* (short-stamened). Yellow, purple. Turkestan. 1882.
„ *breynia'na* (Breynian). See T. AUSTRALIS.
„ *celsia'na* (Cels's). See T. AUSTRALIS.
„ *chrysa'ntha* (golden). Yellow, unspotted, fragrant. Persia. 1894.
„ *cilia'tula* (finely-eye-lashed). Rich crimson. Asia Minor. 1890.
„ *clusia'na* (Clusius's). 1. White, purple. July. Sicily. 1636.
„ „ *a'lba* (white). White, with purple spot at the base. Chitral. 1897.
„ *conci'nna* (neat). 1. Crimson. May. Taurus. 1893.
„ *cornu'ta* (horned). See T. ACUMINATA.
„ *crucia'ta* (cross-like). Red, yellow. April. Asia Minor. 1874.
„ *cuspida'ta* (short-pointed). Rich scarlet, black and yellow base. April. Persia.
„ *Da'mmani* (Damman's). Purple; base black. Lebanon. 1889.
„ *dasyste'mon* (thick stamened). ½. White and yellow, several flowered. 1905.
„ *Didie'ri* (Didier's). 1. Vermilion, with black blotch at the base. May. S. Europe. 1882.
„ „ *a'lba* (white). White, fragrant.
„ „ *axime'nsis* (Axim). Brilliant crimson, with green and gold base. Savoy.
„ „ *fransonia'na* (Fransonian). Red, with black blotch, edged white. S. Europe. 1878.
„ „ *lute'scens* (yellowish). Pale satiny yellow.
„ „ *mauria'na* (Maurian). Brilliant scarlet, with yellow base. Savoy. 1901.
„ „ *planifo'lia* (flat-leaved). Brilliant red, with dusky black base. Savoy. 1858.
„ *edu'lis* (edible). ½–¾. White or pale yellow, tinted green and red on back. Japan; China. 1874.
„ *Eichle'ri* (Eichler's). 1. Dark scarlet, with black blotch and golden aureole. April. Asia Minor. 1874.
„ *e'legans* (elegant). Brilliant red; base yellow. May. Garden origin. 1874.
„ *Elwe'sii* (Elwes'). See T. CUSPIDATA.
„ *fla'va* (yellow). 2–2½. Pale primrose yellow. May. Garden origin.
„ *fosteria'na* (Fosterian). Brilliant crimson, with black base. 1905.
T. fra'grans (fragrant). 1. Yellow, very fragrant. April Algiers. 1866.
„ *fransonia'na* (Fransonian). See T. DIDIERI FRANSONIANA.
„ *fu'lgens* (shining). 1½–2. Brilliant red; base yellow. May. Garden origin. 1874.
„ *gala'tica* (Galatian). ¾. Pale to deep yellow. May. 1900.
„ *gesneria'na* (Gesner's). 2. Striped. April. Levant. 1577.
„ „ *Draco'ntia* (Dragon). 1–1½. Variable, petals ragged. May. "Parrot Tulip."
„ „ *lacinia'ta* (cut-*sepaled*). 2. Variegated. April. Levant. 1603.
„ „ *lu'tea* (yellow). 1½. Yellow. April. Levant. 1603.
„ „ *ple'na* (double). 1. Variegated. April. Levant. 1603.
„ „ *ro'sea* (rosy). Rose.
„ „ *Schre'nkii* (Schrenk's). See T. SCHRENKII.
„ „ *spathula'ta* (spathulate). See T. SPATHULATA.
„ „ *ve'ra* (true). See T. SPATHULATA.
„ „ *versi'color* (party-coloured). 1½. Variegated. April. Levant. 1603.
„ *Grei'gi* (Greig's). ¾–1. Bright orange-scarlet; base black. April, May. Turkestan. 1873.
„ „ *a'lba* (white). Segments with white edges. 1906.
„ *grisebachia'na* (Grisebachian). See T. ORPHANIDEA.
„ *Ha'geri* (Hager's). ½–1½. Deep crimson-red. May. Greece; Smyrna. 1874.
„ „ *ni'tens* (shining). Flowers smaller, orange-red; base blotched. 1903.
„ *hiema'lis* (winter). Red. April. Russia. 1843.
„ *hoogia'na* (Hoogian). ½–1½. Scarlet or brilliant red; base with black blotch, orange aureole. Bokhara. 1910.
„ *hu'milis* (dwarf). Red. April. Persia. 1840.
„ *ilie'nsis* (Trojan). ½–¾. Lemon-yellow. Turkestan. 1879.
„ *i'ngens* (huge). ¾–1. Rich vermilion; base with black blotch. May. Bokhara. 1902.
„ *kaufmannia'na* (Kaufmannian). ½. White or creamy-yellow, with golden base. March. Central Asia. 1877.
„ „ *a'lbo-variega'ta* (white-variegated). White, yellow, rose. Central Asia. 1877.
„ „ *au'rea* (golden). Bright yellow, with red band on back. 1904.
„ „ *cocci'nea* (scarlet). Brilliant scarlet, with yellow, base. 1904.
„ „ *lu'teo-variega'ta* (yellow-variegated). Yellow, red, rose. Central Asia. 1877.
„ *Kesselri'ngi* (Kesselring's). ½–¾. Bright yellow, overlaid red on back. Turkestan. 1879.
„ *kolpakoskia'na* (Kolpakoskyan). 1. Yellow, shaded red on back. Turkestan. 1877.
„ „ *sple'ndens* (splendid). Yellow, rosy-scarlet on back. 1901.
„ *Korolko'wi* (Korolkow's). ¾–¾. Red, with black blotch. April. Turkestan. 1875.
„ *lana'ta* (woolly). Asia Minor.
„ *Leichtli'nii* (Leichtlin's). 1. Purple-red, white, yellow. Kashmir. 1889.
„ *Levie'ri* (Levier's). ¾. Scarlet, with black blotch and golden aureole. Persia. 1894.
„ *libano'tica* (Lebanon). Purple, with blackish blotch. Lebanon. 1888.
„ *linifo'lia* (flax-leaved). ¾. Brilliant scarlet, violet-black base. April. Central Asia. 1884.
„ *Low'nei* (Lowne's). ¾. Whitish or rose, with yellow base. April. Syria. 1899.
„ *macrospi'la* (large-blotched). 1–1½. Glowing carmine, with black blotch. Garden origin. 1874.
„ *macula'ta* (blotched). 1½–2. Dark crimson, with black blotch. May. Garden origin. 1874.
„ *ma'leolens* (ill-smelling). 1. Red, yellow. May. Italy. 1827.
„ „ *variega'ta* (variegated). 1. Variegated. May. Italy. 1827.
„ *mauritia'na* (Mauritian). See T. DIDIERI MAURIANA.
„ *Maximowi'czii* (Maximowicz's). ¾. Scarlet, with violet-black blotch. Bokhara. 1889.
„ *me'dia* (middle). See T. ACUMINATA.
„ *michelia'na* (Michelian). 1–1½. Vermilion, with black blotch. Persia. 1901.
„ *monta'na* (mountain). 1 Scarlet. July. Persia. 1827.

T. negle'cta (neglected). See T. STRANGULATA NEGLECTA.
„ *ni'tida* (shining). ½. Vermilion, with small blotch. April. Bokhara. 1902.
„ *O'culus-so'lis* (sun's-eye). 1. Red, blue. April. Italy. 1816.
„ „ *ale'ppica* (Aleppo). Basal blotch obscure.
„ „ *pe'rsica* (Persian). 1. Scarlet, black. April. Persia. 1826.
„ *orphani'dea* (Orphanidian). ½–1. Yellow, tinted red or green outside. Greece. 1862.
„ *ostrowskia'na* (Ostrowskyan). 1–2. Orange-scarlet, with brown blotch. Turkestan. 1884.
„ *oxype'tala* (sharp-petaled). See T. UNIFLORA OXYPETALA.
„ *pa'tens* (spreading). 1. White, grey. April. Siberia. 1817.
„ *platysti'gma* (broad-stigma). 1–1½. Coral-rose; base yellow. May. S. Europe.
„ *polychro'ma* (many-coloured). ½. Persia. 1885.
„ *præ'cox* (early). 1. Scarlet. April. Italy. 1825.
„ *præ'stans* (excelling). ½–1½. Orange-red, with yellow base. April. Bokhara. 1903.
„ *primuli'na* (primrose). ½–1. Pale primrose-yellow. May. Algeria. 1882.
„ *pube'scens* (downy). 1. Red. April. 1824.
„ *pulche'lla* (pretty). ½–¾. Crimson-purple, with black base. March. Cilicia. 1877.
„ *re'pens* (creeping). See T. SYLVESTRIS.
„ *retrofle'xa* (bent-back). 1–1½. Clear yellow. April, May. Garden origin. 1874.
„ *saxa'tilis* (rock). ½–1. Deep red to rosy-pink, with yellow base. April, May. Crete. 1827.
„ *scabrisca'pa* (rough-stemmed). 2. Red, yellow. April. Italy. 1837.
„ „ *strangula'ta* (choked). See T. STRANGULATA.
„ *Schre'nkii* (Schrenk's). ½–¾. Crimson, with yellow base. Turkestan. 1879.
„ *Sinteni'sii* (Sintenis'). ½. Bright scarlet. March. Turkish Armenia. 1891.
„ *spathula'ta* (spathulate). 1½. Crimson-scarlet, with violet blotch. April. Italy.
„ *Sprenge'ri* (Sprenger's). 1–2. Brilliant scarlet. May, June. Armenia. 1891.
„ *stella'ta* (starred). 2½. White. April. Himalaya; Persia. 1827.
„ *strangula'ta* (choked). 1½. April. Europe.
„ „ *macula'ta* (blotched). Soft yellow; base black. 1903.
„ „ *negle'cta* (neglected). Pale yellow.
„ *suave'olens* (sweet-scented). ½. Red, yellow. April. S. Russia. 1603.
„ „ *latifo'lia* (broad-leaved). See T. PUBESCENS.
„ „ *pluriflo'ra* (several-flowered). Bright scarlet; scape two-flowered. 1903.
„ *sultanabade'nsis* (Sultanabad). Brilliant scarlet, with black blotch. March. Persia. 1894.
„ *sylve'stris* (wild). 1. Yellow. April. Europe (England). "Wild Tulip."
„ „ *biflo'ra* (two-flowered). See T. BIFLORA.
„ „ *mi'nor* (lesser). See T. BIEBERSTEINIANA.
„ *thianscha'nica* (Thian-schan). ½. Flowers less than one inch long. Thian-schan Mountains. 1879.
„ *tri'color* (three-coloured). See T. PATENS.
„ *triphy'lla* (three-leaved). ½. Bright yellow. March, April. Turkestan. 1877.
„ „ *Hœ'ltzeri* (Hœltzer's). Small, yellow, with red band on back. 1884.
„ *tubergenia'na* (Tubergenian). 1½. Scarlet, with black blotch. April. Bokhara. 1904.
„ *tu'rcica* (Turkish). See T. ACUMINATA.
„ *turkesta'nica* (Turkestan). ½–¾. White, with yellow base. April. Turkestan. 1875.
„ *undulatifo'lia* (waved-leaved). ½–¾. Scarlet, with black blotch. April, May. Asia Minor. 1877.
„ „ *Boissie'ri* (Boissier's). Similar, but the aureole is narrow.
„ „ *Harmo'nia* (harmony). Flowers larger. April. Taurus. 1893.
„ *uniflo'ra* (one-flowered). ½–¾. Flower small, pale yellow. April, May. Altai Mountains. 1781.
„ „ *oxype'tala* (sharp-petaled). Segments narrower, more pointed. 1879.
„ *va'ria-pi'cta* (variously-painted). See T. STRANGULATA.
„ *viola'cea* (violet). ½. Violet-purple. March, April. N. Persia. 1894.
T. viridiflo'ra (green-flowered). 1. Green, with yellowish edges. Garden origin.
„ „ *præ'cox* (early). 1½. Flowers larger, with brighter yellow edges.
„ *vitelli'na* (yolk-of-egg). 1½–2. Sulphur-yellow, fading to creamy-white. May. Garden origin.
„ *wilsonia'na* (Wilsonian). ½–1. Vermilion, with black blotch. May. Persia. 1901.

TULIP AS A FLORIST'S FLOWER. Florists call tulips *seedlings* until they have bloomed; after this those preserved on account of their good form and habit, as well as the offsets they produce, are called *breeders*. After some years the petals of these become striped, and they are then said to be *broken*. If the striping is good they are said to have a *good strain;* if it be inferior, they are described as having a *bad strain*. A *rectified* tulip is synonymous with a tulip having a good strain.

A *feathered* tulip has a dark-coloured edge round its petals, gradually becoming lighter on the margin next the centre of the petal. The feathering is said to be *light*, if narrow; *heavy*, if broad; and *irregular*, if its inner edge has a broken outline.

A *flamed* tulip is one that has a dark-pointed spot, somewhat in shape like the flame of a candle, in the centre of each petal.

Sometimes a tulip is both *feathered* and *flamed*.

A *Bizarred* tulip has a yellow ground, and coloured marks on its petals.

A *Byblœmen* is white, marked with black, lilac, or purple.

A *Rose* is white, with marks of crimson, pink, or scarlet.

The end of September is a good time for preparing the tulip-bed.

Situation.—The aspect should be open to the south and south-east, but well sheltered from the north, north-east, and north-west winds. We prefer a perfectly level surface, because the advantage of rain falling upon the bed and sinking into the earth is more certain than on a slope. The elevation of the site is also a consideration worth serious attention. Wherever it is in the power of the cultivator of tulips intended for exhibition to choose the site, let him choose the happy medium, neither too high nor too low. If there are no shelters already on the spot to defend and protect those choice flowers from the untoward blasts of the northern quarter, there ought to be some prepared. A close wooden paling is the one most ready and effectual, and if made of deal or oak, and well-painted, will last several years. Beech, hornbeam, yew, or arbor vitæ hedges are very excellent; but they require several years' growth before they are high enough to screen the flowers effectually. They might be planted behind the paling, to be advancing in growth; so that when the paling decays the hedges would be high and thick enough to answer the purpose. Whatever shelter is made use of, it should be placed at a sufficient distance from the beds not to draw up the flowers, or prevent a full exposure to light. On these accounts, or for these reasons, the wind-shelters should never exceed 6 or 8 feet high.

Draining.—The tulip loves a deep soil and a dry subsoil. Where there is a good depth of good loam, with a dry, gravelly, or sandy bottom, no more drains are required than one or two formed with drain-pipes and tiles to carry off the water that may fall in wet seasons on the surface. An upright shaft, with a grating on the top to catch this surface-water, will be necessary. When the natural soil is shallow and the subsoil clay, or any other water-retaining substance, set out the bed the desired length and breadth, and cast on one side all the good soil, shovelling the small crumbs; then dig, or hack and shovel out the subsoil till the bed is 18 inches deep. After that is finished, dig a drain in the centre of the bed 6 inches deep, and wide enough to allow the operator to lay down first the flat tiles, and then the circular pipes, with holes in the latter to admit the water to escape into them, and then be carried clean away. When the pipes, &c., are laid down, cover them with rubble, and then lay all over the bottom of the bed 3 or 4 inches of either small stones, broken clinkers, or brick-ends. Upon this drainage lay a stratum of short straw or small brushwood; make this smooth, and you may consider the drainage complete.

Manure and Soil.—Procure some one-year-old cow-dung; spread over and upon the drains a stratum of

this cow-dung 2 inches thick; then mix about one-sixth of very well-decomposed hotbed dung with the loam thrown out and laid on one side on commencing the operation of draining. If there is not enough soil to make the bed up level as before, procure some good loam for the purpose, mixing it with the same proportion of well-decomposed dung. If the situation is low and damp, it will be advisable to place an edging round the bed 6 or 8 inches deep, of sufficient strength to bear up the soil when it is raised to that height. The best material for an edging of this kind is blue slate, which may now be had very reasonably; the next best are common flags of slate; and the next, slabs of wood nailed to strong uprights driven into the ground at proper intervals. Mix the top surface with a considerable mixture of river sand; this will cause the bulbs to come out of the soil at taking-up time clean and of a bright brown colour. Should the collection be large, there should be two parallel beds, with a walk between them.

Planting.—The best season is about the beginning of the second week in November, as near the tenth of that month as the weather and the state of the ground will permit. This rule applies to all the country north of London; perhaps, in the milder climate of the southern counties, a week later would be better. Too early planting is injurious, inasmuch as that the leaves will be pushing through before the severe weather has passed away, and would then be in danger, however well protected, of being frost-nipped, and, consequently, injured not only for that year, but also for years to come.

The Method of Planting is governed by the height of the flower-stems; for, as some varieties grow taller than others, the tallest should be in the centre of the bed. This consideration renders it necessary to plant them in rows lengthways of the bed, and not across it. This being determined upon, let the soil of the bed be levelled and made tolerably smooth; then, with a triangular hoe, draw a drill the length of the bed, as near 2 inches deep as possible. To accomplish this quite straight, it will be necessary to have a line stretched very tightly the whole length of the bed, at such a distance from the centre as will allow the point of the hoe, in drawing the drill, to be exactly in the centre. As soon as the drill is drawn, bring out all the tall growers, and plant them 5 inches apart at the bottom, giving each a gentle pressure. When the row is finished, thrust in at each end a strong stick; this is to mark where the row of bulbs is when covered up. Of very choice and expensive varieties, some florists recommend covering the bulbs with fine white sand; but, if the soil is mixed with sand, we think the white sand may be dispensed with. Cover them up by drawing the soil over them with a short-toothed rake. After that let the soil on each side of the planted row be stirred up with a three-pronged fork. Then set the line at the right distance from the centre (we mentioned that the beds should be 4 feet wide, which would allow 9 inches between each of the five rows, and 6 inches next the edging); the line then must be set at such a distance from the centre, that the next row of bulbs will be exactly 9 inches apart from the centre one. Draw the drill the same depth as the first, and plant the next tallest flowers in it. Then mark the row with a stick at each end, and so proceed till the whole is finished; the lowest growers will then be next the paths all round the bed. Each variety must be numbered, and the numbers put in so securely that they cannot be easily displaced.

Shelter is necessary for the flower before and when in bloom. Where the collection is small, and the means small too, this consists merely of hoops, either of wood or iron, with canvas covers or mats to be thrown over the hoops, which should be high enough to keep the covering clear of the flowers. This covering should be applied not only when the plants are in bloom, but also to shelter them from the late frosts that sometimes come after the plants make their appearance, as well as from the cutting winds that often visit us in this country during the early months of the year. This shelter, however, must not be used except when absolutely necessary. Too much shelter only coddles the plants, and makes them so tender that a too sudden exposure, or the least neglect in applying the covering, would be equally as injurious as no shelter at all; therefore, on all favourable occasions, remove the coverings entirely, and let them have the benefit of fine weather and gentle rains.

Where the collection is large, and the means ample, the most convenient width of each bed would be 5 feet; this will hold 6 rows 9 inches apart. A walk between them may be either 3 or 4 feet; the latter will allow more room for the operator and the spectator. Three feet beyond each bed, on the outer sides, place a row of pillars, 4½ inches square, to support the shelter; each pillar may either be let into the ground and well-rammed, or be inserted into an iron or stone socket. These pillars should stand above the surface at least 5 feet, and at a distance of 5 feet from each other. On the top of each pillar a rafter should be placed, to meet a corresponding rafter in the centre of the space just over the centre of the walk. Each rafter, at the junction, must be firmly fastened to a longitudinal piece of wood running the whole length of the beds, the length of the beds depending, of course, upon the number of roots, or size of the collection. There will then be required two rollers of wood of the length of the structure. On each of these nail a sheet of canvas of sufficient width to drop down on each side nearly to the ground. On the top, at the centre, fix a pair of weather-boards, projecting high enough to allow the roller and canvas to go under them, one on each side. This will preserve the canvas from rotting, and so enable it to be used for several years.

TULIP, BUTTERFLY. *Calocho'rtus lilaci'nus.*

TULIP, CALIFORNIAN. *Calocho'rtus.*

TULIP, DROOPING. *Fritilla'ria Melea'gris.*

TULIP, GOLDEN STAR. *Calocho'rtus pulche'llus.*

TULIP MYRTLE. *Darwi'nia macroste'gia.*

TULIP POPPY. *Papa'ver glau'cum.*

TULIP-TREE. *Liriode'ndron tulipi'fera.*

TULIP-TREE, LAUREL-LEAVED. *Magno'lia.*

TUNHOOF. *Ne'peta Glecho'ma.*

TU'NICA. (From *tunica*, a coat; the calyx. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 2-*Digynia*. Allied to Dianthus.)

Hardy herbaceous plants, blooming in July. Seeds in spring, and division of the plants; rich, light soil.

T. dianthoi'des (pink-like). Red. Candia. 1838.
„ *illy'rica* (Illyrian). Red. S. Europe. 1838.
„ *oly'mpica* (Olympian). Asia Minor.
„ *pachyno'ta* (thick-backed). White. Natolia. 1838.
„ *proli'fera* (proliferous). ½. Pink. Europe (England). Annual.
„ *rhodo'pea* (rose-coloured). Gardens.
„ *Saxi'fraga* (saxifrage). ½. Pink. Europe. 1774.
„ „ *a'lba-ple'na* (double-white). ½. Double white. 1909.
„ „ *flo're ple'no* (double-flowered). ½. Semi-double, deep pink. 1901.
„ *stri'cta* (erect). Pink. Altai. 1834.
„ *veluti'na* (velvety). Red. May. S. Europe; Caucasus. 1837. Annual.

TU'PA. (The name of one of the species in Chili. Nat. ord. *Campanulads* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Referred to Lobelia.)

T. argu'ta (sharp-*toothed-leaved*). See SIPHOCAMPYLUS GIGANTEUS.
„ *bla'nda* (charming). 3. Pink. Chili.
„ *crassicau'lis* (thick-stemmed). 3. Yellow, red. Brazil. 1849.
„ *Feui'llei* (Feuille's). See LOBELIA TUPA.
„ *polyphy'lla* (many-leaved). See LOBELIA POLYPHYLLA.
„ *purpu'rea* (purple). See LOBELIA PURPUREA.
„ *salicifo'lia* (willow-leaved). See SIPHOCAMPYLUS GIGANTEUS.
„ *secu'nda* (side-*flowering*). See LOBELIA SECUNDA.

TUPIDA'NTHUS. (From *tupis*, *tupidos*, a hammer, and *anthos*, a flower; in reference to the shape of the flower-bud. Nat. ord. Araliaceæ.)

A rampant, evergreen stove climber. Cuttings in sand, in a close frame, with bottom-heat. Loam, peat, and sand.

T. calyptra'tus (capped). 40–50. Green. Himalaya.

TUPI'STRA. (From *tupis*, *tupidos*, a hammer; in reference to the form of the stigma. Nat. ord. Liliaceæ. Allied to Aspidistra.)

Stove herbs, with large, evergreen leaves, like those of Aspidistra. Divisions. Fibrous loam, leaf-mould, a little manure, and sand.

T. Cla'rkei (Clark's). 4. Dull reddish-purple. Sikkim. 1904.
„ *gra'ndis* (grand). 2–3. Red-brown, red-purple; style white. Perak. 1902.
„ *macrosti'gma* (large-stigma). 1½. Purple. Winter. Himalaya. 1872.
„ *nu'tans* (nodding). 2. Lurid purple. March. Himalaya.
„ *perake'nsis* (Perakian). Purple; stigma white. Singapore. 1900.
„ *squa'lida* (dirty). 2. Dusky violet. March. Amboyna. 1820.

TURF may be obtained either by sowing grass seeds, or laying turf obtained from a common or down: if the latter mode can be adopted it is the best, as the turf is obtained at once, and is more regular than can be obtained under the best circumstances from seed. All the preparation of the soil required is to dig it level a spade deep, provided the subsoil is open, otherwise to have a good drainage effected (see DRAINING); to have all large stones removed from the surface, and to have it brought to a perfect level by repeated rollings, and filling up the hollows when necessary, as indicated by the level. The surface being then loosened by raking is ready for the seed or turf.

By Seed.—See GRASS.

By Turf.—The season for laying turf is any time from September till April or May, though it will grow at almost any time of the year, even if there is occasion to lay it in summer, and dry weather succeed; for although it will open at the joints, and turn brown, as if dead, yet after the first rain it will close again, and resume its verdure. The turf for this use is cut with an iron instrument called a turfing iron, observing to cut the pieces all an equal width, length, and thickness—the proper size is a foot wide, a yard long, and about an inch thick; they should be first marked by line the proper width, length, and depth, with a *racer* or *rutter*; racing them first longwise a foot wide, then across in yard lengths; then proceed to cut them up, having particular regard to cut them level, and equal in thickness, otherwise it will be impossible to lay them level. As you cut, a man or boy should roll each turf up close and tight, the grass side inwards, and pile them up by tens, especially if they are cut by the hundred. If they are cut by the hundred, the price is from sixpence to a shilling, according to the nature of the soil, whether soft and easy to cut, or hard, or stony. A man will cut from three to five, six, or seven hundred in a day, or more, if very soft, easy-cutting turf, and having a person to race them out and roll them up, turf and turf, as they are cut. They are to be laid regularly, turf and turf, unrolling them as you lay them, joining them up quite close, edge to edge, making good all deficiency of broken parts as you go on; and, as soon as laid, it should be well beaten with broad, heavy, wooden beaters, made of flat pieces of elm or oak plank, 2 inches thick, 15 or 18 inches long, and a foot broad, having a handle fixed slanting in the middle of the upper side; and with these beat the grass regularly all over, and then roll it well with a heavy roller, observing that the beating and rolling should be repeated in moist weather. If very dry, hot weather succeeds, so as to occasion the turf to shrink and open at the joints, a good watering will be of much advantage.

By Inoculation.—If turf is scarce, cut turves into pieces, about 3 inches square, and plant these, green side up, pretty thickly over the space intended for the lawn. Beat them down into the soil, and water freely; roll frequently, and water also in dry weather. The turf will soon be as close, and the sward as perfect, as if the ground had been entirely turved.

TURF ASHES. See ASHES.

These, which are the basis of charred turf, now becoming so usual a manure, are, according to M. Sprengel, thus constituted:

Silica	93.10
Alumina	1.35
Oxide of iron	1.73
—— manganese	0.32
Lime	0.62
Magnesia	0.33
Potash, combined with sulphuric acid	0.38
Common salt	0.08
Sulphuric acid, combined with potash and lime	1.70
Phosphoric acid, combined with lime and magnesia	0.39

TURF TOOLS are the *Racer* or *Rutter*, for cutting the edges of turf after it has been laid, and for cutting the outlines of the turves when first obtained. It is a thin, sharp-edged implement, somewhat resembling a cheese-cutter, fixed to a handle about 4 feet long.

The *Turfing Iron* is for raising or peeling off the turves from the soil. It has an arrow-headed, flat blade, with an angular handle.

A Turf or *Daisy Rake* consists of a piece of thin plate iron cut into teeth, with two slips of ash, or other tough wood, between which it is firmly riveted to form a back, and keep it from bending. When put together, the back is 1¼ inch thick. The wood is bevelled half an inch above the interstices of the teeth, at which point the iron is slightly bent longitudinally, to admit the thickness of wood underneath, and give a proper inclination to the handle. The instrument serves both as a grass rake and a daisy rake, and has the advantage over the daisy rakes in common use of being easier cleaned, from the wideness of the interstices between the teeth.

The *Turf-beater* or *Beetle*, as above described, is a flat, heavy piece of wood, with a handle fixed on the back of it at an angle, so that the operator can raise it with the handle, and bring it down flat upon the grass, with a thud, to make it firm. Many modern turf layers object to the use of the *Beater*, as injurious to the grass.

TURGO'SEA. (From *turgeo*, to be swollen, or tumid; in allusion to the succulent character of the plants. Nat. ord. Crassulaceæ. Now referred to Crassula.)

T. aloi'des (Aloe-like). See CRASSULA ALOIDES.
„ *capite'lla* (little-head). See CRASSULA CAPITELLA.
„ *linguæfo'lia* (tongue-leaved). See CRASSULA LINGUÆFOLIA.
„ *obova'ta* (obovate). See CRASSULA OBOVATA.
„ *pertu'sa* (perforated). See CRASSULA PERTUSULA.
„ *thyrsiflo'ra* (thyrse-flowered). See CRASSULA THYRSIFLORA.
„ *tomento'sa* (felted). See CRASSULA TOMENTOSA.
„ *turri'ta* (turreted). See CRASSULA TURRITA.

TU'RNERA. (Named after *Dr. W. Turner*, author of the first English herbal. Nat. ord. *Turnerads* [Turneraceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

All yellow-flowered. Annuals and biennials, by seeds in a hotbed in spring, and plants bloomed in a greenhouse; shrubs, by seeds, and also by cuttings in sand, under a bell-glass, in spring and summer; sandy loam, fibrous peat, and a little charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

GREENHOUSE ANNUALS.

T. angustifo'lia (narrow-leaved). See T. ULMIFOLIA.
„ *auranti'aca* (orange). Orange. Guiana.
„ *cistoi'des* (Cistus-like). See PIRIQUETA VILLOSA.
„ *e'legans* (elegant). See T. ULMIFOLIA ELEGANS.
„ *guiane'nsis* (Guianan). 1. June. Guiana. 1823.
„ *hi'rta* (hairy). 1. June. Brazil. 1818.
„ *pu'mila* (dwarf). See T. PUMILEA.
„ *Pumi'lea* (Pumilea). ½. August. Trop. Amer.
„ *racemo'sa* (racemed). See PIRIQUETA RACEMOSA.
„ *ulmifo'lia* (elm-leaved). 3. July. Jamaica. 1733. Biennial.
„ „ *e'legans* (elegant).

STOVE EVERGREENS.

T. brasilie'nsis (Brazilian). 1. June. Brazil. 1810.
„ *cuneifo'rmis* (wedge-formed). See T. ULMIFOLIA.
„ *rupe'stris* (rock). 2. July. Guiana. 1824.
„ *trioniflo'ra* (Trionum-flowered). See T. ULMIFOLIA.

TURNIPS. *Bra'ssica Ra'pa.*

Varieties.—For the first sowings: Early White Dutch, Early Stone.

For the spring sowings: Common Round White, Large Round White, Large Green-topped, Large Red-topped, Yellow Dutch, Tankard, French, Small Round French, Swedish, Moscow, or Narva, Snowball, Orange Jelly, and Garden Swede.

Sowing may commence at the end of February, a small portion on a warm border, and some in a moderate hotbed of the first two varieties mentioned. These will be fit for use during April. The sowing on a border to be repeated in the beginning of March, and these will produce throughout May.

These sowings are to be repeated in small proportions, at monthly intervals, until the beginning of July, when the main crop for the supply of the winter may be inserted; and finally, small crops at the commencement of August and September for spring.

Mode.—Sow broadcast, or in drills 12 inches apart, and very thin; and to enable the seed to be distributed regularly, mix it well with sand before sowing. Each sowing should, if possible, be performed in showery weather; if otherwise, water at the time of insertion, and three times a week afterwards.

Thin the plants when they have four or five leaves about 2 inches in breadth to at least 12 asunder from each other.

Water must be given frequently and plentifully, as on a regular supply of moisture their goodness, in a great measure, depends.

In November or December, before the setting-in of frost, some of the bulbs must be taken up, and, the tops and roots being removed, preserved under shelter in sand. The young tops are much in request during spring; they must be gathered when very young, otherwise they are strong-flavoured and bitterish.

To obtain Seed, some of the most perfect roots of those which will withstand the winter may remain where grown; or they may be transplanted in November or February; of the two earliest varieties, sown on a border early in March, some of the bulbs being allowed to remain will produce seed the same autumn.

Manures.—The best manure for turnips is stable-dung; and next in their order, guano, super-phosphate of lime, soot, and salt.

For the injuries to which the turnip is liable, see ATHALIA, AMBURY, and BLACK FLEA.

Turnip Cabbage (*Bra'ssica Na'po-bra'ssica*) and Turnip-rooted Cabbage (*B. Cau'lo-ra'pa*). See KNOHL-KOHL.

TURNIP-FLY. See BLACK FLEA.

TURNIP MOTH. *Agro'tis se'getum.*

TURNSOLE. *Heliotro'pium.*

TURPENTINE. *Si'lphium terebinthina'ceum.*

TURPENTINE-MOTH. See RETINIA BUOLIANA and R. TURIONANA.

TURPENTINE-TREE. *Pista'cia Terebi'nthus.*

TURPI'NIA. (Commemorative of *P. Turpin*, a French artist. Nat. ord. Sapindaceæ.)

Stove and greenhouse evergreen trees or shrubs. Cuttings of ripe shoots in sand, in a close case, with gentle bottom-heat. Fibrous loam, peat, and sand.

T. argu'ta (acute). 4. Yellowish-white. March. China. 1820. Greenhouse.
„ *insi'gnis* (remarkable). 10–20. White. May. Mexico. 1847.
„ *nepale'nsis* (Nepaulese). See T. POMIFERA.
„ *occidenta'lis* (western). 20–25. White. May. W. Ind. Stove.
„ *pomi'fera* (apple-bearing). 20–25. White. May. Trop. Asia. 1820.

TURRÆ'A. (Named after *G. Turra*, professor of botany at Padua. Nat. ord. *Meliads* [Meliaceæ]. Linn. 16-*Monadelphia*, 6-*Decandria*. Allied to Melia.)

Stove evergreen trees. Cuttings of firm young shoots in sand, under a bell-glass, in March, in a hotbed; fibrous, sandy loam and vegetable mould. Winter temp., 55° to 60°; summer, 60° to 85°.

T. heterophy'lla (various-leaved). 20. White. May. Sierra Leone. 1843.
„ *loba'ta* (lobed-*leaved*). See T. HETEROPHYLLA.
„ *obtusifo'lia* (blunt-leaved). 4–6. White. S. Africa. 1872.
„ *pinna'ta* (leafleted). See MUNRONIA WALLICHII.

TURRI'TIS ALPI'NA. See ARABIS HIRSUTA.

TUSSA'CIA. (Commemorative of *F. R. de Tussac*, a botanist. Nat. ord. Gesneraceæ. Allied to Episcia.)

Perennial stove herbs. Seeds; cuttings in sand, in a close frame, with bottom-heat. Loam and leaf-mould in equal parts, with plenty of sand.

T. pulche'lla (pretty). 1. Yellow. July, August. Panama. 1830.
„ *semiclau'sa* (half-closed). 1. Yellow, crimson. Brazil. 1870.

TUSSILA'GO. Coltsfoot. (From *tussis*, a cough; used to allay coughs. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)

Hardy herbaceous perennials. Division of the roots, which are mostly inclined to spread freely. The flowers of many of the sorts, especially of *fra'grans*, are grateful from their scent, and, if kept in pots, are interesting in a greenhouse in the early months of the year; they generally do best in a strong, loamy soil, moderately rich.

T. a'lba (white). See PETASITES ALBUS.
„ *alpi'na* (alpine). See HOMOGYNE ALPINA.
„ *di'scolor* (two-coloured). See HOMOGYNE DISCOLOR.
„ *Fa'rfara fo'liis variega'tis* (*common*-variegated-leaved). ½. Yellow. March. Britain. "Coltsfoot," "Farfara," or "Tussilago."
„ *fra'grans* (sweet-scented). See PETASITES FRAGRANS.
„ *fri'gida* (cold). See PETASITES FRIGIDUS.
„ *læviga'ta* (smooth). See PETASITES LÆVIGATUS.
„ *ni'vea* (snowy). See PETASITES NIVEUS.
„ *palma'ta* (hand-*leaved*). See PETASITES PALMATUS.
„ *purpu'rea* (purple). Purple. July. Cape of Good Hope. 1825.
„ *sagitta'ta* (arrow-*leaved*). See PETASITES SAGITTATUS.

TUTSAN. *Hype'ricum Androsæ'mum.*

TWEE'DIA. (Named after *Mr. Tweedie*, a botanical collector. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*. Now referred to Oxypetalum.)

T. cæru'lea (blue). See OXYPETALUM CÆRULEUM.
„ *floribu'nda* (bundle-flowered). See OXYPETALUM SOLANOIDES.
„ *pube'scens* (downy). See OXYPETALUM SOLANOIDES.
„ *ro'sea* (rosy). See OXYPETALUM SOLANOIDES.
„ *versi'color* (changeable-coloured). See OXYPETALUM CÆRULEUM.

TWIN-FLOWER. *Bravo'a geminiflo'ra.*

TWISTED STALK. *Stre'ptopus.*

TYDÆ'A. (Named after *Tydeus*, son of Æneus, an ancient king. Nat. ord. Gesneraceæ. Now referred to Isoloma.)

T. ama'bilis (lovely). See ISOLOMA AMABILE.
„ *Ceci'liæ* (Cecilia's). See ISOLOMA CECILIÆ.
„ *hy'brida na'na* (dwarf hybrid). See ISOLOMA HYBRIDUM.
„ *Li'ndeni* (Linden's) and *T. lindenia'na* (Lindenian). See ISOLOMA LINDENI.
„ *pi'cta* (painted). See ISOLOMA PICTUM.

TYLE BERRY. *Ja'tropha multi'fida.*

TYLOPHORA. (From *tulos*, a swelling, and *phoreo*, to bear, the swollen pollen masses. Nat. ord. *Asclepiads* [Asclepiadaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)

Greenhouse evergreen twiners. Cuttings of either old or young shoots in very sandy loam, and brick and old lime-rubbish, in spring, though any time will do; sandy loam, lime-rubbish, and a little old, dried cow-dung. Winter temp., 40° to 45°, and dry; summer, 60° to 85°, and moist.

T. asthma'tica (asthmatic). 4–5. Green. November. India; Malaya. 1814.
„ *barba'ta* (bearded). 10. July. Australia. 1822.
„ *calcara'ta* (spurred). 10. July. Australia. 1822.
„ *exi'lis* (slender). 10. Pale purple. July. India; Malaya. 1823.
„ *grandiflo'ra* (large-flowered). 10. July. Australia. 1822.
„ *micra'ntha* (small-flowered). Timor.
„ *ocula'ta* (eyed). Purple. Sierra Leone. 1895.

TYLOPHORO'PSIS. (From *Tylophora*, and *opsis*, resemblance; because it resembles that genus. Nat. ord. Asclepiadaceæ.)

Twining evergreen shrub. For culture, see TYLOPHORA.

T. yeme'nsis (Yemen). Flowers small, dull purple. Yemen, Arabia. 1894.

TYPHA. Reed Mace. (An old Greek name. Nat. ord. Typhaceæ.)

Hardy perennial herbs, thriving best in shallow water in ponds, tanks, lakes, and streams. Divisions in spring.

T. angustifo'lia (narrow-leaved). 4. Brown. July. Europe (Britain). "Small Bullrush."
„ *latifo'lia* (broad-leaved). 3–6. Brown. July. Europe (Britain). "Reedmace."

T. Laxma'nni (Laxmann's). 3. Brown. July. Europe.
„ *mi'nima* (smallest). See T. LAXMANNI.
„ *Shuttlewo'rthii* (Shuttleworth's). Brown. July. Europe.
„ *stenophy'lla* (narrow-leaved). 3–5. Brown. July. Europe.

TYPHO'NIUM. (An old classical name for some aroid. Nat. ord. Araceæ. Allied to Arum.)
Stove herbs with tuberous roots. Offsets. Fibrous loam, leaf-mould, and sand, in a moist, warm atmosphere.
T. Bro'wnii (Brown's). ½. Lurid purple. April. Australia. 1875.
„ *cuspida'tum* (short-pointed). 1. Green; spadix white. Trop. Asia. 1819.
„ *divarica'tum* (divaricate). 2. Purple. July. Trop. Asia. 1759.
„ *diversifo'lium* (diverse-leaved). Velvety purple, brown inside. India. 1879.
„ *gigante'um* (giant). China.
„ „ *Gira'ldi* (Girald's). Purple; spadix blackish. N. China. 1902.
„ *huegelia'num* (Huegelian). See T. DIVERSIFOLIUM.
„ *orixe'nse* (Orixan). See T. TRILOBATUM.
„ *peda'tum* (pedate). Pegu.
„ *Roxbu'rghii* (Roxburgh's). Singapore; Java.
„ *triloba'tum* (trilobed). 1½. Green, rose-purple. India; Malaya. 1714.

TYPHONO'DORUM. (From *Typhonium* and *doru*, a spear. Nat. ord. Araceæ.)
Stove, evergreen shrub. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, lumpy peat, and sand.
T. lindleya'num (Lindleyan). 3–10. Green, yellow. Madagascar. 1910. Seeds edible.

TYRI'MNUS. (From *tureuma*, a cheese; in allusion to the large, flat receptacle. Nat. ord. Compositæ. Allied to Silybum.)
A thistle-like perennial herb. Seeds; divisions. Ordinary garden soil.
T. leuco'graphis (white-written). 2. Purple. June, July. S. Europe. 1752.

TYTO'NIA. The Water Balsam. (In honour of *A. Tyton*, a patron of botany. Nat. ord. *Crane's-bills* [Geraniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Hydrocera.)
T. na'tans (swimming). See HYDROCERA ANGUSTIFOLIA.

U

U'HDEA. See MONTANOA.

ULCER. See CANKER.

U'LEX. Furze. (From the Celtic *ac*, a point; the prickly branches. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)
Hardy, yellow-flowered evergreens. Seeds in spring; deep, light soil, though not very particular. The gorse, whin, or furze is valuable, not only for its great beauty, but as constituting a valuable fodder and fence-plant. The *Double-blossomed Furze* is very beautiful, and worthy of a place in small gardens, and is propagated by cuttings in spring and autumn, in a shady, sandy border, or under hand-glasses. The *Upright* or *Irish Furze* is propagated in a similar manner, and is also valuable for fodder; but it seldom flowers, and when it does has generally only a few flowers on a plant. See HEDGE.
U. europæ'us (European). 6. June. Europe (Britain). "Furze," "Gorse," "Whin."
„ „ *flo're-ple'no* (double-flowered). 6. May. Britain.
„ „ *stri'ctus* (erect). 8–10. October. Ireland. "Irish Gorse."
„ *Ga'llii* (France's). Primary spines long, rigid. Western Europe.
„ *genistoi'des* (Genista-like). 1–3. May to August. Portugal. 1823. "Portuguese Furze."
„ *hibe'rnicus* (Irish). See U. EUROPÆUS STRICTUS.
„ *na'nus* (dwarf). 2. August. Western Europe (Britain).
„ *Ga'llii* (France's). See U. GALLII.
T. parvifo'rus (small-flowered). 4. July. S. France; Spain. 1823.
„ *provincia'lis* (Provence). See U. PARVIFLORUS.
„ *stri'ctus* (erect). See U. EUROPÆUS STRICTUS.
„ *welwitschia'nus* (Welwitschian). South-western Europe.

ULLO'A PARASI'TICA. See JUANULLOA AURANTIACA.

ULLU'CUS. (From *ulluco*, the native name in Ecuador. Nat. ord. Chenopodiaceæ.)
Perennial tuberous-rooted herb. Tubers. Light, rich soil. It is grown in Peru and Bolivia, as an article of food, under the name of "Oca-quina."
U. tubero'sus (tuberous). 1–2. Yellow. August. Andes. 1847.

U'LMUS. The Elm. (From the Celtic name, *ulm*. Nat. ord. *Nettleworts* [Urticaceæ]. Linn. 5-*Pentandria*, 2-*Digynia*.)
Nearly all hardy; all deciduous, and red-flowered, blooming in February to April. *Campe'stris* and its allies, by suckers and layers, and by grafting on the *monta'na*. The latter is also propagated, not by suckers, but by layers, which root freely; but chiefly by seeds, which should be gathered in June as soon as ripe, and sown in light, mellow soil; or dried, and put in bags until the following March or April. Deep, dry, sandy loam suits all the species and varieties, and produces the most valuable timber.
U. ala'ta (winged). 30. N. Amer. 1820. "Wahoo," "Winged Elm."
„ *a'lba* (white). See U. PEDUNCULATA.
„ *america'na* (*white*. American). 40. N. Amer. "American or White Elm."
„ „ *a'lba* (white-*branched*). See U. AMERICANA.
„ „ *fo'liis-variega'tis* (variegated-leaved).
„ „ *inci'sa* (cut-*leaved*). N. Amer.
„ „ *pe'ndula* (drooping). N. Amer. 1820.
„ „ *ru'bra* (red-*branched*). See U. FULVA.
„ *campe'stris* (*English*-field). 80–120. England. "English Elm," "Common Elm."
„ „ *acutifo'lia* (acute-leaved). 80. Britain.
„ „ *a'lba* (white). 80. Britain.
„ „ *anta'rctica* (antarctic). Leaves very small.
„ „ *anta'rctica au'rea* (golden). Leaves yellow. 1866.
„ „ *anta'rctica pe'ndula* (drooping).
„ „ *au'rea* (golden). See U. CAMPESTRIS ANTARCTICA AUREA.
„ „ *Bera'rdi* (Berard's). Erect. Seedling. 1887.
„ „ *betulæfo'lia* (birch-leaved). Britain.
„ „ *chine'nsis* (Chinese). China.
„ „ *concavæfo'lia* (concave-leaved). Britain.
„ „ *cornubie'nsis* (Cornish). See U. GLABRA CORNUBIENSIS.
„ „ *creti'nsis* (Cretan). Leaves medium sized. Crete.
„ „ *ere'cta* (erect).
„ „ *fo'liis au'reis* (leaves golden-*variegated*). Britain.
„ „ *fo'liis-variega'tis* (leaves variegated *with white*) Britain.
„ „ *globo'sa* (globose). Habit globose. 1894.
„ „ *gra'cilis* (slender).
„ „ *japo'nica* (Japanese). See U. JAPONICA.
„ „ *latifo'lia* (broad-leaved). 80. Britain.
„ „ *Louis Van Houtte*. Leaves yellow.
„ „ *microphy'lla pe'ndula* (drooping-small-leaved).
„ „ *modioli'na* (Modiola-like).
„ „ *myrtifo'lia* (myrtle-leaved). Leaves very small, purple-green.
„ „ *na'na* (dwarf). 2. Britain.
„ „ *parvifo'lia* (small-leaved). 20. Siberia. 1822.
„ „ *pe'ndula no'va* (new-drooping).
„ „ *planifo'lia* (flat-leaved). 20.
„ „ *pyramida'lis* (pyramidal). Habit upright.
„ „ *sarnie'nsis* (Jersey). 80. Britain. "Jersey Elm."
„ „ *stri'cta* (upright). See U. GLABRA CORNUBIENSIS.
„ „ *subero'sa* (corky). 40. England. "Cork-barked Elm."
„ „ *subero'sa pe'ndula* (corky-drooping).
„ „ *tortuo'sa* (twisted). Britain.
„ „ *umbraculi'fera* (umbrella-bearing). Head compact, umbrella-like. Tiflis. 1879.
„ „ *umbraculi'fera gra'cilis* (slender-umbrella-bearing).
„ „ *variega'ta* (variegated).
„ „ *variega'ta no'va* (new-variegated).
„ „ *vimina'lis* (twiggy). 30. Britain.

U. campes'tris vimina'lis stri'cta (upright-twiggy).
„ „ *vimina'lis variega'ta* (variegated-twiggy).
„ „ *vi'rens* (green). 80. Britain. "Kidbrook Elm."
„ „ *visco'sa* (clammy). Britain.
„ „ *webbia'na* (Wahbian). Leaves narrow, infolded at the sides.
„ „ *Whea'tleyi* (Wheatley's). See U. CAMPESTRIS SARNIENSIS.
„ *carpinifo'lia* (hornbeam-leaved). See U. GLABRA.
„ *crassifo'lia* (thick-leaved). Arkansas, Texas, &c. "Cedar Elm."
„ *effu'sa* (spreading-*flowered*). See U. PEDUNCULATA.
„ *elli'ptica* (elliptic). Turkestan.
„ *frutico'sa* (shrubby). 8. Europe.
„ *fu'lva* (deep yellow). 40–60. N. Amer. 1824. "Slippery Elm."
„ „ *pe'ndula* (drooping).
„ *Gaujа'rdii* (Gaujard's). Tree symmetrical, upright, vigorous. 1898.
„ *gla'bra* (smooth). 60. Europe (Britain).
„ „ *cornubie'nsis* (Cornish). 50–100. England. "Cornish Elm."
„ „ *cornubie'nsis Dickso'ni* (Dickson's). Leaves golden. 1906.
„ „ *glandulo'sa* (glandulous-*leaved*). Britain.
„ „ *latifo'lia* (broad-leaved). Britain.
„ „ *ma'jor* (greater). See U. MAJOR.
„ „ *microphy'lla* (small-leaved). Britain.
„ „ *pe'ndula* (drooping). Britain. "Downton Elm."
„ „ *pe'ndula no'va* (new-drooping).
„ „ *ramulo'sa* (branching). Floetbeck.
„ „ *ru'bra* (red). Inner bark red.
„ „ *variega'ta* (variegated-*leaved*). Britain.
„ „ *vege'ta* (vigorous). See U. MONTANA VEGETA.
„ *integrifo'lia* (entire-leaved). See HOLOPTELEA INTEGRIFOLIA.
„ *japo'nica* (Japanese). 65–90. Light red. Japan. 1908.
„ *ma'jor* (greater). 40–80. Britain.
„ *monta'na* (mountain). 40–120. Europe (Britain). "Scotch or Wych Elm."
„ „ *atropurpu'rea* (dark-purple). Leaves purple.
„ „ *au'rea* (golden). Leaves yellow.
„ „ *austra'lis* (southern).
„ „ *cevenne'nsis* (Cevennes).
„ „ *cine'rea* (grey).
„ „ *cri'spa* (curled-*leaved*). 20.
„ „ *cuculla'ta* (hooded). Leaves curved or hooded.
„ „ *Dauve'ssei* (Dauvesse's).
„ „ *Do'vei* (Dova's).
„ „ *etru'sca* (Etruscan).
„ „ *fastigia'ta* (pyramidal). Exeter. 1826. "Exeter Elm," "Ford's Elm."
„ „ *fastigia'ta au'rea* (golden-upright).
„ „ *gigante'a* (giant).
„ „ *lacinia'ta* (laciniate). Leaves three-pointed or deeply cut at the margin.
„ „ *latifo'lia ni'gricans* (broad-leaved-blackening).
„ „ *li'bro ru'bro* (red-barked). Inner bark red.
„ „ *lute'scens* (yellowish). Leaves pale yellow.
„ „ *macrophy'lla* (large-leaved).
„ „ *macrophy'lla fastigia'ta* (large-leaved-upright).
„ „ *ma'jor* (greater). Britain.
„ „ *mi'nor* (less). Britain.
„ „ *na'na* (dwarf). 2.
„ „ *ni'gra* (black). 40. Ireland. "Black Irish Elm."
„ „ *pe'ndula* (drooping). Britain.
„ „ *pe'ndula Camperdown*. "Camperdown Weeping Elm."
„ „ *purpu'rea* (purple). Leaves purple.
„ „ *rugo'sa* (rough-*leaved*). 40. Britain.
„ „ *sco'tica* (Scotch).
„ „ *serpenti'na* (serpentine).
„ „ *supe'rba* (superb).
„ „ *vege'ta* (vigorous). 40–70. "Huntingdon Elm," "Chichester Elm."
„ *nemora'lis* (grove). See ZELKOVA CRENATA.
„ *parvifio'ra* (small-flowered). Green. April. China and Japan.
„ *pedunculа'ta* (stalked). 50–60. Europe, &c. 1800. "Hungarian Elm."
„ *pinna'to-ramo'sa* (pinnate-branched). 20–30. Siberia.
„ *pu'mila* (dwarf). Northern Asia.
„ *Rosee'lsii* (Roseels'). See U. CAMPESTRIS ANTARCTICA AUREA.
U. racemo'sa (racemose). N. Amer. "Rock Elm."
„ *sca'bra* (scabrous). See U. MONTANA.
„ *sero'tina* (late). Southern United States.
„ *subero'sa* (cork-*barked*). See U. CAMPESTRIS SUBEROSA.
„ *turkesta'nica* (Turkestan). Turkestan.
„ *urticæfo'lia* (Urtica-leaved). See U. MONTANA CRISPA.

UMBELLULA'RIA. (From *umbella*, a little shade, parasol, or umbel; the flowers are produced in small umbels. Nat. ord. Lauraceæ.)
An evergreen shrub or tree for a warm wall, except in the more favoured parts of the country. The foliage is scented. Cuttings in sandy soil in a cold frame, kept close and shaded during the day till roots are formed. Any light, well-drained soil.
U. califo'rnica (Californian). 10–80. Pale yellow. June. North-western Amer. 1862.

UMBILI'CUS. (From *umbilicus*, the navel; concave leaves of some species. Nat. ord. *Houseleeks* [Crassulaceæ]. Linn. 10-*Decandria*, 4-*Pentagynia*. Referred to Cotyledon.)
Hardy herbaceous succulents. Seeds, divisions, and cuttings of offsets; sandy loam and peat. They do best in the recesses of rock-work.
U. ere'ctus (upright). See COTYLEDON LUSITANICA.
„ *gla'ber* (smooth). See COTYLEDON GLABRA.
„ *horizonta'lis* (horizontal). See COTYLEDON UMBILICUS.
„ *Liève'nii* (Lieven's). See COTYLEDON LIEVENII.
„ *lu'tea* (yellow). See COTYLEDON LUSITANICA.
„ *malacophy'llus* (soft-leaved). See COTYLEDON MALACOPHYLLA.
„ *penduli'nus* (drooping). See COTYLEDON UMBILICUS.
„ *platyphy'llus* (broad-leaved). See COTYLEDON PLATYPHYLLA.
„ *Sempervi'vum* (Sempervivum-like). See COTYLEDON SEMPERVIVUM.
„ *serra'tus* (saw-edge-*leaved*). See COTYLEDON SERRATA.
„ *spino'sus* (spiny). See COTYLEDON SPINOSA.
„ *turkesta'nicus* (Turkestan). See COTYLEDON TURKESTANICA.

UMBRELLA ELM. *U'lmus campe'stris umbraculi'fera.*

UMBRELLA LEAF. *Diphyllei'a cymo'sa.*

UMBRELLA PINE. *Sciado'pitys verticilla'ta.*

UMBRELLA PLANT. *Saxi'fraga pelta'ta.*

UMBRELLA TREE. *Magno'lia tripe'tala.*

UMBRELLA WORT. *Oxy'baphus.*

UNCA'RIA. (From *uncus*, a hook; the petioles of the leaves form hooks. Nat. ord. Rubiaceæ.)
Climbing stove shrubs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.
U. Ga'mbier (Gambier). Pale red. 10. Malaya. 1825. "Gambier."
„ *sessilifru'ctus* (stackless-fruited). Pale red. 10. Himalaya; Burma. 1829.

UNCI'FERA. (From *uncus*, a hook, and *fero*, to bear; the pollinia are hooked. Nat. ord. Orchidaceæ. Allied to Saccolabium.)
Stove epiphytal orchid. Divisions. Fibre of peat, sphagnum, and crocks in baskets.
U. heteroglo'ssa (variable-lipped). Country unknown. 1878.

UNDERGROUND BEAN. *Voandzei'a subterra'nea.*

UNDERGROUND ONION. See POTATO ONION.

UNGNA'DIA. (Commemorative of *Baron Von Ungnad*, who introduced the Horse Chestnut. Nat. ord. Sapindaceæ. Allied to Æsculus.)
Hardy deciduous shrub. Seeds or layers. Well-drained soil.
U. specio'sa (showy). 10–20. Pink. Texas. 1850.

UNICORN PLANT. *Marty'nia probosci'dea.*

U'NIOLA. Spike Grass. (From *unus*, one; the glumes being united in pairs. Nat. ord. Gramineæ.)
Hardy perennial grasses of ornamental value when cut or dried. Seeds; divisions. Ordinary garden soil.
U. latifo'lia (broad-leaved). 2–3. August. N. Amer. "Seaside Oat."

U. Pa'lmeri (Palmer's). 2–4. August. Banks of Colorado River. 1889.
„ *panicula'ta* (panicled). 3–6. August. N. Amer.

UNO'NA. (A different spelling of *Anona*, to which it is allied. Nat. ord. Anonaceæ.)
Stove evergreen shrubs. Cuttings of mature wood in a close frame, with bottom-heat. Loam, with a little lumpy peat and sand.
U. co'ncolor (one-coloured). 6. Guiana. 1820.
„ *Dasyma'schala* (Dasymaschala). India and Malaya.
„ *di'scolor* (two-coloured). Trop. Asia.
„ *Na'rum* (Narum). See UVARIA NARUM.

UNTRUE. See SPORTING.

UPAS TREE. *Antia'ris toxica'ria.*

UPLAND WILLOW OAK *Que'rcus cine'rea.*

URA'NIA. (From *ouranios*, sublime; the stateliness of the plant. Nat. ord. *Musads* [Scitaminaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Referred to Ravenala.)
U. madagascarie'nsis (Madagascar). See RAVENALA MADAGASCARIENSIS.
„ *Ravena'la* (Ravenala). See RAVENALA MADAGASCARIENSIS.
„ *specio'sa* (showy). See RAVENALA MADAGASCARIENSIS.

URA'RIA. (From *oura*, a tail; the bracts. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Hedysarum.)
Stove evergreens. Seeds in a hotbed in spring; and cuttings of side-shoots in May, in sand, under a bell-glass; sandy loam and fibrous peat. Winter temp., 55° to 65°; summer, 65° to 85°.
U. alopecuroi'des (foxtail-like). See U. LAGOPUS.
„ *como'sa* (tufted). See U. CRINITA.
„ *crini'ta* (hairy). 2 Pink. July. Trop. Asia. 1818.
„ *hamo'sa* (hooked). White. June. E. Ind. 1827.
„ *lagoce'phala* (hare-headed). See DESMODIUM BARBATUM.
„ *lagopodioi'des* (hare's-foot-like). 1½. Purple. July. China. 1790.
„ *Lago'pus* (hare's-foot). 7. Purple. June. Nepaul. 1824.
„ *pi'cta* (painted-*leaved*). 3. Purple. July. Tropics Old World. 1788.

URCEO'CHARIS. (A name compounded from *Urceolina* and *Eucharis*; the plants being regarded as hybrids between members of those genera. Nat. ord. Amaryllidaceæ.)
Stove bulbs. Offsets. Fibrous loam, a little leaf-mould old cow-manure, and sand.
U. Cli'brani (Clibran's). 2. White. (*Eucharis grandiflora* × *Urceolina pendula.*) 1892.
„ *edenta'ta* (toothless). 2. White; corona toothless. (Natural hybrid, *Urceolina* × *Eucharis.*) Peru. 1910.

URCEOLA. (From *urceolus*, a little cup or pitcher; the corolla is urceolate or pitcher-shaped. Nat. ord. Apocynaceæ.)
A tall evergreen climber. Cuttings in sand in bottom-heat. Loam, peat, sand, and some pieces of charcoal.
U. esule'nta (edible). 6–10. Brown. Burma.

URCEOLI'NA. (From *urceolus*, a small cup, or pitcher; from the smallness of the cup, or nectary, inside the flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Eucharis.)
Half-hardy bulbs, growing in shady woods, and flowering from June to November; they require perfect rest in winter. Offset-bulbs; rich, fibrous loam; the protection of a cold pit, and kept dry in winter.
U. au'rea (golden). See U. PENDULA.
„ *fu'lva* (tawny). See U. PENDULA.
„ *latifo'lia* (broad-leaved). 1. Yellow, green. September. Peru.
„ *minia'ta* (vermilion). 1–1½. Vermilion. February. Peru and Bolivia. 1836.
„ „ *lacuno'sa* (pitted). 1. Red. September. 1836.
„ „ *suliva'nica* (Sulivanian). 1. Orange. March. 1839.
„ *pe'ndula* (hanging-down). 1. Yellow, green. June. Peru. 1837.

URE'DO. See BARBERRY and MILDEW.

URE'NA. (The native name at Malabar is *Uren.* Nat. ord. Malvaceæ.)
Annual stove herb. Seeds. Loam, leaf-mould, and plenty of sand.
U. loba'ta (lobed). Pink. June to September. Tropics everywhere.

URE'RA. (From *uro*, *urere*, to burn, to sting; the stems and leaves are covered with stinging hairs. Nat. ord. Urticaceæ.)
Stove or greenhouse shrub or small tree. Cuttings in sand, in a close case, with bottom-heat. Loam, peat, and sand.
U. te'nax (tough). 5–10. Green. Natal. "Urera Fibre."

URGI'NEA. (Named after *Ben Urgin*, an Arab tribe in Algeria. Nat. ord. Liliaceæ.)
Greenhouse bulbs. Offsets; seeds. Loam, leaf-mould, some cow-manure, and sand, and must be rested in winter.
U. alti'ssima (very-tall). 3. Whitish, purple-green. May. Trop. Africa. 1789.
„ *cilia'ta* (eye-lashed). ½. White, green. S. Africa. 1819.
„ *eriospermoi'des* (Eriospermum-like). 2. Whitish, small. S. Africa. 1887.
„ *exuva'ta* (cast-off-skin). ½. White, purple. June. S. Africa. 1795.
„ *filifo'lia* (thread-leaved). ½–1. Whitish, purple. June. S. Africa. 1820.
„ „ *ma'jor* (greater). Yellow-green, drooping. S. Africa. 1904.
„ *fra'grans* (fragrant). 1. Whitish, purple. June, July. S. Africa. 1791.
„ *i'ndica* (Indian). ½. Greenish, white. India; Burma; Abyssinia. 1832.
„ *lilaci'na* (lilac). Lilac. Natal.
„ *macroce'ntra* (large-spurred). 3. White, tipped green; lowest bracts spurred. S. Africa. 1887.
„ *mari'tima* (maritime). 2–3. White, green-purple. October. Europe; S. Africa. 1829.
„ *micra'ntha* (small-flowered). Trop. Africa.
„ *physo'des* (bladder-like). ½. Whitish, purple. June. S. Africa. 1804.
„ *Sci'lla* (Scilla). See U. MARITIMA.
„ *secu'nda* (one-sided). ½. White. August. S. Africa. 1826.

URINE. (See DUNG.) The urine of all animals is excellent as a manure; but it must be given only to plants whilst growing, and in a diluted state. One of the most fertilising of liquid-manures is composed of cabbage-leaves, and other vegetable refuse, putrefied in the urine from a house or stable, and diluted with three times its quantity of water when applied. If mixed with bleaching powder (chloride of lime), there will be no offensive smell. Gypsum mixed with urine, or a little oil of vitriol poured into it, adds to its utility as a manure. Sulphate of iron, in the proportion of seven pounds to every hundred of urine, prevents the escape of ammonia during putrefaction.

UROPE'DIUM. (From *oura*, a tail, and *podion*, a slipper; the slipper of this plant is flattened and elongated like a tail. Nat. ord. Orchidaceæ. Now referred to Selenipedium.)
U. Li'ndeni (Linden's). See SELENIPEDIUM CAUDATUM UROPEDIUM.

UROPE'TALON. (From *oura*, a tail, and *petalon*, a petal; the petals are lengthened out into tail-like appendages. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Dipcadi.)
U. becazzea'num (Becazzean). ½. Green. Abyssinia. 1892.
„ *fu'lvum* (tawny). See DIPCADI SEROTINUM FULVUM.
„ *glau'cum* (sea-green). See DIPCADI GLAUCUM.
„ *longifo'lium* (long-leaved). See DIPCADI LONGIFOLIUM.
„ *sero'tinum* (late-*flowering*). See DIPCADI SEROTINUM.
„ *umbona'tum* (umbonate). See DIPCADI UMBONATUM.
„ *Welwi'tschii* (Welwitsch's). See DIPCADI WELWITSCHII.

UROSKI'NNERA. (Commemorative of *G. Ure Skinner*, a collector of plants in Central America. Nat. ord. Scrophulariaceæ.)

Stove perennial herb. Divisions. Fibrous loam, peat, and sand.

U. specta'bilis (showy). Light purple. July. Guatemala. 1857.

URO'SPATHA. (From *oura*, a tail, and *spathe*, a spathe; in allusion to the long-tailed spathe. Nat. ord. Araceæ.)

Evergreen stove herbs. Offsets, divisions. Fibrous loam, lumpy peat, and sand.

U. desci'scens (falling-off). 3. Brown, wine red. Brazil. 1860.
„ *e'legans* (elegant). See U. SAGITTÆFOLIA.
„ *gra'ndis* (grand). Green. Panama.
„ *pictura'ta* (pictured). See U. SAGITTÆFOLIA.
„ *specta'bilis* (showy). See U. SAGITTÆFOLIA.
„ *sple'ndens* (splendid). See U. SAGITTÆFOLIA.
„ *sagittæfo'lia* (arrow-leaved). 2. Green. Brazil. 1866.

UROSPE'RMUM. (From *oura*, a tail, and *sperma*, a seed; the seeds are beaked. Nat. ord. Compositæ.)

Hardy perennial or annual herbs. Seeds; cuttings; divisions. Well-drained garden soil.

U. a'sperum (rough). See U. PICROIDES.
„ *cape'nse* (Cape). See U. PICROIDES.
„ *Dalecha'mpii* (Dalechamp's). 2. Light yellow. July. S. Europe. 1739.
„ *picroi'des* (Picris-like). 1. Yellow. July. S. Europe. 1683. Annual.

UROSTI'GMA SUBTRIPLINE'RVIUM. See FICUS SUBTRIPLINERVIA.

URSI'NIA. (Commemorative of *John Ursinius*, a German. Nat. ord. Compositæ. Includes Sphenogyne.)

Greenhouse shrubby plants, hardy annuals, or some that may be grown outdoors in summer like *U. pulchra* and *U. anthemoides*. Seeds; cuttings of the shrubby plants. Fibrous loam, leaf-mould or peat, and sand; well-drained soil in the open.

U. abrotanifo'lia (Abrotanum-leaved). 1–2. Yellow. July. S. Africa. 1789. Shrubby.
„ *anthemoi'des* (Anthemis-like). ½–1. Yellow, coppery beneath. August. S. Africa. 1774.
„ *crithmifo'lia* (Crithmum-leaved). 1–2. Yellow. July. S. Africa. 1768. Shrub.
„ *denta'ta* (toothed). 1–2. Yellow, coppery underneath. July. S. Africa. 1787. Shrub.
„ *fœnicula'cea* (fennel-like). 1. Yellow. July. S. Africa. 1825.
„ *leucanthemifo'lia* (Leucanthemum-leaved). ½. Yellow. July. S. Africa. 1825.
„ *leucanthemoi'des* (Leucanthemum-like). See U. LEUCANTHEMIFOLIA.
„ *odora'ta* (scented). 1. Yellow, brown beneath. June. S. Africa. 1774. Shrub.
„ *parado'xa* (paradoxical). ½–1. Yellow, dark copper beneath. July. S. Africa. Subshrubby.
„ *pili'fera* (pile-bearing). 1–1½. Yellow, brown beneath. Autumn. S. Africa. 1821. Subshrubby.
„ *pu'lchra* (fair). 1. Orange. July to September. S. Africa. 1836.
„ *scario'sa* (dry). 1. Yellow, pale brown beneath. June. S. Africa. 1774. Shrubby.
„ *serra'ta* (sawed). 2–3. Golden-yellow. June. S. Africa. 1826. Shrubby.
„ *specio'sa* (showy) of gardens. See U. PULCHRA.

URTI'CA. (From *uro*, to burn, to sting; in allusion to the stinging hairs. Nat. ord. Urticaceæ.)

Annual and perennial herbs, too well known in gardens and their neighbourhood from the frequency of *U. dioica* in shady and waste places, and the annual *U. urens* in the cultivated ground. Seeds; divisions. Ordinary soil.

U. æ'stuans (raging). See FLEURYA ÆSTUANS.
„ *involucra'ta* (involucrated). See PILEA PUBESCENS.
„ *membrana'cea* (membranous). 1. Green. July. S. Europe.
„ *piluli'fera* (pile-bearing). 1. Green. July to September. Europe (England). Roman Nettle.
„ *reticula'ta* (netted). See PILEA RETICULATA.
„ *thunbergia'na* (Thunbergian). 1½. Green. July. Japan.

URVI'LLEA. (Commemorative of *Captain Dumont d'Urville*, a French botanist. Nat. ord. Sapindaceæ. Now referred to Serjania.)

U. ferrugi'nea (rusty). See SERJANIA CUSPIDATA.

USTILA'GO. A genus of fungi, in which the protospores are produced in masses, filling the tissues with simple cells of a black colour. They are known as smuts, and are very injurious to corn and grasses. The young fruits or grains seen to be attacked should have the stems cut and burnt before the spores are ripe. Oats and barley often get badly attacked by *U. segetum*, and grain should be treated with some disinfectant before sowing, if the fungus was present when growing. One pound of sulphate of copper, dissolved in five quarts of water, is sufficient for a sack of grain (four bushels), which should be steeped in the solution.

UTRICULA'RIA. Bladderwort. (From *utriculus*, a small skin, or water-bottle made of it; in reference to the small bladders on the floating or submerged leaves of the plants. Nat. ord. Lentibulariaceæ. Allied to Pinguicula.)

A very large genus of plants spread over the whole world in boggy and wet places, or submerged in water. They float near the surface in summer, and their flower scapes are produced above the water. Divisions. Our native species may be grown in ponds, tanks, or tubs. Moist stove species, such as *U. montana*, may best be grown in baskets of sphagnum, mixed with small pieces of charcoal and drained with crocks. The small bladders are best developed on the species which live in water, and may be defective or absent from those that grow in sphagnum or moss. In our native species they have a small opening or trap-door which opens inwards, and the interior is furnished with four-branched hairs. Minute animals in the water, either seeking for shelter, or out of curiosity, push against the trap-door, which opens to let them in but closes behind them, thus making prisoners of them. After a time they die, decay, and the nutrient matter of their bodies is absorbed by the branching hairs.

British Aquatics.

U. Bre'mii (Brem's). ½–½. Yellow. Europe (England).
„ *interme'dia* (intermediate). ½. Yellow. July to September. Europe (England), Asia, &c.
„ *ma'jor* (larger). ½. Yellow. July to September. Europe (England).
„ *mi'nor* (smaller). ½–½. Yellow. June to August. Europe (Britain, Ireland).
„ *negle'cta* (neglected). See U. MAJOR.
„ *vulga'ris* (common). ½–1½. Yellow. July, August. Europe (Britain), Asia, and N. Amer.

Stove.

U. bi'fida (bifid). Orange-yellow. September. Trop. Asia and Australia. 1882.
„ *Endre'sii* (Endres'). ½. Pale blue. Costa Rica. 1874.
„ *forgetia'na* (Forgetian). See U. LONGIFOLIA.
„ *Humbo'ldtii* (Humboldt's). Pale lavender. British Guiana. 1886.
„ *ia'nthina* (violet-like). ½. Pale blue, edged violet. Brazil.
„ *latifo'lia* (broad-leaved). See U. LONGIFOLIA.
„ *longifo'lia* (long-leaved). ½. Violet-blue, or mauve. Brazil. 1892.
„ *monta'na* (mountain). ½–½. White, with yellow blotch. June, July. Trop. Amer. 1871.
„ „ *ro'sea* (rosy). See U. ENDRESII.
„ *nelumbifo'lia* (Nelumbium-leaved). Brazil.
„ *prehe'nsilis* (prehensile). Yellow. Summer. Leaves floating. Trop. and S. Africa. 1910.
„ *renifo'rmis* (reniform). 1–2. Rose. Brazil. 1886.
„ *rhyterophy'lla* (rein-leaved). See U. LONGIFOLIA.

UVA'RIA. (From *uva*, a cluster of grapes; the resemblance of the fruit. Nat. ord. *Anonads* [Anonaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Stove evergreens, brown-flowered, except where otherwise mentioned. Cuttings of firm side-shoots in May, in sand, under a bell-glass, in heat; sandy loam and fibrous peat. Winter temp., 55° to 60°; summer, 60° to 85°.

U. acumina'ta (sharp-pointed). 6. Trop. Africa. 1820.
„ *aroma'tica* (aromatic). See UNONA CONCOLOR.
„ *escule'nta* (eatable). See ARTABOTRYS ODORATISSIMUS.
„ *fascicula'ta* (bundled). See POLYALTHIA SIMIARUM.
„ *fusca'ta* (brown). 5. Guiana. 1823.
„ *Gæ'rtneri* (Gærtners'). 6. Ceylon. 1820.
„ *Ki'rkii* (Kirk's). 4. Buff yellow. Trop. Africa. 1870.

U. lanceola'ta (lanceolate). See GUATTERIA VIRGATA.
„ *longiflo'ra* (long-flowered). See POLYALTHIA LONGIFOLIA.
„ *longifo'lia* (long-leaved). See POLYALTHIA LONGIFOLIA.
„ *lu'cida* (shining). Trop. Africa. 1825.
„ *lu'tea* (yellow). See ALPHONSEA LUTEA.
„ *macro'poda* (long-stalked). Ceylon.
„ *membrana'cea* (membranous). Australia.
„ *microca'rpa* (small-fruited). 3. Brown. July. China. 1822.
„ *Na'rum* (Narum). 10. Brownish. India.
„ *nitidi'ssima* (most-shining). Blue. Caledonia. 1825.
„ *odora'ta* (sweet-scented). See CANANGA ODORATA.
„ *purpu'rea* (purple). Trop. Asia.
„ *tomento'sa* (woolly). See SACCOPETALUM TOMENTOSUM.
„ *veluti'na* (velvety). See MILIUSA VELUTINA.
„ *villo'sa* (shaggy). See MILIUSA VELUTINA.
„ *vi'rens* (green). Yellow-green. Delagoa Bay. S. Africa. 1896.
„ *zeyla'nica* (Ceylon). 20. Scarlet. India; Ceylon. 1794.

UVULA'RIA. (Formerly used in diseases of the *uvula*. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)
Hardy, North American, herbaceous perennials; yellow-flowered, except *grandiflo'ra*. Division of the plant in spring; light, sandy loam.
U. amplexicau'lis (stem-clasping). See STREPTOPUS DISTORTUS.
„ *chine'nsis* (Chinese). See DISPORUM PULLUM.
„ *fla'va* (yellow). See U. PERFOLIATA.
„ *grandiflo'ra* (large-flowered). 1. Purple. May. 1802.
„ *hi'rta* (hairy). See TRICYRTIS HIRTA.
„ *lanceola'ta* (spear-*leaved*). See U. PERFOLIATA.
„ *lanugino'sa* (woolly). See DISPORUM LANUGINOSUM.
„ *leschenaultia'na* (Leschenaultian). See DISPORUM LESCHENAULTIANUM.
„ *perfolia'ta* (leaf-stem-pierced). ½. May. 1710.
„ *pube'rula* (downy). ½. May. 1824.
„ *ro'sea* (rosy). See STREPTOPUS ROSEUS.
„ *sessilifo'lia* (stalkless-leaved). ½. June. 1790.
„ *se'ssilis* (sessile). See DISPORUM SESSILE.

V

VACCA'RIA PARVIFLO'RA. See SAPONARIA VACCARIA.

VACCI'NIUM. Whortleberry. (The derivation is doubtful, perhaps from *bacca*, a berry. Nat. ord. *Cranberries* [Vacciniaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
Seeds in autumn; cuttings under a hand-light in summer; suckers; divisions; rooting stems from trailing along the ground; very sandy loam; if a portion of peat all the better. All hardy except *caracasa'num*, *leuco'stomum*, *meridiona'le*, and *Rolliso'ni*, and all deciduous, and natives of North America, unless otherwise mentioned.
V. albiflo'rum (white-flowered). See V. CORYMBOSUM.
„ *amœ'num* (lovely). See V. CORYMBOSUM AMŒNUM.
„ *angustifo'lium* (narrow-leaved). See V. PENNSYLVANICUM ANGUSTIFOLIUM.
„ *arbo'reum* (tree). White, red. 1765. "Farkleberry."
„ *Arctosta'phylos* (Arctostaphylos). 3–4. White. Caucasus; Armenia.
„ *brasilie'nse* (Brazilian). See GAYLUSSACIA PSEUDOVACCINIUM.
„ *buxifo'lium* (box-leaved). See GAYLUSSACIA BRACHYCERA.
„ *cæspito'sum* (turfy). ½. White. May. 1823.
„ *canade'nse* (Canadian). 1. White, red. May. 1825. "Canadian Whortleberry."
„ *caracasa'num* (Caracas). 6. White. July. Caracas. 1825. Stove evergreen.
„ *ce'reum* (waxy). Friendly Islands.
„ *cilia'tum* (eye-lashed). Japan.
„ *corymbo'sum* (corymbed). 7. White. May. 1765. "Common Blueberry; Swamp Blueberry."
„ „ *amœ'num* (lovely).
„ „ *angustifo'lium* (narrow-leaved). 3. White. 1767.
„ „ *fusca'tum* (browned). 2. White, pink. June. Southern United States. 1770.
V. corymbo'sum virga'tum (twiggy). 3. White, red. April. 1767.
„ *crassifo'lium* (thick-leaved). 1. White. June. 1787.
„ *diffu'sum* (diffuse). See V. ARBOREUM.
„ *dumo'sum* (bushy). See GAYLUSSACIA DUMOSA.
„ „ *hu'mile* (humble). See GAYLUSSACIA DUMOSA.
„ *elonga'tum* (elongated). See V. CORYMBOSUM.
„ *erythri'num* (red-*twigged*). 1½. Scarlet. Java. 1852. Stove.
„ *erythroca'rpum* (red-fruited). May. Berry red. 1806.
„ *frondo'sum* (leafy). See GAYLUSSACIA FRONDOSA.
„ „ *venu'stum* (beautiful). See GAYLUSSACIA FRONDOSA VENUSTA.
„ *fusca'tum* (browned). See V. CORYMBOSUM FUSCATUM.
„ *gale'zans* (gale-*leaved*). See V. VIRGATUM.
„ *gla'brum* (smooth). 2. Pink. July. 1812.
„ *glau'co-a'lbum* (glaucous-white). Himalaya.
„ *grandiflo'rum* (large-flowered). See V. CORYMBOSUM.
„ *hirsu'tum* (hairy). Mountains of North Carolina. 1889.
„ *humifu'sum* (trailing). See GAULTHERIA MYRSINITES.
„ *Imra'yi* (Imray's). See HORNEMANNIA MARTINICENSIS.
„ *interme'dium* (intermediate). (*V. Myrtillus* × *Vitis-Idæa*.) Europe.
„ *japo'nicum* (Japanese). Japan.
„ *leuco'botrys* (white-bunched). See V. SERRATUM LEUCOBOTRYS.
„ *leuco'stomum* (white-lipped). 2. Scarlet, white. Peru. 1847. Greenhouse evergreen.
„ *ligustri'num* (privet-*leaved*). See LYONIA LIGUSTRINA.
„ *macroca'rpum* (large-fruited). See OXYCOCCUS MACROCARPUS.
„ *madere'nse* (Madeira). 4–6. Greenish-white. Madeira. 1777.
„ *meridiona'le* (meridional). 2. Red, white. April. Jamaica. 1778. Stove evergreen.
„ *minutiflo'rum* (small-flowered). See V. PENNSYLVANICUM.
„ *Morti'nia* (Mortinia). 2–3. Rose-pink. Andes of Ecuador. 1884. Greenhouse.
„ *Myrsini'tes* (Myrsine-*leaved*). 1½. Purple. May.
„ „ *lanceola'tum* (spear-*leaved*). 1½. Purple. May.
„ „ *obtu'sum* (blunt). 1½. Purple. May.
„ *myrtifo'lium* (myrtle-leaved). See V. CRASSIFOLIUM.
„ *myrtilloi'des* (Myrtillus-like). See V. PENNSYLVANICUM.
„ *Myrti'llus* (myrtle). 1½. Pink. May. Northern Hemisphere (Britain). "Whortleberry; Bilberry; Blaeberry."
„ „ *fru'ctu a'lbo* (white-fruited). Green; fruit white. May. Britain.
„ *ni'tidum* (glossy). 1½. Pink. May. 1794.
„ „ *decu'mbens* (lying-down). ¾. Pink. May. 1794.
„ *occidenta'le* (western). Mountains of California and Utah.
„ *ova'tum* (egg-*leaved*). 2. Pink. May. North-western Amer. 1826.
„ *Oxyco'ccus* (Oxycoccus). See OXYCOCCUS PALUSTRIS.
„ *padifo'lium* (bird-cherry-leaved). Pale green. July. Madeira. 1777.
„ *pa'llidum* (pale). See V. CORYMBOSUM.
„ *parviflo'rum* (small-flowered). See GAYLUSSACIA RESINOSA.
„ *parvifo'lium* (small-leaved). 1. North-western Amer. "Dwarf Blueberry."
„ *pennsylva'nicum* (Pennsylvanian). 1½. White, blue. June. 1772.
„ „ *angustifo'lium* (narrow-leaved). 2. Pale yellow. May. 1776.
„ *refle'xum* (reflexed). 1–2. Red. Winter. Bolivia. 1869. Stove.
„ *resino'sum* (resinous). See GAYLUSSACIA RESINOSA and varieties.
„ *reticula'tum* (netted). See V. CEREUM.
„ *Rolliso'ni* (Rollison's). 2. Scarlet. August. Java Mountains. 1851. Greenhouse.
„ *rugo'sum* (wrinkled). See PENTAPTERYGIUM RUGOSUM.
„ *se'rpens* (creeping). See PENTAPTERYGIUM SERPENS.
„ *serra'tum* (serrated). 3–4. White. Himalaya. 1859.
„ „ *leuco'botrys* (white-bunched). Berries white.
„ *Sprenge'lii* (Sprengel's). See V. MYRSINITES.
„ *stami'neum* (*long*-stamened). 2. White. May. 1772.
„ „ *a'lbum* (white-*flowered*). 2. White. Mexico.
„ *tene'llum* (very-slender). See V. VIRGATUM TENELLUM.
„ *vaci'llans* (wavering). N. Amer.
„ *virga'tum* (twiggy). 2–3. Rose. May. 1806.

V. virga'tum tene'llum (very slender). 1½. White.
„ *uligino'sum* (bog). 2. Flesh. April. Britain. "Bog Blaeberry."
„ *Vi'tis-Idæ'a* (Vitis-Idæa). ¾. Pink. May. Britain. "Cowberry." Evergreen.
„ „ *ma'jor* (larger). Leaves larger.
„ „ *mi'nor* (smaller). Leaves smaller than the type.

VAGA'RIA. (From *vagus*, doubtful, uncertain. Nat. ord. Amaryllidaceæ. Allied to Eurycles.)
Hardy or half-hardy bulb. Offsets; seeds. Fibrous loam, leaf-mould, and sand.
V. parvifio'ra (small-flowered). 1–2. White, with green keel. Autumn. Syria; Tripoli. 1815.

VALDI'VIA. (Named after *Valdivia*, in Chili. Nat. ord. Saxifragaceæ.)
Half-hardy, evergreen herb. Cuttings under a hand-light; divisions. Light soil; or loam, leaf-mould, and sand in a frame.
V. gaya'na (Gayan). 2. Rose. Chili. 1863.

VALENZUE'LIA. (A commemorative name. Nat. ord. Sapindaceæ. Allied to Paullinia.)
Greenhouse evergreen shrub or small tree. Cuttings in sand under a bell-glass. Loam, peat, and sand.
V. trine'rvis (three-nerved). 5–10. Chili.

VALERIA'NA. Valerian. (Named after *Valerius*, who first used it in medicine. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)
Hardy herbaceous perennials. Divisions of the root in spring, and seeds; common garden-soil; the tenderer sorts should have a dry place.
V. alliariæfo'lia (Alliaria-leaved). 1½. Red. June. Caucasus. 1826.
„ *angustifo'lia* (narrow-leaved). See CENTRANTHUS SIBTHORPII.
„ *a'pula* (Apulian). Red. June. Europe.
„ *arizo'nica* (Arizonian). 1. Whitish or pink. Arizona, &c. 1901.
„ *asarifo'lia* (Asarum-leaved). 1. Red. June. Crete. 1824.
„ *Calci'trapa* (Calcitrapa). See CENTRANTHUS CALCITRAPA.
„ *cape'nsis* (Cape). ½. Red. June. S. Africa. 1816.
„ *ce'ltica* (Celtic). 1. White. June. Switzerland. 1784.
„ *ceratophy'lla* (horn-leaved). 1½. Snow-white. Mexico. 1909. Half-hardy.
„ *Cornuco'piæ* (horn-of-plenty). See FEDIA CORNUCOPLÆ.
„ *denta'ta* (toothed). See VALERIANELLA DENTATA.
„ *dioi'ca* (dioecious). 1. Flesh. June. Europe (Britain).
„ *edu'lis* (edible). North-western Amer.
„ *elonga'ta* (lengthened). ½. Yellow. June. Austria. 1812.
„ *exalta'ta* (tall). Russia.
„ *globulariæfo'lia* (Globularia-leaved). Red. June. Pyrenees.
„ *interme'dia* (intermediate). See V. TRIPTERIS.
„ *Jatama'nsi* (Jatamans'). See NARDOSTACHYS JATAMANSI.
„ *macrophy'lla* (large-leaved). See V. ALLIARIÆFOLIA.
„ *monta'na* (mountain). 1. Light red. July. Switzerland. 1748.
„ *Na'pus* (turnip-*rooted*). White. Mexico. 1839.
„ *officina'lis* (shop). 3. Flesh. June. Europe (Britain). "Cat's Valerian."
„ „ *exalta'ta* (tall). See V. EXALTATA.
„ „ *sambucifo'lia* (elder-leaved). See V. SAMBUCIFOLIA.
„ *Phu'* (Phu). 3. White. August. Caucasus. 1597. "Cretan Spikenard."
„ „ *au'rea* (golden). Leaves yellow when young.
„ *procu'rrens* (running). See V. OFFICINALIS.
„ *pyrena'ica* (Pyrenean). 3. Pink. August. Pyrenees. "Capon's-tail Grass."
„ *rotundi'loba* (round-poded). Chili.
„ *rotundifo'lia* (round-leaved). See V. MONTANA.
„ *ruthe'nica* (Russian). See PATRINIA SIBIRICA.
„ *saliu'nca* (lavender). 1½. Red. June. France. 1824.
„ *sambucifo'lia* (elder-leaved). 3. White. July. Europe (England). 1819.
„ *saxa'tilis* (rock). ½. White. July. Austria. 1740.
V. sibi'rica (Siberian). See PATRINIA SIBIRICA.
„ *sisymbriifo'lia* (Sisymbrium-leaved). 1. Red. June. S. Europe. 1820.
„ *supi'na* (flat-lying). ½. White, red. July. Switzerland. 1822.
„ *tri'pteris* (three-winged). 1. White. May. Switzerland. 1752.
„ *tubero'sa* (tuberous-rooted). 1½. Light, red. June. S. Europe. 1629.

VALERIANE'LLA. Lamb's Lettuce. (A diminutive of *Valeriana*. Nat. ord. *Valerianworts* [Valerianaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)
Hardy annuals. Seeds in the open border, in spring. See CORN SALAD.
V. Auri'cula (Auricula). 1. Rose. June, July. Europe (England).
„ *carina'ta* (keeled). ½. Pale blue. April to June. Europe (Britain).
„ *conge'sta* (crowded-*flowered*). 1. Red. July. Columbia. 1826.
„ „ *mi'nor* (smaller). 1. Rose. July. 1826.
„ *corona'ta* (crowned). 1. June, July. S. Europe.
„ *denta'ta* (toothed). ½. Lilac. June, July. Europe (Britain).
„ *echina'ta* (prickly-*capsuled*). 1. Pink. July. S. Europe. 1809.
„ *eriocа'rpa* (woolly-fruited). ½. Lilac. June. Europe (England).
„ *olito'ria* (salad). ½. Blue. April. Europe (Britain). "Lamb's Lettuce; Corn Salad."
„ *samolifo'lia* (Samolus-leaved). 1. Rose. July. North-Western Amer. 1835.
„ *vesica'ria* (bladdery). 1. June, July. S. Europe.

VALERIAN, GREEK. *Polemo'nium cæru'leum.*

VALERIAN, LONG-SPURRED. *Centra'nthus macro'siphon.*

VALERIAN, RED. *Centra'nthus ru'ber.*

VALLA'RIS. (From *vallo*, to inclose; used for fences in Java. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove evergreen twiner. Cuttings of short, firm, stubby side-shoots in sandy soil, under a glass, in heat, in May; sandy, fibrous loam, and fibrous peat. Winter temp., 55° to 60°; summer, 60° to 85°.
V. Pergula'na (trellis). 10. White. India; Malaya. 1818.

VALLE'SIA. (Named after *F. Vallesio*, physician to Philip II of Spain. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove, white-flowered evergreens. Cuttings of young shoots, getting firm, in sand, under a bell-glass in heat; sandy loam and fibrous peat. Winter temp., 55° to 60°; summer, 60° to 85°.
V. cymbæfo'lia (boat-leaved). 4. June. Mexico. 1821.
„ *dicho'toma* (forked). See V. CYMBÆFOLIA.
„ *gla'bra* (smooth). See V. CYMBÆFOLIA.

VALLISNE'RIA. (Named after *A. Vallisneri*, an Italian botanist. Nat. ord. *Hydrocharads* [Hydrocharidaceæ]. Linn. 22-*Dioecia*, 2-*Diandria*.)
A floating, fresh-water perennial, whose flowers live under water, except just at the time of impregnation. Division; rich loam, in a good-sized pot, plunged deep in a tub or cistern of water. Winter temp., 45° to 50°; summer, 60° to 80°.
V. spira'lis (spiral). Brown. July. S. Europe. 1818.

VALLO'TA. (Named after *P. Vallot*, a French botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Cyrtanthus.)
With the exception of Dr. Herbert, no systematic botanist had previously pointed out the real affinity of Vallota. A cross-seedling, by its pollen, has been obtained by Mr. Beaton from *Cyrta'nthus obli'quus*, which no one could distinguish from a Vallota of the same age. Greenhouse, scarlet-flowered bulbs, from South Africa. Offsets; sandy loam and peat, and leaf-mould. Winter temp., 40° to 45°, and dry; summer, 60° to 75°.
V. purpu'rea (purple). 1½. May. 1774. "Scarborough Lily."
„ „ *delica'ta* (delicate). 1. Pale red. 1893.

V. purpu'rea exi'mia (choice). Red, white throat, with crimson blotch.
„ „ *magni'fica* (magnificent). Bright scarlet.
„ „ *ma'jor* (greater). May. 1774.
„ „ *mi'nor* (smaller). 1. May. 1774.

VALONIA OAK. *Que'rcus Æ'gilops.*

VALORA'DIA PLUMBAGINOI'DES. See CERATOSTIGMA PLUMBAGINOIDES.

VANCOUVE'RIA. (Named after *Fort Vancouver.* Nat. ord. Berberidaceæ. Allied to Epimedium.)
Hardy perennial herb. Divisions. Light, well-drained soil.

V. hexa'ndra (six-stamened). ½. Lilac. May. North-western Amer. 1827. "Barrenwort."

VA'NDA. (The Sanscrit name of the first-found species. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids, grown in baskets. See ORCHIDS.

V. alpi'na (alpine). Green, yellow, purple. Himalaya. 1837.
„ *amesia'na* (Amesian). White, fragrant. India. 1887.
„ *ame'na* (lovely). White, purple. July. (*V. cærulea* × *Roxburghii*.) 1897. Natural hybrid
„ „ *Sa'nderæ* (Mrs. Sander's). Flowers finer and more handsome. 1908.
„ *arbuthnotia'na* (Arbuthnotian). Golden-yellow, striped with pale purple. Malabar. 1892.
„ *Batema'nnii* (Mr. Bateman's). See STAUROPSIS LISSOCHILOIDES.
„ *Benso'ni* (Benson's). Green, with crimson spots. Burma. 1886.
„ „ *tri'stis* (sad). Sulphur-yellow without, dirty brown within; lip whitish-yellow. 1896.
„ *bi'color* (two-coloured). 3. Brownish-purple, tessellated. Himalaya. 1896.
„ *Boxa'llii* (Boxall's). White, with dark tips to the segments. Philippines. 1881.
„ „ *cobbia'na* (Cobbian). White, purple striped, dark purple-brown. 1881.
„ *cæru'lea* (light blue). Light sky-blue; lip deep blue. Winter. Himalaya. 1849.
„ „ *Charleswo'rthii* (Charlesworth's). Large, pure white, with a yellow blotch on the lip. 1908.
„ „ *grandiflo'ra* (large-flowered). Flowers of large size. 1881.
„ „ *peetersia'na* (Peetersian). Large, white, tinted with rose. Khasia. 1897.
„ „ *Sa'nderæ* (Mrs. Sander's). White, tipped with magenta-pink; lip deep magenta. 1910.
„ *cærule'scens* (bluish). Lilac, blue. Burma. 1869.
„ „ *Boxa'llii* (Boxall's). See V. CONFUSA.
„ „ *lowia'na* (Lowian). White, tipped with amethyst; lip amethyst. India. 1877.
„ „ *Regnie'ri* (Regnier's). Flowers darker than the type. 1900.
„ *Charleswo'rthii* (Charlesworth's). White, veined and marbled with purple. (Nat. hyb. *V. cæru'lea* × *Bensoni*.) 1894.
„ *Cla'rkei* (Clarke's). See ARACHNANTHE CLARKEI.
„ *co'ncolor* (one-coloured). 3–5. White, brown. China. 1850.
„ *confu'sa* (confused). White; lip lavender, striped blue. Burma. 1877. (*V. cærulescens* × *parviflora*.)
„ *conge'sta* (crowded). See ACAMPE CONGESTA.
„ *crista'ta* (crested). 1. Green, purple. April. Nepaul. 1818.
„ *crue'nta* (bloody). 2. Red. August. China. 1819.
„ *Cumi'ngii* (Cuming's). See V. LAMELLATA.
„ *Dea'rei* (Deare's). 3. Yellow. Sunda Isles. 1886.
„ *denisonia'na* (Denisonian). White, orange. Burma. 1862.
„ „ *hebra'ica* (Hebraic). Sulphur, with markings like Hebrew characters. Burma. 1885.
„ „ *puncta'ta* (dotted). Sulphur; lip white, with brown spots. 1881.
„ *densiflo'ra* (dense-flowered). Burma. 1851.
„ *Flore'yæ* (Mrs. Florey's). White; lip violet. Supposed natural hybrid. 1910.
„ *fu'rva* (dusky). Brown, white. December. China. 1844.
„ *fu'sco-vi'ridis* (brown-and-green). See V. FURVA.
„ *gigante'a* (giant). See STAUROPSIS GIGANTEA.
V. Go'weri (Gower's). See STAUROPSIS UNDULATA.
„ *Griffi'thii* (Griffith's). See V. ALPINA.
„ *hasti'fera* (shield-bearing). Light yellow; lip white, brown, mauve. Sunda Isles. 1883.
„ *he'lvola* (sun-flying). Red, purple. Java. 1850.
„ *hookeria'na* (Hookerian). White, with lines of purple dots, rich purple. Borneo. 1882.
„ *insi'gnis* (showy). 2. Crimson, brown, white. February. Java. 1848.
„ „ *Schröderia'na* (Schröderian). Yellow; lip white. Malaya. 1883.
„ *kimballia'na* (Kimballian). 1. Pure white; lip rosy-purple. Burma. 1889.
„ „ *La'ckneræ* (Mrs. Lackner's). Snow-white, with a few yellow spots on the spur. 1894.
„ *lamella'ta* (layered). Pale. August. Manilla. 1837.
„ „ *Boxa'llii* (Boxall's). Ochre, with purple base; lip lake. Philippines. 1880.
„ „ *Boxa'llii supe'rba* (superb). White, spotted claret; lip claret. 1888.
„ *limba'ta* (bordered). Brown, yellow, lilac. Java. 1875.
„ *Li'ndeni* (Linden's). Light yellow; lip with red dots and lines. Sunda Isles. 1886.
„ *lissochiloi'des* (Lissochilus-like). See STAUROPSIS LISSOCHILOIDES.
„ *longifo'lia* (long-leaved). See ACAMPE LONGIFOLIA.
„ *Lo'wei* (Lowe's). See ARACHNANTHE LOWII.
„ *Moo'rei* (Moore's). Supposed natural hybrid. (*V. cærulea* × *kimballiana*.) Burma. 1897.
„ *multiflo'ra* (many-flowered). See ACAMPE MULTIFLORA.
„ *Pari'shii* (Parish's). Yellow, white, violet. Burma. 1870.
„ „ *marriottia'na* (Marriottian). Mauve, with darker blotches; lip white, lake. Burma. 1880.
„ „ *purpu'rea* (purple). See V. PARISHII MARRIOTTIANA.
„ *parviflo'ra* (small-flowered). Yellow, white, purple. India; Burma.
„ *pedunculo'ris* (*long*-flower-stalked). See COTTONIA MACROSTACHYA.
„ *pu'mila* (dwarf). 1. Ivory-white; lip striped crimson. Sikkim. 1897.
„ *recu'rva* (recurved). See SARCANTHUS ROSTRATUS.
„ *Roxbu'rghii* (Roxburgh's). 1½. White, purple. July. India; Burma. 1810.
„ „ *ru'bra* (red). Brown, tessellated with yellow; lip reddish. 1885.
„ „ *tessella'ta* (chequered). 1. White, purple. July. China. 1816.
„ „ *uni'color* (one-coloured). See V. CONCOLOR.
„ „ *wrightia'na* (Wrightian). Lip very short, purple. 1883.
„ *sanderia'na* (Sanderian). 2–2½. Mauve, lined purple, yellow, veined purple. Philippines. 1882.
„ „ *alba'ta* (whitish). White, marked purple, and suffused with yellow. 1887.
„ „ *Fræbe'liæ* (Madame Frœbel's). Very large, richly coloured. 1902.
„ „ *labe'llo-viridi* (green-lipped). Lip green. 1886.
„ „ *ro'seo-a'lba* (rosy-white). White; lower petals greenish, with purple veins at base. 1902.
„ *schröderia'na* (Schröderian). See V. INSIGNIS SCHRÖDERIANA.
„ *spathula'ta* (spathulate). S. India.
„ *stangea'na* (Stangean). Ochre, netted with dark purple-brown; lip white, blue. Assam. 1885.
„ *sua'vis* (sweet-scented). White, brown. September. Java. 1847.
„ „ *fla'va* (yellow). Yellow, spotted with brown.
„ „ *Gottscha'lckei* (Gottschalcke's). White, with red purple spots. 1869.
„ „ *Li'ndeni* (Linden's). White; lip white at base, the rest purple. 1886.
„ „ *magni'ficens* (magnificent). Flowers larger and more brightly coloured. 1897.
„ „ *pa'llida* (pale). Cream-white, with yellow-green spots. 1908.
„ „ *Rollisso'ni* (Rollisson's).
„ „ *Vei'tchii* (Veitch's).
„ *supe'rba* (superb). See V. LAMELLATA BOXALLII SUPERBA.
„ *te'res* (cylindric-*leaved*). 2. Red, yellow. March. India. 1828.
„ „ *a'lba* (white). Pure white. 1892.

V. te'res Anderso'ni (Anderson's). Highly coloured.
„ „ *auro'rea* (aurora). White; lip reddish, and pale yellow throat. 1881.
„ „ *ca'ndida* (white). See V. TERES ALBA.
„ „ *gigante'a* (giant). Large and richly coloured. 1896.
„ *terctifo'lia* (terete-leaved). See SARCANTHUS TERETIFOLIUS.
„ *tessella'ta* (tessellated). See V. ROXBURGHII TESSELLATA.
„ *testa'cea* (reddish-yellow). See V. PARVIFLORA.
„ *tri'color* (three-coloured). Light yellow, densely spotted with red-brown. Java. 1846.
„ „ *cinnamo'mea* (cinnamon). Yellow, and cinnamon. Java. 1869.
„ „ *Dodgso'ni* (Dodgson's). Amber-yellow, sparingly spotted; lip magenta.
„ „ *Ho'veæ* (Mrs. Hove's). Yellowish, thickly spotted with red; lip rose-crimson.
„ „ *insi'gnis* (remarkable). Bright yellow, regularly spotted with red-brown; lip rose-carmine.
„ „ *Lewi'sii* (Lewis's). Pale yellow, neatly spotted with red-brown. 1894.
„ „ *Patterso'ni* (Patterson's). Cream, spotted chestnut-brown; lip magenta-purple. 1883.
„ „ *planila'bris* (flat-lipped). Lip flat, magenta-purple to rose-purple.
„ „ *russelia'na* (Russelian). Yellow, spotted with bright red-brown.
„ „ *tenebro'sa* (dark). Yellow, spotted dark red-brown; lip rose-crimson. 1903.
„ „ *Walli'chii* (Wallich's). Yellow, spotted with brown; lip lilac. 1893.
„ „ *Wa'rneri* (Warner's). Yellow, edged with rose; lip rose-purple.
„ *undula'ta* (waved). See STAUROPSIS UNDULATA.
„ *viola'cea* (violet-*lipped*). White, violet. May. Manilla. 1839.
„ *Vipa'nii* (Vipan's). Dark brown, with paler netting; lip white, stained with purple. Burma. 1882.
„ *Wa'tsoni* (Watson's). White; lip deep yellow, spotted red-brown at the base. Annam. 1905.
„ *wightia'na* (Wightian). See ACAMPE WIGHTIANA.

VANDE'LLIA. (Named after *L. Vandelli*, a Portuguese botanist. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Torenia.)
Tender annuals. Seeds in a hotbed. in spring; plants pricked off, and bloomed chiefly in the greenhouse, in light, rich soil.

V. Brow'nii (Brown's). See V. CRUSTACEA.
„ *crusta'cea* (shelly). Blue. June. Tropics everywhere. 1816.
„ *diffu'sa* (spreading). 1. White. July. Santa Cruz. 1824.
„ *hirsu'ta* (hairy). Blue. June. India. 1823.
„ *peduncula'ta* (long-stalked). Purple. July. Trop. Asia. 1818.
„ *Roxbu'rghii* (Roxburgh's). See V. PEDUNCULATA.

VANGUE'RIA. (*Voa-vanguer*, the name of *edu'lis* in Madagascar. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Plectronia.)
It produces a good dessert fruit. Stove evergreen. Cuttings of half-ripened shoots in sand, under a bell-glass; sandy peat and fibrous loam. Winter temp., 50° to 55°; summer, 60° to 85°.

V. edu'lis (eatable). 10. White. Madagascar. 1809. "Voa Vanga."
„ *infau'sta* (unlucky). 3. Pale yellow-green. May. Trop. and S. Africa. 1829.
„ *veluti'na* (velvety) of Hooker. See V. INFAUSTA.

VANI'LLA. (A diminutive of *vaina*, the Spanish for sheath; shape of seed-pod. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)
Stove orchids, grown on blocks, or like Aroids on the damp wall of a moist stove, with the roots in soil; white-flowered, where not otherwise specified. (See ORCHIDS.) The Vanilla of commerce is, or should be, the dried fruit of *V. planifo'lia*.

V. acutifo'lia (pointed-leaved). Caracas. 1841.
„ *africa'na* (African). Sierra Leone. 1843.
„ *aroma'tica* (aromatic) of Willdenow. See V. PLANIFOLIA.
„ *bi'color* (two-coloured). Dull red. Guiana.
„ *clavicula'ta* (tendrilled). Cuba. 1838.
V. grandiflo'ra (large-flowered). See P. POMPONA.
„ *grandifo'lia* (large-leaved). Flowers very large. W. Trop. Africa; Congo. 1904.
„ *Humblo'tii* (Humblot's). Bright yellow; lip with brown markings. Leafless. Comoro Islands. 1900.
„ *Lu'jæ* (Luja's). Flowers very large. Congo Free State. 1904.
„ *lute'scens* (yellow). See V. POMPONA.
„ *Moo'nii* (Moon's). Ceylon.
„ *palma'rum* (palms'). Brazil and Guiana.
„ *Phalæno'psis* (Phalænopsis). Bluish-white, with rose and orange markings. Seychelle Islands. 1869.
„ *planifo'lia* (smooth-leaved). 10. May. W. Ind. 1739.
„ *Pompo'na* (Pompona). White or pale yellow. Mexico. 1859.
„ *Rosche'ri* (Roscher's). Zanzibar.
„ *Wa'lkeræ* (Mrs. Walker's). S. India.
„ *wightia'na* (Wightian). Pale yellow, tipped green; lip with red-purple crest. S. India. 1899.

VAPOURER MOTH. *Orgy'ia anti'qua.*

VARIEGATED LAUREL. *Au'cuba japo'nica.*

VASCO'A. (Commemorative of *Vasco de Gama*, who first sailed round the Cape of Good Hope in 1497. Nat. ord. Leguminosæ. Now referred to Rafnia.)

V. amplexicau'lis (stem-clasping). See RAFNIA AMPLEXICAULIS.
„ *perfolia'ta* (perfoliate). See RAFNIA PERFOLIATA.

VASCONCE'LLEA. See CARICA.

VEGETABLE BUTTER. *Ba'ssia butyra'cea.*

VEGETABLE FIRE-CRACKER. *Brevoo'rtia I'da Ma'ia.*

VEGETABLE HAIR. *Tilla'ndsia usneoi'des.*

VEGETABLE IVORY. *Phyte'lephas macroca'rpa.*

VEGETABLE MANURES. See GREEN MANURES, ASHES, and MANURES.

VEGETABLE MARROW. *Cucu'rbita Pe'po ovi'fera.*

VEGETABLE OYSTER. *Tragopo'gon porrifo'lius.*

VEI'TCHIA JAPO'NICA, of Lindley. See PICEA ALCOCKIANA.

VEI'TCHIA. (Commemorative of the late *James Veitch*, of Chelsea, the leading nurseryman of his time. Nat. ord. Palmaceæ.)
Stove palms. Seeds. Loam, one-third peat, and sand.

V. canterburya'na (Canterburyan). See HEDYSCEPE CANTERBURYANA.
„ *Joha'nnis* (John Gould Veitch's). Fiji. 1868.
„ *Sto'rckii* (Storck's). 40. Fiji.

VELE'ZIA. (A commemorative name. Nat. ord. Caryophyllaceæ. Allied to Dianthus.)
Hardy annual for the rockery. Seeds. Light, well-drained soil.

V. ri'gida (rigid). ½. Mediterranean region.

VE'LLA. Cress Rocket. (From *velar*, the Celtic name of cress. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*.)
Half-hardy evergreen. Cuttings of young shoots in sand, under a hand-light, in a shady place, in summer; a dry, airy, warm situation, such as in raised rock-work. North of London, in exposed, damp places, it will require a little protection in winter.

V. a'nnua (annual). See CARRICHTERA VELLÆ.
„ *Pseu'docy'tisus* (bastard-cytisus). 3. Yellow. April. Spain. 1759.

VELLEI'A. (Named after *Major Velley*, who studied sea-weeds. Nat. ord. *Goodeniads* [Goodeniaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Includes Euthales.)
Greenhouse, yellow-flowered evergreens, from Australia. Division; sandy loam and peat. Winter temp., 35° to 45°.

V. lanceola'ta (spear-*leaved*). See GOODENIA FILIFORMIS.
„ *lyra'ta* (lyre-*leaved*). ½. April. 1819.
„ *macrophy'lla* (large-leaved). 3-4. Yellow, brown. July. 1839.
„ *parado'xa* (paradoxical). ½. July. 1824.

V. spathula'ta (spathulate). ½. April. 1825.
„ *trine'rvis* (three-nerved). 1. Purple, yellow. July. 1803.

VELLO'ZIA. (Named after a Spanish botanist. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Barbacenia.)

The Vellozias are perennials, from two to ten feet high, having trunks as large as a man's body, branching, and having tufts of leaves on the top like the Yucca. Greenhouse herbaceous. Division of the plant in spring; sandy loam and fibrous peat. Winter temp., 40° to 50°; summer, 60° to 80°.

V. ca'ndida (white). White. Brazil. 1865.
„ *compa'cta* (compact). Brazil.
„ *e'legans* (elegant). White, fading to green. S. Africa. 1866.
„ *equisetoi'des* (Equisetum-like). See V. EQUISETOIDES TRICHOPHYLLA.
„ „ *trichophy'lla* (hair-leaved). 3–5. Lilac purple, fragrant. British Central Africa. 1903.
„ *lanceola'ta* (spear-*leaved*). Yellow. Swan River. 1841.
„ *phaloca'rpa* (stud-fruited). Brazil.
„ *retine'rvis* (net-veined). 10–12. Blue. S. Africa. 1876.
„ *squama'ta* (scaly). See BARBACENIA SQUAMATA.
„ *Ta'lboti* (Talbot's). See V. ELEGANS.

VELTHEI'MIA. (Named after *F. A. Veltheim*, a German botanist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Urginea.)

Greenhouse bulbs, from South Africa, with flesh-coloured flowers. Offsets from the bulbs; rich, sandy loam. Winter temp., 35° to 45°.

V. glau'ca (milky-green). 2. March. 1781.
„ „ *rubesce'nti-purpu'rea* (red-purple). 1. Red, purple. July. 1834.
„ *interme'dia* (intermediate). 1½. April. 1800.
„ *specio'sa* (showy). See KNIPHOFIA ALOIDES.
„ *Uva'ria* (Uvaria). See KNIPHOFIA ALOIDES.
„ *viridifo'lia* (green-leaved). 2. August. 1768.

VENI'DIUM. (Derivation not evident. Nat. ord. Compositæ. Allied to Arctotis.)

Hardy annuals and half-hardy or greenhouse perennials. Seeds; cuttings in sand under a bell-glass. Light, rich soil in the open. Loam, leaf-mould, or peat and sand, if grown in pots.

V. calendula'ceum (Calendula-like). ½–1. Yellow; disc black. July to October. S. Africa.
„ *cinera'rium* (Cineraria-like). See V. PERFOLIATUM.
„ *fu'gax* (fleeting). ½–1½. Yellow, with dark spots at base of rays; disc black. S. Africa. 1887. Annual.
„ *hirsu'tum* (hairy). 1. Rays pale yellow; disc brown. S. Africa. 1887. Annual.
„ *perfolia'tum* (perfoliate). ½–1. Yellow. S. Africa.
„ *semipappo'sum* (half-pappused). 1–2. Orange. June. S. Africa. 1768.
„ *specio'sum* (showy) of gardens. See V. HIRSUTUM.

VENTENA'TIA MI'NOR. See STYLIDIUM LINEARE.

VENTILA'GO. (From *ventilo*, to swing in the wind. Nat. ord. Rhamnaceæ.)

A climbing stove shrub. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

V. maderaspata'na (Maderaspatan). Green. India. 1822.

VENTILATION. See GREENHOUSE.

VENUS' FLY-TRAP. *Dionæ'a musci'pula.*

VENUS' HAIR. *Adia'ntum Capi'llus-Ve'neris.*

VENUS' LOOKING-GLASS. *Specula'ria Spe'culum.*

VENUS' NAVELWORT. *Omphalo'des.*

VENUS' SUMACH. *Rhu's Coti'nus.*

VE'PRIS LANCEOLA'TA. See TODDALIA LANCEOLATA.

VERA'TRUM. False Hellebore. (From *vere*, truly, and *ater*, black; colour of the roots. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 23-*Polygamia*, 1-*Monœcia*.)

The plants in this genus are all poisonous. Hardy herbaceous perennials. Seeds and divisions in spring; deep, rich loam.

V. a'lbum (white). 5. White. July. Europe. 1548. " White Hellebore."
V. angustifo'lium (narrow-leaved). See STENANTHIUM ANGUSTIFOLIUM.
„ *califo'rnicum* (Californian). 5–6. White, with dark green centre. North-western Amer. 1900.
„ *fri'gidum* (cold). See STENANTHIUM FRIGIDUM.
„ *lobelia'num* (Lobel's). See V. ALBUM.
„ *Maa'ckii* (Maack's). 2. Blackish. June to August. Siberia, &c. 1883.
„ *ni'grum* (dark-*flowered*). 3. Dark purple. June. Siberia. 1596.
„ *parviflo'rum* (small-flowered). 2. Green. June. Carolina. 1809.
„ *Sabadi'lla* (Sabadilla). 3. White. May. Mexico. 1830.
„ *vi'ride* (green-*flowered*). 5. Green. July. N. Amer. 1742. " Indian Poke."

VERBA'SCUM. Mullein. (From *barbascum*, bearded; the bearded stamens. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

All yellow-flowered where not otherwise mentioned. All freely by seeds; perennials also by division of the roots in spring.

HARDY HERBACEOUS.

V. æthio'picum (Ethiopian). May. Mount Sinai. 1825.
„ *alopecu'rus* (foxtail). See V. NIGRUM.
„ *austri'acum* (Austrian). See V. NIGRUM.
„ *betonicæfo'lium* (betony-leaved). 2. July. Armenia. 1825.
„ *chryse'rium* (golden). June. Palestine. 1827.
„ *colli'num* (hill). See V. THAPSUS.
„ *cu'preum* (copper-coloured). See V. PHŒNICEUM.
„ *fascicula'tum* (clustered). See V. SINAITICUM.
„ *ferrugi'neum* (rusty) of Miller. Rusty or reddish-yellow. S. Europe. 1759.
„ *ferrugi'neum* (rusty) of Andrews. See V. PHŒNICEUM.
„ *Hi'nkei* (Hinke's). See V. NIGRUM.
„ *hyoserifo'lium* (Hyoseris-leaved). See V. SPECIOSUM.
„ *lana'tum* (woolly). See V. NIGRUM.
„ *ni'grum* (black-*rooted*). 2. July. Europe (England).
„ *orienta'le* (eastern). 2. July. Caucasus. 1821.
„ *ovalifo'lium* (oval-leaved). 1. Caucasus. 1804.
„ *phœni'ceum* (purple). 3. Purple. July. S. Europe. 1796.
„ *plica'tum* (plaited). July. Greece. 1816.
„ *si'mplex* (simple). 3–4. July. Syria. 1825. Shrubby.
„ *sinai'ticum* (Sinaitic). May. Mount Sinai. 1826.
„ *specio'sum* (showy). June. Eastern Europe; Asia Minor. 1829.
„ *spino'sum* (thorny). 1. Purple. July. Crete. 1824. Evergreen.
„ *thapsoi'des* (Thapsus-like). July. Portugal. 1819.
„ *tri'ste* (dark). See V. PHŒNICEUM.
„ *undula'tum* (waved). 3. July. S. Europe. 1819.

HARDY BIENNIALS.

V. auricula'tum (eared-*leaved*). See V. MUCRONATUM.
„ *bana'ticum* (Hungarian). See V. NIGRUM.
„ *bipinnati'fidum* (doubly-leaflet-cut). See V. PINNATIFIDUM.
„ *Blatta'ria* (Blattaria). 3–6. July, August. Europe (England). " Moth Mullein."
„ *Boerhaa'vii* (Boerhaave's). 2. July. S. Europe. 1731. Annual.
„ *bombyci'fo'rme* (Bombyx-formed). See V. LAGURUS.
„ *candidi'ssimum* (whitest). See V. MUCRONATUM.
„ *Cedre'ti* (Cedret's). Syria.
„ *ceratophy'llum* (horn-leaved). See V. PINNATIFIDUM.
„ *Chai'xii* (Chaix's). 3. July. France. 1821.
„ *cuspida'tum* (pointed). See V. THAPSUS.
„ *de'lphicum* (Delphian). Greece.
„ *densiflo'rum* (dense-flowered). See V. THAPSIFORME.
„ *flocco'sum* (flock-of-wool). See V. PULVERULENTUM.
„ *formo'sum* (handsome). See V. OVALIFOLIUM.
„ *gla'brum* (smooth) of Willdenow. See V. VIRGATUM.
„ *gnaphalo'des* (Gnaphalium-like). 2. July. Caucasus. 1825.
„ *gossypi'num* (cottony). 4. July. Caucasus. 1820.
„ *grandiflo'rum* (large-flowered). 4. July. Europe. 1820.
„ *hæmorrhoida'le* (blood-coloured). See V. PULVERULENTUM.
„ *i'ndicum* (Indian). See V. THAPSUS.
„ *Lagu'rus* (hare's-tail). Asia Minor.

V. leia'nthum (smooth). 10–14. Bright yellow. July to September. Asia Minor. 1908.
„ *leptosta'chyum* (slender-spiked). See V. SIMPLEX.
„ *longifo'lium* (long-leaved). 3. July. Naples. 1824.
„ *Lychni'tis* (Lychnitis). 3. July. Europe (Britain). "White Mullein."
„ *lyra'tum* (lyre-*leaved*). See CELSIA CRETICA.
„ *macra'nthum* (large-flowered). See V. PHLOMOIDES.
„ *maja'le* (hog). See V. BOERHAAVII.
„ *malaco'trichum* (soft-haired). S. Europe.
„ *monspessula'num* (Montpelier). See V. NIGRUM.
„ *monta'num* (mountain). 3. July. Europe. 1819.
„ *mucrona'tum* (short-pointed). 4. May, June. Asia Minor; Crete. 1823.
„ *Myco'ni* (Mycon's). See RAMONDIA PYRENAICA.
„ *ni'veum* (snowy). 3. May. Naples. 1823.
„ *oly'mpicum* (Olympic). 5–6. Bright yellow. July to September. Bithynia. 1883.
„ *orienta'le* (oriental). Caucasus.
„ *ovalifo'lium* (oval-leaved). 2. July. Caucasus. 1818.
„ *ova'tum* (egg-*leaved*). See V. NIGRUM.
„ *panno'sum* (woolly). See V. LONGIFOLIUM.
„ *phlomoi'des* (Phlomis-like). 3. July. Europe. 1820.
„ „ *a'lbum* (white). Creamy-white. 1910.
„ *pinnati'fidum* (leaflet-cut). 1. July. Archipelago. 1788. Greenhouse.
„ *pulveru'lentum* (powdery). 3. July. Europe (England). "Hoary Mullein."
„ *pyramida'tum* (pyramidal). 3. July. Caucasus. 1804.
„ *raschya'num* (Raschyan). See V. CEDRETI.
„ *repa'ndum* (wavy-edged). See V. BLATTARIA.
„ *rotundifo'lium* (round-leaved). See V. BOERHAAVII.
„ *rubigino'sum* (rusty). 4. Yellow, red. July. Hungary. 1817.
„ *rugulo'sum* (wrinkled-*leaved*). See V. PHLOMOIDES.
„ *sinua'tum* (indented-*leaved*). 2. July. S. Europe. 1570.
„ *specta'bile* (showy). 2. Yellow, purple. July. Tauria. 1820.
„ *Steve'nii* (Stevens'). 5. July. Siberia. 1821.
„ *tau'ricum* (Taurian). See V. RUBIGINOSUM.
„ *thapsifo'rme* (Thapsus-formed). January. Europe; Asia Minor. 1825.
„ *Tha'psus* (shepherd's-club). 6. July. Europe (Britain). "Flannel Plant." "Aaron's Rod."
„ „ *elonga'tum* (lengthened). July. Europe. 1813.
„ *tripolita'num* (Tripolitan). Syria.
„ *verna'le* (vernal). See V. NIGRUM.
„ *versiflo'rum* (inverted-flowered). 3. Purple. July. Bohemia. 1823.
„ *virga'tum* (twiggy). 5. August. Europe (Britain).
„ *wiedmannia'num* (Wiedmannian). Indigo-blue, changing to purple-lilac. Asia Minor. 1893.

VERBE'NA. Vervain. (From the Celtic *Ferfain*. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Annuals and biennials, by seed in a slight hotbed in March, or in the open air in April; perennials, by division, layers, and cuttings; tender kinds, chiefly by cuttings, unless when seed is employed to obtain new varieties. These varieties are struck generally in spring and autumn for blooming in pots, but chiefly for decorating the flower-garden beds. A rich, sandy loam suits them best. The points of the shoots in spring strike best in a little heat. In autumn they can scarcely be kept too cool. The smallest piece will form a better plant than a larger piece.

GREENHOUSE HERBACEOUS.

V. ala'ta (winged-*stemmed*). 5. Rosy. August. Monte Video. 1828.
„ *amæ'na* (pleasing). 1. Pinkish-purple. July. Hybrid. 1840.
„ *arrania'na* (Lady Arran's). See V. INCISA.
„ *barba'ta* (bearded). 1. Pink. August. Mexico. 1826.
„ *chamædrifo'lia* (germander-leaved). 1. Scarlet. August. Buenos Ayres. 1827.
„ „ *Meli'ndres* (Melindres). Deeply serrated, less hairy.
„ *difu'sa* (spreading). See V. URTICÆFOLIA.
„ *glandulo'sa* (glanded). See V. HISPIDA.
„ *hi'spida* (hispid). 2. Pale. July. S. Amer. 1832.
„ *inci'sa* (cut-*leaved*). 2 Red. August. Panama. 1836.
V. Mahoné'ti (Mahonet's). See V. TENERA MAHONETI.
„ *Meli'ndres* (Melindres). See V. CHAMÆDRIFOLIA MELINDRES.
„ *melissoi'des* (balm-like). See V. CHAMÆDRIFOLIA.
„ *muta'bilis* (changeable). See STACHYTARPHETA MUTABILIS.
„ *pholgiflo'ra* (Phlox-flowered). 1½. Purple or lilac, to red and blue. Brazil. 1834.
„ „ *vulga'ris* (common). 1. Scarlet. August. Brazil. 1834.
„ *pulche'lla* (neat). See V. TENERA.
„ *radi'cans* (rooting). ½. Lilac. July. Chili. 1832.
„ *rugo'sa* (wrinkled) of D. Don. See V. VENOSA.
„ *rugo'sa* (wrinkled) of Miller. Mexico.
„ *sulphu'rea* (sulphur-coloured). 1. Sulphur. July. Chili. 1832.
„ *te'nera* (slender). 1. Purple. July. Argentina. 1827.
„ „ *Mahoné'ti* (Mahonet's). 1. Reddish-violet, with white edges. 1870.
„ *teucrioi'des* (germander-like). 2. Purplish. July. Chili. 1837.
„ *tri'fida* (trifid). 3. Purple. August. Mexico. 1818.
„ *triphy'lla* (three-leaved). See LIPPIA CITRIODORA.
„ *tweedia'na* (Tweedie's). See V. PHLOGIFLORA VULGARIS.
„ *urticæfo'lia* (nettle-leaved). 3. Blue. July. Temperate and trop. Amer. 1818.
„ *veno'sa* (*strong*-veined). 2½. Rosy. July. Buenos Ayres. 1830.
„ *xu'tha* (yellow). 2–3. Purple or blue. July, August. N. Amer. 1824.

HARDY ANNUALS AND BIENNIALS.

V. angustifo'lia (narrow-leaved). N. Amer.
„ *erinoi'des* (Erinus-like). 1. Reddish-violet. July. Peru. 1818. Annual.
„ „ *a'lba* (white). White. May. Chili. 1839.
„ „ *contra'cta* (contracted). Leaves with linear segments.
„ „ *Sabi'ni* (Sabine's). ½. Purplish. July. Chili. 1834.
„ *Aublé'tia* (Aublet's). 1. Purple. August. N. Amer. 1774. Biennial. "Rose Vervain."
„ „ *Lambe'rtii* (Lambert's). Leaves narrower, more deeply cut.
„ „ *ro'sea* (rosy). 1½. Pink, fragrant. July. Carolina.
„ *bractea'ta* (bracted). 1. Pink. July. Mexico. 1820. Biennial.
„ *cane'scens* (hoary). ½. Blue. July. Mexico. 1824.
„ *e'legans* (elegant). ½. Blue. July. Mexico. 1826. Biennial.
„ *hasta'ta* (spear-shaped). 3–6. Purple or blue. July. N. Amer. 1810. Biennial. "Blue Vervain."
„ „ *panicula'ta* (panicled). Has no three-lobed leaves.
„ *Lambe'rtii* (Lambert's). See V. AUBLETIA LAMBERTII.
„ *lasio'stachys* (hairy-spiked). See V. PROSTRATA.
„ *littora'lis* (shore). 3. Grey. June. S. Amer. 1832.
„ *multi'fida* (much-cut). See V. ERINOIDES.
„ *Oblæ'tia* (Oblætia). See V. AUBLETIA.
„ *panicula'ta* (panicled). See V. HASTATA PANICULATA.
„ *pinnati'fida* (leaflet-cut). See V. HASTATA.
„ *prostra'ta* (prostrate). 2. Purple. July. N. Amer. 1826. Biennial.
„ *rugo'sa* (wrinkled) of Willdenow. See V. ANGUSTIFOLIA.

HARDY HERBACEOUS.

V. Aublé'tia Drummo'ndii (Drummond's Aubletia). 1½. Lilac. July. Texas.
„ *biserra'ta* (twice-sawed). See V. POLYSTACHYA.
„ *bonarie'nsis* (Buenos Ayres). S. Amer.
„ *carolinie'nsis* (Carolinian). See V. POLYSTACHYA.
„ *Drummo'ndii* (Drummond's). See V. AUBLETIA DRUMMONDII.
„ *officina'lis* shop). 1–1½. Purple. July to September. Europe (Britain). Common Vervain.
„ „ *veno'sa* (veined). Bluish. August. Oxford. 1837.
„ *polysta'chya* (many-spiked). 4. Red. July. Mexico. 1820.
„ *pulche'lla-coro'lla-a'lbida* (beautiful-whitish-corollaed). See V. ERINOIDES ALBA.
„ *sca'bra* (scurfy). See V. URTICIFOLIA.
„ *soro'ria* (sister). See V. OFFICINALIS.
„ *stri'cta* (upright). 1–2. Blue. July to September. N. Amer.

VERBENA, LEMON, or **SWEET-SCENTED.** *Li'ppia citriodo'ra.*

VERBESI'NA. Crown Beard. (Altered from *Verbena.* Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia,* 2-*Superflua.*)

Greenhouse, yellow-flowered, except where otherwise mentioned, herbaceous perennials, from Mexico. Seeds and divisions of the root; rich, sandy loam.

V. ala'ta (wing-*stalked*). 2. August. 1699.
„ *atriplicifo'lia* (orach-leaved). See MONTANOA ARBORESCENS.
„ *Coreo'psis* (Coreopsis). See ACTINOMERIS SQUARROSA.
„ *croca'ta* (saffron). 2. July to September. 1812.
„ *diversifo'lia* (diverse-leaved). 10. White. Brazil; Costa Rica. 1908. Evergreen.
„ *encelioi'des* (Encelia-like). 3. July, August. N. and S. Amer. 1785.
„ *helianthoi'des* (Helianthus-like). 3. N. and S. Amer. 1825.
„ *occidenta'lis* (western). 3. July. N. Amer. 1803.
„ *pinnati'fida* (leaflet-cut). 3. August. 1826.
„ *salicifo'lia* (willow-leaved). 2. July. 1825.
„ *sati'va* (cultivated). See GUIZOTIA ABYSSINICA.
„ *virgi'nica* (Virginian). 2. White. August. N. Amer.

VEREI'A ACUTIFLO'RA. See KALANCHOE ACUTIFLORA.

VEREI'A CRENA'TA. See KALANCHOE AFZELIANA.

VERGE-CUTTER. A tool, consisting of a crescent-shaped blade, something like a cheese-cutter, with a long handle, for cutting grass verges and the edges of flower-beds.

VERMINIA'RIA DENUDA'TA. See VIMINARIA DENUDATA.

VERNAL GRASS, SWEET. *Anthoxa'nthum odora'tum.*

VERNO'NIA. Iron Weed. (Named after *W. Vernon,* a botanical traveller. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia,* 1-*Æqualis.*)

All purple-flowered where not otherwise mentioned. Hardy, by seeds and divisions; tender, by seeds, divisions, and cuttings under a hand-light; rich, sandy loam; stove treatment.

STOVE EVERGREENS, &c.

V. acutifo'lia (pointed-leaved). See V. SERICEA.
„ *adoe'nsis* (Adoan). Abyssinia.
„ *anthelmi'ntica* (worm-killing). Lilac. August. Himalaya. 1770. Biennial.
„ *arbore'scens* (tree-like). 5. November. Jamaica. 1733.
„ *Arechavale'tæ* (Arechavaleta's). 3–6. Reddish-violet. Uruguay. 1901.
„ *a'spera* (rough). See V. ROXBURGHII.
„ *axillæfio'ra* (axillary-flowered). See V. COTONEASTER.
„ *calvoa'na* (Calvoan). 6–12. White, purple. Winter. Trop. Africa. 1862.
„ *centrifio'ra* (spur-flowered). See V. SCORPIOIDES.
„ *cine'rea* (grey). July. Tropics. Biennial.
„ *corymbo'sa* (corymbose). S. Africa.
„ *Cotonea'ster* (Cotoneaster). 1½. Lilac. September. Brazil.
„ *flexuo'sa* (zigzag). 1½. September. Brazil. 1823.
„ *frutico'sa* (shrubby). See V. RIGIDA.
„ *linea'ris* (narrow-*leaved*). 1. October. S. Amer. 1825. Annual.
„ *mespilifo'lia* (Mespilus-leaved). S. Africa.
„ *odorati'ssima* (sweetest-scented). See V. SCABRA.
„ *pinifo'lia* (pine-leaved). 2. June to August. S. Africa. 1863.
„ *podo'coma* (hairy-stalked). 6. Rose-purple. Trop. Africa.
„ *ri'gida* (rigid). 4. October. W. Ind. 1818.
„ *Roxbu'rghii* (Roxburgh's). White. June. Himalayas. 1823.
„ *sca'bra* (rough). 4. October. Brazil. 1817.
„ *scorpioi'des* (scorpion-like). 1. Lilac-rose. Trop. Amer. 1826.
„ *seri'cea* (silky). 5. December. Brazil. 1825.

HARDY HERBACEOUS.

V. alti'ssima (tallest). 12. October. Ohio. 1820.
„ *angustifo'lia* (narrow-leaved). 4. September. N. Amer. 1817.
V. angustifo'lia scabe'rrima (roughest). See V. ALTISSIMA.
„ *arkansa'na* (Arkansas). N. Amer.
„ „ *a'lba* (white). White. 1902.
„ *Baldwi'ni* (Baldwin's). N. Amer.
„ *fascicula'ta* (fascicled). United States.
„ *gigante'a* (gigantic). Carmine or violet-rose. 1907.
„ *glau'ca* (milky-green). See V. NOVÆBORASCENSIS.
„ *novæboracе'nsis* (New York). 6. August. N. Amer. 1710.
„ *oligophy'lla* (few-leaved). September. N. Amer. 1710.
„ *pandura'ta* (fiddle-*leaved*). 4. October. Trop. Africa. 1825.
„ *præa'lta* (very tall). See V. NOVÆBORACENSIS.
„ *scabe'rrima* (roughest). See V. ANGUSTIFOLIA.
„ *serratuloi'des* (sawwort-like). September. Mexico. 1824.
„ *te'res* (cylindric-leaved). July. Himalaya; Burma. 1821.
„ *wightia'na* (Wightian). Ceylon.

VERO'NICA. Speedwell. (The meaning is doubtful. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria,* 1-*Monogynia.*)

All blue-flowered where not otherwise named. Annuals, seeds in March and April; perennials, chiefly by division in spring; good garden soil; shrubby, cuttings in spring or summer under a bell-glass; peat and loam. Winter temp. for greenhouse kinds, 38° to 45°. In the subjoined list of shrubby species the more tender are indicated by the word greenhouse, but most of them can be grown on the sea-board of Great Britain and Ireland.

EVERGREEN SHRUBS AND SUBSHRUBS.

V. amplexicau'lis (stem-clasping). 1–2. White. New Zealand. 1895.
„ *Anderso'nii* (Anderson's). 2–3. Blue-purple. July. Garden origin.
„ „ *variega'ta* (variegated). Leaves edged with creamy-white. An excellent bedding plant.
„ *ano'mala* (anomalous). 2–6. White. New Zealand.
„ *arbo'rea* (tree). New Zealand.
„ *arena'ria* (sand). ½. May. Australia. 1823.
„ *Armstro'ngii* (Armstrong's). 1–2. White. New Zealand. 1899.
„ *azu'rea* (azure). Garden origin.
„ *balfouria'na* (Balfourian). 1–2. Violet. Leaves edged brown. New Zealand. 1897.
„ *Bidwi'llii* (Bidwill's). ½. Large, deep blue. June to September. New Zealand.
„ *buxifo'lia* (box-leaved). 1–2½. White. New Zealand.
„ *calyci'na* (large-calyxed). June. Australia. 1820.
„ *ca'ndida* (white). White. Origin doubtful.
„ *ca'rnea* (fleshy). Flesh. New Zealand.
„ *carno'sula* (somewhat-fleshy) of Hooker f. Bot. Mag., t. 6587. See V. PINGUIFOLIA.
„ *carno'sula* (somewhat fleshy) of Hooker f. 1–1½. White. June to August. New Zealand.
„ *cane'scens* (hoary). ½. Pale blue. June, July. New Zealand.
„ *Catarra'ctæ* (waterfall). 1–2. White or pink. New Zealand.
„ *chatha'mica* (Chathamic). ½. Dark purple. New Zealand. 1899.
„ *Cole'nsoi* (Colenso's). 1–3. Lavender-blue to white. New Zealand. 1893.
„ „ *glau'ca* (sea-green). Leaves sea-green.
„ *cookia'na* (Cookian). New Zealand.
„ *cupressoi'des* (Cupressus-like). 1–4. Violet. New Zealand.
„ „ *varia'bilis* (variable). ½. New Zealand. 1888.
„ *darwinia'na* (Darwinian). New Zealand.
„ *decu'mbens* (lying-down). White. New Zealand. 1888.
„ *decussa'ta* (decussate). See V. ELLIPTICA.
„ *Derwe'ntia* (River Derwent). 2–3. Lavender or white. June. New Zealand. 1802.
„ *dianthifo'lia* (Dianthus-leaved). See V. ARENARIA.
„ *Dieffenba'chii* (Dieffenbach's). 2. New Zealand. 1898.
„ *diosmæfo'lia* (Diosma-leaved). Lilac. July, August. New Zealand. 1835.
„ „ *trise'pala* (three-sepaled).
„ *di'stans* (distant). 1. April. Australia. 1825.

V. elli'ptica (elliptic). 1–20. Blue-purple. July to September. New Zealand, &c. 1776.
„ *epacri'dea* (Epacris-like). 2–3. White. New Zealand.
„ *Fairfie'ldii* (Fairfield's). 1–1½. Lavender. New Zealand.
„ *formo'sa* (beautiful). 2–4. Pale blue. July. Tasmania. 1835. Greenhouse.
„ *fruticulo'sa* (shrubby). ½. Flesh. July. Europe (Scotland).
„ *girdwoodia'na* (Girdwoodian). See V. FORMOSA.
„ *glau'co-cæru'lea* (glaucous-blue). See V. PIMELIOIDES.
„ *Godefro'yæ* (Godefroy's). 1½–3. White. Garden origin. 1888.
„ *gra'cilis* (graceful). 1. May. Australia. 1820.
„ *guthria'na* (Guthrian). ½. Intense blue. Garden origin.
„ *Haa'stii* (Haast's). New Zealand.
„ *Hecto'ri* (Hector's). 1–1½. Pink, white. New Zealand. 1888.
„ *hulkea'na* (Hulkean). 1–3. Lilac. July to September. New Zealand. 1865.
„ *igno'ta* (unknown). New Zealand.
„ *kermesi'na* (carmine). See V. SPECIOSA.
„ *Ki'rkii* (Kirk's). 6–12. White. New Zealand.
„ *labia'ta* (lipped). See V. DERWENTIA.
„ *læ'vis* (smooth). 2–4. White. New Zealand.
„ *lavaudia'na* (Lavaudian). New Zealand.
„ *Lewi'sii* (Lewis's). New Zealand.
„ *ligustrifo'lia* (Ligustrum-leaved). 2–4. White. New Zealand.
„ *lindleya'na* (Lindleyan). See V. SALICIFOLIA.
„ *Lindsa'yi* (Lindsay's). 1–2. (*S. amplexicaulis* × *pimelioides.*) Garden origin. 1898.
„ *linifo'lia* (flax-leaved). New Zealand.
„ *lobelioi'des* (Lobelia-like). See V. SPECIOSA.
„ *loganioi'des* (Logania-like). 1–1½. White. New Zealand. 1893.
„ *Lyalli'i* (Lyall's). ½–1½. White, with lilac veins. June to August. New Zealand. 1879.
„ *lycopodioi'des* (Lycopodium-like). White. New Zealand.
„ *macroca'rpa* (large-fruited). New Zealand.
„ „ *stri'cta* (upright).
„ *macrou'ra* (long-tailed). New Zealand.
„ *mi'xta* (mixed). See V. SPECIOSA.
„ *monti'cola* (mountain-loving). New Zealand.
„ *newrye'nsis* (Newry). Garden hybrid.
„ *ni'vea* (snowy). White. May. Tasmania. 1840.
„ *odo'ra* (sweet-scented). New Zealand.
„ *parvifo'ra* (small-flowered). 1–2. White. Summer. New Zealand. 1822. "Koro-Miko."
„ „ *angustifo'lia* (narrow-leaved) and *V. stenophy'lla* (narrow-leaved). See V. PARVIFLORA.
„ *perfolia'ta* (perfoliate). 1. Blue-violet. August. Australia. 1815. "Digger's Speedwell."
„ *pimeleoi'des* (Pimelea-like). ½–1. Deep purple. New Zealand.
„ *pinguifo'lia* (greasy-leaved). ½–4. White. June to August. New Zealand. 1870.
„ *plebe'ia* (common). 1. June. Australia. 1820.
„ *rakaie'nsis* (Rakaian). New Zealand.
„ *salicifo'lia* (willow-leaved). 2–5. Blue-purple to white. June, July. New Zealand. 1843. Greenhouse. "Korumeek."
„ „ *gra'cilis* (slender).
„ *salicornioi'des* (Salicornia-like) of Gardens. See V. CUPRESSOIDES VARIABILIS.
„ *saxa'tilis* (rock). ½. Bright blue. July to September Europe (Britain). "Rock Speedwell."
„ *speciо'sa* (showy). 1½–2. Dark blue-purple. May. New Zealand. 1835. Greenhouse.
„ „ *imperia'lis* (imperial). 1½–2. Dark purple-red. 1877.
„ „ *ru'bra* (red). 1½–2. Rose.
„ *tobarcorre'nsis* (Tobarcorran). Garden hybrid.
„ *Trave'rsii* (Travers's). 2–4. White. June to September. New Zealand. 1873.
„ *vernico'sa* (varnished). 1. White. New Zealand.

HARDY ANNUALS.

V. agre'stis (field). ½. Summer. Europe (Britain).
„ *arve'nsis* (field). ½. Summer. Europe (Britain).
„ *Buxbau'mii* (Buxbaum's). See V. TOURNEFORTII.
„ *ceratoca'rpa* (horn-fruited). March. Caspian region. 1835.
V. di'dyma (twin). All seasons. Europe; N. Africa. 1827.
„ *glau'ca* (sea-green). ½. Large, blue. Greece. 1901.
„ *hederæfo'lia* (ivy-leaved). ½–1. Lilac. All seasons. Europe (Britain).
„ *pe'rsica* (Persian). See V. TOURNEFORTII.
„ *poli'ta* (polished). See V. DIDYMA.
„ *syri'aca* (Syrian). ½. Blue. June. Syria. 1857. Half-hardy.

HARDY AQUATICS.

V. Anaga'llis (Anagallis). 1–1½. Summer. Europe (Britain). "Water Pimpernel."
„ *anagallioi'des* (Anagallis-like). Greece; Orient. 1836.
„ *Beccabu'nga* (Beccabunga). 1–1½. Summer. Europe (Britain). Brooklime.
„ *carolinia'na* (Carolinian). See V. PEREGRINA.
„ *parmula'ria* (small-shield). See V. SCUTELLATA.
„ *peregri'na* (wandering). 1. June. N. Amer. 1821.
„ *scutella'ta* (little-shield). 2. Flesh. Summer. North temperate regions (Britain).

HARDY HERBACEOUS, &c.

V. abrotanifo'lia (southernwood-leaved). 2. August. Siberia. 1830.
„ *acutiflo'ra* (acute-flowered). 1. Red. May. France. 1821.
„ *Allio'nii* (Allioni's). ½. May. S. Europe. 1740. Evergreen.
„ *alpi'na* (alpine). ½. May. Northern and arctic regions (Britain).
„ „ *heterophy'lla* (variable-leaved). ½. May. Europe.
„ „ *integrifo'lia* (entire-leaved). ½. May. Silesia. 1814.
„ „ *obtusifo'lia* (blunt-leaved). ½. July. Scotland.
„ „ *pu'mila* (dwarf). ½. August. Piedmont. 1819.
„ „ *rotundifo'lia* (round-leaved). ½. May. Europe. 1816.
„ „ *Wormskioldii* (Wormskiold's). Leaves larger. Greenland. 1819.
„ *aphy'lla* (leafless). ½. May. S. Europe. 1775.
„ *argu'ta* (sharp-notched). See V. LONGIFOLIA.
„ *assoa'na* (Assoan). ½. June. Spain. 1821.
„ *austra'lis* (southern). See V. SPICATA.
„ *austri'aca* (Austrian). 1. July. Austria. 1748.
„ „ *pinnati'fida* (pinnatifid). Leaves deeply and finely cut.
„ „ *Pre'nja* (Prenja).
„ *azu'rea* (sky-blue). 3. May. Garden origin (?). 1821.
„ *Baumgarte'nii* (Don Baumgarten's). May. Transsylvania. 1826.
„ *bellidioi'des* (daisy-like). ½. May. Switzerland. 1775.
„ *brachyphy'lla* (short-leaved). See V. SPICATA.
„ *brevifo'lia* (short-leaved). See V. SPICATA BREVIFOLIA.
„ *cæspito'sa* (tufted). Greece and Asia Minor.
„ *cauca'sica* (Caucasian). 1. Pale red. June. Caucasus. 1816.
„ „ *latifo'lia* (broad-leaved). ½. Pale red. June. Caucasus. 1820.
„ *Chamæ'drys* (germander). ½. June. Europe (Britain). "Germander Speedwell."
„ „ *lamiifo'lia* (Lamium-leaved). August. 1825.
„ „ *variega'ta* (variegated). ½. August.
„ *Clu'sii* (Clusius's). See V. SPICATA.
„ *complica'ta* (complicate-*leaved*). See V. LONGIFOLIA.
„ *crassifo'lia* (thick-leaved). 2½. Violet. May. Europe. 1822.
„ *crenula'ta* (notch-*flowered*). See V. LONGIFOLIA.
„ *crini'ta* (hairy). See V. TEUCRIUM.
„ *cri'spa* (curled-*leaved*). 2. June. 1823.
„ *Cusi'ckii* (Cusick's). North-western Amer.
„ *Cymbala'ria* (Cymbalaria). Greece and Asia Minor.
„ *denta'ta* (tooth-*leaved*). See V. TEUCRIUM.
„ *depaupera'ta* (impoverished). See V. APHYLLA.
„ *ela'tior* (taller). See V. LONGIFOLIA.
„ *e'legans* (elegant). See V. SPURIA.
„ *exalta'ta* (lofty). 4. June. Siberia. 1816.
„ *filifo'rmis* (thread-*leaved*). ½. May. Levant. 1780.
„ *folio'sa* (leafy). See V. SPURIA.
„ *gentianifo'lia* (Gentian-leaved). See V. GENTIANOIDES.
„ *gentianoi'des* (Gentian-like). 2. Violet. June. Levant. 1748.
„ „ *variega'ta* (variegated). Leaves edged with white.
„ *gla'bra* (smooth). See V. LONGIFOLIA.

V. gla'bra a'lba (white). See V. LONGIFOLIA ALBA.
„ *gra'ndis* (grand). 1½. White. August. Siberia. 1826.
„ *hy'brida* (hybrid). See V. SPICATA HYBRIDA.
„ *inca'na* (hoary). 2. May. Russia. 1759.
„ *inci'sa* (cut-*leaved*). 2. July. Siberia. 1739.
„ *Jacqui'ni* (Jacquin's). See V. AUSTRIACA.
„ *lacinia'ta* (jagged-*leaved*). See V. SPURIA.
„ *latifo'lia* (broad-leaved). 1. White, blue. May. Austria. 1748.
„ *laxiflo'ra* (loose-flowered). Belgium.
„ *leuca'ntha* (white-flowered). See V. SPURIA LEUCANTHA.
„ *linarieefo'lia* (Linaria-leaved). See V. SPURIA.
„ *longibractea'ta* (long-bracted). See V. SPICATA.
„ *longiflo'ra* (long-flowered). 1. Lilac. June. 1824.
„ *longifo'lia* (long-leaved). 3. August. S. Europe. 1731.
„ „ *abbrevia'ta* (shortened). May. 1823.
„ „ *a'lba* (white). 3. White. August.
„ „ *incarna'ta* (flesh-coloured). 3. Flesh. August.
„ „ *latifo'lia* (broad-leaved). June. Crimea. 1821.
„ „ *ro'sea* (rosy). 2–3. Rose-pink. July to September.
„ „ *subse'ssilis* (nearly-stalkless). See V. SUBSESSILIS.
„ „ *variega'ta* (variegated-*leaved*). 1½. July.
„ *mari'tima* (marine). See V. LONGIFOLIA.
„ *me'dia* (mediate). See V. LONGIFOLIA.
„ *melanco'lica* (melancholy). 1. June. 1820.
„ *melissæfo'lia* (balm-leaved). 1. May. Caucasus. 1826.
„ *menthæfo'lia* (mint-leaved). See V. SPICATA.
„ *Me'yeri* (Meyer's). July. Dahuria. 1837.
„ *Michaux'xii* (Michaux's). 1. July. Persia. 1834.
„ *micra'ntha* (small-flowered). See V. CHAMÆDRYS.
„ *microphy'lla* (small-leaved). See V. SERPYLLIFOLIA.
„ *monta'na* (mountain). ½–1. Pale blue. May, June. Europe (Britain).
„ *muelleria'na* (Muellerian). See V. OFFICINALIS.
„ *multi'fida* (much-cut). ½. June. Siberia. 1748.
„ *negle'cta* (neglected). See V. INCANA.
„ *ni'tens* (shining). See V. LONGIFOLIA.
„ *ni'tida* (clear). See V. LONGIFOLIA.
„ *Nummula'ria* (moneywort-*leaved*). ½. June. Pyrenees. 1820.
„ *officina'lis* (shop). ½. June. Europe (Britain). "Fluellen."
„ *orchi'dea* (Orchis-*flowered*). 1. August. Europe. 1819.
„ *orienta'lis* (eastern). ½. July. Levant. 1748.
„ „ *tenuifo'lia* (slender-leaved). ½. June. Tauria. 1820.
„ *pa'llida* (pale). See V. GENTIANOIDES.
„ *panicula'ta* (panicled). See V. SPURIA.
„ *pectina'ta* (comb-*leaved*). 1. May. Orient. 1819.
„ „ *ro'sea* (rosy). ½. Pink. May to July.
„ *pedunculari'ris* (*long*-flower-stalked). 1. March. Caucasus. 1826.
„ *persicifo'lia* (peach-leaved). See V. LONGIFOLIA.
„ *petræ'a* (rock). 1. May. Caucasus. 1821.
„ *pilo'sa* (shaggy). See V. CHAMÆDRYS.
„ *pinna'ta* (leafleted). 1. May. Siberia. 1776.
„ *pinnati'fida* (leaflet-cut). 1. June. 1817.
„ *plica'ta* (plaited). See V. CHAMÆDRYS.
„ *polysta'chya* (many-spiked). See V. LONGIFOLIA.
„ *Po'næ* (Pona's). ½. September. Pyrenees. 1822.
„ *præa'lta* (very high). 4. August. 1817.
„ *præ'cox* (early). ½. June. S. Europe. 1775.
„ *prostra'ta* (trailing) of Linn. 1. May. Europe. 1774.
„ „ *satureiæfo'lia* (savory-leaved). See V. TEUCRIUM DUBIA.
„ *prostra'ta* (prostrate) of Vill. See V. TEUCRIUM DUBIA.
„ *re'pens* (creeping). White. September. Corsica. 1829.
„ *rupe'stris* (rock). See V. TEUCRIUM DUBIA.
„ *ruthe'nica* (Russian). See V. LONGIFOLIA.
„ *satureioi'des* (Satureia-like). ½. Bright blue. May to August. Dalmatia.
„ *Schmi'dtii* (Schmidt's). See V. CHAMÆDRYS.
„ *serpyllifo'lia* (Serpyllum-leaved). ½. May. Europe (Britain).
„ „ *humifu'sa* (low-spreading). ½. May. Europe.
„ „ *negle'cta* (neglected). ½. May. Britain.
„ „ *quaterna'ta* (four-leaved). ½. May. Europe.
„ „ *tene'lla* (tender). ½. May. Europe.
V. seti'gera (bristled). See V. OFFICINALIS.
„ *sibi'rica* (Siberian). See V. VIRGINICA.
„ *spica'ta* (spiked). 1. August. Europe (England).
„ „ *a'lba* (white). 1. White. July to September.
„ „ *brevifo'lia* (short-leaved). 1. May to July. 1822.
„ „ *hy'brida* (hybrid). 1. June, July, August. England.
„ „ *variega'ta* (variegated). 1½. Leaves variegated. July to September.
„ *spu'ria* (spurious). 2. August. Siberia. 1731.
„ „ *leuca'ntha* (white-flowered). 2. White. July. Siberia. 1817.
„ *stephania'na* (Stephan's). See V. SPURIA.
„ *subse'ssilis* (nearly-stalkless). 1½–2. Deep blue. July to October. Japan. 1878. "Japanese Speedwell."
„ *tau'rica* (Taurian). See V. ORIENTALIS TENUIFOLIA.
„ *telephifo'lia* (Telephium-leaved). Caucasus.
„ *tene'lla* (tender). See V. REPENS.
„ *tenuifo'lia* (fine-leaved). See V. ASSOANA.
„ *Teu'crium* (germander-*leaved*). 2. July. Europe. 1596.
„ „ *a'lba* (white). ½. White. May to October. 1910.
„ „ *du'bia* (doubtful). ½. Blue. May to October.
„ „ *Pseu'do-chamæ'drys* (false-chamædrys). 1. May to August. Austria.
„ *ticine'nsis* (Ticin). See V. LONGIFOLIA.
„ *trichoca'rpa* (hairy-capsuled). See V. AUSTRIACA.
„ *villo'sa* (shaggy). See V. LONGIFOLIA.
„ *virgi'nica* (Virginian). 5. White. July. N. Amer. 1714. "Great Virginian Speedwell."
„ „ *incarna'ta* (flesh-coloured). 5. Flesh. July. Virginia. 1714.
„ „ *japo'nica* (Japanese). 3. Lilac. Leaves much broader.
„ *Wormskio'ldii* (Wormskiold's). See V. ALPINA WORMSKIOLDII.

VERONICA'STRUM. See VERONICA.

VERSAILLES LAUREL. *Pru'nus Lauroce'rasus latifo'lia.*

VERSCHAFFE'LTIA. (Commemorative of *M. A. Verschaffelt*, the introducer of *V. splendida*. Nat. ord. Palmaceæ.)

Stove Palm with large and handsome leaves. Seeds. Fibrous loam, peat, and sand.

V. melanochæ'tes (black-haired). See ROSCHERIA MELANOCHÆTES.
„ *sple'ndida* (splendid). 50–80. Seychelles. 1864.

VERTICO'RDIA. (Derivation not given. Nat. ord. *Fringe-myrtles* [Myrtaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse evergreens, from Australia. Cuttings of young shoots in sand, under a bell-glass, in April or May; fibrous loam and sandy peat. Winter temp., 38° to 45°.

V. acero'sa (chaffy-*leaved*). Yellow. April. 1842.
„ *Bro'wnii* (Brown's). 1. White. April. 1826.
„ *densiflo'ra* (dense-flowered). White. June.
„ *Fontane'sii* (Desfontaine's). 1. White. April. 1826.
„ *grandiflo'ra* (large-flowered). Yellow. May.
„ *helia'ntha* (sunflower). See V. GRANDIFLORA.
„ *insi'gnis* (showy). Pink. April. 1839.
„ *ni'tens* (shining). 2–3. Golden-yellow. May. 1862.
„ *penni'gera* (feathery). Lilac. April. 1841.
„ *serra'ta* (sawed). Yellow. May. 1841.
„ *seti'gera* (bristly). See V. PENNIGERA.

VERVAIN. *Verbe'na.*

VERVAIN, BASTARD. *Stachytarphe'ta muta'bilis.*

VERVAIN SAGE. *Sa'lvia Verbena'ca.*

VESICA'RIA. Bladder Pod. (From *vesica*, a bladder or blister; inflated seed-pods. Nat. ord. *Crucifers* [Cruciferæ]. Linn. 15-*Tetradynamia*. Allied to Aubrietia.)

All yellow-flowered. Seeds, division, and cuttings of the young shoots under a hand-light; common soil.

HARDY ANNUALS.

V. gra'cilis (slender). June. Texas. 1834.
„ *grandiflo'ra* (large-flowered). July. Texas. 1835.
„ *sinua'ta* (indented-*leaved*). See ALYSSUM SINUATUM.

HARDY EVERGREENS.

V. a'rctica (arctic). ½. August. N. Amer. 1826.
„ *areno'sa* (sandy). See V. ARCTICA.

V. cre'tica (Cretan). See ALYSSUM CRETICUM.
„ *ede'ntula* (toothless). See ALYSSUM GEMONENSE.
„ *gnaphalo'des* (Gnaphalium-like). ½. Bright citron-yellow. Persia. 1907.
„ *græ'ca* (Grecian). Yellow. Summer. Greece; Italy.
„ *ludovicia'na* (Ludovic's). June. Louisiana. 1825. Herbaceous.
„ *reticula'ta* (netted). See COLUTEOCARPUS RETICULATUS.
„ *utricula'ta* (bladdered). 1. May. Europe. 1730.

VESLI'NGIA. (Commemorative of *John Vesling*, a Professor of Botany at Padua. Nat. ord. Compositæ. Now referred to Guizotia.)

V. sati'va (cultivated). See GUIZOTIA ABYSSINICA.
„ *sca'bra* (rough). See GUIZOTIA ABYSSINICA.

VESPU'CCIA. (Commemorative of *Amerigo Vespucci*, 1451–1512, who discovered Continental America, and gave his name to it. Nat. ord. Alismaceæ. Now referred to Hydrocleis.)

V. Humbo'ldtii (Humboldt's). See HYDROCLEIS COMMERSONI.

VE'STIA. (Named after *Dr. Vest*, a German. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Cestrum.)

Greenhouse deciduous shrub. Cuttings of half-ripened shoots in sand, under a bell-glass; peat and loam. Winter temp., 40° to 48°.

V. fœ'tida (fetid). See V. LYCIOIDES.
„ *lycioi'des* (boxthorn-like). 3. Yellow. June. Chili. 1815.

VETCH. *Vi'cia.*

VETCH, BASTARD or **BLADDER.** *Pha'ca.*

VETCH, BITTER. *Vi'cia O'robus.*

VETCH, CHICKLING. *La'thyrus sati'vus.*

VETCH, CROWN. *Coroni'lla.*

VETCH, HORSESHOE. *Hippocre'pis.*

VETCH, KIDNEY. *Anthy'llis.*

VETCH, LIQUORICE. *Astra'galus Glycyphy'llos.*

VETCH, MEDICK. *Ono'brychis.*

VETCH, MILK. *Astra'galus.*

VETCH, WOOD. *Vi'cia sylva'tica.*

VETCHLING. *La'thyrus.*

VIBO'RGIA. See WIBORGIA.

VIBU'RNUM. (From *vieo*, to tie; use of flexible shoots. Nat. ord. *Caprifoils* [Caprifoliaceæ]. Linn. 5-*Pentandria*, 3-*Trigynia*.)

White-flowered, unless otherwise mentioned. Seeds, which should lie a season in the rot-heap before sowing; by layers; and freely, especially the evergreens, by cuttings in autumn, in sandy soil, in a shady border, where they may remain two years. The tender kinds like a little peat or leaf-mould, and greenhouse or stove treatment.

GREENHOUSE EVERGREENS.

V. mono'gynum (one-styled). Java.
„ *puncta'tum* (dotted). India.
„ *ri'gidum* (rigid). 4. May. Canaries. 1796.
„ *rugo'sum* (rough). See V. RIGIDUM.
„ *sempervi'rens* (evergreen). China.
„ *suspe'nsum* (suspended). White, yellow. February. 1853.
„ *tinoi'des* (Tinus-like). 4. S. Amer. 1820. Stove.
„ *villo'sum* (shaggy). 6. Trop. Amer. 1824.

HARDY EVERGREENS.

V. Awafu'ki (Awafuki). See V. ODORATISSIMUM.
„ *cassinoi'des* (Cassine-like). 3. June. N. Amer. 1761. "Witherod."
„ *coria'ceum* (leathery). 10–50. Cream-white; anthers purple. Himalaya to China. 1881.
„ *He'nryi* (Dr. Henry's). Fruits coral red. Central China. 1909.
„ *læviga'tum* (smoothed). See V. OBOVATUM.
„ *Mulla'ha* (Mullaha). See V. STELLULATUM.
V. odorati'ssimum (sweetest-scented). 6. May. China; Himalaya. 1818.
„ *pygmæ'a* (pigmy). 1½. Himalayas. 1841.
„ *rhytidophy'llum* (wrinkled-leaved). 4–6. Yellowish-white. Berries dark red. Central China. 1903.
„ *sine'nse* (Chinese). See V. ODORATISSIMUM.
„ *stellula'tum* (finely-starry). Himalaya.
„ *Ti'nus* (laurustine). 5. July. S. Europe. 1595.
„ „ *Frœ'beli* (Frœbel's). Flowers whiter. Habit compact.
„ „ *hi'rtum* (hairy). 5. July. S. Europe.
„ „ *lu'cidum* (shining). 10. August. Algiers.
„ „ *lu'cidum variega'tum* (variegated). 10. August.
„ „ *macrophy'llum* (large-leaved). Reddish. Corfu. 1908.
„ „ *purpu'reum* (purple).
„ „ *pyramida'le* (pyramidal). Habit upright.
„ „ *ro'seum* (rosy). Rose sport from type. 1902.
„ „ *stri'ctum* (erect). 6. August. S. Europe.
„ „ *stri'ctum variega'tum* (variegated). 6. August. S. Europe.
„ „ *virga'tum* (twiggy). 6. August. Italy.
„ *u'tile* (useful). April. Central China. 1909.

HARDY DECIDUOUS.

V. acerifo'lium (maple-leaved). 4. June. N. Amer. 1736. "Dockmackie."
„ *buddleifo'lia* (Buddleia-leaved). Central China. 1903.
„ *bulla'tum* (blistered-leaved). Origin uncertain.
„ *burejæ'ticum* (Burejætic). China. 1862.
„ *Carle'sii* (Carles's). 2–3. Pink-white, changing to pure white, fragrant. May. Corea. 1902.
„ *cotinifo'lium* (Cotinus-leaved). 10. June. Himalaya. 1830.
„ *davu'ricum* (Dahurian). 2. June. Dahuria. 1785.
„ *denta'tum* (tooth-*leaved*). 5. June. N. Amer. 1763. "Arrow-wood."
„ „ *variega'tum* (variegated). Leaves variegated.
„ *dilata'tum* (swollen). 4. April. China; Japan. 1846.
„ *edu'le* (eatable-*fruited*). See V. OPULUS.
„ *ero'sum* (gnawed). Japan. 1896.
„ *furca'tum* (forked). China and Japan.
„ *hancea'num* (Hancean). China.
„ *He'ssei* (Hesse's). 2–3. Berries coral-red. China or Japan. 1909.
„ *hupehe'nse* (Hupeh). 4. Central China. 1910.
„ *Lanta'na* (Lantana). 5–10. May. Europe (Britain); Asia; N. Africa. "Wayfaring Tree."
„ „ *fo'liis au'reis variega'tis* (golden-variegated-leaved).
„ „ *fo'liis puncta'tis* (dotted-leaved).
„ „ *grandifo'lium* (large-leaved). 10. June.
„ *lantanoi'des* (Lantana-like). 5. June. N. Amer. "Hobble-bush."
„ *Lenta'go* (Lentago). 8. July. Spain. 1761. "Sheep Berry."
„ „ *subpeduncula'tum* (slightly-stalked). Flower-stalk ¼ in. long. 1889.
„ *macroce'phalum* (large-headed). 20. China. 1844.
„ „ *Ketelee'ri* (Keteleer's). The fertile, wild form. 1863.
„ *mo'lle* (soft). 6. May. N. Amer. 1812.
„ *ni'tidum* (shining). See V. NUDUM.
„ *nu'dum* (naked). 8. June. N. Amer. 1752.
„ „ *squama'tum* (scaly). 6. July. N. Amer. 1822.
„ *obova'tum* (reversed-egg-*leaved*). 2–10. April, May. N. Amer. 1724.
„ „ *punicifo'lium* (Punica-leaved). See V. NUDUM.
„ *O'pulus* (guelder-rose). 10. July. Northern Hemisphere (Britain). "Guelder Rose."
„ „ *au'reum* (golden). Leaves golden-yellow. 1906.
„ „ *fo'liis-variega'tis* (variegated-leaved). June.
„ „ *fru'ctu lu'teo* (yellow-fruited). Berries yellow.
„ „ *na'num* (dwarf). ½–1.
„ „ *ro'seum Ta'tteri* (Tatter's rosy).
„ „ *ste'rile* (barren). July. "Snowball Tree."
„ *orienta'le* (eastern). 10. May. Caucasus. 1827.
„ *Oxyco'ccos* (cranberry-like). See V. OPULUS.
„ *paucifo'rum* (few-flowered). 3–4. June. N. Amer. 1890.
„ *phlebo'trichum* (hairy-veined). 3–5. May. Berries scarlet. China. 1910.
„ *plica'tum* (plaited-*leaved*). See V. TOMENTOSUM PLICATUM.
„ *prunifo'lium* (plum-leaved). 8. May. N. Amer. 1731. "Black Haw."

V. pube'scens (downy). 3. June. N. Amer. 1736.
„ *pyrifo'lium* (pear-leaved). See V. PRUNIFOLIUM.
„ *rufi'dulum* (reddish). Southern United States. "Southern Black Haw."
„ *Sanda'nkwa* (Sandankwa). 6. China. 1875.
„ *Sa'rgenti* (Sargent's). White; anthers violet. China. 1899.
„ „ *calve'scens* (bald). Plant wholly smooth. 1903.
„ *Sieboʻldii* (Siebold's). Japan.
„ *stella'tum* (starry). Mexico. 1889.
„ *thei'ferum* (tea-bearing). Central and W. China. 1910.
„ *tomento'sum* (felted). 3–6. May, June. Japan.
„ „ *lancea'tum* (lance-shaped). Leaves smaller, more downy. 1908.
„ „ *Marie'si* (Maries'). Sterile flowers on the outer part of the umbel. 1902.
„ „ *plica'tum* (plaited). 10. Flowers sterile. May. Japan. "Japanese Snowball Tree."
„ „ *plica'tum grandiflo'rum* (large-flowered). Flowers larger.
„ *Vei'tchi* (Veitch's). Flowers all fertile. Central China. 1903.
„ *Ve'tteri* (Vetter's). Hybrid. (*V. Lentago* × *nudum*.) 1889.
„ *Wri'ghtii* (Wright's). 10. Flowers fertile. Japan; China. 1903.

VI'CIA. Vetch. (From *vincio*, to bind; referring to the tendrils clasping. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Purple-flowered climbers, unless otherwise mentioned. Annuals, seeds; perennials, seeds and divisions; good garden soil.

HARDY ANNUALS.

V. amphica'rpa (double-fruited). S. Europe, &c.
„ *angustifo'lia* (narrow-leaved). 1–2. July. Europe (Britain).
„ *a'tropurpu'rea* (dark purple). 3. June. Algiers. 1815.
„ „ *a'lba* (white). White. June. Sardinia. 1836.
„ *bie'nnis* (biennial). 2. August. Siberia. 1753.
„ *calcara'ta* (spurred). 2. Red, blue. July. Barbary. 1790.
„ *crue'nta* (blood-coloured). See V. FULGENS.
„ *dispe'rma* (two-seeded). South-western Europe.
„ *Ervi'lia* (Ervilia). S. Europe, &c.
„ *Fa'ba* (Faba). 2–4. White, purple, black. July. Cultivated only. Broad Bean.
„ „ *equi'na* (horse). 2–3. White, purple, black. July. Cultivated. "Horse Bean."
„ *fu'lgens* (shining). Algeria.
„ *gigante'a* (giant). North-western Amer.
„ *gla'bra* (smooth). See V. SATIVA GLABRA.
„ *grami'nea* (grassy). Chili and Brazil.
„ *grandiflo'ra* (large-flowered). 1. Yellow. July. S. Europe. 1818.
„ *hirsu'ta* (hairy) of Fischer. 1½. Yellow. July. Siberia. 1819.
„ *hirsu'ta* (hairy) of S. F. Gray. 1–2. Pale blue. July. Europe (Britain). "Common Tare."
„ *hy'brida* (hybrid) of Hudson. See VICIA LUTEA.
„ *lathyroi'des* (Lathyrus-like). ½. June to September. Europe (Britain). "Strangle Tare."
„ *longifo'lia* (long-leaved). 2. Cream. July. Syria. 1818.
„ *lu'tea* (yellow). 1½. Yellow. July. Mediterranean region (Britain).
„ „ *læviga'ta* (smooth). ½–1. Pale blue or whitish. July to September. Dorset.
„ *me'lanops* (black-eye). S. Europe.
„ *narbone'nsis* (Narbonne). 3. July. France. 1590.
„ *nissolia'na* (Nissolian). 3. July. Europe. 1773.
„ *Nusqui'nez* (Nusquinez). 1½. July. Europe. 1818.
„ *panno'nica* (Pannonian). 1½. White. June. Hungary. 1636.
„ *peregri'na* (rambling). 1½. July. S. Europe. 1779.
„ *Pseu'do-cra'cca* (bastard-cracca). 2. Yellow. June. S. Europe. 1820.
„ *puncta'ta* (dotted). See V. ONOBRYCHIOIDES.
„ *sati'va* (cultivated). 3. May. Europe (Britain). "Common Vetch." "Tare."
„ „ *angustifo'lia* (narrow-leaved). See V. ANGUSTIFOLIA.
„ „ *gla'bra* (smooth). 2. July. Switzerland. 1819.
V. serratifo'lia (saw-leaved). See V. NARBONENSIS.
„ *setifo'lia* (bristle-leaved). See V. GRAMINEA.
„ *Sibtho'rpii* (Sibthorp's). Greece.
„ *si'cula* (Sicilian). May. Sicily, &c. 1827.
„ *sitche'nsis* (Sitchan). See V. GIGANTEA.
„ *stria'ta* (channelled). See V. PANNONICA.
„ *syri'aca* (Syrian). See V. CALCARATA.
„ *tetraspe'rma* (four-seeded). 1–2. Pale blue. May to August. Europe (Britain).
„ *Thou'ini* (Thouin's). 2. June. Europe. 1800.
„ *tricho'calyx* (hairy-calyxed). See V. ATROPURPUREA ALBA.
„ *triflo'ra* (three-flowered). 2. July. Italy. 1820.
„ *va'ria* (variable). Europe, &c.
„ *villo'sa* (shaggy). 3. June. Europe. 1815.

HARDY HERBACEOUS.

V. abbrevia'ta (short-*flower-stalked*). 2. Pale blue. June. Caucasus. 1818.
„ *alti'ssima* (tallest). 3. Pale blue. August. Barbary. 1820.
„ *america'na* (American. *Wood*). 3. White. June. N. Amer. 1800.
„ *ame'na* (pleasing). 2. June. Siberia. 1818.
„ *argе'ntea* (silvery). 1. Pink. June. Pyrenees. 1827.
„ *aura'ntia* (orange). 1½. Yellow. June. Asia Minor. 1818.
„ *bithy'nica* (Bithynian). 1–2. July. Mediterranean region (Britain). "Purple Vetch."
„ *Bivo'nea* (Bivoni's). Rose. July. Sicily. 1828.
„ *cape'nsis* (Cape). See LESSERTIA PULCHRA.
„ *carolinia'na* (Carolina). 2. White. June. Carolina. 1820.
„ *cassu'bica* (Cassubian). 3. Light blue. July. Europe. 1711.
„ *Cra'cca* (Cracca). 2. July. Northern hemisphere (Britain). "Tufted Vetch."
„ „ *flo'ribus-a'lbus* (white-flowered). 2. White. July.
„ „ *flo'ribus-ru'bris* (red-flowered). 2. Red, July.
„ *dennesia'na* (Dennesian). Slaty-blue, changing to fawn. Azores. Extinct in wild state.
„ *denta'ta* (toothed). See V. DUMETORUM.
„ *dumeto'rum* (hedge). 3. July. Europe; Siberia. 1752.
„ *Gera'rdi* (Gerard's). 2. July. S. Europe. 1810.
„ *læviga'ta* (smooth-*podded*). See V. LUTEA LÆVIGATA.
„ *onobrychioi'des* (sainfoin-like). 1. June. S. Europe. 1759.
„ *oroboi'des* (Orobus-like). 1–2. Yellow. June. S. Europe. 1758.
„ *O'robus* (Orobus). 1–2. White, tinged purple. June to September. Europe (Britain). "Bitter Vetch."
„ *pellu'cida* (transparent). See LESSERTIA FALCIFORMIS.
„ *pere'nnis* (everlasting). See V. ATROPURPUREA.
„ *pisifo'rmis* (pea-shaped). 2. Cream. July. Europe. 1739.
„ *polyphy'lla* (many-leaved). See V. TENUIFOLIA.
„ *pyrena'ica* (Pyrenean). 1. May. Pyrenees. 1818.
„ *se'pium* (hedge). 1–3. May to July. Europe (Britain). "Bush Vetch."
„ *sylva'tica* (wood). 2–4. White, with blue veins. June, July. Europe (Britain). "Wood Vetch."
„ *tenuifo'lia* (slender-leaved). 1½. July. Europe. 1799.
„ *trunca'tula* (rather-snipped). 1. Yellow, red. July. Bannat; Caucasus.
„ *uni'juga* (one-paired). 2. Blue. June. Siberia. 1758.
„ *variega'ta* (variegated). 3. June. Caucasus. 1816.

VI'CIA FA'BA, or **BROAD BEAN.** See BEAN.

VICTO'RIA. (Named after Her Majesty *Queen Victoria*. Nat. ord. *Water-lilies* [Nymphæaceæ]. Linn. 13-*Polyandria*, 1-*Monogynia*. Alliance between Euryale and Nymphæa.)

Stove herbaceous aquatic. Generally by seeds, sown in strong heat, and planted out in a reservoir of heated water as soon as germinated. From the size of the leaves, the tank must be 25 feet in diameter; and if the water is moved, or is being constantly furnished with a fresh supply, the plants will thrive all the better. At Messrs. Weeks', in the King's Road, it has been bloomed successfully in the *open* air in a tank, the water of which was heated to 80° by hot-water pipes.

V. cruzia'na (Cruzian). See V. REGIA CRUZIANA.
„ *crucia'na* (Crucian). See V. REGIA CRUZIANA.
„ *re'gia* (royal). Rosy-white. July to October. River Amazon. 1836.
„ „ *cruzia'na* (Cruzian). Deep red-pink the second evening. Edges of leaves 6–8 in. high. Corrientes, Argentina. 1894.
„ „ *cruzia'na Ma'lmei* (Malme's). Marginal ribs of leaves pale to dark rose. Brazil. 1907.
„ „ *Tri'cheri* (Tricker's). See V. REGIA CRUZIANA.

VICTORIAN HAZEL. *Pomade'rris ape'tala.*

VIEUSSEU'XIA. (Named after *M. Vieusseux*, a Swiss botanist. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Now referred to Moræa.)
Bulbs from the Cape of Good Hope, requiring the same treatment as I'XIAS.
V. Bellende'ni (Bellenden's). See MORÆA PAVONIA LUTEA.
„ *fu'gax* (transient). See MORÆA EDULIS.
„ *glau'copis* (grey-eyed). See MORÆA GLAUCOPIS.
„ *viridioi'des* (Iris-like). See MORÆA CANDOLLEANA.
„ *lu'rida* (lurid). See MORÆA LURIDA.
„ *Pavo'nia* (peacock). See MORÆA PAVONIA.
„ *spira'lis* (spiral). See MORÆA PAVONIA LUTEA.
„ *te'nuis* (slender). See MORÆA TENUIS.
„ *tricu'spis* (three-pointed). See MORÆA TRICUSPIS.
„ *tripetaloi'des* (three-petaled-like). See MORÆA TRIPETALA.
„ *unguicula'ris* (clawed). See MORÆA UNGUICULARIS.
„ *villo'sa* (shaggy). See MORÆA PAVONIA VILLOSA.

VI'GNA. (Named after *D. Vigni*, a commentator on Theophrastus. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*. Allied to Dolichos.)
Hardy, yellow-flowered, climbing annuals. Seeds in a slight hotbed in March, and afterwards planted out in the beginning of May, or sown in the end of April in sandy, light soil.
V. Burche'llii (Burchell's). Purple. June to September. S. Africa. 1816. Greenhouse.
„ *Ca'tjang* (Catjang). Yellow or red. July. Tropics. 1776. "Chowlee."
„ *gla'bra* (smooth). 4. July. Tropics everywhere. 1685.
„ *sine'nsis* (Chinese). See V. CATJANG.
„ *strobilo'phora* (cone-bearing). Purple and white. Mexico. 1894.
„ *villo'sa* (shaggy). See V. GLABRA.

VIGUIE'RA. (Named after *L. G. A. Viguier*, a French botanist. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 3-*Frustranea*. Allied to the Sunflower.)
Stove, yellow-flowered, herbaceous perennials. Divisions in spring, and cuttings of young shoots as fresh growth commences, in sandy soil, in a hotbed, in March; sandy peat and fibrous loam. Winter temp., 50° to 55°; summer, 60° to 75°.
V. denta'ta (toothed). See V. HELIANTHOIDES.
„ *exce'lsa* (lofty). 8. Mexico. 1820.
„ *helianthoi'des* (sunflower-like). 3. July. Mexico; W. Ind. 1825.
„ *linea'ris* (linear). 2. September. Mexico. 1823. Greenhouse.
„ *prostra'ta* (lying-flat). See HELIANTHUS TRACHELIIFOLIUS.
„ *ri'gida* (rigid). See HELIANTHUS RIGIDUS.
„ *tomento'sa* (felted). 5–6. Lower California. 1900. Greenhouse.

VILLA'DIA. (Derivation not clear. Nat. ord. Crassulaceæ.)
Greenhouse succulent. Seeds. Loam, leaf-mould, broken bricks, and sand.
V. ramosi'ssima (much-branched). Mexico. 1905.

VILLAMI'LLA. (Derivation not obvious. Nat. ord. Phytolaccaceæ.)
Stove evergreen shrub. Cuttings in sand, in a gentle bottom-heat. Fibrous loam, leaf-mould, and sand.
V. octa'ndra (eight-stamened). 2. White. May. Trop. Amer. 1752.

VILLANO'VA. (Commemorative of *T. M. Villanova*, a Professor of Botany at Valencia. Nat. ord. Compositæ. Allied to Hymenothrix.)
An erect, greenhouse herb, which may be grown in the open during summer. Seeds; cuttings. Well-drained garden soil.
V. chrysanthemoi'des (Chrysanthemum-like). 1–2. Yellow. September. New Mexico. 1878.

VILLARE'SIA. (Commemorative of *M. Villarez*, a Spanish botanist. Nat. ord. Olacaceæ.)
Stove evergreen shrubs. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
V. emargina'ta (notched). 3–40. White, fragrant. September. Peru.
„ *grandiflo'ra* (large-flowered). Brazil. 1857.
„ *mucrona'ta* (small-pointed). See V. EMARGINATA.

VILLA'RSIA. (Named after *Villars*, a French botanist. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Yellow-flowered, where not otherwise stated. Divisions and seeds in spring. Most of them must be treated as aquatics, either planted in pans or tubs, or potted and set in large saucers, and coaxed with greenhouse treatment. The hardiest like the protection of the latter though they may stand frequently in the open air.

HERBACEOUS PERENNIALS.

V. Cri'sta-ga'lli (cock's-crest). See MENYANTHES CRISTA-GALLI.
„ *gemina'ta* (twin-*flower-stalked*). See LIMNANTHEMUM GEMINATUM.
„ *sarmento'sa* (twiggy). See LIMNANTHEMUM GEMINATUM.
„ *Si'msii* (Sims'). See LIMNANTHEMUM INDICUM.

HERBACEOUS AQUATICS.

V. capita'ta (headed). ½. Light yellow, in heads. W. Australia. 1879.
„ *chile'nsis* (Chilian). 1. June. Chili. 1832.
„ *corda'ta* (heart-shaped). See LIMNANTHEMUM LACUNOSUM.
„ *humboldtia'na* (Humboldtian). See LIMNANTHEMUM HUMBOLDTIANUM.
„ *i'ndica* (Indian). See LIMNANTHEMUM INDICUM.
„ *lacuno'sa* (pitted). See LIMNANTHEMUM LACUNOSUM.
„ *Nymphoi'des* (water-lily-like). See LIMNANTHEMUM PELTATUM.
„ *ova'ta* (egg-*leaved*). June. S. Africa. 1786.
„ *parnassifo'lia* (Parnassia-leaved). 2. August. N.S. Wales. 1825.
„ *renifo'rmis* (kidney-*leaved*). 1. July. N. Holland. 1820.

VILLEBRU'NEA. (A commemorative name. Nat. ord. Urticaceæ.)
Stove shrub. Cuttings in sand, in a close frame, with bottom-heat. Loam, peat, and sand.
V. integrifo'lia (entire-leaved). Green. India; Malaya. "Bon Reha."

VILMORI'NIA. (Named after *M. Vilmorin*, a celebrated French nurseryman. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)
Stove evergreen. Seeds, soaked in warm water, and sown in a hotbed in spring; also cuttings of half-ripened shoots in sand, under a bell-glass, in April, and in bottom-heat; sandy peat and fibrous loam. Winter temp., 55° to 60°; summer, 60° to 85°.
V. multiflo'ra (many-flowered). 6. Purple. St. Domingo. 1826.

VIMINA'RIA. Rush Broom. (From *vimen*, a twig; the twiggy, leafless branches. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Daviesia.)
Greenhouse, orange, yellow-flowered evergreen, from Australia. Cuttings of half-ripened shoots in sand, under a bell-glass, in April; also by seeds in a gentle hotbed; loam and peat. Winter temp., 40° to 45°.
V. denuda'ta (stripped). 3. August. 1780.
„ *lateriflo'ra* (side-flowering). See JACKSONIA SCOPARIA.

VI'NCA. Periwinkle. (From *vinculum*, a band; the tough, long shoots. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Evergreens. Division of the plant in spring, or cuttings of the shoots in a shady border, in spring or autumn;

these make beautiful green carpeting under trees, where scarcely anything else would grow, and flourish in almost any soil. Some require the stove.

V. acutiflo'ra (acute-flowered). See V. HERBACEA.
„ *herba'cea* (herbaceous). 1½. Purple. June. Hungary. 1816.
„ *hu'milis* (humble). See V. MINOR.
„ *ma'jor* (greater). 2. Purple. August. Mediterranean region (England).
„ „ *elegantis'ssima* (very-elegant). Leaves heavily variegated with creamy-white.
„ „ *variega'ta* (variegated). 2. Blue. July. England.
„ *me'dia* (intermediate). 1. Blue. August. South-western Europe.
„ *mi'nor* (lesser). 1. Blue. August. Europe (Britain).
„ *pusi'lla* (small-*flowered*). ½. Blue. August. Tranquebar. 1778. Stove annual.
„ *ro'sea* (rosy). 1. Rose-coloured. May. Tropics. 1776. Stove.
„ „ *a'lba* (white). 1. White. June. Tropics. Stove.
„ *ocella'ta* (*red*-eyed). 1. White, red. June. E. Ind. Stove.

VINCETO'XICUM. (From *vinco, vincere*, to overcome, and *toxicum*, poison; considered to be an antidote to poison. Nat. ord. Asclepiadaceæ.)

Hardy perennial herbs. Divisions. Ordinary garden soil.

V. acu'tum (acute). White. July. S. Europe. 1596.
„ *fusca'tum* (brown). 2–3. Yellow. July. Eastern Europe. 1817.
„ *japo'nicum* (Japanese). White. June to September. Japan.
„ *lu'teum* (yellow). 2. Yellow. June. Portugal. 1596.
„ *me'dium* (intermediate). 3. White. May. Caucasus; Persia.
„ *ni'grum* (black). 3. Brown. July. Europe; Asia Minor. 1596.
„ *officina'le* (shop). 2–3. White. May. Europe. 1596. "Tame Poison."
„ *pilo'sum* (hairy). See CYNOCTONUM PILOSUM.
„ *purpura'scens* (purplish). Purplish. Japan. 1850.
„ *tmo'leum* (Tmolean). Mount Tmolus, Asia Minor.

VINE BOWER. *Cle'matis Vitice'lla.*

VINE, CONDOR. *Marsde'nia Cundura'ngo.*

VINE, CYPRESS. *Ipomœ'a Qua'moclit.*

VINE, GRANADILLA. *Passiflo'ra quadrangula'ris.*

VINE, GRAPE. *Vi'tis vini'fera.* See GRAPE VINE.

VINE LEEK. *A'llium Ampelo'prasum.*

VINE, MADEIRA. *Boussingau'ltia basellioi'des.*

VINE MAPLE. *A'cer circina'tum.*

VINE, MATRIMONY. *Ly'cium.*

VI'OLA. The Violet. (The Latin name. Nat. ord. *Violetworts* [Violaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Blue-flowered, where not otherwise mentioned. By seeds, divisions, and cuttings under a bell-glass or hand-light; mostly in rich, light soil, with a portion of peat.

GREENHOUSE PERENNIALS.

V. arbore'scens (tree-like). 1½. May. Spain. 1779.
„ *betonicifo'lia* (betony-leaved). ½. August. Australia. 1820.
„ *caspito'sa* (tufted). See V. PATRINII.
„ *decu'mbens* (lying-down). ½. June. S. Africa. 1819.
„ *hedera'cea* (ivy-*leaved*). ½. July. Australia. 1823. "New Holland Violet."
„ *hu'milis* (lowly). ½. White. May. Mexico. 1824.
„ *palme'nsis* (Palma). 1. Purple. May. Canary Islands. 1836.
„ *pygmæ'a* (pigmy). ½ August. Peru. 1822.
„ *renifo'rmis* (kidney-*leaved*). ½. July. Australia. 1823.

HARDY PERENNIALS.

V. acu'ta (acute). See V. PRIMULÆFOLIA.
„ *affi'nis* (related). See V. CUCULLATA.
„ *alleghane'nsis* (Alleghany). See V. SAGITTATA.
„ *alpi'na* (alpine). ½. Purple. June. Austria. 1823.
V. alta'ica (Altaic). ½. Dark purple. May. Siberia. 1808.
„ „ *purpu'rea* (purple). ½. Purple. May. Siberia. 1810.
„ *ambi'gua* (doubtful). See V. CAMPESTRIS.
„ *amœ'na* (pleasing). See V. LUTEA AMŒNA.
„ *arena'ria* (sand). June. Europe; N. Asia; N. Amer. 1820.
„ *asarifo'lia* (Asarum-leaved). See V. CUCULLATA.
„ *a'spera* (rough). See V. SERPENS.
„ *attenua'ta* (attenuated). See V. LANCEOLATA.
„ *au'rea* (golden). ½. Yellow. May. California. 1828.
„ *banna'tica* (Hungarian). See V. TRICOLOR.
„ *bi'color* (two-coloured). See V. TRICOLOR ALBA.
„ *biflo'ra* (two-flowered). ½. Yellow. June. Alps, Europe. 1752.
„ *bla'nda* (charming). ½. White. May. N. Amer. 1803.
„ *calcara'ta* (spurred). ½. May. Switzerland. 1752.
„ „ *albiflo'ra* (white-flowered). Flowers large, white.
„ „ *Ha'lleri* (Haller's). Flowers large, dark blue.
„ *campe'stris* (field). ½. Purple. April. Tauria. 1823.
„ *canade'nsis* (Canadian). ½. White. May. N. Amer. 1783.
„ „ *di'scolor* (two-coloured). ½. Blue, white. June. N. Amer. 1783.
„ *cani'na* (dog's). ½. May. Europe (Britain). "Dog Violet."
„ „ *flavico'rnis* (yellow-spurred). A small form with heart-shaped leaves.
„ „ *monta'na* (mountain). 1. May. Alps. 1682.
„ „ *Muehlenbe'rgii* (Muchlenberg's). ½. April. N. Amer. 1820.
„ „ *pu'mila* (dwarf). ½. May. France. 1818.
„ „ *radi'cans* (rooting). ½. June. Carolina. 1823.
„ „ *stri'cta* (upright). Cream. May. England. 1819.
„ *ceni'sia* (Mount Cenis). ½. June. Mount Cenis. 1759.
„ *chrysa'ntha* (golden-flowered). North-western Amer.
„ *clandesti'na* (clandestine). See V. ROTUNDIFOLIA.
„ *colli'na* (hill). ½. May. Poland. 1822.
„ *co'ncolor* (self-coloured). See IONIDIUM CONCOLOR.
„ *cornu'ta* (horned). ½. May. Pyrenees. 1776.
„ „ *purpu'rea* (purple). Rich violet-purple. 1908.
„ *cuculla'ta* (hooded). ½. May. N. Amer. 1762.
„ „ *variega'ta* (variegated). Violet, white. 1880.
„ *dactyloi'des* (Dactylis-like). ½. May. Siberia. 1820.
„ *de'bilis* (weak). See V. CANINA MUEHLENBERGII.
„ *declina'ta* (turned-aside). ½. June. Hungary. 1818.
„ *delphinifo'lia* (Delphinium-leaved). See V. PEDATIFIDA.
„ *digita'ta* (finger-*leaved*). See V. PEDATA.
„ *disse'cta* (jagged-*leaved*). See V. PINNATA.
„ *di'stans* (distant). ½. Yellow. June. Himalaya. 1824.
„ *Dougla'sii* (Douglas's). See V. CHRYSANTHA.
„ *ela'tior* (taller). Europe; N. Asia; Orient.
„ *emargina'ta* (notch-ended). See V. SAGITTATA.
„ *epipsi'la* (naked-above). See V. SUECICA.
„ *erioca'rpa* (woolly-fruited). See V. PUBESCENS.
„ *flabellifo'lia* (fan-leaved). See V. PEDATA.
„ *flavico'rnis* (yellow-horned). See V. CANINA FLAVICORNIS.
„ *floraire'nsis* (Floraire). Supposed hybrid between *V. calcarata* and *cornuta*. 1910.
„ *gibbo'sa* (swollen). See V. HASTATA.
„ *glabe'lla* (smooth). Yellow. March. North-western Amer. 1884.
„ *glau'ca* (milky-green). See V. ARENARIA.
„ *gmelinia'na* (Gmelin's). ½. May. Siberia. 1820.
„ *gra'cilis* (slender). ½. Violet. June. Greece. 1817.
„ „ *valde'ria* (Valderian). ½. Violet, white. Summer.
„ *grandiflo'ra* (large-flowered). ½. Yellow. July. Switzerland.
„ *hasta'ta* (halbert-*leaved*). ½. Yellow. May. Carolina. 1823.
„ *heterophy'lla* (various-leaved). See V. GRACILIS VALDERIA.
„ *hirsu'ta* (hairy). See V. HIRTA.
„ *hi'rta* (hairy). ½. Greyish. May. Europe (Britain).
„ *japo'nica* (Japan). ½. May. Japan. 1818.
„ *Joo's* (Joo's). Transsylvania.
„ *kitaibelia'na* (Kitaibel's). See V. TRICOLOR.
„ *Kro'keri* (Kroker's). See V ARENARIA.
„ *labrado'rica* (Labrador). See V. CANINA MUEHLENBERGII.

V. la'ctea (milky). ½. Bluish-purple. May. Europe (England).
,, *lanceola'ta* (spear-*leaved*). ½. White. June. N. Amer. 1759.
,, *Langsdo'rfii* (Langsdorf's). ½. June. Siberia. 1823.
,, *litora'lis* (shore). See V. PRATENSIS.
,, *lu'tea* (yellow). ½. Yellow. June. Europe (Britain).
,, ,, *ama'na* (lovely). ½. Blue or blue and purple. Summer. Scotland.
,, *macedo'nica* (Macedonian). Macedonia.
,, *macra'ntha* (large-flowered). See V. CALCARATA.
,, *macula'ta* (spotted). ½. Yellow. January. Chili. 1851.
,, *mira'bilis* (wonderful). ½. July. Europe. 1732.
,, *monta'na* (mountain). See V. CANINA MONTANA.
,, ,, *stri'cta* (erect). See V. CANINA STRICTA.
,, *munbya'na* (Munbyan). ½–1. Violet, white. May to July. Spain. 1897.
,, *negle'cta* (neglected). See V. SYLVESTRIS.
,, *nummulariifo'lia* (moneywort-leaved). 1½. May. S. France. 1820.
,, *Nutta'llii* (Nuttall's). ½. Yellow. May. Missouri. 1812.
,, *obli'qua* (twisted-*flowered*). See V. CUCULLATA.
,, *ochroleu'ca* (yellowish-white). See V. STRIATA.
,, *occu'lta* (hidden). ½. Veiny. June. N. and W. Asia. 1832. Annual.
,, *odora'ta* (sweet-scented. *Common*). ½. Purple. June. Europe (Britain). "Sweet Violet."
,, ,, *a'lba* (white-*flowered*). ½. White. April. Britain.
,, ,, *pa'llida ple'na* (pale-double). Lavender-blue. "Neapolitan Violet."
,, ,, *sulphu'rea* (sulphur). Pale yellow. 1898.
,, *Orea'des* (Oreades). See V. ALTAICA.
,, *ova'ta* (egg-*leaved*). See V. SAGITTATA.
,, *palma'ris* (palm). See P. DISTANS.
,, *palma'ta* (hand-leaved). ½. May. N. Amer. 1752.
,, ,, *cuculla'ta* (hooded). See V. CUCULLATA.
,, ,, *variega'ta* (variegated). ½. Purple, white. June. N. Amer.
,, *palu'stris* (marsh). ½. May. Northern temperate regions (Britain).
,, ,, *pennsylva'nica* (Pennsylvanian). See V. PUBESCENS.
,, *papiliona'cea* (butterfly). See V. CUCULLATA.
,, ,, *Patri'nii* (Patrin's). See V. PATRINII.
,, *Patri'nii* (Patrin's). June. Russia; N. Asia; Himalaya.
,, *peda'ta* (doubly-lobed). ½. May. N. Amer. 1759.
,, ,, *atropurpu'rea* (dark-purple). See V. PEDATA BICOLOR.
,, ,, *bi'color* (two-coloured). ½. Blue and white. May. N. Amer.
,, ,, *flabella'ta* (fan-*leaved*). See V. PEDATA BICOLOR.
,, ,, *ranunculifo'lia* (Ranunculus-leaved). ½. Whitish. June. N. Amer. 1818.
,, *pedati'fida* (lobe-cleft). ½. June. N. Amer. 1826.
,, *peduncula'ta* (stalked). North-western Amer.
,, *pennsylva'nica* (Pennsylvanian). See V. PUBESCENS.
,, *persicifo'lia* (peach-leaved). 1. Cream. June. Europe. 1817.
,, *pinna'ta* (leafleted). ½. Violet. June. Europe. 1752.
,, *præmo'rsa* (bitten-*rooted*). See V. AUREA.
,, *prate'nsis* (meadow). June. Europe.
,, *primulæfo'lia* (primrose-leaved). ½. June. Carolina. 1783.
,, *prostra'ta* (prostrate). ½. Cream. June. Teneriffe. 1824.
,, *pube'scens* (downy). ½. Yellow. June. N. Amer. 1772.
,, *pu'mila* (dwarf). See V. CANINA PUMILA.
,, ,, *ericeto'rum* (heath). See V. CANINA.
,, ,, *lancifo'lia* (spear-leaved). See V. LACTEA.
,, *pyrena'ica* (Pyrenean). ½. May. Pyrenees. 1817.
,, *pyrolæfo'lia* (Pyrola-leaved). See V. MACULATA.
,, *raddea'na* (Raddean). Amurland; China.
,, *radi'cans* (rooting). See V. CANINA RADICANS.
,, *rivinia'na* (Rivinian). ½. Blue, with many dark veins. Spur yellow-white or purple. Britain.
,, *rostra'ta* (beaked). N. Amer.
,, *rothomage'nsis* (Rouen). ½. July. Europe. 1781.
,, *rotundifo'lia* (round-leaved). ½. Pale yellow. May. N. Amer. 1800.
,, *Ru'ppii* (Ruppius's). ½. May. Europe. 1822.
V. Rydbe'rgii (Rydberg's). ½–1. White, slightly tinted with purple. N. Amer. 1909.
,, *sagitta'ta* (arrow-*leaved*). ½. White, blue. July. N. Amer. 1775.
,, *sarmento'sa* (twiggy). See V. ODORATA.
,, *schmidtia'na* (Schmidt's). See V. CANINA.
,, *scia'phila* (shade-loving). Lilac, purple. Europe. 1873.
,, *Selki'rkii* (Selkirk's). ½. June. N. Amer. 1822.
,, *se'rpens* (creeping). ½. Pale yellow. May. N. India; Malaya; China. 1824.
,, *soro'ria* (sisterly). See V. CUCULLATA.
,, *stagni'na* (stagnant). ½. Pale lilac or white. April to August. Europe (England).
,, *stria'ta* (streaked). ½. Striped. June. N. Amer. 1772.
,, *sua'vis* (sweet). ½. June. Ukraine. 1823.
,, *sude'tica* (Sudetic). See V. TRICOLOR SUDETICA.
,, *sue'cica* (Swedish). ½. Yellow. N. Europe. 1822.
,, *sylva'tica* (wood). See V. SYLVESTRIS.
,, *sylve'stris* (wood). ½. May. Europe (Britain). 1826. "Wood Violet."
,, ,, *reichenbachia'na* (Reichenbachian). Spur not furrowed. Europe (Britain).
,, *sy'rtica* (Syrtian). Europe.
,, *tri'color* (three-coloured). ½. Yellow, purple. August. Europe (Britain). "Pansy."
,, ,, *a'lba* (white). ½. White. May. N. Amer. 1818. Annual.
,, ,, *arve'nsis* (corn-field). ½. Yellow, purple. June. Britain.
,, ,, *e'legans* (elegant). ½. Veiny. Summer. Altai. 1832.
,, ,, *hi'rta* (hairy). June. Pannonia. 1820.
,, ,, *sude'tica* (Sudetic). ½. Yellow. Europe. 1805.
,, *triparti'ta* (three-parted). See V. HASTATA.
,, *uliginо'sa* (swamp). ½. Purple. April. Carinthia. 1823.
,, *umbro'sa* (shady). See V. SCIAPHILA.
,, *uniflo'ra* (one-flowered). ½. Yellow. June. Siberia. 1774.
,, *valde'ria* (Valderian) of Allioni. See V. CENISIA.
,, *variega'ta* (variegated). ½. Pale violet. May. Dahuria. 1817.
,, *verecu'nda* (modest). Japan.
,, *verticilla'ta* (whorled). See IONIDIUM POLYGALÆFOLIUM.
,, *villarsia'na* (Villars's). See V. TRICOLOR.
,, *vilmorina'na* (Vilmorinian). See V. ODORATA SULPHUREA.
,, *Zo'ysii* (Zoys's). ½. Yellow. August. Europe.

VIOLET. *Vi'ola.*

VIOLET, ADDER'S. *Goodye'ra pube'scens.*

VIOLET, BOG. *Pingui'cula.*

VIOLET, CAPE. *Ioni'dium cape'nse.*

VIOLET, DAME'S. *He'speris matrona'lis.*

VIOLET, DOG. *Vi'ola cani'na.*

VIOLET, DOG'S-TOOTH. *Erythro'nium De'ns-ca'nis.*

VIOLET FORCING. To obtain *Neapolitan Violets* in winter, select a warm, sheltered corner; cast out trenches a foot deep and 5 feet wide into the alleys, and make a turf wall all round to the desired height, for holding about 15 or 18 inches of leaves, rubbish-heap refuse, or any fermenting materials likely to afford a little bottom-heat, upon which place about 8 or 9 inches of rich, open soil. The width regulate by any lights to be spared for a time, or thatched hurdles, or other protectors. Violets are also extensively planted in ordinary cold frames, with or without fermenting manure beneath them, and plenty of air must be given them to keep the foliage dry and prevent attacks of fungi. The plants take up from the store plantation carefully, with balls of earth to their roots, and plant from 10 to 12 inches apart each way, first clearing them of any side-shoots or suckers; afterwards keep clear of dead leaves, &c., well surface-stir, and never allow to get dry. No lights or protection are to be placed over them until frosty nights set in, or very heavy rains; then, at all times, tilt on both sides, with abundance of air, if the weather is not too severe. By such treatment the foliage is always large,

thick, and of a beautiful dark green, the flowers abundant and large. No side-runners are to be allowed to run until April, at which time they are to be encouraged to grow; and open, sandy, rich soil sifted amongst them, and kept well watered, to encourage them to root freely. A partially-shaded piece of good ground is then to be chosen in the month of May, and the Violets then forked up, old and young altogether, and the best of the young plants selected and planted out a foot apart each way singly. They are to be kept well surface-stirred all the summer, and by the end of September they will be fine plants to take up as above described.

Russian Violets—Single White, Double White, Double Blue, and other hardy varieties—grow in a similar way, with regard to planting out the young runners and summer treatment, and they are also to be carefully taken up in September; some placed in turf-pits, with gentle bottom-heat, and some without bottom-heat, and a quantity planted on sloping banks. By this simple contrivance abundance of luxuriant flowers are kept in succession from September till May. Every variety is kept clear from side-shoots or runners all the summer. All the varieties are particularly fond of charred articles mixed with the soil.

VIOLET, FRINGED. *Thysano'tus.*

VIOLET FUNGI. The Sweet Violet (*Viola odorata*) and others are liable to be attacked by several fungi. One of the most destructive is *Puccinia Violæ*, which occurs on the Violet in spring in the Æcidium or cluster-cup form. It may be recognised by its small yellow cups thickly covering orange-coloured patches, and when these cups burst, the orange-yellow spores escape. Another named *Urocystis Violæ*, enters the tissues of the stems and leaves of various violets, causing them to become distorted and stunted. The skin ultimately bursts, allowing the dark-coloured spores to escape in great quantity. Plants that get attacked should be burned to destroy the spores, and prevent the diseases from spreading. Violets that are forced are very liable to be attacked by *Phyllosticta Violæ*, which may usually be recognised by bleached or colourless spots, which run into one another, forming patches that are visible on both surfaces of the leaves. If the attack is noticed in good time it may be prevented from spreading by spraying the plants with sulphide of potassium, one ounce to three or four gallons of water. The plants should also be grown in cold frames or outdoors for a time till they regain their wonted health and vigour.

VIOLET, MARSH. *Vi'ola palu'stris.*

VIOLET, MERCURY'S. *Campa'nula Me'dium.*

VIOLET, NEW HOLLAND. *Vi'ola hedera'cea.*

VIOLET, SPURLESS. *Vi'ola hedera'cea.*

VIOLET, SWEET. *Vi'ola odora'ta.*

VIOLET, TONGUE. *Schweigge'ria.*

VIOLET, WATER. *Hotto'nia palu'stris.*

VIOLET, WOOD. *Vi'ola sylve'stris.*

VIPER GOURD. *Trichosa'nthes angui'na.*

VIPER'S BUGLOSS. *E'chium.*

VIPER'S GRASS. *Scorzone'ra hispa'nica.*

VIRE'YA RETU'SA. See RHODODENDRON RETUSUM.

VIRGI'LIA. (Named after *Virgil*, the Roman poet. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 10-*Decandria*, 1-*Monogynia*. Allied to Sophora.)

Greenhouse, yellow-flowered evergreen, from South Africa. Cuttings of half-ripened shoots in sand, under a glass, in April; sandy loam and fibrous peat.

V. au'rea (golden). See CALPURNIA AUREA.
„ *cape'nsis* (Cape). 2. Purple, white. July. 1767.
„ *intru'sa* (intruded). See CALPURNIA AUREA.
„ *lu'tea* (yellow). See CLADRASTIS TINCTORIA.
„ *robinioi'des* (Robinia-like). See CALPURNIA ROBINIOIDES.
„ *sylva'tica* (wood). See CALPURNIA SYLVATICA.

VIRGI'LIA HELIOI'DES, of L'Heritier. See GAILLARDIA PULCHELLA.

VIRGINIAN COWSLIP. *Merte'nsia pulmonarioi'des.*

VIRGINIAN CREEPER. *Ampelo'psis quinquefo'lia*, or more correctly *Vi'tis quinquefo'lia.*

VIRGINIAN DATE PALM. *Diospy'ros virginia'na.*

VIRGINIAN POKE. *Phytola'cca deca'ndra.*

VIRGINIAN SILK. *Peri'ploca gra'ca.*

VIRGINIAN STOCK. *Malco'mia mari'tima.*

VIRGIN'S BOWER. *Cle'matis Vita'lba.*

VIRGIN TREE. *Cinnamo'mum Partheno'xylon.*

VI'ROLA SEBI'FERA. See MYRISTICA SEBIFERA.

VISCA'RIA. Rock Lychnis. (From *viscus*, bird-lime; the glutinous stems. Nat. ord. *Cloveworts* [Caryophyllaceæ]. Linn. 10-*Decandria*, 5-*Decagynia*. Now referred to Lychnis.)

V. a'lba (white). See LYCHNIS VISCARIA ALBA.
„ *albiflo'ra* (white-flowered). See LYCHNIS VISCARIA ALBA.
„ *alpi'na* (alpine). See LYCHNIS ALPINA.
„ *Cœli-ro'sa* (rose-of-heaven). See LYCHNIS CŒLI-ROSA.
„ *grandiflo'ra* (large-flowered). See LYCHNIS GRANDIFLORA.
„ *helve'tica* (Helvetian). See LYCHNIS ALPINA.
„ *negle'cta* (neglected). See LYCHNIS VISCARIA.
„ *ocula'ta* (eyed). See LYCHNIS CŒLI-ROSA.
„ „ *ca'ndida* (white). See LYCHNIS VISCARIA ALBA.
„ *sue'cica* (Swedish). See LYCHNIS ALPINA.
„ *vulga'ris* (common). See LYCHNIS VISCARIA.

VI'SCUM. Mistletoe. (From *viscus*, bird-lime; the berries contain a viscid matter like bird-lime. Nat. ord. *Loranths* [Loranthaceæ]. Linn. 22-*Dicœcia*, 4-*Pentandria*.)

The Mistletoe thrives best on the thorn and the apple. The seed, in early spring, should be squeezed from the berries into crannies of the bark underneath a branch, or slits be made on purpose in the bark.

V. a'lbum (white). 2. Green. May. Europe (England).
„ *crucia'tum* (cross-like). Male flowers large. Berries red-brown. Spain; N.E. Africa; Syria. 1902. On the Olive.

VI'SMIA. (Named after *M. Visme*, a Lisbon merchant. Nat. ord. *Tutsans* [Hypericaceæ]. Linn. 18-*Polyadelphia*, 2-*Polyandria*.)

Stove, yellow-flowered evergreens. Cuttings of firmish side-shoots in sand, in May, under a bell-glass, and placed in bottom-heat; sandy peat, fibrous loam, and a little rough charcoal. Winter temp., 50° to 55°; summer, 60° to 85°.

V. brasilie'nsis (Brazilian. *Wax-tree*). 8. August. Brazil. 1824.
„ *gla'bra* (smooth). 10. Red. July. Trop. Amer. 1824.
„ *guiane'nsis* (Guianan). 8. August. Guiana. 1824. "Wax Tree."
„ *sessilifo'lia* (stalkless-leaved). May. Guiana. 1826.

VI'SNEA. (Supposed to be commemorative of *Visne*, a Portuguese merchant. Nat. ord. Ternstrœmiaceæ.)

Greenhouse evergreen tree. Cuttings in sand under a bell-glass. Loam, peat, and sand.

V. Mocane'ra (Mocanera). White. March. Canaries. 1815.

VI'TEX. Chaste-tree. (From *vieo*, to bind; the flexible branches. Nat. ord. *Verbenas* [Verbenaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*.)

Purple-flowered, except where otherwise stated. The hardy by cuttings under a hand-glass, in a shady border, in autumn, or in a sheltered place without the hand-glass. The others require greenhouse and stove treatment, and are easily propagated by cuttings under a bell-glass; the stove species in a little bottom-heat; sandy loam and a little peat.

HARDY DECIDUOUS.

V. A'gnus-ca'stus (chaste-lamb-tree). 6. White, blue. Sicily. 1570.
„ „ *latifo'lia* (broad-leaved). 6. White, blue. September. Sicily. 1570.

STOVE EVERGREENS.

V. ala'ta (winged). 10. September. E. Ind. 1820.
„ *alti'ssima* (tallest). 8. Ceylon. 1810.
„ *arbo'rea* (tree). See V. PUBESCENS.
„ *bi'color* (two-coloured). See V. NEGUNDO.
„ *bignonioi'des* (Bignonia-like). Blue. Caracas. 1826.
„ *capita'ta* (headed). Blue. June. Trinidad. 1822.
„ *donia'na* (Don's). Sierra Leone. 1824.
„ *gigante'a* (gigantic). Ecuador. 1826.
„ *heterophy'lla* (various-leaved). Blue. E. Ind. 1820.
„ *ilicifo'lia* (Ilex-leaved). June to September. Cuba.
„ *inci'sa* (cut). 4. August. China. 1758. Greenhouse or hardy.
„ „ *heterophy'lla* (various-leaved). Sky-blue. China. 1910.
„ *latifo'lia* (broad-leaved). See V. PUBESCENS.
„ *Leuco'xylon* (white-wooded). 4. Ceylon. 1793.
„ *Li'ndeni* (Linden's). 5. Pale lilac, streaked with red in the tube. Colombia. 1872.
„ *littora'lis* (shore). 18. Bright rose. New Zealand. 1907. Greenhouse.
„ *Negu'ndo* (Negundo). 4. E. Ind. 1810.
„ „ *inci'sa* (cut). See V. INCISA.
„ *ova'ta* (egg-*leaved*). See V. TRIFOLIA.
„ *pube'scens* (downy). 30. Blue. July. Trop. Asia. 1820.
„ *sali'gna* (willow-*leaved*). See V. LEUCOXYLON.
„ *trifo'ra* (three-flowered). 6. Cayenne. 1819.
„ *trifo'lia* (three-leaved). 4. E. Ind. 1759.
„ „ *unifolia'ta* (one-leafleted). Leaves undivided. Japan. 1907.
„ „ *variega'ta* (variegated). Violet-purple. Leaves edged white. Polynesia. 1876.
„ *umbro'sa* (shady). 30. Jamaica. 1823.

VITIPHŒ'NIX. (From *Vitis*, the vine, and *Phœnix*, the date palm. Nat. ord. Palmaceæ.)

Stove Palm. Seeds. Loam, one-third peat, and sand.

V. fili'fera (thread-bearing). Fiji. 1885.

VI'TIS. The Vine. (From the Celtic *gwyd*, pronounced *vid*, best of trees. Nat. ord. *Vineworts* [Ampelidaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

Hardy deciduous, all but one green-flowered. Few are worth growing except *vini'fera* and its varieties; the other species are viewed chiefly in this country as ornamental climbers. All are propagated by cuttings and buds of the ripe wood, layers, and by grafting and inarching. Soil for all, a rich, open loam. See GRAPE VINE.

V. acumina'ta (long-pointed). Fruit large, black. Fiji. 1890.
„ *aconitifo'lia* (aconite-leaved). See V. SERIANÆFOLIA.
„ *ægirophy'lla* (goat-leaved). Turkestan. 1892.
„ *æstiva'lis* (summer). 20. May. United States. 1656. "Summer Grape."
„ „ *Linseco'mii* (Linsecom's). 20. May. "Pine-wood or Turkey Grape."
„ *alboni'tens* (white-shining). Brazil. 1871. Stove.
„ *amazo'nica* (Amazon). Leaves with silvery veins. Brazil. 1866. Stove.
„ *amure'nsis* (Amur). Leaves woolly when young. Amurland; N. China.
„ *anta'rctica* (Antarctic). July. Australia. 1790. "Kangaroo Vine." Greenhouse.
„ *arbo'rea* (tree-like). June. Leaves bipinnate. S. United States. 1700. "Pepper Vine."
„ *argyrophy'lla* (silvery-leaved). See V. ÆGIROPHYLLA.
„ *arizo'nica* (Arizona). Arizona. "Cañon Grape."
„ *arma'ta* (armed). 10–20. Stems and petioles spiny. Central China. 1903.
„ „ *Vei'tchii* (Veitch's). More vigorous, richly coloured in autumn. Central China. 1904.
„ *Baine'sii* (Baines'). Trop. Africa. 1864.
„ *Berlandie'ri* (Berlandier's). Berries blackish-violet. Texas; New Mexico. 1888.
„ *baudinia'na* (Baudinian). See V. ANTARCTICA.
„ *bi'color* (two-coloured). Eastern United States. "Blue Grape."
„ *bla'nda* (mild). May. N. Amer.
„ *bourquinia'na* (Bourquinian). S. California. "Valley Grape."
„ *brevipeduncula'ta* (short-stalked). China.
„ *califo'rnica* (Californian). California to N. Oregon.
„ *ca'ndicans* (white). Eastern Texas. "Mustang Grape."
V. cantonie'nsis (Canton). Leaves pinnate. Malacca and China. 1904.
„ *cape'nsis* (Cape). Berries blackish-red. S. Africa. 1887. Greenhouse.
„ *capreola'ta* (tendrilled). Himalaya.
„ *caribæ'a* (Caribæan). W. Ind.
„ „ *Blanco'i* (Blanco's). Florida.
„ *Cha'mpini* (Champin's). South-western Texas.
„ *chontale'nsis* (Chontal). Scarlet. Nicaragua. 1869.
„ *cine'rea* (grey). Illinois to Kansas, Texas, &c. "Sweet Winter Grape."
„ *cirrho'sa* (tendrilled). S. Africa. 1866.
„ *Coigne'tiæ* (Coignetia's). Crimson in autumn. Japan. 1890.
„ *cordifo'lia* (heart-leaved). 12. May, June. United States. 1806. "Chicken Grape."
„ *davidia'na* (Davidian). See V. HETEROPHYLLA.
„ *Delava'yi* (Delavay's). Leaves with three leaflets. Central and W. China. 1904.
„ *disse'cta* (cut). Trop. Africa.
„ *doania'na* (Doanian). Leaves and branches hoary white. N.W. Texas. 1896.
„ *Endre'sii* (Endres'). Leaves with purple veins. Costa Rica. 1875.
„ *erio'clada* (woolly-branched). India.
„ *ficifo'lia* (fig-leaved). China; Japan.
„ *flexuo'sa* (flexuous). India; China; Japan. 1818.
„ „ *chine'nsis* (Chinese). Leaves larger, less glossy than *V. f. Wilsoni*. Central China. 1904.
„ „ *Wilso'ni* (Wilson's). A slender growing variety. Central China. 1903.
„ *girdia'na* (Girdian). S. California. "Valley Grape."
„ *gongylo'des* (wallet-jointed). See V. PTEROPHORA.
„ *henrya'na* (Henrian). Leaves 5-fingered, silvery and rose on the veins. Central China. 1904.
„ *heterophy'lla* (various-leaved). 10. Blue. Japan. 1820.
„ „ *humulifo'lia* (hop-leaved). 3–8. Berries turquoise-blue. Japan; China. 1868.
„ „ *variega'ta* (variegated). Leaves variegated with rose and cream.
„ *himalaya'na* (Himalayan). Himalaya.
„ „ *semicorda'ta* (half-heart-shaped). Leaves 3-lobed. Himalaya; Khasia Mts. 1907.
„ *hypoglau'ca* (glaucous-beneath). Yellow. Australia. 1866.
„ *inco'nstans* (inconstant). 20–50. China and Japan. 1868.
„ „ *aura'ta* (golden). Leaves blotched with yellow. 1909.
„ „ *Lo'wii* (Low's). Leaves small, dark purple in autumn. 1907.
„ „ *purpu'rea* (purple). Leaves purple.
„ „ *robu'sta* (robust). A strong growing variety.
„ *indivi'sa* (undivided). S. United States. 1888.
„ *japo'nica* (Japanese). Eastern Asia. 1875.
„ „ *crassifo'lia* (thick-leaved). Leaves leathery, cobwebby beneath. 1886.
„ „ *marmora'ta* (marbled). Leaves marbled with yellow. 1875.
„ *javale'nsis* (Javalan). Scarlet. Nicaragua. 1869.
„ *Labru'sca* (Labrusca). 12. June. N. Amer. 1656. "Fox Grape." "Skunk Grape." The parent of most of the American cultivated grapes.
„ *lana'ta* (woolly). May. India; China. 1824.
„ *leeoi'des* (Leea-like). See V. CANTONIENSIS.
„ *Li'ndeni* (Linden's). Leaves spotted with white. Colombia. 1870.
„ *Lo'ngii* (Long's). N.W. Texas; New Mexico.
„ *ma'cropus* (long-stalked). Trop. Africa. 1864.
„ *Marti'nii* (Martin's). Cochin-China.
„ *megalophy'lla* (large-leaved). Leaves bipinnate. Central China. 1903.
„ *multi'fida* (much-cut). Leaves deeply lobed. Berries black. China. 1891.
„ *munsonia'na* (Munsonian). Florida. "Mustang Grape of Florida." "Bird Grape."
„ *oblo'nga* (oblong). Queensland.
„ *obte'cta* (covered). Leaves 3–5 fingered. Himalaya; Burma; China. 1904.
„ *obtusifo'lia* (obtuse-leaved). See V. TOMENTOSA.
„ *orienta'lis* (oriental). Orient.
„ *Pagnu'ccii* (Pagnucc's). Leaves small, bronzy in autumn. China. 1907.
„ *palma'ta* (hand-shaped). N. Amer. "Red or Cat Grape."

V. parvifo'lia (small-leaved). See V. FLEXUOSA.
,, *pe'ndula* (drooping). Trop. Africa.
,, *pe'rsica* (Persian). Persia to Afghanistan.
,, *planicau'lis* (flat-stemmed). Himalaya. 1849.
,, *polysta'chya* (many-spiked). India.
,, *ptero'phora* (wing-bearing). October. Brazil. 1883. Stove.
,, *quadrangula'ris* (four-angled). Summer. Trop. Asia and Africa.
,, *quinquefo'lia* (five-leaved). May. N. Amer. 1629. "Virginian Creeper."
,, ,, *hirsu'ta* (hairy). May. N. Amer. 1806.
,, ,, *inci'sa* (cut).
,, ,, *ma'jor* (larger).
,, ,, *mura'lis* (wall).
,, *renifo'rmis viola'cea* (kidney-shaped-violet). Dioecious. China. 1888.
,, *re'pens* (creeping). Leaves reddish-brown, claret beneath when young. Self-clinging. India; China. 1908.
,, *ripa'ria* (river-bank). See V. VULPINA.
,, *Romane'ti* (Romanet's). Dioecious. N China. 1888.
,, *rotundifo'lia* (round-leaved). United States. "Muscadine Southern Fox Grape."
,, *rupe'stris* (rock). S. United States. "Sand or Sugar Grape."
,, *ru'tilans* (red). Stems and petioles covered with dark red bristles. Eastern Asia. 1890.
,, *scala'ntha* (bright-flowered). Arabia; Africa.
,, *semicorda'ta* (half-heart-shaped). See V. HIMALAYANA SEMICORDATA.
,, *sempervi'rens* (evergreen). See V. STRIATA.
,, *serianæfo'lia* (Seriana-leaved). Leaves with 3–5 leaflets. China and Japan. 1867.
,, *sine'nsis* (Chinese). Leaves reddish-purple. China. 1903.
,, *stria'ta* (striped). Berries reddish. Rio Grande do Sul. 1881. Evergreen.
,, *Thomso'ni* (Thomson's). Leaves fingered, reddish above, violet-purple beneath. N. India; China. 1903.
,, *Thunbe'rgii* (Thunberg's). Leaves large, becoming crimson in autumn. China; Japan.
,, *Tita'nea* (Titanea). Berries black. Japan. 1905.
,, *tomento'sa* (felted). Leaves white felted. India. 1891.
,, ,, *sero'tina* (late). A late-fruiting form. 1891.
,, *Trelea'sei* (Trelease's). Texas; Arizona.
,, *tricuspida'ta* (three-pointed). See V. INCONSTANS.
,, *veluti'nus* (velvety). Red. Malaya. 1859.
,, *vini'fera* (wine-bearing). 30. June. Orient; North-western India. "Grape Vine."
,, ,, *apiifo'lia* (celery-leaved). See V. VINIFERA LACINIOSA.
,, ,, *corinthi'aca* (Corinthian). Berries small. "Currant Grape."
,, ,, (?) *Davi'dii* (David's). (Syn. *Spinovitis Davidii*, Carr.)
,, ,, *lacinio'sa* (deeply-cut). 20. Leaves deeply cut. 1648. Parsley-leaved Vine.
,, ,, *purpu'rea* (purple). Leaves purple. "Teinturier Grape."
,, ,, *sylve'stris* (wild).
,, *voinieria'na* (Voinierian). Fruit large, grape-like. China. 1897.
,, *vomere'nsis* (Vomeran). Leaves deeply cut, covered with light brown felt. 1909.
,, *vulpi'na* (wolf). 20. May. N. Amer. 1826. "Riverbank or Frost Grape."
,, *Walli'chii* (Wallich's). See V. FLEXUOSA.
,, *Wilso'næ* (Mrs. Wilson's). Leaves deep red in autumn. China. 1909.

VITTADI'NIA. (From *vitta*, a riband, and *adinos*, closely pressed; in allusion to the narrow, closely-pressed bracts surrounding the heads. Nat. ord. Compositæ. Allied to Erigeron.)
A low-growing perennial. Seeds; cuttings; divisions. Well-drained soil.
V. austra'lis (southern). 1. White, pink. Summer. Australia; New Zealand. "Australian Daisy."
,, *tri'loba* (three-lobed). See V. AUSTRALIS.

VITTA'RIA. (From *vitta*, a riband; shape of fronds. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*.)
Stove, brown-spored Ferns. See FERNS.

V. angustifo'lia (narrow-leaved). Malacca.
,, *elonga'ta* (elongated). Tropics of Old World.
,, *ensifo'rmis* (sword-shaped). See V. ELONGATA.
,, *graminifo'lia* (grass-leaved). 1. July. Brazil. 1820.
,, *linea'ta* (lined). 2. August. Trop. Amer.; Asia; and Africa. 1793.
,, *revolu'ta* (revolute). June. Himalaya.
,, *scolopendri'na* (Scolopendrium-like). 1–1½. New Guinea; Philippines; Malaya.
,, *stipita'ta* (stalked). 1½–2. Colombia to Peru.
,, *zosterifo'lia* (Zostera-leaved). See V. ELONGATA.

VIVIA'NIA. (Named after *Dr. Viviani*, a Swiss botanist. Nat. ord. *Crane's-bills* [Geraniaceæ]. Linn. 10-*Decandria*, 3-*Trigynia*.)
Greenhouse, Chilian evergreens. Cuttings of young shoots in sand, under a bell-glass, in May; sandy loam and fibrous peat. Winter temp., 45° to 50°; summer, 60° to 70°.
V. grandiflo'ra (large-flowered). See V. GRANDIFOLIA.
,, *grandifo'lia* (large-leaved). 2. Red. July. 1832.
,, *marifo'lia* (Marum-leaved). 2. Red. July. 1832.
,, *parviflo'ra* (small-flowered). See V. PARVIFOLIA.
,, *parvifo'lia* (small-leaved). 2. White. July. 1832.

VOANDZEI'A. (From *Voandzou*, said to be the native name in Madagascar. Nat. ord. Leguminosæ.)
A somewhat creeping herb, which buries its seed-pod in the ground like *Arachis hypogæa* and *Trifolium subterraneum*. Seeds. Loam, leaf-mould, and sand.
V. subterra'nea (subterranean). ½. Light yellow. July. Trop. and S. Africa. 1823. "Underground Bean." "Bombarra Ground Nut."

VOCHY'SIA. (Derived from *Vochy*, the native name of *V. guianensis*. Nat. ord. Vochysiaceæ, which is allied to Polygalaceæ. Also spelt Vochisia and Vochya.)
Evergreen stove shrubs. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
V. ferrugi'nea (rusty). 20–25. Yellow, odorous. August. Brazil.
,, *guiane'nsis* (Guianese). 6–12. Yellow. August. Guiana. 1822. "Copai-ye-wood."
,, *tomento'sa* (felted). See V. FERRUGINEA.

VOLKAME'RIA. (Commemorative of *J. Christopher Volkamer*, a botanist. Nat. ord. Verbenaceæ. Now referred to Clerodendron.)
V. acule'ata (prickly). See CLERODENDRON ACULEATUM.
,, *angustifo'lia* (narrow-leaved). See CLERODENDRON HETEROPHYLLUM.
,, *buxifo'lia* (box-leaved). See CLERODENDRON BUXIFOLIUM.
,, *fra'grans* (fragrant). See CLERODENDRON FRAGRANS.
,, *ine'rmis* (unarmed). See CLERODENDRON NEREIFOLIUM.
,, *japo'nica* (Japanese). See CLERODENDRON FRAGRANS.
,, *Kæ'mpferi* (Kæmpfer's). See CLERODENDRON SQUAMATUM.

VOLUTARE'LLA. (The diminutive of *Voltaria*. Nat. ord. Compositæ. Allied to Centaurea.)
Hardy or half-hardy annuals. Seeds. May be raised in gentle heat and planted outside in May.
V. bi'color (two-coloured). 1. Coppery-purple. July. N. Africa. 1818.
,, *Li'ppii* (Lipp's). 1. Pale purple. June. S. Amer.; Canaries. 1793.
,, *murica'ta* (warted). 1. Purple. July. Morocco. 1621.

VOUA'PA. (The native name in Guiana. Nat. ord. Leguminosæ. Now referred to Macrolobium.)
V. bifo'lia (two-leaved). See MACROLOBIUM VUAPA.

VO'YRIA. (Guianan name. Nat. ord. *Gentianworts* [Gentianaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Stove herbaceous perennials. Seeds and divisions in spring; sandy loam, with decayed vegetable mould, or a little peat. Winter temp., 50° to 55°; summer, 60° to 80°.
V. aphy'lla (leafless). Yellow. June. Trop. Amer. 1824.
,, *cæru'lea* (blue). Blue. June. Guiana. 1824
,, *ro'sea* (rosy). Red. July. Guiana. 1822.
,, *unifio'ra* (one-flowered). See V. APHYLLA.

VRIE'SIA. (Named after *Dr. de Vriese*, a Dutch botanist. Nat. ord. *Bromelworts* [Bromeliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Now referred to Tillandsia.)

V. Alexa'ndræ (Queen Alexandra's). See TILLANDSIA ALEXANDRÆ.
„ *amethysti'na* (amethyst). See TILLANDSIA AMETHYSTINA.
„ *a'nceps* (two-edged). See TILLANDSIA ANCEPS.
„ *Barille'ii* (Barillet's). See TILLANDSIA BARILLETI.
„ *be'llula* (pretty). See TILLANDSIA HELICONIOIDES.
„ *Billbe'rgiæ* (Billbergia). See TILLANDSIA BILLBERGIÆ.
„ *brachy'stachys* (short-spiked). See TILLANDSIA CARINATA.
„ *cæspito'sa* (tufted). See TILLANDSIA SCHLECTENDAHLII.
„ *carina'ta* (keeled). See TILLANDSIA CARINATA.
„ *chryso'stachys* (golden-spiked). See TILLANDSIA CHRYSOSTACHYS.
„ *cora'llina* (coral). See TILLANDSIA CORALLINA.
„ *crotalo'phora* (clapper-bearing). See TILLANDSIA BARILLETI.
„ *duvalia'na* (Duvalian). See TILLANDSIA DUVALIANA.
„ *Falkenbe'rgii* (Falkenberg's). See TILLANDSIA HELICONIOIDES.
„ *fenestra'lis* (window). See TILLANDSIA FENESTRALIS.
„ *gigante'a* (gigantic). See TILLANDSIA REGINA.
„ *gladioliflo'ra* (Gladiolus-flowered). See TILLANDSIA GLADIOLIFLORA.
„ *glaucophy'lla* (milky-green-leaved). See TILLANDSIA GLAUCOPHYLLA.
„ *glaziovia'na* (Glaziovian). See TILLANDSIA REGINA.
„ *gra'cilis* (slender). See TILLANDSIA PROCERA.
„ *gutta'ta* (spotted). See TILLANDSIA GUTTATA.
„ *heliconioi'des* (Heliconia-like). See TILLANDSIA HELICONIOIDES.
„ *hieroglyphica* (hieroglyphical). See TILLANDSIA HIEROGLYPHICA.
„ *incurva'ta* (incurved). See TILLANDSIA INCURVATA.
„ *imperia'lis* (imperial). See TILLANDSIA REGINA IMPERIALIS.
„ *Jo'nghei* (Jonghe's). See TILLANDSIA JONGHEI.
„ *Kra'meri* (Kramer's). See TILLANDSIA PSITTACINA KRAMERI.
„ *Li'ndeni* (Linden's). See TILLANDSIA LINDENI.
„ *Marte'lli* (Martell's). See TILLANDSIA MARTELLI.
„ *mœnsia'na* (Mœnsian). See TILLANDSIA MŒNSIANA.
„ *paraba'ica* (Parabaic). See TILLANDSIA PARABAICA.
„ *Philippocobu'rgi* (Philipp-Coburg's). See TILLANDSIA PHILIPPOCOBURGI.
„ *Platzma'nni* (Platzmann's). See TILLANDSIA PLATZMANNI.
„ *psittaci'na* (parrot-like-*flowered*). See TILLANDSIA PSITTACINA and variety.
„ *pulverule'nta linea'ta* (powdery-lined). Flowers unknown. Leaves striped with yellow. Brazil. 1888.
„ *purpura'scens* (purple). Leaves purple beneath. Brazil. 1893.
„ *quintusia'na* (Quintusian). See TILLANDSIA QUINTUSIANA.
„ *reticula'ta* (netted). See TILLANDSIA RETICULATA.
„ *rodigasia'na* (Rodigasian). See TILLANDSIA RODIGASIANA.
„ *sanguinole'nta* (blood-red). See TILLANDSIA SANGUINOLENTA.
„ *Saunde'rsii* (Saunders'). See TILLANDSIA SAUNDERSII.
„ *scala'ris* (ladder). See TILLANDSIA SCALARIS.
„ *siebertia'na* (Siebertian). Leaves narrow, spiny, edged with white. 1899.
„ *specio'sa* (showy). See TILLANDSIA SPLENDENS.
„ *sple'ndens* (splendid). See TILLANDSIA SPLENDENS.
„ *tessella'ta* (tessellated). See TILLANDSIA TESSELLATA and varieties.
„ *tri'color* (three-coloured). See TILLANDSIA PUNCTULATA.
„ *truffautia'na* (Truffautian). See TILLANDSIA INCURVATA.
„ *vimina'lis* (twiggy). See TILLANDSIA VIMINALIS.
„ *viridiflo'ra* (green-flowered). See TILLANDSIA VIMINALIS.
„ *Warmi'ngii* (Warming's). See TILLANDSIA WARMINGII.
„ *wawra'nea* (Wawra's). See TILLANDSIA WAWRANEA.
„ *xipho'stachys* (sword-spiked). See TILLANDSIA XIPHOSTACHYS.

VULNERA'RIA. (From *vulnus*, *vulneris*, a wound. Nat. ord. Leguminosæ. Now referred to Anthyllis.)

V. Anthy'llis (Anthyllis). See ANTHYLLIS VULNERARIA.
„ *Dille'nii* (Dillenius'). See ANTHYLLIS VULNERARIA DILLENII.
„ *rubriflo'ra* (red-flowered). See ANTHYLLIS VULNERARIA DILLENII.

W

WACHENDO'RFIA. (Named after *E. J. Wachendorf*, a Dutch botanist. Nat. ord. *Bloodworts* [Hæmodoraceæ]. Linn. 3-*Triandria*, 1-*Monogynia*.)

Greenhouse, South African bulbs; yellow-flowered, except where otherwise mentioned, and requiring the same treatment as the larger Ixias. They bloom in April.

W. brevifo'lia (short-leaved). See W. HIRSUTA.
„ *breynia'na* (Breynian). See W. HIRSUTA.
„ *grami'nea* (grass-*leaved*). See W. GRAMINIFOLIA.
„ *graminifo'lia* (grass-leaved). 1.
„ *Hibbe'rtii* (Hibbert's). See W. PANICULATA.
„ *hirsu'ta* (hairy). 1½. Violet. 1687.
„ *panicula'ta* (panicled). 2. 1700.
„ *tene'lla* (tender). 1. 1816.
„ *thyrsiflo'ra* (thyrse-flowered). 2. May. 1759.
„ *villo'sa* (shaggy). See W. HIRSUTA.

WAFER ASH. *Ptelea trifolia'ta.*

WAGA'TEA. (Probably commemorative. Nat. ord. Leguminosæ. Allied to Gleditschia and Cæsalpinia.)

A tall, climbing stove shrub. Cuttings in sand, in a warm frame, with bottom-heat. Sandy loam and peat.

W. spica'ta (spiked). 30. Orange; calyx scarlet. India.

WAHLENBE'RGIA. (Named after *Dr. Wahlenberg*, author of "Flora Lapponica." Nat. ord. *Bellworts* [Campanulaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)

All are blue-flowered, except when otherwise mentioned. Seeds under a glass in the beginning of April, and planted out at the end of May; division of perennials, and cuttings of the young shoots at the beginning of summer, under a hand-light; sandy peat and loam, and a cool, moist situation.

GREENHOUSE ANNUALS, &c.

W. capilla'ris (hair-*leaved*). See W. GRACILIS.
„ *ce'rnua* (drooping). Blue, white. July. S. Africa. 1804. Biennial.
„ *dehi'scens* (gaping). See W. GRACILIS.
„ *gra'cilis* (slender). April. Southern tropical and temperate regions. 1794. Biennial. "Australian Harebell."
„ *littora'lis* (sea-shore). April. Van Diemen's Land. 1820. Biennial.
„ *tubero'sa* (tuberous). ½–1½. White, rose. Juan Fernandez. 1874.
„ *undula'ta* (wavy). Violet-blue. S. Africa.
„ *vincæflo'ra* (Vinca-flowered). See W. GRACILIS.

HARDY PERENNIALS.

W. albomargina'ta (white-margined). See W. SAXICOLA.
„ *arva'tica* (Arvatian). See W. HEDERACEA.
„ *capilla'cea* (hair-like-*leaved*). White. May. S. Africa. 1822.
„ *dalma'tica* (Dalmatian). Dalmatia.
„ *graminifo'lia* (grass-leaved). 1. June. Hungary; Italy. 1817.
„ *grandiflo'ra* (large-flowered). See PLATYCODON GRANDIFLORUM.
„ *hedera'cea* (ivy-like). ¼. June, July. Europe (England). "Ivy-leaved Harebell."
„ *Kitaibe'lii* (Kitaibel's). Violet. June. Hungary. 1823.
„ „ *croa'tica* (Croatic). Croatia, &c.
„ *ni'vea* (snowy). Snow-white; calyx reddish. Alps of Bosnia. 1893.
„ *Pumi'lio* (Pumilio). ¼. Violet. June. Dalmatia.
„ *pumilio'rum* (diminutive). See W. SERPYLLIFOLIA DINARICA.
„ *re'pens* (creeping). See W. PROCUMBENS.
„ *Ro'ylei* (Royle's). See CODONOPSIS OVATA.

W. saxi'cola (rock-loving). ½–½. June. New Zealand. "New Zealand Bluebell."
„ *serpyllifo'lia* (thyme-leaved). ½. Dalmatia.
„ „ *dina'rica* (Dinarian).
„ *tenuifo'lia* (slender-leaved). ½. Violet-blue. August. Croatia; Dalmatia. 1879.
„ „ *ca'ricina* (Carex-like). Leaves longer, slender.

HARDY ANNUALS.

W. cape'nsis (Cape). July. 1819.
„ *diffu'sa* (spreading). See MICROCODON LINEARE DIFFUSUM.
„ *diversifo'lia* (various-leaved). See W. PROCUMBENS.
„ *elonga'ta* (elongated). See W. CAPENSIS.
„ *fle'xilis* (feeble). ½. May. S. Africa. 1836.
„ *hispi'dula* (bristly). See MICROCODON DEPRESSUM.
„ *linea'ris* (narrow-*leaved*). See MICROCODON LINEARE.
„ *lobelioi'des* (Lobelia-like). See W. PENDULA.
„ *nutabu'nda* (much-drooping). White. July. Italy. 1830.
„ *pe'ndula* (drooping). Pale red. July. Madeira; Canaries. 1777.
„ *procu'mbens* (lying-down). July. S. Africa. 1822.

WAILE'SIA. (Commemorative of *G. Wailes*, a noted cultivator of Orchids. Nat. ord. Orchidaceæ. Now referred to Dipodium.)

W. paludo'sa (marsh). See DIPODIUM PALUDOSUM.
„ *pi'cta* (painted). See DIPODIUM PICTUM.
„ *puncta'ta* (dotted). See DIPODIUM PUNCTATUM.
„ *ro'sea* (rosy). See DIPODIUM PICTUM.

WAI'TZIA. (Commemorative of *M. Waitz*. Nat. ord. Compositæ. Allied to Helipterum.)

Annuals with Everlasting flowers like Helipterum and Helichrysum. Seeds in gentle heat, to be planted out in May. Ordinary garden soil.

W. acumina'ta (long-pointed). See W. CORYMBOSA.
„ *au'rea* (golden). 1–2. Golden-yellow. July to September. Australia. 1836.
„ *corymbo'sa* (corymbose). 1. White, yellow. Australia. 1864.
„ *grandiflo'ra* (large-flowered). 1–1½. Yellow. July. August. Australia. 1864.
„ *ni'vea* (snowy). See W. ODONTOLEPIS.
„ *odonto'lepis* (tooth-scaled). 1½. White or pink. July to September. Australia. 1836.
„ *steetzia'na* (Steetzian). 1. Yellow. July, August. Australia. 1861.
„ *tene'lla* (slender). See W. STEETZIANA.

WAKE ROBIN. *A'rum macula'tum* and *Trillium grandiflorum*.

WALDSCHMI'DIA. See LIMNANTHEMUM.

WALDSTEI'NIA. (Named after *F. von Waldstein*, a German botanist. Nat. ord. *Roseworts* [Rosaceæ]. Linn. 12-*Icosandria*, 1-*Monogynia*. Allied to Geum.)

Hardy herbaceous perennials. Divisions. Ordinary soil, or to be planted on the rockery.

W. donia'na (Donian). See W. FRAGARIOIDES.
„ *fragarioi'des* (strawberry-like). ½–1. Yellow. May. N. Amer. 1800.
„ *geoi'des* (avens-like). ½. Yellow. June. Hungary; Tauria. 1804.
„ *sibi'rica* (Siberian). 1. Yellow. May, June. Siberia.
„ *trifo'lia* (three-leaved). ½–½. Yellow. April, May. Europe.

WA'LKERA. (Named after *Dr. R. Walker*, founder of the Cambridge Botanic Garden. Nat. ord. *Ochnads* [Ochnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Gomphia.)

Stove, yellow-flowered evergreens. Cuttings of half-ripened shoots, or firm side-shoots in sand, under a bell-glass, in the beginning of April; sandy loam and peat. Winter temp., 50° to 60°; summer, 60° to 85°.

W. integrifo'lia (entire-leaved). 12. Guiana.
„ *serra'ta* (saw-*leaved*). See GOMPHIA ANGUSTIFOLIA.

WALKING LEAF. *Scolope'ndrium rhizophy'llum*.

WALKS. See CONCRETE and GRAVEL WALKS.

WALL-CRESS. *A'rabis*.

WALL FERN. *Polypo'dium vulga're*.

WALLFLOWER. *Cheira'nthus Chei'ri*.

WALLFLOWER, ALPINE. *Ery'simum ochroleu'cum*.

WALLI'CHIA. (In honour of *Dr. Wallich*, curator of the Calcutta Botanic Garden. Nat. ord. *Palms* [Palmaceæ]. Linn. 21-*Monœcia*, 6-*Hexandria*.)

Moist-stove Palms. Require a light, well-drained loam. Increased by suckers, which must be separated gradually, so as to induce them to root before being finally taken from the parent.

W. caryotoi'des (Caryota-like). Yellow-white. July. Chittagong; Burma. 1825.
„ *densiflo'ra* (thickly-flowered). Sikkim Himalaya.
„ *di'sticha* (two-ranked). Himalaya.
„ *na'na* (dwarf). See DIDYMOSPERMA NANUM.
„ *porphyroca'rpa* (purple-fruited). See DIDYMOSPERMA PORPHYROCARPON.

WALLI'SIA. See TILLANDSIA.

WALL PENNYWORT. *Cotyle'don Umbili'cus*.

WALL PEPPER. *Se'dum a'cre*.

WALL RUE. *Asple'nium Ru'ta-mura'ria*.

WALLS are usually built in panels, from 15 to 30 feet in length, one brick thick, with pillars at these specified distances, for the sake of adding to their strength, and the foundation a brick and a half thick. The plan of Mr. Silverlock, of Chichester, is worthy of adoption, since, if well constructed, it is equally durable, and saves one-third of the expense. Walls so constructed are stated to become dry after rain much more rapidly than a solid wall of the same or any other thickness, and there appears not a shadow of a reason why they should not ripen fruit equally well. He forms the wall hollow, 9 inches in breadth, by placing the bricks edgewise, so as to form two facings; they are laid in good mortar, and the joints carefully finished. They are placed alternately with their faces and ends to the outsides, so that every second brick is a tie, and in each succeeding course a brick with its end outwards is placed on the centre of one laid lengthwise on either side. The top of the wall must be covered with a coping of stone or bricks projecting 8 inches. It is strengthened at every 20 feet by piers of 14-inch work, built in the same manner, with bricks laid on edge.

In every instance a wall should never be lower than 8 feet. The thickness usually varies with the height of the wall, being 9 inches if it is not higher than 8 feet; 13½ inches, if above 8 and under 14 feet; and 18 inches, from 14 up to 20 feet.

Inclined or *Sloping Walls* have been recommended, but have always failed in practice. It is quite true that they receive the sun's rays at a favourable angle, but they retain wet, and become so much colder by radiation at night than perpendicular walls, that they are found to be unfavourable to the ripening of fruit.

The Flued-wall or *Hot-wall* is generally built entirely of brick, though, where stone is abundant and more economical, the back or north side may be of that material. A flued-wall may be termed a hollow wall, in which the vacuity is thrown into many compartments, to facilitate the circulation of smoke and heat from the base, or surface of the ground, to within 1 or 2 feet of the coping. Such walls are generally arranged with hooks inserted under the coping, to admit of fastening some description of protecting covers, and sometimes for temporary glass frames. A length of 40 feet, and from 10 to 15 high, may be heated by one fire, the furnace of which, being placed 1 or 2 feet below the surface of the ground, the first course, or flue, will commence 1 foot above it, and be 2 feet 6 inches or 3 feet high, and the second, third, and fourth courses will be narrower as they ascend. The thickness of that side of the flue next the south or preferable side should, for the first course, be 4 inches, or brick and bed; and, for the other courses, it were desirable to have bricks cast in a smaller mould; say for the second course 3, for the third 2½, and for the fourth 2½ inches in breadth. This will give an opportunity of bevelling the wall, and the bricks being all of the same thickness, though of different widths, the external appearance will be everywhere the same.—*Enc. Gard.*

WALNUT. *Ju'glans re'gia*.

WALNUT, BLACK. *Ju'glans ni'gra.*

WALSU'RA. (Changed or altered from *Wallursi*, the native name for *W. Piscidia.* Nat. ord. Meliaceæ.)
Stove evergreen trees. Cuttings of firm wood in sand, in a close frame, with bottom-heat. Loam, peat, and sand.
W. Pisci'dia (fish-poison). 20. Dirty yellow. June. India. 1830.
„ *robu'sta* (robust). 20–25. White. June. Himalaya; Burma. 1827.

WALUE'WA. (Commemorative of *P. A. Walejew.* Nat. ord. Orchidaceæ. Allied to Gomeza.)
Stove epiphytal Orchid. Divisions. Sphagnum, fibre of peat, and crocks.
W. pulche'lla (pretty). ½. Yellowish, with purple band on the petals. Brazil. 1890.

WAMPEE TREE. *Coo'kia.*

WANDERING JEW. *Saxi'fraga sarmento'sa.*

WHANGHEE CANE. *Phyllo'stachys ni'gra.*

WARATAH or **WARATAH TREE.** *Telo'pea speciosi'ssima.*

WARDIAN CASE. See GLASS CASE.

WARPU'RIA. (Commemorative of *Warpur*, a collector of plants. Nat. ord. Acanthaceæ.)
Stove, dwarf perennial herb. *W. clandestina* is the type of a new genus. Cuttings in sand, in a close frame, with bottom-heat. Loam, leaf-mould, and sand.
W. clandesti'na (hidden). ½–½. White. Leaves pale green, with zigzag black band each side of the midrib. Madagascar. 1908.

WA'RREA. (Named after *F. Warre*, a botanical collector. Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria.* Allied to Grobya.)
Stove orchids, grown in baskets. See ORCHIDS.
W. bidenta'ta (two-toothed-*lipped*). Purple, white. September. Colombia. 1843.
„ *ca'ndida* (white). See ZYGOPETALUM CANDIDUM.
„ *cya'nea* (blue-*lipped*). See ACACALLIS CYANEA.
„ *digita'ta* (fingered). See ZYGOPETALUM WAILESIANUM.
„ *di'scolor* (two-coloured). See ZYGOPETALUM DISCOLOR.
„ *hookeria'na* (Hookerian). Reddish-purple, paler in centre. Peru. 1910.
„ *margina'ta* (margined). See ZYGOPETALUM MARGINATUM.
„ *quadra'ta* (four-sided). See ZYGOPETALUM MARGINATUM.
„ *rube'scens* (reddish). Red. April. Brazil. 1838.
„ *tri'color* (three-coloured). 2. Yellow, purple. August. Brazil. 1843.
„ „ *stapelioi'des* (Stapelia-like). Yellow, barred with brown. Colombia. 1873.
„ *wailesia'na* (Wailesian). See ZYGOPETALUM WAILESIANUM.

WARSCEWICZE'LLA. (Diminutive of *Warscewiczia.* Nat. ord. Orchidaceæ. Now referred to Zygopetalum.)
W. aroma'tica (aromatic). See ZYGOPETALUM AROMATICUM.
„ *pi'cta* (painted). See ZYGOPETALUM PICTUM.
„ *Wendla'ndii di'scolor* (Wendland's two-coloured). See ZYGOPETALUM WENDLANDII DISCOLOR.

WARSZEWI'CZIA. (Commemorative of the Russian botanist, *Warszewicz.* Nat. ord. Rubiaceæ.)
Evergreen stove tree. Cuttings in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.
W. cocci'nea (scarlet). Bright red. Trop. Amer.

WARTED GOURD. *Cucu'rbita Pe'po verruco'sa.*

WASHINGTO'NIA. (Commemorative of *George Washington*, the notable American patriot and statesman. Nat. ord. Palmaceæ.)
Greenhouse Palms. Seeds. Fibrous loam, peat, and sand.
W. fili'fera (thread-bearing). 20–40. California. 1883.
„ *robu'sta* (robust). See W. FILIFERA.
„ *Sono'ræ* (Sonora's). California.

WASHINGTO'NIA GIGANTE'A, of Carriere. See SEQUOIA GIGANTEA.

WATER. The best for the gardener's purpose is rain water, preserved in tanks sunk in the earth, and rendered tight either by puddling, or bricks covered with Parker's cement. To keep these tanks replenished, gutters should run round the eaves of every structure in the garden, and communicate with them. Every hundred cubic inches of rain water contains more than four cubic inches of air, of which more than half are carbonic acid gas, and the remainder nitrogen and oxygen, in the proportion of sixty-two of the former to thirty-eight of the last named.
That obtained from ponds or springs invariably contains matters offensive or deleterious to plants. That known as hard water, containing an excess of salts of lime or magnesia, is invariably prejudicial, and pond water is scarcely less so. If it be stagnant, and loaded with vegetable extract, it is even worse than hard spring water; for it then contains carburetted hydrogen, and other matters noxious to vegetables. These last-named waters, if obliged to be employed to tender plants, should have a pint of the ammoniacal water of the gas-works, mixed thoroughly with every sixty gallons, an hour or two before they are used.

WATER-CRESS. (*Nastu'rtium officina'le.*) *Varieties.*—Small Brown-leaved, hardiest; Large Brown-leaved, best for deep water; Green-leaved, easiest cultivated.
Planting in Water.—The trenches in which they are grown are so prepared, that, as nearly as possible, a regular depth of 3 or 4 inches can be kept up. These trenches are 3 yards broad, and 87 yards long, and whenever one is to be planted the bottom is made quite firm and slightly sloping, so that the water which flows in at one end may run out at the other. If the bottom of the trench is not sufficiently moist, a small body of water is allowed to enter to soften it. The cresses are then divided into small sets or cuttings, with roots attached to them; and these are placed at the distance of 3 or 4 inches from each other. At the end of five or six days a slight dressing of well-decomposed cow-dung is spread over all the plants, and this is pressed down by means of a heavy board, to which a long handle is obliquely fixed. The water is then raised to the depth of 2 or 3 inches, and never higher. Each trench is thus replanted annually, and furnishes twelve crops during the season. In the summer the cresses are gathered every fifteen or twenty days, but less frequently during winter; care is taken that at each gathering at least a third part of the bed is left untouched, so that neither the roots may be exhausted, nor the succeeding gathering delayed. After every cutting, a little decayed cow-dung, in the proportion of two large barrowfuls to each trench, is spread over the naked plants, and this is beaten down by means of the rammer above mentioned. After the water-cresses have been thus treated for a twelvemonth, the manure forms a tolerably thick layer at the bottom of the trench, and tends to raise its level. To restore it to its original level, all the refuse should be thrown out upon the borders which separate the trenches from each other. These borders may be planted with artichokes, cabbages, or cauliflowers.
Planting in Borders.—This must be done in September, and in a moist, shady border. Plant slips, and the only cultivation necessary is to dig the earth fine, to draw a slight trench with a hoe, to fill this with water until it becomes a mud, to cover it about an inch deep with drift sand, and then to stick in the slips about 6 inches apart, watering them until established. The sand keeps the plants clean. They will be ready for gathering from in a very few weeks, and the shoots should be invariably cut, and not picked. They are not so mild-flavoured as those grown in water, but then they are free from aquatic insects, &c.

WATERFALL. See CASCADE.

WATERING ENGINE. See ENGINE.

WATERING POTS. These should have roses pierced with very fine holes; the diameter of those usually used is too large. *Long-spouted* watering-pots are required for watering plants in pots upon shelves. *French* watering pots have zigzag bends in the spout, to break from the plant the force of the water. *Shelf* watering-pots are small and flat-bodied, for giving water to plants overhead, and near the glass in greenhouses or stoves.
Mr. G. Thompson advocates a very superior type of

watering-pot, and states that its superiority consists in the roses being so formed as to give the water thrown from them the nearest resemblance to a gentle shower of rain, which renders it peculiarly suitable for watering seedlings or other tender plants. As the brass joints which connect the roses to the spout are made water-tight, there is no danger of its returning outside, to the annoyance of the person using it: it has a spout to which the roses are screwed; a box to contain either spout out of use; it has, also, holes in which the joints are placed; a large rose, for watering flower-beds; and a smaller rose, for watering plants in pots.

WATER ALOE. *Stratio'tes aloi'des.*

WATER ARCHER. *Sagitta'ria sagittifo'lia.*

WATER ASH, CAROLINA. *Fra'xinus platyca'rpa.*

WATER AVENS. *Ge'um riva'le.*

WATER BALSAM. *Hydro'cera angustifo'lia.*

WATER BEAN. *Nelu'mbium.*

WATER BEAN, SACRED. *Nelu'mbium specio'sum.*

WATER BETONY. *Scrophula'ria aqua'tica.*

WATER CALTROPS. *Tra'pa na'tans.*

WATER CRESS. *Nastu'rtium officina'le.*

WATER ELDER. *Vibu'rnum O'pulus.*

WATER FLAG. *I'ris Pseuda'corus.*

WATER LEAF. *Hydrophy'llum.*

WATER LEMON. *Passiflo'ra laurifo'lia.*

WATER LENTILS. *Le'mna.*

WATER LETTUCE. *Pi'stia Stratio'tes.*

WATER LILY. *Ny'mphæa.*

WATER LILY, NEW ZEALAND. *Ranu'nculus Lya'llii.*

WATER LILY, YELLOW. *Nu'phar lu'teum.*

WATER MELON. *Citru'llus vulga'ris.*

WATER MILFOIL. *Myriophy'llum.*

WATER OAK. *Que'rcus aqua'tica.*

WATER PARSNIP. *Si'um.*

WATER PLANTS. See AQUARIUM.

WATER REED. *Aru'ndo.*

WATER SOLDIER. *Stratio'tes aloi'des.*

WATER SPIKE. *Potamoge'ton.*

WATER THYME. *Elo'dea canade'nsis.*

WATER VINE. *Tetra'cera alnifo'lia.*

WATER VIOLET. *Hotto'nia palu'stris.*

WATER WHITE OAK. *Que'rcus lyra'ta.*

WATSO'NIA. (Named after *W. Watson*, a London apothecary. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia*. Allied to Gladiolus.)

Bulbs, from South Africa, except where otherwise mentioned. For culture, see GLADI'OLUS.

W. a'lba (white). See W. MERIANA O'BRIENI.
„ *aletroi'des* (Aletris-like). 1½. Scarlet. June. 1774.
„ „ *variega'ta* (variegated). 1½. Variegated. June. 1774.
„ *angu'sta* (narrow-*flowered*). Scarlet. May, June. 1795.
„ *Arde'rnei* (Arderne's). See W. MERIANA O'BRIENI.
„ *brevifo'lia* (short-leaved). 1. Pink. May. 1794.
„ *campanula'ta* (bell-shaped). See IXIA COLUMELLARIS.
„ *cocci'nea* (scarlet). 1. Bright crimson. B.M., t. 1194.
„ *compa'cta* (compact). See MICRANTHUS PLANTAGINEUS and M. FISTULOSUS.
„ *cyli'ndrica* (cylindrical). 1. Pale red, with narrow tube. Said to come from Madagascar. 1871.
„ *densiflo'ra* (dense-flowered). 1½–3. Rose-red, rarely white. 1878.
„ *fistulo'sa* (hollow). See MICRANTHUS FISTULOSUS.
„ *fu'lgida* (shining). See W. ANGUSTA.
„ *hu'milis* (lowly). 2. Lake. June. 1754.
„ *iridifo'lia* (Iris-leaved). See W. MERIANA IRIDIFOLIA.
„ „ *Arde'rnei* (Arderne's). See W. MERIANA O'BRIENI.
W. iridifo'lia fu'lgens (shining). See W. ANGUSTA.
„ „ *O'Brie'ni* (O'Brien's). See W. MERIANA O'BRIENI.
„ *lacca'ta* (lake). See W. HUMILIS.
„ *Ludwi'gii* (Ludwig's). See W. MERIANA ROSEO-ALBA
„ *margina'ta* (bordered). 3. Pink. July.
„ „ *mi'nor* (lesser). 3. Pink. August. 1812.
„ *meria'na* (Merian). 1½. Flesh. May. 1750.
„ „ *Arde'rnei* (Arderne's). See W. MERIANA O'BRIENI.
„ „ *cocci'nea* (scarlet). See W. COCCINEA.
„ „ *iridifo'lia* (Iris-leaved). 2–4. Pink. Leaves broader. May. 1795.
„ „ *O'Bri'eni* (O'Brien's). 2–4. Pure white. May, June. S. Africa. 1889.
„ „ *ro'seo-a'lba* (rosy-white). 1. Pink, white. July.
„ *plantagi'nea* (plantain-like). See MICRANTHUS PLANTAGINEUS.
„ *puncta'ta* (dotted-*flowered*). 1. Purple. June. 1800.
„ *racemo'sa* (racemed). Appears to be *Ixia columellaris*(?).
„ *retu'sa* (retuse). Rose-red. Leaves like those of an Ixia.
„ *revolu'ta* (revolute). See GLADIOLUS WATSONIUS.
„ *ro'sea* (rosy). 2. Rose-red. July. 1803.
„ „ *a'lbo* (red-and-white). See W. MERIANA ROSEO-ALBA.
„ *ru'bens* (red). See W. PUNCTATA.
„ *spica'ta* (spiked). See MICRANTHUS PLANTAGINEUS and M. FISTULOSUS.
„ *strictiflo'ra* (erect-flowered). 1. Red. June. 1810.
„ *tubulo'sa* (tubular). See W. ALETROIDES.

WATTLE. *Aca'cia* and *Citharе'xylum.*

WAX DAMMAR. *Podoca'rpus neriifo'lia.*

WAX FLOWER. *Ho'ya.*

WAX FLOWER, CLUSTERED. *Stephano'tis flori-bu'nda.*

WAX, GRAFTING. See GRAFTING WAX, under "GRAFT."

WAX MYRTLE. *My'rica ceri'fera.*

WAX PALM. *Coperni'cia ceri'fera.*

WAX PLANT. *Ceri'nthe ma'jor.*

WAX TREE. *Vi'smia guiane'nsis.*

WAY BREAD. *Planta'go.*

WAYFARING TREE. *Vibu'rnum Lanta'na.*

WE'BBIA PINIFO'LIA. See VERNONIA PINIFOLIA.

WE'BERA. (Commemorative of *George Henry Weber*, a Professor at Kiel. Nat. ord. Rubiaceæ. Now referred to Tarenna.)

W. corymbo'sa (corymbose). See TARENNA ZEYLANICA.

WEDE'LIA. (Commemorative of *George Wolfgang Wedel*, a German botanist. Nat. ord. Compositæ.)

Greenhouse or half-hardy perennials or subshrubs. Seeds; cuttings under a bell-glass. Fibrous loam, leaf-mould, and sand.

W. au'rea (golden). See ZEXMENIA AUREA.
„ *biflo'ra* (two-flowered). Yellow. July. Tropics Old World. 1818. Annual.
„ *hi'spida* (roughly-hairy). 1½. Yellow. June. Mexico. 1819. Half-hardy perennial.
„ *oblo'nga* (oblong). 2–3. Lemon-yellow. British E. Africa. 1909. Half-hardy perennial.
„ *radio'sa* (rayed). 1½–2. Yellow. June. Brazil. 1820. Greenhouse subshrub.

WEED-WIND or **WITH-WIND.** *Convo'lvulus.*

WEEPING ARBOR-VITÆ. *Thu'ya orienta'lis pe'ndula.*

WEEPING ASH. *Fra'xinus exce'lsior pe'ndula.*

WEEPING ASPEN. *Po'pulus tre'mula pe'ndula.*

WEEPING BEECH. *Fa'gus sylva'tica pe'ndula.*

WEEPING BIRCH. *Be'tula a'lba pe'ndula.*

WEEPING BIRCH, YOUNG'S. *Be'tula a'lba pe'ndula You'ngii.*

WEEPING CHERRY. *Pru'nus a'cida semperflo'rens.*

WEEPING ELM. *U'lmus gla'bra pe'ndula*, and *U. monta'na pe'ndula.*

WEEPING LABU'RNUM. *Labu'rnum vulga're pe'ndulum.*

WEEPING MOUNTAIN ASH. *Py'rus Aucupa'ria pe'ndula.*

WEEPING OAK. *Que'rcus peduncula'ta pe'ndula.*

WEEPING POPLAR. *Po'pulus grandidenta'ta pe'ndula,* and *Po'pulus tre'mula pe'ndula.*

WEEPING RED CEDAR. *Juni'perus virginia'na pe'ndula.*

WEEPING WILLOW. *Sa'lix babylo'nica.*

WEEPING WILLOW, AMERICAN. *Sa'lix purpu'rea pe'ndula.*

WEEPING WILLOW, KILMARNOCK. *Sa'lix ca'prea pe'ndula.*

WEEVIL. See ANTHO'NOMUS.

WEIGE'LA. (Commemorative of *C. E. Weigel*, a writer on botanical subjects. It is often spelt Weigelia. Nat. ord. Caprifoliaceæ. See DIERVILLA.)

W. ama'bilis (lovely) of Gardens. See DIERVILLA FLORIDA.
„ *ama'bilis* (lovely) of Carriere. See DIERVILLA GRANDIFLORA.
„ *ca'ndida* (white). See DIERVILLA FLORIDA CANDIDA.
„ *procu'mbens* (lying-down). Rose, spotted with white. 1879. Trailing.
„ *ro'sea* (rosy). See DIERVILLA FLORIDA.
„ „ *monstro'sa* (monstrous). See DIERVILLA FLORIDA MONSTROSA.

WEINMA'NNIA. (Named after *J. W. Weinmann*, a German botanist. Nat. ord. *Saxifrages* [Saxifragaceæ]. Linn. 8-*Octandria*, 2 *Digynia*.)

White-flowered, evergreen shrubs. Cuttings of half-ripened shoots in sand, under a bell-glass, in April. The stove ones in bottom-heat, the others in a close, cool pit or frame; sandy loam and leaf-mould, with a little old, dried cow-dung.

STOVE.

W. elli'ptica (oval-*leaved*). 4. May. S. Amer. 1824.
„ *gla'bra* (smooth). See W. PINNATA.
„ *hi'rta* (hairy). 6. May. Jamaica. 1820.
„ *ova'ta* (egg-*leaved*). 6. May. Peru. 1824.
„ *pinna'ta* (pinnate). 6. May. Trop. Amer. 1815.

GREENHOUSE.

W. austra'lis (Australian). See ACROPHYLLUM VENOSUM.
„ *panicula'ta* (panicled). See CALDCLUVIA PANICULATA.
„ *pube'scens* (downy). See W. RETICULATA.
„ *reticula'ta* (netted). Peru. 1847.
„ *trichospe'rma* (hairy-seeded). 4. May. Peru; Chili.
„ *trifolia'ta* (three-leaved). See PLATYLOPHUS TRIFOLIATUS.
„ *veno'sa* (veiny). See ACROPHYLLUM VENOSUM.

WELDE'NIA. (A commemorative name. Nat. ord. Commelinaceæ.)

A greenhouse, tuberous-rooted herb. Seeds; offsets. Loam, leaf-mould, and sand.

W. ca'ndida (white). 1. White. Mexico; Guatemala. 1894.

WE'LFIA. (Complimentary to the royal family—*Guelph*—of Hanover. Nat. ord. Palmaceæ. Allied to Geonoma.)

Stove Palm. Seeds. Loam, peat, and sand.

W. re'gia (royal). 40–60. Leaves bronzy when young. Colombia. 1869.

WELLINGTO'NIA. (In honour of the great *Duke of Wellington*. Nat. ord. *Conifers* [Coniferæ]. Linn. 22-*Monœcia*, 10-*Monadelphia*. Now referred to Sequoia.)

W. gigante'a (gigantic). See SEQUOIA GIGANTEA.
„ „ *pyramida'ta compa'cta* (pyramidal, compact). See SEQUOIA GIGANTEA PYRAMIDATA COMPACTA.

WELSH NUT. *Ju'glans re'gia.*

WELSH ONION. See CIBOUL.

WELSH POPPY. *Mecono'psis ca'mbrica.*

WELWI'TSCHIA. (Commemorative of *Dr. Frederic Welwitsch*, the famous botanical traveller, who first made the plant known in Europe. Nat. ord. Gnetaceæ.)

This is one of the most remarkable curiosities in the vegetable kingdom. It belongs to an order most frequently represented by Ephedra in this country, but has no external resemblance to the latter. It bears scarlet cones not unlike those of a Spruce in shape. An old plant has a flat, table-like top, somewhat two-lobed, and 2–4½ ft. in diameter, rough and brown like the crust of a loaf, and has an obconical trunk, 1 to 2 feet high. From the edge of the top it produces two long, flat, linear leaves, that get torn into strips as they lie on the ground or get blown about by the wind on the arid sands of tropical and South-western Africa, where rain seldom falls. The trunk that bears them rises only a few inches from the sand. For some time these leaves were considered to be the seed leaves, but plants germinated at the Royal Gardens, Kew, carried their cotyledons for some time, after which the true leaves appeared. The plant grows very slowly in this country and also in its native home, and is supposed to live for one hundred years. Dew falls more frequently than rain in its native country, but probably it derives its moisture by capillary attraction from the subsoil, and has a great faculty in retaining the small quantity it requires to sustain life.

W. mira'bilis (wonderful). Cones scarlet. Leaves 3–6 ft. long. Trop. Africa and Damara Land. 1862 and 1878.

WENDLA'NDIA. (Named after *J. C. Wendland*, curator of the Botanic Garden, Hanover. Nat. ord. *Rubiads* [Rubiaceæ]. Linn. 6-*Hexandria*, 4-*Polygynia*. Allied to Hindsia.)

Stove, white-flowered evergreens. Cuttings of the points of young shoots, or small young side-shoots, in sand, under a bell-glass, in May; sandy loam, fibrous peat, and a little charcoal. Winter temp., 45° to 55°; summer, 60° to 80°.

W. panicula'ta (panicled). July. India, Malaya. 1820.
„ *populifo'lia* (poplar-leaved). See COCCULUS CAROLINUS.
„ *tincto'ria* (dyer's). July. Himalaya; Burma. 1825.

WERNE'RIA. (Named after *A. G. Werner*, the celebrated mineralogist. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Allied to Doronicum.)

Half-hardy herbaceous. Division of the plant in spring; sandy loam, well drained; requires a cool greenhouse or a cold pit in winter, or may be treated as an alpine plant, protected from severe frost and wet in winter.

W. ri'gida (stiff). ½. February. Ecuador. 1828.

WESTERN YEW. *Ta'xus brevifo'lia.*

WEST INDIAN COCKSPUR. *Piso'nia aculea'ta.*

WEST INDIAN MUGWORT. *Parthe'nium Hystero'phorus.*

WESTO'NIA HUMIFU'SA. See RO'THIA TRIFOLIA'TA.

WESTRI'NGIA. (Named after *J. P. Westring*, physician to the King of Sweden. Nat. ord. *Lipworts* [Labiatæ]. Linn. 14-*Didynamia*, 1-*Gymnospermia*. Allied to Prostranthera.)

Greenhouse, blue-flowered evergreens, from Australia. Cuttings of half-ripened shoots in May, in sand, under a bell or hand-glass; sandy loam and leaf-mould. Winter temp., 35° to 45°.

W. angustifo'lia (narrow-leaved). See W. RIGIDA.
„ *cine'rea* (grey). See W. RIGIDA.
„ *Dampie'ri* (Dampier's). White. August. 1803.
„ *eremi'cola* (dessert-loving). 2–3. Light blue. June. 1823.
„ *grandifo'lia* (large-leaved). 2–3. July.
„ *longifo'lia* (long-leaved) of R. Brown. Lilac. June to August. 1878.
„ *longifo'lia* (long-leaved) of Lindley. See W. EREMICOLA.
„ *ri'gida* (rigid). 2–3. White. 1823.
„ *rosmarinifo'rmis* (rosemary-formed). 2. Light blue. July. 1791.
„ *rubiæfo'lia* (Rubia-leaved). 3. June. Tasmania. 1820.
„ *triphy'lla* (three-leaved). September. 1823.

WEST WIND, FLOWER OF THE. *Zephyra'nthes.*

WEYMOUTH PINE. *Pi'nus Stro'bus.*

WHANGEE or **WANGHEE CANE.** *Phyllo'stachys ni'gra.*

WHEAT. *Tri'ticum vulga're.*

WHEAT, BUCK. *Fagopy'rum escule'ntum.*

WHEAT, GUINEA or **TURKEY.** *Ze'a Ma'ys.*

WHIN. *U'lex.*

WHINBERRY. *Vacci'nium Myrti'llus.*

WHIN, PETTY. *Geni'sta a'nglica.*

WHITE ALDER. *Platy'lophus trifolia'tus.*

WHITE ARUM LILY. *Richa'rdia africa'na.*

WHITE ASH. *Fra'xinus america'na.*

WHITE BASSWOOD, AMERICAN. *Ti'lia heterophy'lla.*

WHITE BEAM-TREE. *Py'rus A'ria.*

WHITE BLADDER FLOWER. *Arau'jia serici'fera.*

WHITE BOTHEN. White Goldes. *Chrysa'nthemum Leuca'nthemum.*

WHITE BOTTLE. *Sile'ne infla'ta.*

WHITE BUTTERWOOD. *Trichi'lia spondioi'des.*

WHITE CAMASSIA. *Cama'ssia Leichlii'nii.*

WHITE CEDAR. *Cupre'ssus thyoi'des* and other species. *Thu'ya plica'ta* and *T. occidenta'lis.*

WHITE CYPRESS. *Taxo'dium di'stichum.*

WHITE ELM. *U'lmus america'na.*

WHITEHEA'DIA. (Commemorative of the *Rev. Henry Whitehead*, who discovered many curious plants in South Africa. Nat. ord. Liliaceæ.)
Greenhouse bulb. Offsets. Loam, leaf-mould, and sand.
W. bifo'lia (two-leaved). See W. LATIFOLIA.
,, *latifo'lia* (broad-leaved). 1½. Light green. April, May. S. Africa. 1792.

WHITE-HEART HICKORY. *Ca'rya tomento'sa.*

WHITE HELLEBORE. *Vera'trum a'lbum.*

WHITE LIME. *Ti'lia arge'ntea.*

WHITE PINE. *Pi'nus fle'xilis.*

WHITE POTHERB. *Valeriane'lla olito'ria.*

WHITE ROOT. *Polygona'tum multiflo'rum.*

WHITE SAPOTA. *Casimiro'a edu'lis.*

WHITE SPRUCE. *Pi'cea a'lba.*

WHITE THORN. *Crata'gus Oxyaca'ntha.*

WHITE TREE. *Melaleu'ca Leucade'ndron.*

WHITE VINE. *Cle'matis Vita'lba.*

WHITE WOOD. *Liriode'ndron tulipi'fera* and *Ti'lia america'na.*

WHITFIE'LDIA. (Named after *T. Whitfield*, a botanical collector of African plants. Nat. ord. *Acanthads* [Acanthaceæ]. Linn. 14-*Didynamia*, 2-*Angiospermia*. Allied to Barleria.)
For culture, see BARLE'RIA.
W. lateri'tia (brick-coloured). 3. Lilac, red. December. Sierra Leone. 1841.

WHITLA'VIA. (In honour of *F. Whitlaw, Esq.*, an Irish botanist. Nat. ord. *Hydrophyls* [Hydrophyllaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to Phacelia.)
Hardy annual.
W. grandiflo'ra (large-flowered). See PHACELIA WHITLAVIA.

WHI'TLEYA. (Commemorative of *Mr. Whitley*, a nurseryman at Fulham. Nat. ord. Solanaceæ. Now referred to Scopolia.)
W. stramonifo'lia (Stramonium-leaved). See SCOPOLIA LURIDA.

WHITLOW GRASS. *Ero'phila vulga'ris.*

WHITTEN TREE. *Vibu'rnum O'pulus.*

WHITWORT. *Chrysa'nthemum Parthe'nium.*

WHORTLEBERRY. *Vacci'nium Myrti'llus.*

WIBO'RGIA. (Commemorative of *E. Viborg*, a Danish botanist. Nat. ord. Leguminosæ. Allied to Loddigesia.)
Greenhouse evergreens from South Africa. Cuttings of young shoots in sandy soil, under a bell-glass, in May. Sandy loam and fibrous peat. Winter temp., 40° to 50°.
W. obcorda'ta (reversed-egg-shaped). 3–6. Yellow. July.
,, *seri'cea* (silky). 3. Yellow. July. 1810.
,, *spine'scens* (spiny). 3. Yellow. July. 1796.

WIDDRINGTO'NIA. (Commemorative of *Captain Widdrington*. Nat. ord. Coniferæ. Now referred to Callitris.)
W. cupressoi'des (Cupressus-like). See CALLITRIS CUPRESSOIDES.
,, *juniperoi'des* (Juniperus-like). See CALLITRIS ARBOREA.
,, *Why'tei* (Whyte's). 140. Cones smaller than a chestnut. Mountains of Central Africa. 1894. "The Milanji Cypress."

WIDOW, MOURNFUL. *Scabio'sa atropurpu'rea.*

WIDOW WAIL. *Cneo'rum.*

WIDOW-WISSE. *Geni'sta tincto'ria.*

WIGA'NDIA. (Commemorative of *John Wigand*, a Bishop of Pomerania. Nat. ord. Hydrophyllaceæ. Allied to Hydrolea.)
Stove herbs with large, handsome leaves, and much used for subtropical bedding. Seeds; cuttings of young shoots taken off with a heel, when the plants are making fresh growth in spring. Fibrous loam, fibrous peat, with some pieces of charcoal and sand.
W. caracasa'na (Caracas) of gardens. See W. URENS.
,, *caracasa'na* (Caracas) of H.B.K. 6–10. Lilac. April. Mexico; Venezuela. 1836.
,, *Ku'nthii* (Kunth's). See W. URENS.
,, *macrophy'lla* (large-leaved). See W. URENS.
,, *u'rens* (stinging). 4–6. Violet-blue. June to September. Mexico. 1827.
,, *Vigie'ri* (Vigier's). 4–6. Lilac-blue. September, October. Mexico (?). 1868.

WI'GHTIA. (A commemorative name. Nat. ord. Scrophulariaceæ.)
A tall, climbing, greenhouse shrub. Cuttings of short side-shoots under a bell-glass. Loam, peat, and sand.
W. gigante'a (gigantic). 15. Rosy or white. Himalaya. 1823.

WIG TREE. *Rhu's Co'tinus.*

WIKSTRŒ'MIA. (Commemorative of *J. E. Wikström*, a Swedish botanist. Nat. ord. Thymeleaceæ.)
Greenhouse and stove deciduous shrubs. Cuttings in sand under a bell-glass. Equal parts of loam and peat, with some sharp sand.
W. Albe'rti (Albert's). 2. Deep yellow. Bokhara. 1887.
,, *i'ndica* (Indian). See W. VIRIDIFLORA.
,, *viridiflo'ra* (green-flowered). 2–3. Green. Trop. Asia; Australia. 1829. Stove.

WILD APPLE. *Py'rus Ma'lus.*

WILD BERGAMOT. *Mona'rda fistulo'sa.*

WILD CLARY. *Sa'lvia Verbena'ca.*

WILD CLOVE. *Pime'nta a'cris.*

WILD DATE. *Phœ'nix sylve'stris.*

WILDERNESS. See LABYRINTH.

WILD HYACINTH. *Sci'lla festa'lis.*

WILD IRISHMAN. *Aciphy'lla squarro'sa* and *Disca'ria Tou'matou.*

WILD LIQUORICE. *A'brus precato'rius.*

WILD OLIVE. *Elæa'gnus* and *O'lea europæ'a.*

WILD SERVICE. *Py'rus Tormina'lis.*

WILD SNOWBALL. *Ceano'thus america'nus.*

WILD WATER LEMON. *Passiflo'ra fœ'tida.*

WILD WILLIAMS. *Ly'chnis Flos-cu'culi.*

WILLDENO'WIA. (Commemorative of *Carl Lud. Willdenow*, Professor of Botany at Berlin. Nat. ord. Restiaceæ.)

A greenhouse perennial herb, with jointed stems like Equisetum. Divisions. Loam, peat, and sand.

W. te'res (round) of Thunberg. 2–3. Brown. S. Africa. 1790.

„ *te'res* (round) of gardens. See RESTIO SUBVERTICILLATUS.

WILLEME'TIA. (Commemorative of *P. R. Willemet*, a botanical writer. Nat. ord. Rhamnaceæ. Now referred to Noltea.)

W. africa'na (African). See NOLTEA AFRICANA.

WILLOW. *Sa'lix.*

WILLOW, AMERICAN WATER. *Dianthe'ra america'na.*

WILLOW, FRENCH, HERB, or **PERSIAN.** *Epilo'bium angustifo'lium.*

WILLOW GRASS. *Poly'gonum amphi'bium.*

WILLOW HERB. *Epilo'bium.*

WILLOW, KILMARNOCK WEEPING. *Sa'lix ca'prea pe'ndula.*

WILLOW, WEEPING. *Sa'lix babylo'nica.*

WILLUGHBEI'A. (Commemorative of *Francis Willughby*, an English naturalist. Nat. ord. Apocynaceæ. Allied to Allamanda.)

Tall, evergreen climbing shrubs. Cuttings of side-shoots in sand, in a close frame, with bottom-heat. Fibrous loam, peat, and sand.

W. edu'lis (edible). 20–40. Pale pink. July. Himalaya; Burma; Malaya. 1818.

„ *firma* (firm). Malaya.

WIND FLOWER. *Ane'mone* and *Gentia'na Pneumona'ntha.*

WINDOW-BEARING ORCHID. *Cryptophora'nthus.*

WIND-ROOT. *Ascle'pias tubero'sa.*

WIND ROSE. *Rœme'ria hy'brida.*

WINEBERRY. *Vacci'nium Myrti'llus.*

WINEBERRY, JAPANESE. *Ru'bus phœnicola'sius.*

WINE PALM. *Caryo'ta u'rens* and *Phœ'nix sylve'stris.*

WINGED PEA. *Tetragono'lobus purpu'reus.*

WI'NTERA. (Commemorative of *Captain W. Winter.* Nat. ord. Magnoliaceæ. Now referred to Drimys.)

W. aroma'tica (aromatic). See DRIMYS AROMATICA.

„ *granate'nsis* (Granadan). See DRIMYS WINTERI.

WINTER ACONITE. *Era'nthis hyema'lis.*

WINTERBERRY. *I'lex*, especially the section *Pri'nos.*

WINTER BLOOM. *Hamame'lis virgi'nica.*

WINTER CHERRY. *Phy'salis Alkeke'ngi.*

WINTER CLOVER. *Miche'lla re'pens.*

WINTER CRESS. *Barbare'a.*

WINTER DAFFODIL. *Sternbe'rgia lu'tea.*

WINTER GARDEN. This name is usually applied to a large glass building or greenhouse from which frost is just excluded. It is generally large enough to allow the interior to be laid off in walks, with large beds which can be planted with Himalayan and other half-hardy Rhododendrons, Araucarias, Acacias, Camellias, Palms, *Cobæa scandens*, Climbing Tea, and other tender Roses. Plants in large pots are sometimes stood on the beds, such as trained specimens of Indian Azaleas, Camellias, Oranges, Bamboos, and other greenhouse plants. Benches round the sides and near the glass are occupied with a host of smaller plants coming from slightly warmer countries than ours, such as South Africa, Australia, the Himalayas, China, Japan, the Canary Islands, and Mexico. Many bulbs can be grown in pots or in the beds, such as *Agapanthus umbellatus*, Vallota, *Lilium sulphureum, L. neilgherrense, L. nepalense, L. wallichianum, L. auratum, L. speciosum, L. Henryi*, and their varieties. The larger Tree Ferns from cool countries make very stately objects, whether in pots or planted out.

WINTERGREEN. *Py'rola.*

WINTERGREEN, CHICKWEED. *Trienta'lis europæ'a.*

WINTERGREEN, CREEPING. *Gaulthe'ria procu'mbens.*

WINTER MOTH. *Cheimato'bia bruma'ta.*

WINTER SWEET. *Aco'nanthe'ra specta'bilis*, and *Ori'ganum heracleo'ticum.*

WINTER WOLF'S BANE. *Era'nthis hyema'lis.*

WIRE-WORMS are the larvæ of various species of *Elater, Click Beetle*, or *Skip-Jack*. To remove the wire-worm from a soil, no mode is known but frequently digging it and picking them out, as their yellow colour renders them easily detected. To prevent their attack upon a crop, mix a little spirit of tar, or a larger quantity of gas-lime, with the soil. It has been stated that growing white mustard drives them away, and it is certainly worth the trial. To entrap them, and tempt them away from a crop they have attacked, bury potatoes in the soil near the crop; and if each potato has a stick thrust through it, this serves as a handle by which it may be taken up, and the wire-worms which have penetrated it be destroyed. To decoy them from beds of Anemones, Ranunculuses, &c., it is said to be a successful plan to grow round the beds an edging of daisies, for the roots of which they have a decided preference.

WISTA'RIA. (Named after *C. Wistar*, an American professor. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria*.)

Hardy deciduous, mauve, blue, or purplish-flowered climbers. Seeds when obtainable; cuttings of the strong roots; by cuttings of the young shoots, getting firm, under a hand-light, in sandy soil, but more generally by layers of long-ripened young shoots, as then almost every bud will form a plant. Sandy loam and peat.

W. brachy'botrys (short-bunched). 3–5. Violet-purple. April. Japan.

„ *chine'nsis* (Chinese). 20–40. May and June, and sometimes again in August. China. 1816. "Chinese Kidney-bean Tree."

„ „ *a'lba* (white). 20. White. May. China. 1846.

„ „ *flo're ple'no* (double-flowered). Flowers double. 1882.

„ „ *fo'liis variega'tis* (variegated-leaved). Leaves variegated with creamy-white. 1886.

„ „ *macro'botrys* (large-bunched). White, lavender-purple. Japan. 1870.

„ „ *consequa'na* (following).

„ *floribu'nda* (bundle-flowered). See W. CHINENSIS.

„ *frute'scens* (shrubby). 10. July. N. Amer. 1724. American Kidney-bean Tree.

„ „ *flo're a'lbo* (white-flowered).

„ „ *magnifica* (magnificent).

„ *involu'ta* (rolled-inwards). 30–45. Pale purple. New South Wales. 1904.

„ *japo'nica* (Japanese). White. July, August. Japan.

„ *multi'juga* (many-paired). Lilac; wings purple. Summer. Japan. 1874.

„ „ *flo're a'lbo* (white-flowered). White.

„ „ *ro'sea* (rosy). Rose. 1903.

„ „ *russellia'na* (Russelian). Dark blue-purple. 1903.

„ *sine'nsis* (Chinese). See W. CHINENSIS.

„ „ *a'lba* (white). See W. CHINENSIS ALBA.

WISTARIA, TUBEROUS-ROOTED. *A'pios tubero'sa.*

WITCH ELM. *U'lmus monta'na.*

WITCHES' THIMBLE. *Sile'ne mari'tima.*

WITCH HAZEL. *Hamame'lis.*

WITHA'NIA. (Probably commemorative. Nat. ord. Solanaceæ.)

Stove and greenhouse, evergreen, hoary shrubs. Cuttings in sand in a close frame. Loam, peat, and sand.

W. coa'gulans (coagulating). India. "Cheese Maker."

„ *somni'fera* (sleep-bearing). India; S. Africa.

WITHERI'NGIA. (Named after *Dr. Withering*, a British botanist. Nat. ord. *Nightshades* [Solanaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Now referred to several genera.)

W. crassifo'lia (thick-leaved). See SOLANUM CRASSIFOLIUM.
„ *monta'na* (mountain). See SOLANUM MONTANUM.
„ *purpu'rea* (purple). ½. Pale purple. July. Chili. 1829. Tuberous.
„ *stramonifo'lia* (Stramonium-leaved). See BRACHISTUS STRAMONIFOLIUS.

WITHE ROD, AMERICAN. *Vibu'rnum nu'dum.*

WITHY. *Sa'lix fra'gilis.*

WITLOOF. Garden variety of *Cicho'rium I'ntybus.*

WITSE'NIA. (Named after *M. Witsen*, a Dutch patron of botany. Nat. ord. *Irids* [Iridaceæ]. Linn. 3-*Triandria*, 1-*Monogynia.*)
Greenhouse, purplish-flowered, herbaceous plants, from South Africa. Seeds in a slight hotbed in April; divisions of the plant then, or taking off the sucker-like offsets; sandy peat and a little fibrous loam, with a little rough charcoal, and well-drained. Winter temp., 40° to 48°.
W. corymbo'sa (corymbed). See ARISTEA CORYMBOSA.
„ *mau'ra* (Moorish). 4. December. 1790.
„ *parti'ta* (divided). See KLATTIA PARTITA.
„ *ramo'sa* (branched). 1. April. 1819.

WITTSTEI'NIA. (Commemorative of *Wittstein.* Nat. ord. Ericaceæ.)
A greenhouse evergreen shrub. Seeds; cuttings; layers. Sandy peat.
W. vaccinia'cea (Vaccinium-like). 1. Yellowish or red. Australia. 1893. Creeping.

WITTEBROOM. *Leucade'ndron.*

WOAD, DYER'S. *Isa'tis tincto'ria.*

WOAD, WAXEN. *Geni'sta tincto'ria.*

WOAD, WILD. *Rese'da Lu'teola.*

WOLF BERRY. *Symphorica'rpus occidenta'lis.*

WOLF CHOP. *Mesembrya'nthemum lupi'num.*

WOLF'S BANE. *Aconi'tum lupici'dum* and *A. lyco'ctonum.*

WOLF'S BANE, WINTER. *Era'nthis hyema'lis.*

WOLF'S CLAW. *Lycopo'dium clava'tum.*

WOLF'S MILK. *Eupho'rbia.*

WOLKENSTEI'NIA THEOPHRA'STA. See GOMPHIA THEOPHRASTA.

WOLLASTO'NIA. (Commemorative of *Dr. Wollaston*, a great chemist. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua.* Now referred to Wedelia.)
W. biflo'ra (two-flowered). See WEDELIA BIFLORA.

WOMAN'S-CAP ORCHID. *Thelymi'tra.*

WONGA-WONGA VINE. *Teco'ma austra'lis.*

WOOD ASHES. See ASHES.

WOOD BETONY. *Peduncula'ris canade'nsis* and *Sta'chys Beto'nica.*

WOODBINE. *Lonice'ra Periclyʼmenum.*

WOODBINE, AMERICAN. *Vi'tis quinquefo'lia.*

WOOD-BRONEY. *Fra'xinus exce'lsior.*

WOOD FERN. *Polypo'dium vulga're.*

WOODFO'RDIA. (Commemorative of *J. Woodford*, who wrote a flora of Edinburgh and the surroundings. Nat. ord. Lythraceæ.)
Stove shrub. Seeds; cuttings in sand, in a close case, with bottom-heat. Loam, peat, and sand.
W. floribu'nda (free-flowering). 2–4. Scarlet. May, June. Trop. Asia and Africa.
„ *frutico'sa* (shrubby). See W. FLORIBUNDA.
„ *tomento'sa* (felted). See W. FLORIBUNDA.

WOOD LAUREL. *Da'phne Lau'reola.*

WOOD LEOPARD MOTH. *Zeu'zera Æ'sculi.*

WOODLICE. *Oni'scus ase'llus, Porce'llio sca'ber*, and *Armadi'llo vulga'ris.*

WOOD LILY. *Py'rola mi'nor* and *Tri'llium.*

WOOD NUT. *Co'rylus Avella'na.*

WOODROOF, WOODRUFF, or **WOODROWEL.** *Aspe'rula odora'ta.*

WOO'DSIA. (Named after *J. Woods*, a British botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.*)
Hardy, brown-spored Ferns, except *mo'llis* and *pube'scens*, which require the stove. See FERNS.
W. alpi'na (alpine). See W. HYPERBOREA.
„ *Brow'nii* (Brown's). See HYPODERRIS BROWNII.
„ *cauca'sica* (Caucasian). See DICKSONIA FRAGILIS.
„ *glabe'lla* (smoothish). September. North temperate zone. 1827.
„ *hyperbo'rea* (northern). ½. July. Arctic regions and north temperate zone (Scotland).
„ *ilve'nsis* (Ilva). ½. June. North temperate zone (Britain).
„ *mo'llis* (soft). July. Mexico to Peru.
„ *obtu'sa* (blunt). ½. June. N. Amer. 1836.
„ *orega'na* (Oregon). ½. Oregon and Rocky Mountains.
„ *perrinia'na* (Perrin's). See W. OBTUSA.
„ *polystichoi'des* (Polystichum-like). ½. Japan and China. 1863.
„ „ *sinua'ta* (scolloped). Pinnæ broader, blunter.
„ „ *Vei'tchii* (Veitch's). ½–1. Frond very shaggy. Japan.
„ *pube'scens* (downy). June. Brazil. 1826.
„ *scopuli'na* (rocky). ½–¾. Rocky Mountains and British America. 1882.
„ *vesti'ta* (clothed). June. Brazil. 1816.

WOOD SORREL. *O'xalis Acetose'lla.*

WOOD TONGUE FERN. *Drymoglo'ssum.*

WOOD VIOLET. *Vi'ola sylva'tica.*

WOODWA'RDIA. (Named after *T. J. Woodward*, a British botanist. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices.*)
Hardy brown-spored Ferns. *Radi'cans* requires shelter in winter. See FERNS.
W. angustifo'lia (narrow-leaved). See W. AREOLATA.
„ *areola'ta* (areolate). ¾–1. United States. 1812.
„ *Harla'ndii* (Harland's). 1–1½. Hong-Kong.
„ *japo'nica* (Japanese). September. Japan; China.
„ *orienta'lis* (oriental). 4–8. Japan to Formosa. 1858.
„ *parado'xa* (paradoxical). 3. Small island near Vancouver Island. 1907.
„ *radi'cans* (rooting-*leaved*). 1½. July. North temperate zone. 1779.
„ „ *Bro'wnii* (Brown's).
„ „ *crista'ta* (crested). Pinnæ symmetrically crested. 1878.
„ *thelypteroi'des* (Thelypteris-like). September. N. Amer.
„ *virgi'nica* (Virginian). 1. August. N. Amer. 1724.

WOOD WAXEN. *Geni'sta tincto'ria.*

WOODY NIGHTSHADE. *Sola'num Dulcama'ra.*

WOOLLEN. *Verba'scum.*

WOOLLEN RAGS. See ANIMAL MATTERS.

WOOLLY APHIS. See AMERICAN BLIGHT.

WORKING is a gardener's term for the practice of grafting. "To work" upon a stock is to graft upon it.

WORM GRASS. *Spige'lia marila'ndica.*

WO'RMIA. (Named after *O. Wormius*, a Danish naturalist. Nat. ord. *Dilleniads* [Dilleniaceæ]. Linn. 13-*Polyandria*, 5-*Pentagynia.* Allied to Dillenia.)
Stove evergreens. Cuttings of ripe wood in a close case, with bottom-heat. Fibrous loam and sand.
W. Burbi'dgei (Burbidge's). Light golden-yellow. N. Borneo. 1879.
„ *denta'ta* (toothed). See W. TRIQUETRA.
„ *trique'tra* (triquetrous). 20. White. Ceylon. 1818.

WORMS. The earth worms belong to the genus Lumbricus, *L. terre'stris* being one of the largest and most familiar. They feed on decaying vegetable matter, and often draw leaves and other vegetation into their burrows, so that they can feed on the same when decaying. They swallow much earth in order to get the decaying vegetable matter in it, and after digesting it cast it up in heaps at the mouth of their burrows, and

these are only too well known to gardeners and golf-green keepers under the name of worm-casts. This digested soil is very fertile and feeds the grass, but is objectionable to those using the grass. A weak solution of carbonate of ammonia in water will soon bring the worms to the surface. Water, saturated with lime by steeping a quantity of quicklime in it for twenty-four hours, and then watering the grass with the clear liquid, acts in a similar way. Both these remedies may be used in flower-pots to drive out or kill the worms that may be in them. Worms are really harmful in pots by stopping up the drainage with their casts, and making the soil water-logged. Their burrows in lawns act as natural drainage.

WORMWOOD. *Artemi'sia Absi'nthium.*

WORMWOOD, FIELD. *Artemi'sia campe'stris.*

WORMWOOD, ROMAN. *Artemi'sia po'ntica.*

WOUNDS. See EXTRAVASATED SAP.

WOUNDWORT. *Anthy'llis Vulnera'ria.*

WOUNDWORT, HEDGE. *Sta'chys.*

WOUNDWORT, HERCULES'. *Hera'cleum.*

WREATHEWORT, PURPLE. *O'rchis ma'scula.*

WREATH, PURPLE. *Petre'a volu'bilis.*

WRI'GHTIA. (Named after *Dr. Wright*, of Jamaica. Nat. ord. *Dogbanes* [Apocynaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*. Allied to Alstonia.)

Stove evergreen shrubs, with white flowers, and from the East Indies, except where otherwise described. For culture, see ALSTONIA.

W. angustifo'lia (narrow-leaved). 8. September. Ceylon. 1752.
„ *antidysente'rica* (antidysenteric). See HOLARRHENA ANTIDYSENTERICA.
„ *cocci'nea* (scarlet). 12. Scarlet. July. 1822.
„ *du'bia* (doubtful). Orange. June. 1813.
„ *latifo'lia* (broad-leaved). 30. August. Havannah. 1733.
„ *pube'scens* (downy). 4. Green, yellow. March. Malaya; Australia. 1829.
„ *tincto'ria* (dyer's). 15. 1812. India.
„ *zeyla'nica* (Ceylon). Ceylon.

WULFE'NIA. (Named after *F. Xavier Wulfen*, a botanical author. Nat. ord. *Figworts* [Scrophulariaceæ]. Linn. 2-*Diandria*, 1-*Monogynia*.)

Hardy herbaceous. Seeds and divisions in spring; light, rich soil, and a dry, elevated place in winter, or kept from damp in a dry, cool pit.

W. amherstia'na (Amherstian). ½. Blue. July. Himalaya. 1846.
„ *carinthi'aca* (Carinthian). 1½. Blue. July. Carinthia. 1817.
„ *notonia'na* (*East Indian*). See KLUGIA NOTONIANA.
„ *reniformis* (reniform). See SYNTHYRIS RENIFORMIS.

WU'LFFIA. (Named after *J. C. Wulff*, author of "Flora Borussica." Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 4-*Necessaria*. Allied to Rudbeckia.)

Stove evergreen herb. Cuttings of young shoots in sandy soil, in spring or summer; sandy loam and leaf-mould. Winter temp., 45° to 58°; summer, 60° to 80°.

W. macula'ta (spotted). See W. STENOGLOSSA.
„ *stenoglo'ssa* (narrow-tongued). 3. Yellow. June. Trop. Amer. 1822.

WULLSCHLÆGE'LIA. (Commemorative of *Herr B. Wullschlægel*, who first collected *W. aphylla*. Nat. ord. Orchidaceæ.)

Stove terrestrial leafless orchids. Offsets. Peat, sphagnum, bits of charcoal, and sand.

W. aphy'lla (leafless). Flowers very small. Jamaica.
„ *calcara'ta* (spurred). Flowers very small. River Uaupas, Brazil.

WU'RMBEA. (Named after *F. V. Wurmbe*, a Dutch naturalist. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Androcymbium.)

Half-hardy bulbs, from South Africa and all but one white-flowered. For culture, see MELANTHIUM.

W. campanula'ta (bell-shaped). See W. CAPENSIS.
„ *cape'nsis* (Cape). ½. June.
W. cape'nsis longiflo'ra (long-flowered). ½. May. 1788.
„ „ *pu'mila* (dwarf). ½. May. 1800.
„ „ *purpu'rea* (purple). 1. Purple. May. 1788.

WYCH ELM. *U'lmus monta'na.*

WYE'THIA. (Commemorative of *N. B. Wyeth*, who discovered the first known species. Nat. ord. Compositæ.)

Hardy perennial herbs. Divisions in spring or autumn. Ordinary soil.

W. angustifo'lia (narrow-leaved). 1–2. Yellow. September, October. North-western Amer.
„ *mo'llis* (soft). 1½. Yellow. October. California.

WYMOT. *Althæ'a officina'lis.*

X

XANTEDE'SCHIA REHMA'NNI COCCI'NEA. See RICHARDIA REHMANNI COCCINEA.

XANTHI'SMA. (From *xanthisma*, a yellow colour; because the flowers are yellow. Nat. ord. Compositæ. Allied to Haplopappus.)

Hardy or half-hardy annual. Seeds in the open in April. Ordinary garden soil.

X. texa'num (Texan). 2–3. Bright yellow. Texas. 1877.

XA'NTHIUM. Clot Bur, Cockle Bur. (From *xanthion*, first applied to *Xanthium Strumarium*, used for dyeing the hair yellow. Nat. ord. Compositæ.)

Hardy annuals of no horticultural value, but often occurring in this country. Seeds. Ordinary soil.

X. i'ndicum (Indian). See X. STRUMARIUM.
„ *macroca'rpum* (large-fruited). 2–4. Yellow September. S. Europe.
„ *spino'sum* (spiny). 2–3. Yellow. September, October. Europe. "Bathurst Bur."
„ *Struma'rium* (Strumarium). 2–3. Yellow. September, October. All countries. "Small Burdock."

XANTHOCE'PHALUM. (From *xanthos*, yellow, and *kephale*, a head; flowers in yellow heads. Nat. ord. Compositæ.)

Greenhouse shrub and half-hardy perennial. Cuttings of the greenhouse species under a bell-glass, and seeds of the perennial in a frame, to be planted out in May.

X. centaurioi'des (Centaurea-like). 1½. Yellow. June to August. S. Amer. 1826. Shrub.
„ *gymnospermoi'des* (Gymnospermum-like). 2–4. Orange-yellow. September. Arizona. 1859.

XANTHO'CERAS. (From *xanthos*, yellow, and *keras*, a horn; there are yellow projecting glands between the petals. Nat. ord. Sapindaceæ.)

A deciduous shrub or small tree. Seeds; root cuttings. Well-drained garden soil.

X. sorbifo'lia (Sorbus-leaved). 5–15. White, with blood-red marks at the base. China. 1870.

XANTHOCHY'MUS. (From *xanthos*, yellow, and *chymos*, juice; the plants have a copious, yellow juice. Nat. ord. Guttiferæ. Now referred to Garcinia.)

X. du'lcis (sweet). See GARCINIA DULCIS.
„ *ovalifo'lius* (oval-leaved). See GARCINIA OVALIFOLIA.
„ *picto'rius* (painter's). See GARCINIA XANTHOCHYMUS.

XANTHORRHI'ZA. Yellow Root. (From *xanthos*, yellow, and *rhiza*, a root. Nat. ord. *Crowfoots* [Ranunculaceæ]. Linn. 5-*Pentandria*, 6-*Polygynia*.)

Hardy evergreen shrub. Suckers; sandy loam and peat; does best in a moist situation.

X. apiifo'lia (parsley-leaved). 3. Purple, green. February. United States. 1766. "Shrub Yellow Root."

XANTHORRHŒ'A. Grass-tree. (From *xanthos*, yellow, and *rheo*, to flow; yellow juice. Nat. ord. *Rushes* [Juncaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Xerotes.)

Greenhouse, white-flowered plants, from Australia. Offsets and imported stems. Peat, loam, and sand.

X. arbo'rea (tree-like). 5–10. White. April. "Botany Bay Gum."

X. austra'lis (southern). 3. Victoria; Tasmania. 1824. Evergreen.
„ *bractea'ta* (bracted). 2–3. 1810. Herbaceous.
„ *Bruno'nis* (Brown's). See X. PREISSII.
„ *gra'cilis* (slender).
„ *ha'stilis* (spear). 4–12. 1803. Evergreen.
„ *hu'milis* (dwarf). See X. PUMILIO.
„ *me'dia* (intermediate). 2. 1803. Evergreen.
„ *mi'nor* (smaller). 2. 1804. Herbaceous.
„ *Prei'ssii* (Preiss's). 4–20. Greenish-yellow. April. South-west Australia.
„ *Pumi'lio* (pigmy). 2. 1825. Herbaceous.
„ *quadrangula'ta* (four-angled). 4–8. Greenish. 1874.
„ *resino'sa* (resinous). See X. MEDIA.
„ *semipla'na* (half-flat). Leaves flattened on one side.
„ *tatea'na* (Tatean).

XANTHO'SIA. (From *xanthos*, yellow; some species are covered with yellow down. Nat. ord. Umbelliferæ.) Greenhouse evergreen herbs or small shrubs. Seeds; cuttings in sand under a bell-glass. Fibrous loam, peat, and sand.

X. hirsu'ta (hairy). See X. PILOSA.
„ *monta'na* (mountain). See X. PILOSA.
„ *pilo'sa* (hairy). 1–2. White. June. Australia. 1826.
„ *rotundifo'lia* (round-leaved). 1–2. White. June. Australia. 1836.

XANTHOSO'MA. (From *xanthos*, yellow, and *soma*, a body; the edible roots. Nat. ord. *Arads* [Araceæ]. Linn. 21-*Monœcia*, 7-*Heptandria*. Allied to Caladium.) Stove plants. For culture, see CALADIUM.

X. appendicula'tum (appendaged). See X. ATROVIRENS.
„ *atrovi'rens* (dark-green). Venezuela.
„ *auricula'tum* (auricled). Spathe green, white; spadix white. Brazil. 1869.
„ *Barille'ti* (Barillet's). 3. Leaves large, dull green. Brazil. 1882.
„ *belophy'llum* (arrow-leaved). 1½–2. Yellow; spadix whitish. Trop. Amer.
„ *corda'tum* (heart-shaped). 3–4. Spathe yellow-green, tinted rose at the base, white inside. British Guiana. 1906.
„ *edu'le* (edible). 4. White. Guiana. 1800.
„ *helleborifo'lium* (hellebore-leaved). 1½–2. Yellow-green. Trop. Amer. 1793.
„ *Hoffma'nni* (Hoffmann's). Spathe white, purple in the tube. Mexico. 1900.
„ *Jacqui'ni* (Jacquin's). Yellow. May. Venezuela. 1816. Evergreen.
„ *Li'ndeni* (Linden's). 1–1½. Spathe brownish-green, white. Leaves with white veins. Colombia. 1871.
„ „ *magnifi'cum* (magnificent). Leaves much larger.
„ *macula'tum* (blotched). Leaf-stalks purplish. 1861.
„ *maximilia'num* (Maximilian). 4–5. Purple, violet, white. Brazil. 1860.
„ *mira'bile* (wonderful). 3–4. Primrose-yellow. Trop. Amer. 1874.
„ *nue'vo-leone'nse* (New-Leone). 6. Leaf-blades horizontal. Mexico. 1908. "Colossal Elephant's Ear."
„ *plu'mbeum* (lead-coloured). See ALOCASIA CUPREA.
„ *robu'stum* (robust). 3–4. Whitish. Mexico.
„ *sagittæfo'lium* (arrow-leaved). White. May. Trop. Amer. 1710. Herbaceous.
„ *viola'ceum* (violet). 3. Pale violet outside, yellow-white within. W. Ind. 1864.
„ *Walli'sii* (Wallis's). Leaves dark green, with silvery veins. Colombia. 1869.

XANTHO'XYLUM. See ZANTHOXYLUM.

XAVE'RIA. See ANEMONOPSIS.

XENIA'TRUM. See CLINTONIA.

XERA'NTHEMUM. Immortelle. (From *xeros*, dry, and *anthos*, a flower; everlasting flower. Nat. ord. *Compositæ* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
The flowers, after being dried, may be dyed of any colour. Hardy annuals. Seeds in the open border in April.

X. a'nnuum (annual). 3. Purple. July. S. Europe. 1570.
„ *cane'scens* (hoary). See HELIPTERUM CANESCENS.
„ *cylindra'ceum* (cylindrical). S. Europe; Asia Minor.
„ *ere'ctum* (upright). See X. INAPERTUM.
X. fu'lgidum (shining). See HELICHRYSUM FULGIDUM.
„ *herba'ceum* (herbaceous). See HELICHRYSUM SQUAMOSUM.
„ *inape'rtum* (unopened). 2. Purple. July. Mediterranean region; Caucasus. 1620.
„ *longipappo'sum* (long-feathered). White. June. Persia. 1836.
„ *orienta'le* (eastern). See CHARDINIA XERANTHEMOIDES.
„ *ri'gidum* (rigid). See HELICHRYSUM STRIATUM.
„ *sesamoi'des* (Sesamum-like). See HELICHRYSUM SESAMOIDES.
„ „ *sulphu'reum* (sulphur). See HELICHRYSUM SESAMOIDES.

XEROCLA'DIA. (From *xeros*, dry, and *klados*, a branch; the plant is dry and rigid. Nat. ord. Leguminosæ. Allied to Prosopis.)
A small, dry, rigid, deciduous greenhouse shrub. Seeds; cuttings in sand under a bell-glass. Fibrous loam and peat in equal parts, with sand.

X. Ze'yheri (Zeyher's). 1–2. Yellow. S. Africa. 1816.

XERONE'MA. (From *xeros*, dry, and *nema*, a filament; the filaments dry up and remain. Nat. ord. Liliaceæ. Allied to Anthericum.)
An elegant stove perennial. Seeds; divisions. Fibrous loam, leaf-mould, a little sand, and old cow-manure rubbed up finely.

X. Moo'rei (Moore's). 1½. Crimson. New Caledonia. 1877.

XEROPHY'LLUM. (From *xeros*, dry, and *phullon*, a leaf; dry, grassy leaves. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 3-*Trigynia*. Allied to Helonias.)
White-flowered, herbaceous perennials, from North America. Seeds and divisions of the plant in spring. A rather moist, peaty border suits them best.

X. asphodeloi'des (asphodel-like). 1. May. 1765. "Turkey's Beard."
„ *grami'neum* (grassy). See STENANTHIUM ANGUSTIFOLIUM GRAMINEUM.
„ *Sabadi'lla* (Sabadilla). See VERATRUM SABADILLA.
„ *setifo'lium* (bristle-leaved). 1½. May. 1811.
„ *te'nax* (tough-*leaved*). See X. SETIFOLIUM.

XEROPHY'TA. (From *xeros*, dry, and *phuton*, a plant; literally, dry plant. Nat. ord. Amaryllidaceæ. Now referred to Vellozia.)

X. retine'rvis (net-nerved). See VELLOZIA RETINERVIS.

XERO'TES. (From *xerotes*, dryness; the plants are dry and wiry. Nat. ord. Juncaceæ. Allied to Xanthorrhœa.)
Greenhouse perennial dry herbs. Divisions. Sandy loam and leaf soil.

X. longifol'ia (long-leaved). 3. Greenish-white. June. Australia. 1798. "Australian Tussock Grass."
„ *ri'gida* (rigid). ½–1. Greenish-white. June. Australia. 1791.

XIMENE'SIA. (Named after *J. Ximenes*, a Spanish apothecary. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*. Now referred to several genera.)

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X. Cavanille'sii (Cavanilles'). See IOSTEPHANE HETEROPHYLLA.
„ *fœ'tida* (stinking). See ENCELIA FŒTIDA.
„ *heterophy'lla* (variable-leaved). See ENCELIA HETEROPHYLLA.

HERBACEOUS PERENNIALS.

X. corda'ta (heart-*leaved*). See ENCELIA CORDATA.
„ *encelioi'des* (Encelia-like). See VERBESINA ENCELIOIDES.

XIME'NIA. (Named after *F. Ximenes*, a Spanish naturalist. Nat. ord. *Olacads* [Olacaceæ]. Linn. 8-*Octandria*, 1-*Monogynia*.)
Stove evergreens. Cuttings of half-ripened shoots in sand, under a glass, in May, and in bottom-heat; sandy, fibrous peat, and lumpy loam. Winter temp., 55° to 60°; summer, 60° to 85°.

X. america'na (American). 15. Yellowish. Tropics everywhere. 1759.

X. ine'rmis (unarmed). See X. AMERICANA.
„ *lanceola'ta* (spear-*leaved*). See ACRONYCHIA LAURIFOLIA.
„ *oblongifo'lia* (oblong-leaved). Green. June. Australia. 1823.

XIPHI'DIUM. (From *xiphos*, a sword; sword-like leaves. Nat. ord. *Bloodworts* [Hæmodoraceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Wachendorfia.)

Stove, herbaceous perennials. Divisions of the plant as fresh growth commences; rich, fibrous loam and fibrous peat, and a small portion of charcoal and sand. Winter temp., 50° to 58°; summer, 60° to 85°.

X. a'lbum (white). See X. CÆRULEUM ALBUM.
„ *cæru'leum* (blue). 1½. Blue. Trop. Amer. 1793.
„ „ *a'lbum* (white). 1½. White. W. Ind. 1787.
„ *floribu'ndum* (free-flowering). See X. CÆRULEUM.
„ *gigante'um* (gigantic). See X. CÆRULEUM ALBUM.

XIPHION. (From *xiphion*, a corn-flag. Nat. ord. Iridaceæ. This name includes all the bulbous Irises, to which they are referred.)

X. Auche'ri (Aucher's). See IRIS FUMOSA.
„ *filifo'lium* (thread-leaved). See IRIS FILIFOLIA.
„ *Hi'stric* (Actor). See IRIS HISTRIO.
„ *ju'nceum* (rush-like). See IRIS JUNCEA.
„ *kolpakowskia'num*. See IRIS KOLPAKOWSKIANA.
„ *latifo'lium* (broad-leaved). See IRIS XIPHIOIDES.
„ *planifo'lium* (flat-leaved). See IRIS ALATA.
„ *reticula'tum* (netted). See IRIS RETICULATA.
„ *Sisyri'nchium* (Sisyrinchium-like). See IRIS SISYRINCHIUM.
„ *tingita'num* (Tangiers). See IRIS TINGITANA.
„ *vulga're* (common). See IRIS XIPHIUM.

XIPHO'PTERIS. Sword Fern. (From *xiphos*, a sword, and *pteris*, a fern. Nat. ord. *Ferns* [Filices]. Linn. 24-*Cryptogamia*, 1-*Filices*. Now referred to Polypodium.)

Stove, brown-spored Ferns. See FERNS.

X. heterophy'lla (variable-leaved). ½. June. N. Holland. 1824.
„ *myosuroi'des* (Myosurus-like). See POLYPODIUM SERRULATUM MYOSUROIDES.
„ *serrula'ta* (saw-like). See POLYPODIUM SERRULATUM.

XYLO'BIUM. (From *xulon*, wood, and *bios*, life; the plants grow upon wood. Nat. ord. Orchidaceæ. Allied to Bifrenaria.)

Stove epiphytal Orchids. Offsets and divisions. Fibre of peat, sphagnum, and crocks in pots or baskets.

X. brachysta'chyum (short-spiked). Yellowish, with sordid purple spots. S. Brazil. 1906.
„ *bracte'scens* (large-bracted). Peru. 1842.
„ *Colle'yi* (Colley's). Reddish-brown, with purple spots. Trinidad. 1890.
„ *conca'vum* (hollow). 1. Light yellow. June. Guatemala. 1844.
„ *corruga'tum* (ribbed). Brownish-purple; lip yellow, veined with purple. Venezuela. 1844.
„ *de'color* (without-colour). 1. White. W. Ind. 1830.
„ *elonga'tum* (elongated). 1. Light yellow; lip brown-purple. W. Ind. 1847.
„ *fovea'tum* (pitted). 1. Straw-yellow. Guiana. 1839.
„ *hyaci'nthinum* (hyacinth-like). Venezuela.
„ *hypocri'ticum* (mimicking). Country unknown. 1860.
„ *inca'num* (hoary). June. Guatemala. 1844.
„ *leontoglo'ssum* (lion's-tongued). 2–3. Yellow, spotted red. Colombia.
„ *pallidiflo'rum* (pale-flowered). 1. Sulphur-white. W. Ind. 1826.
„ *scabrili'ngue* (rough-tongued). Colombia. 1844.
„ *squa'lens* (dirty). 1. Flesh, lined purple; lip purple. Brazil. 1828.

XYLOME'LUM. (From *xulon*, wood, and *melon*, an apple; the fruit is large and woody. Nat. ord. Proteaceæ. Allied to Lambertia.)

Greenhouse shrub. Seeds; cuttings of young but firm shoots in sandy peat, under a bell-glass. Fibrous loam, peat, and sand.

X. pyrifo'rme (pear-formed). Fruit 2–3 in. long. Australia. 1869. "Wooden Pear."

XYLOPHY'LLA. (From *xulon*, wood, and *phullon*, a leaf; texture of the leaves. Nat. ord. *Spurgeworts* [Euphorbiaceæ]. Linn. 21-*Monœcia*, 10-*Decandria*. Now referred to Phyllanthus.)

X. angustifo'lia (narrow-leaved). See PHYLLANTHUS ANGUSTIFOLIUS.
„ *elonga'ta* (elongated-*leaved*). See PHYLLANTHUS ANGUSTIFOLIUS.
„ *falca'ta* (sickle-*leaved*). See PHYLLANTHUS EPIPHYLLANTHUS.
„ *latifo'lia* (broad-leaved) of Linnæus. See PHYLLANTHUS LATIFOLIUS.
„ *latifo'lia* (broad-leaved) of Sims. See PHYLLANTHUS SPECIOSUS.
„ *linea'ris* (narrow-*leaved*). See PHYLLANTHUS LINEARIS.
„ *longifo'lia* (long-leaved). See EXOCARPUS CERAMICUS.
„ *monta'na* (mountain) of Sims. See PHYLLANTHUS ANGUSTIFOLIUS.
„ *monta'na* (mountain) of Swartz. See PHYLLANTHUS MONTANUS.
„ *obova'ta* (obversely-egg-shaped). See FLUGGEA MICROCARPA.
„ *ramiflo'ra* (branch-flowered). See SECURINEGA RAMIFLORA.
„ *specio'sa* (showy). See PHYLLANTHUS SPECIOSUS.

XYLO'PIA. (From *xulon*, wood, and *pikros*, bitter; the wood and fruit of *X. gla'bra* are called Bitterwood in the West Indies. Nat. ord. *Anonads* [Anonaceæ]. Linn. 13-*Polyandria*, 6-*Polygynia*.)

Stove evergreen shrubs or trees. Cuttings of firm, stubby side-shoots one year old, with most of the leaves adhering, in sand, under a bell-glass; sandy loam and fibrous peat. Winter temp., 50° to 55°; summer, 60° to 85°.

X. æthio'pica (Ethiopian). Trop. Africa. "Negro Pepper."
„ *frute'scens* (shrubby). 4. Guiana. 1823.
„ *gla'bra* (smooth-*fruited*). 20. Jamaica. 1820. "Bitterwood."
„ *murica'ta* (rough-*fruited*). 4. W. Ind. 1779.

XYLO'SMA. (From *xulon*, wood, and *osme*, smell. Nat. ord. Bixaceæ.)

Stove evergreen shrubs. Cuttings in sand, in a close case, with bottom-heat. Fibrous loam, peat, and sand.

X. ni'tidum (shining). 6. June. Trop. Amer. 1820.
„ *Salzma'nni* (Salzmann's). Flowers minute. Fruit like bilberries. Brazil. 1908.

XYLO'STEON. See LONICERA.

XYRI'DION. See IRIS.

XY'RIS. (A name given by Dioscorides to *Iris fœtidissima*. Nat. ord. Xyridaceæ.)

A stove rush-like perennial. Divisions. Fibrous loam, leaf-mould, and plenty of sand.

X. alti'ssima (tallest). See BOBARTIA INDICA.
„ *opercula'ta* (covered-with-a-lid). 1–1½. White; bracts black. June. Australia. 1804.

XYSMALO'BIUM. (From *xusma*, a fragment, and *lobos*, a lobe; in reference to the slender lobes of the corona. Nat. ord. Asclepiadaceæ.)

A warm and dry greenhouse perennial. Seeds in heat; cuttings of side-shoots in sand after being dried for a week, then inserted in sand under a bell-glass. Fibrous loam, fibrous peat, finely-broken bricks and sand, with good drainage.

X. padifo'lium (Padus-leaved). 3. Purplish-green; corona purplish-yellow. S. Africa. 1867.

Y

YACCA-WOOD TREE. *Podoca'rpus purdiea'na.*

YAM. *Diosco'rea.*

YANG-MAE TREE. *My'rica Na'gi.*

YARROW. *Achille'a.*

YARROW, SOLDIER'S. *Stratio'tes aloi'des.*

YATE or **YEIT TREE.** *Eucaly'ptus cornu'ta.*

YELLOW ARCHANGEL. *La'mium Galeo'bdolon* and *L. macula'tum au'reum.*

YELLOWBY. *Chrysa'nthemum se'getum.*

YELLOW CENTAURY. *Chlo'ra perfolia'ta.*

YELLOW CRESS. *Barbare'a præ'cox.*

YELLOW ELDER. *Teco'ma sta'ns.*

YELLOW EVERLASTING. *Helichry'sum arena'rium.*

YELLOW-EYED GRASS. *Xy'ris.*

YELLOW GARDEN HAWK WEED. *To'lpis barba'ta.*

YELLOW IRIS. *I'ris Pseuda'corus.*

YELLOW LARKSPUR. *Tropæ'olum.*

YELLOW PUCCOON. *Hydra'stis canade'nsis.*

YELLOW RATTLE. *Rhina'nthus Cri'sta-ga'lli.*

YELLOW ROCKET. *Barbare'a vulga'ris.*

YELLOW ROOT. *Hydra'stis canade'nsis.*

YELLOW STAR FLOWER. *Sternbe'rgia lu'tea.*

YELLOW STAR OF BETHLEHEM. *Ga'gea lu'tea.*

YELLOW SULTAN. *Centau'rea moscha'ta fla'va.*

YELLOW WATER LILY. *Nu'phar lu'teum.*

YELLOW WEED, DYER'S. *Rese'da Lu'teola.*

YELLOW WOOD. *Cladra'stis tincto'ria, Ochro'sia borbo'nica,* and *Podoca'rpus.*

YELLOWWORT. *Chlo'ra perfolia'ta.*

YEVERING BELLS. *Py'rola secu'nda.*

YEW. *Ta'xus.*

YEW-BUD GALLS. Small, green, cone-like bodies, made up of small leaves, may often be found on the Yew at the ends of the branches and twigs. Their origin is due to the irritation set up by the larva of *Cecidomyia taxi*, a small, two-winged fly. An egg is laid at the tip of the shoot, and the action of the larva is to prevent the young shoot from elongating, so that all the leaves for that year merely enlarge to form the cone. The larva lives in this gall all the year, emerging in June. By gathering the galls during summer and burning them, the fly will be destroyed.

The Yew-bud Mite (*Eriophyes psilaspis*) settles in buds on any part of a stem or branch, just as they commence to open, and retards the growth of the buds, which form scaly galls, similar in size and shape to those of the Black Currant and Hazel. The growth of the galls is complete by the end of May, but the mite remains in them till the following spring. They are dark green at first, changing to reddish-brown or chocolate. When this pest gets into a yew hedge, it may multiply to such an extent as to have a stunting effect upon the hedge. The same remedies apply as for the Yew-bud Galls and the Black Currant Bud Mite.

YEW, CHINESE. *Podoca'rpus chine'nsis.*

YEW, CLUSTERED-FLOWERED. *Cephalota'xus.*

YEW GALLS. See YEW-BUD GALLS.

YEW, JAPANESE. *Cephalota'xus pedunculа'ta fastigia'ta.*

YEW, JOINTED. *Arthrota'xus.*

YEW, LORD HARRINGTON'S. *Cephalota'xus pedunculа'ta.*

YEW, PRINCE ALBERT'S. *Saxegothæ'a conspi'cua.*

YEW, STINKING. *Torre'ya.*

YOKE ELM. *Carpi'nus Be'tulus.*

YOUTH AND OLD AGE. *Yi'nnia.*

YOUTHWORT. *Dro'sera rotundifo'lia.*

YU'CCA. Adam's Needle. (Name of the plant in Peru. Nat. ord. *Lilyworts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*.)

All whitish-flowered evergreens. Sometimes by seeds, sown immediately they are ripe, in a slight hotbed; generally by suckers, but also, at times, from young shoots that branch from the stems; deep, dry, sandy loam is their favourite soil; a few require the assistance of a stove or greenhouse, but most of them stand the open air in England. *Aloifo'lia* is, perhaps, the tenderest of all the hardy ones. They flourish near the sea-shore. We may add, that they seem quite at home on a knoll, or on rock-work.

HARDY.

Y. *acumina'ta* (pointed-*flowered*) of Sweet. See Y. GLORIOSA ACUMINATA.
„ *acutifo'lia* (acute-leaved). 4–5. White. Country unknown. 1869.
„ *aletrifo'rmis* (Aletris-like). 2. Cape of Good Hope. 1823. Greenhouse.
„ *aloifo'lia* (Aloe-leaved). 2. August. S. United States; W. Ind. 1696. Greenhouse.
„ „ *Draco'nis* (dragon's). 8. August. W. Ind. 1732.
„ „ *li'nea-lu'tea* (yellow-lined). Mexico. 1863.
„ „ *pe'ndula* (drooping-*leaved*). 12. August.
„ „ *purpu'rea* (purple). Leaves purple. Plant dwarf.
„ „ *serrula'ta* (finely-sawed). 10. Carolina. 1808.
„ „ *tri'color* (three-coloured). Leaves edged with cream and red.
„ „ *variega'ta* (variegated-*leaved*). 2. August.
„ *angustifo'lia* (narrow-leaved). 2. July. Missouri. 1811.
„ „ *stri'cta* (upright). 2–3. Arkansas. 1817.
„ *arcua'ta* (bowed). See Y. ALOIFOLIA.
„ *argo'spatha* (silver-spathed). 2–3. White. Country unknown. 1868.
„ *bacca'ta* (berried). 8–10. White. Fruit purple. Mexico. 1870. Greenhouse.
„ „ *circina'ta* (curled-threaded). Leaves with copious coiled threads.
„ „ *austra'lis* (southern). Mexico. 1876. Greenhouse.
„ „ *fragilifo'lia* (fragile-leaved).
„ *Boerhaa'vii* (Boerhaave's). Mexico. 1870. Greenhouse.
„ *brevifo'lia* (short-leaved). Mexico. Greenhouse.
„ *canalicula'ta* (channelled). See Y. TRECULEANA.
„ *circina'ta* (curled-threaded). See Y. BACCATA.
„ *conca'va* (hollow-*leaved*). See Y. FILAMENTOSA CONCAVA.
„ *conspi'cua* (conspicuous). See Y. ALOIFOLIA.
„ *constri'cta* (constricted). 8–10. White. Mexico. 1862. Greenhouse.
„ *cornu'ta* (horned). See Y. TRECULEANA.
„ *crenula'ta* (scolloped). See Y. ALOIFOLIA SERRULATA.
„ *desmetia'na* (Desmetian). Mexico. 1868. Greenhouse.
„ *Draco'nis* (dragon). See Y. ALOIFOLIA DRACONIS.
„ *Ehrenbe'rgii* (Ehrenberg's). Mexico. 1861.
„ *ela'ta* (tall). 8–12. White, fragrant. Mexico. 1889.
„ „ *a'lbo-margina'ta* (white-edged).
„ *Engelma'nni* (Engelmann's). See Y. WHIPPLEI.
„ *ensifo'lia* (sword-leaved). See Y. GUATEMALENSIS.
„ *exi'gua* (slender). See Y. FILAMENTOSA EXIGUA.
„ *falca'ta* (sickle-shaped). See Y. FLEXILIS FALCATA.
„ *filamento'sa* (thready). 2. September. Virginia. 1675. "Silk Grass."
„ „ *antwerpe'nsis* (Antwerp). See Y. ORCHIOIDES MAJOR.
„ „ *au'reo-variega'ta* (golden-variegated). Leaves with bright yellow bands. 1884. Greenhouse.
„ „ *conca'va* (hollow). 1½. Leaves concave. August. 1816.
„ „ *exi'gua* (slender). White, green. S. United States. 1873.
„ „ *fla'ccida* (flabby). 2. Leaves recurved. 1816.
„ „ *glauce'scens* (sea-green). 2. Leaves glaucous. July. N. Amer. 1819.
„ „ *grandiflo'ra* (large-flowered). See Y. FILAMENTOSA MAXIMA.
„ „ *ma'jor* (larger). See Y. FILAMENTOSA MAXIMA.
„ „ *ma'xima* (largest). Flowers 2½–3 in. long. 1873.
„ „ *orchioi'des* (orchid-like). See Y. ORCHIOIDES.
„ „ *pube'rula* (finely-downy). Inflorescence downy. August.
„ „ *variega'ta* (variegated-*leaved*). 2. September.
„ *fili'fera* (thread-bearing). 10–50. Mexico. 1826. Greenhouse.

Y. flaccida (flaccid). See Y. FILAMENTOSA FLACCIDA.
„ *flexilis* (flexible). 4. Mexico. 1859. Greenhouse.
„ „ *falcata* (sickle-shaped). 1879. Nearly stemless.
„ „ *nobilis* (noble). Young leaves very glaucous. 1879.
„ „ *semicylindrica* (half-cylindrical). 1870.
„ *fragilifolia* (fragile-leaved). See Y. BACCATA.
„ *funifera* (cord-bearing). Leaves 6–7 ft. long. Mexico. 1866.
„ *Ghiesbreghtii* (Ghiesbreght's). See Y. GUATEMALENSIS.
„ *gigantea* (gigantic). 4–6. Mexico. 1859.
„ *glauca* (sea-green). Southern United States. 1813.
„ *glaucescens* (milky-green). See Y. FILAMENTOSA GLAUCESCENS.
„ *gloriosa* (glorious). 4. July. Southern United States. 1596. "Adam's Needle."
„ „ *acuminata* (long-pointed). 2–6. Leaves long-pointed. August. 1800.
„ „ *Ellacombei* (Ellacombe's). Leaves concave on the face. Plant nearly stemless.
„ „ *major* (greater). 4. 1808.
„ „ *medio-striata* (median-striped). Leaves having a whitish-green band on both sides. 1880.
„ „ *minor* (smaller). A dwarf variety.
„ „ *obliqua* (oblique). 4. Leaves sea-green oblique. 1808.
„ „ *plicata* (plaited). Leaves much plaited.
„ „ *pruinosa* (frosted). Leaves sea-green.
„ „ *recurvifolia* (recurved-leaved). See Y. RECURVIFOLIA.
„ „ *rufocincta* (red-edged). 1½. July. Leaves with red-brown edges. 1816.
„ „ *superba* (superb). 10. Flowers larger. August.
„ „ *tortulata* (slightly-twisted). Leaves flexnous. 1873. Plant stemless.
„ „ *variegata* (variegated-leaved). July.
„ *gracilis* (slender). July. Mexico. 1829. Greenhouse.
„ *graminifolia* (grass-leaved). See DASYLIRION GRAMINIFOLIUM.
„ *guatemalensis* (Guatemalan). 15–20. Summer. Mexico and Guatemala. 1873.
„ *Hanburyi* (Sir Thos. Hanbury's). White. Leaves linear, with brown edge. 1892. Stemless.
„ *japonica* (Japanese). See Y. RECURVIFOLIA.
„ *latevirens* (bright-green). Mexico. 1838. Greenhouse.
„ *laeviga'ta* (smooth). See Y. PEACOCKII.
„ *lineolutea* (yellow-lined). See Y. ALOIFOLIA LINEALUTEA.
„ *longifolia* (long-leaved) of Karw. See NOLINA LONGIFOLIA.
„ *longifolia* (long-leaved) of Carriere. See Y. FLEXILIS.
„ *lutescens* (yellowish). See Y. RUPICOLA.
„ *macrocarpa* (large-fruited). 1–4. Arizona. 1881.
„ *mexicana* (Mexican). See Y. FLEXILIS.
„ *nobilis* (noble). See Y. FLEXILIS NOBILIS.
„ *obliqua* (oblique-*leaved*). See Y. GLORIOSA OBLIQUA.
„ „ *major* (larger). See Y. GLORIOSA MAJOR.
„ *orchioides* (orchid-like). 1½. Southern United States. 1861.
„ „ *major* (greater). Inflorescence 2–3 ft. long. S. United States. 1875.
„ *Parmentieri* (Parmentier's). See Y. ALOIFOLIA.
„ *patens* (spreading). A slight form of Y. GLORIOSA.
„ *Peacockii* (Peacock's). Leaves about 100. Mexico (?). 1879.
„ *pendula* (drooping). See Y. RECURVIFOLIA.
„ *periculosa* (dangerous). See Y. BACCATA.
„ *pitcarniæfolia* (Pitcairnia-leaved). Mexico. 1838.
„ *polyphylla* (many-leaved). See Y. CONSTRICTA.
„ *pruinosa* (pruinose or frosted). See Y. GLORIOSA PRUINOSA.
„ *puberula* (rather-downy). See Y. FILAMENTOSA PUBERULA.
„ *purpurea* (purple). See Y. ALOIFOLIA PURPUREA.
„ *recurva* (curled-back-*leaved*). See Y. RECURVIFOLIA.
„ *recurvifolia* (recurved-leaved). White, tinted red. Leaves 100–150, recurved. S. United States. 1794.
„ „ *variegata* (variegated). Leaves with a pale green, reddish-tinted stripe. 1883.
„ *revoluta* (revolute). See Y. TRECULEANA.
„ *Rœzlii* (Rœzl's). See Y. GUATEMALENSIS.
„ *rufo-cincta* (reddish-edged). See Y. GLORIOSA RUFOCINCTA.
„ *rupicola* (rock-loving). 1½–2. White, greenish on back. S. United States; Mexico.
Y. scabrifolia (rough-leaved). See Y. BACCATA.
„ *semicylindrica* (half-cylindrical). See Y. FLEXILIS SEMICYLINDRICA.
„ *serratifolia* (sawed-leaved). Mexico. 1838.
„ *serrulata* (saw-*edged*). See Y. ALOIFOLIA SERRULATA.
„ *stenophylla* (narrow-leaved). See Y. FLEXILIS.
„ *stricta* (upright). See Y. GLAUCA.
„ *superba* (superb). See Y. GLORIOSA SUPERBA.
„ *tenuifolia* (slender-leaved). See Y. ALOIFOLIA.
„ *tonelia'na* (Tonelian). See FURCRÆA BEDINGHAUSII.
„ *tortifolia* (twisted-leaved). See Y. RUPICOLA.
„ *torulis* (twisted). See Y. RUPICOLA.
„ *tortula'ta* (twisted). See Y. GLORIOSA TORTULATA.
„ *treculia'na* (Treculian). 20–25. Summer. Mexico. 1858.
„ *tricolor* (three-coloured). See Y. ALOIFOLIA TRICOLOR.
„ *undula'ta* (wavy). See Y. TRECULIANA.
„ *Whipplei* (Whipple's). Inflorescence 4–12 ft. long. California and Arizona. 1876. Stemless.
„ „ *viola'cea* (violet). Tinted with violet. Arizona, &c. 1884.

Z

ZACI'NTHA. (From *Zacinthus*, an old name of *Zante*, where the plant grows. Nat. ord. Compositæ.)
Hardy annual. Seeds. Ordinary garden soil.
Z. pe'ndula (drooping). See *Z. VERRUCOSA*.
„ *verruco'sa* (warted). ½–1. Yellow. July to September. S. Europe; Asia Minor.

ZAHLBRU'CKNERA. (A commemorative name. Nat. ord. Saxifragaceæ.)
Hardy, slender perennial herb. Seeds; divisions. Fibrous loam, peat, and sand. A half shady position should be selected for it.
Z. parado'xa (paradoxical). ¼. Green. June. Europe.

ZALA'CCA. (The native Malay name. Nat. ord. Palmaceæ.)
Dwarf stove palms. Seeds. Loam, fibrous peat, and sand.
Z. blumea'na (Blumean). See *Z. EDULIS*.
„ *edu'lis* (edible). Pink. Leaves 12–20 ft. long. Burma; Malaya. 1847.
„ *glabre'scens* (smooth). Penang.
„ *ni'tida* (shining). Trop. Africa. 1884.
„ *Wa'gneri* (Wagner's). Country unknown. 1870.
„ *wallichia'na* (Wallichian). See *Z. EDULIS*.

ZALUZA'NIA. (Commemorative of *Adam Zaluziansky à Zaluzian*, of Prague. Nat. ord. Compositæ.)
A greenhouse, evergreen subshrub. Seeds; cuttings in sand, under a bell-glass, in a warm greenhouse. Loam, fibrous peat, and sand.
Z. globo'sa (globose). 1. White. July. Mexico. 1570.

ZALUZIA'NSKYA. (Commemorative of *Adam Zaluziansky à Zaluzian*, a physician of Prague. Nat. ord. Scrophulariaceæ. Allied to Chænostoma.)
Half-hardy annuals, except in the case of *Z. lychni'dea*, which is a greenhouse subshrub. All may be grown in the greenhouse, being dwarf and pretty. Seeds in gentle heat, and afterwards planted out; or sown outdoors in April they will merely be later. The shrub by cuttings under a bell-glass. Light, sandy soil and leaf-mould.
Z. capensis (Cape). ½–1. White. Spring. S. Africa.
„ *lychni'dea* (Lychnis-like). ½–1½. Yellow-white. May to July. S. Africa. 1776.
„ *maritima* (maritime). See *Z. LYCHNIDEA*.
„ *selaginoides* (Selago-like). ½–1. White, with orange eye. June to September. S. Africa. 1854.

ZA'MIA. (From *zamia*, loss; the barren appearance of the male flowers. Nat. ord. *Cycads* [Cycadaceæ]. Linn. *22-Dioecia*, *12-Icosandria*.)
A race of plants intermediate between Ferns and Palms. Those not otherwise specified are from South Africa, and will succeed in a greenhouse; but all do best in a stove. Suckers; rich, loamy soil. Winter temp., 45° to 55°; summer, 60° to 80°.
Z. amplifolia (ample-leaved). Colombia. 1878.
„ *angustifolia* (narrow-leaved). 2. July. Bahamas.

Z. ca'ffra (Caffrarian). See ENCEPHALARTOS CAFFER.
„ *calo'coma* (beautiful-haired). See MICROCYCAS CALOCOMA.
„ *Chi'gua* (Chigua). 4–5. Colombia. 1847.
„ *cycadifo'lia* (Cycas-leaved). See ENCEPHALARTOS CYCADIFOLIUS.
„ *Cy'cadis* (Cycas-like). See ENCEPHALARTOS CAFFER.
„ *de'bilis* (weak-*long-leaved*). 1. July. W. Ind. 1777.
„ *Fische'ri* (Fischer's). Trop. Amer. 1849.
„ *Fra'seri* (Fraser's). See MACROZAMIA FRASERI.
„ *furfura'cea* (scurfy). 3. July. Mexico. 1691.
„ *Ghelli'nckii* (Ghellinck's). See ENCEPHALARTOS GHELLINCKII.
„ *ho'rrida* (horrid). See ENCEPHALARTOS HORRIDUS.
„ *integrifo'lia* (entire-leaved. *Dwarf*). 2. July. W. Ind. 1768.
„ *Ki'ckxii* (Kickx's). Cuba.
„ *lanugino'sa* (woolly). See ENCEPHALARTOS LANUGINOSUS.
„ *latifo'lia* (broad-leaved). 6. Honduras.
„ *Leibo'ldii* (Leibold's). Trunk 8 in. high. Mexico. 1843.
„ *Li'ndeni* (Linden's). Trunk 3 ft. Ecuador. 1875.
„ *Li'ndleyi* (Lindley's). See Z. CHIGUA.
„ *Loddige'sii* (Loddiges'). Mexico. 1844.
„ *longifo'lia* (long-leaved). See ENCEPHALARTOS LONGIFOLIUS.
„ *me'dia* (mediate). 2. July. W. Ind. 1768.
„ *me'dia* (intermediate) of Sims. See Z. PUMILA.
„ *Mique'lii* (Miquel's). See MACROZAMIA MIQUELII.
„ *monta'na* (mountain). 3–4. Colombia. 1873.
„ *murica'ta* (warted). Trop. Amer. 1849.
„ *nœffia'na* (Nœffian). S. Amer. 1896.
„ *obli'qua* (oblique). Trunk 6–7 ft. Colombia. 1877.
„ *Otto'nis* (Otto's). Trunk ½ ft. Cuba.
„ *pi'cta* (painted). Mexico (?).
„ *pra'sina* (leek-green). See Z. LATIFOLIA.
„ *Pri'nceps* (princely). See Z. CHIGUA.
„ *pruni'fera* (plum-bearing). See ENCEPHALARTOS PRUNIFERUS.
„ *Pseu'do-parasi'tica* (falsely-parasitical). Panama. 1873.
„ *pu'mila* (dwarf). 1½. W. Ind. 1812.
„ *pu'ngens* (stinging). See ENCEPHALARTOS PUNGENS.
„ *pygmæ'a* (pigmy). 1. May. W. Ind.
„ *repa'nda* (wavy-*leaved*). 6.
„ *Rœ'zlii* (Rœzl's). See Z. PSEUDO-PARASITICA.
„ *Siebo'ldi angustifo'lia* (Siebold's narrow-leaved). See Z. LEIBOLDII.
„ *Ski'nneri* (Skinner's). Leaves 4–5 ft. Central Amer. 1851.
„ *spino'sa* (spiny). See ENCEPHALARTOS ALTENSTEINII.
„ *spira'lis* (spiral). See MACROZAMIA SPIRALIS.
„ *tenuifo'lia* (slender-leaved). See Z. FISCHERI.
„ *te'nuis* (slender). 1. Bahama Islands.
„ *tonkine'nsis* (Tonkin). Tonkin. 1885.
„ *tridenta'ta* (three-toothed). See ENCEPHALARTOS TRIDENTATUS.
„ *villo'sus* (shaggy). See ENCEPHALARTOS VILLOSUS.
„ *Walli'sii* (Wallis'). Colombia. 1875.

ZAMIOCU'LCAS. (From *Zamia*, and *Culcasia;* because it is an Aroid like the latter, but having pinnate or bipinnate leaves like a Zamia. Nat. ord. Araceæ.)

Stove, evergreen herbs, with tuber-bearing rhizomes. Divisions or offsets. Tubers are also produced from the leaves if laid on moist sand or on cocoanut fibre in a propagating case. The tubers form plants when potted up. Fibrous loam, lumpy peat, and some nodules of charcoal with sand. Moist stove treatment is necessary.

Z. Boivi'nii (Boivin's). 2–3. Spathe yellow-green inside, lurid yellow-green outside. Trop. Africa. 1873.
„ *Loddige'sii* (Loddiges'). 2–2½. Spathe green; spadix greenish-yellow. Trop. Africa. 1828.

ZANONA PALM. *Socrate'a exorrhi'za.*

ZANO'NIA. (Commemorative of *James Zanoni*, a superintendent of the Bologna Botanic Garden. Nat. ord. Cucurbitaceæ. Now referred to Alsomitra.)

Z. sarcophy'lla (fleshy-leaved). See ALSOMITRA SARCOPHYLLA.

ZANTEDE'SCHIA ÆTHIO'PICA. [See RICHARDIA AFRICANA.

ZANTHOSO'MA HOFFMA'NNI. See XANTHOSOMA HOFFMANNI.

ZANTHO'XYLUM. Toothache-tree. (From *zanthos*, yellow, and *xulon*, wood. Nat. ord. *Rutads* [Rutaceæ]. Linn. 22-*Dicœcia*, 5-*Pentandria*.)

Nearly all white-flowered; cuttings in sand, under a bell-glass, in May; the stove species in heat; the hardy species by seed, pieces of the roots, and cuttings of the ripened shoots in sandy soil, under a hand-light; sandy loam suits any of them.

HARDY DECIDUOUS.

Z. ailanthoi'des (Ailanthus-like). Japan and Formosa.
„ *ala'tum* (winged). May. India. Partly evergreen.
„ *america'num* (American). 12–15. April. United States. 1740. "Prickly Ash, Toothache Tree."
„ *Bu'ngei* (Bunge's). China.
„ „ *folio'lis angustio'ribus* (narrower-leaved). 1904.
„ *fraxi'neum* (ash-like). See Z. AMERICANUM.
„ *mi'te* (mild). See Z. AMERICANUM.
„ *piperi'tum* (Pepper-like). 10. September. China; Japan. 1773. "Chinese or Japanese Pepper."
„ *planispi'num* (flat-spined). Japan.
„ *schinifo'lium* (Schinus-leaved). Japan.
„ *trica'rpum* (three-capsuled). See Z. CLAVA-HERCULIS.

STOVE EVERGREENS.

Z. affi'ne (related). Mexico. 1826.
„ *aroma'ticum* (aromatic). See Z. CLAVA-HERCULIS.
„ *Blackbu'rnia* (Blackburnia). 20. May. Australia; Norfolk Island. 1829. Greenhouse.
„ *Budru'nga* (Budrunga). 20. March. Himalaya; Burma. 1825.
„ *cape'nsis* (Cape). 10–25. S. Africa.
„ *Cla'va-He'rculis* (Hercules'-club). 50. Caribees. 1739.
„ *emargina'tum* (notched). West Indies.
„ *hermaphro'ditum* (two-sexed). 50. Guiana. 1823.
„ *heterophy'llum* (various-leaved). Bourbon. 1823.
„ *juglandifo'lium* (walnut-leaved). St. Domingo. 1822.
„ *ni'tidum* (shining). 6. China. 1823.
„ *pinna'tum* (pinnate). See Z. BLACKBURNIA.
„ *Ptero'ta* (winged-*leaf-stalked*). August. Jamaica. 1768.
„ *sapindoi'des* (Sapinda-like). See Z. EMARGINATUM.
„ *Spi'nifex* (thorn-bearer). 2–3. July. W. Ind.; Venezuela. 1825.
„ *spino'sum* (thorny). 6. Jamaica. 1824.
„ *trago'des* (goat's-tooth). 6. St. Domingo. 1759.
„ *triphy'llum* (three-leaved). See EVODIA TRIPHYLLA.

ZAPA'NIA. (Commemorative of *Paul Ant. Zappa*, of Pavia. Nat. ord. Verbenaceæ. Now referred to Lippia.)

Z. nodiflo'ra (node-flowering). See LIPPIA NODIFLORA.

ZA'RA. See PISTIA.

ZAUSCHNE'RIA. (Named after *M. Zauschner*, a German. Nat. ord. *Onagrads* [Onagraceæ]. Linn. 8-*Octandria*, 1-*Monogynia*. Allied to Epilobium.)

A hardy plant, with the habit of a Fuchsia. Division of the plant in spring; cuttings of the shoots in spring, summer, and autumn, under a hand-light. It is a good pot and bedding-plant; for the latter purpose, as the flowers are apt to drop too much, mix it with *Cu'phea strigillo'sa;* rich, light soil.

Z. califo'rnica (Californian). 1–3. Bright scarlet. June. California. 1847. Californian Fuchsia.
„ „ *latifo'lia* (broad-leaved). 1. Scarlet. Leaves broader.
„ „ *mexica'na* (Mexican). 1–3. Scarlet.
„ *mexica'na* (Mexican). See Z. CALIFORNICA MEXICANA.

ZE'A. Maize, or Indian Corn. (From *zao*, to live; a food-plant. Nat. ord. *Grasses* [Gramineæ]. Linn. 21-*Monœcia*, 3-*Triandria*.)

Annuals. Seeds in a slight hotbed in early spring, and the seedlings planted out into good soil. The heads, when half-grown and green, make an excellent vegetable when boiled.

Z. Cura'gua (Curagua). 1. June. Chili. 1824.

Z. Ma'ys (maize). 2. June. Paraguay. 1562. "Guinea or Turkey Wheat," "Indian Corn," "Maize," "Mealies."
,, ,, *gigante'a fo'liis variega'tis* (giant-variegated-leaved). Leaves with silvery-white variegation.
,, ,, *graci'llima variega'ta* (very slender variegated). 1886.
,, ,, *japo'nica a'lbo-vitta'ta* (Japanese-white-striped). Japan. 1867.
,, ,, *tunica'ta fo'liis variega'tis* (tunicated-variegated-leaved). Leaves variegated. 1891.

ZEBRA PLANT. *Cala'thea zebri'na.*

ZEBRA WOOD. *My'rtus fra'grans* and *Guetta'rda specio'sa.*

ZEBRI'NA. (The leaves are striped like a zebra. Nat. ord. Commelinaceæ. Allied to Tradescantia, and often named *T. zebrina.*)
Greenhouse evergreen creeping herb, having its leaves striped with white, shaded purple and purple beneath. Cuttings root easily in any light soil, kept moist. Loam, leaf-mould, and sand. It is a good basket plant, for small pots on the front of stages, and for planting under the stages, when a fair amount of light is available.
Z. pe'ndula (drooping). White, rose-purple. Summer. Mexico. 1846.

ZEDOARY, ROUND. *Curcu'ma Zedoa'ria.*

ZEHNE'RIA. (Commemorative of *Joseph Zehner*, a botanical artist. Nat. ord. Cucurbitaceæ. Now referred to Melothria.)
Z. hasta'ta (halbert-shaped). See MELOTHRIA HETEROPHYLLA.
,, *sca'bra* (rough). See MELOTHRIA PUNCTATA.
,, *sua'vis* (sweet). See MELOTHRIA PUNCTATA.

ZELKO'VA. (Possibly a Japanese native name. Nat. ord. Urticaceæ.)
Small, hardy, deciduous trees, resembling Elms. Seeds; layers. Ordinary garden soil.
Z. acumina'ta (long-pointed). Green. April. Japan. "Keaki."
,, *crena'ta* (notched). 10–14. Green. April. Caucasus. 1760.
,, ,, *pe'ndula* (drooping). Branches drooping.
,, *Davi'dii* (David's). Green. April. China; Mongolia; Corea. 1910.
,, *japo'nica Verschaffe'lti* (Japanese, Verschaffelt's variety). See *Z.* VERSCHAFFELTII.
,, *Kea'ki* (Keaki). See *Z.* ACUMINATA.
,, *Verschaffe'lti* (Verschaffelt's). Green. April. Eastern Asia. 1892.

ZENO'BIA. (Commemorative of *Zenobia*, Empress of Palmyra. Nat. ord. Ericaceæ. Allied to Lyonia and Andromeda.)
A dwarf, subevergreen, hardy shrub of great beauty when in bloom, the flowers resembling those of Lily of the Valley, but larger. Seeds; layers. Sandy loam and peat.
Z. specio'sa (showy). 2. White. May to July. N. Amer. 1800.
,, ,, *pulveule'nta* (powdery). Leaves glaucous-white, as if powdered.
,, ,, *quercifo'lia* (oak-leaved).

ZEPHYRA'NTHES. (From *zephyr*, the west wind, and *anthos*, a flower. Nat. ord. *Amaryllids* [Amaryllidaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Habranthus.)
Half-hardy bulbs, with only one flower on a stalk. For culture, see HABRANTHUS.
Z. Anderso'nii (Anderson's). ½. Golden inside, or copper, lined outside. Monte Video. 1829.
,, *andi'cola* (Andes-loving). ½. Bright violet. January. Chili.
,, *Atama'sco* (Atamasco). ½. White. March. N. Amer. 1629. "Atamasco Lily."
,, *au'rea* (golden). ½–1. Golden-yellow. June. Peru. 1829.
,, *cæru'lea* (blue). ½. Pale blue or lilac. Uruguay. 1897.
,, *ca'ndida* (white). ½. White. September. Argentina. 1822. "Swamp Lily."
,, ,, *ma'jor* (larger). 1. Flowers 4 in. long. 1907.
Z. carina'ta (keeled). ½. Pink. May. Mexico. 1824.
,, *chloroleu'ca* (greenish-white). ½. Pale green. July. Trop. Amer. (?).
,, *citri'na* (citron). ½. Bright yellow. August. Guiana. 1881.
,, *co'ncolor* (one-coloured). 1. Lemon-yellow. July. Mexico. 1845.
,, *Drummo'ndii* (Drummond's). See COOPERIA PEDUNCULATA.
,, *fla'va* (yellow). ½–1. Golden-yellow. June. Peru. 1833.
,, *flave'scens* (yellowish). See *Z.* MESOCHLOA FLAVESCENS.
,, *gracilifo'lia* (slender-leaved). ½. Pale purplish-pink. September. Maldonado; Monte Video. 1823.
,, ,, *boothia'na* (Boothian). ½. Pink. October. Buenos Ayres. 1822.
,, *grandiflo'ra* (large-flowered). See *Z.* CARINATA.
,, *lila'cina* (lilac). ½–1. Lilac. Mexico.
,, *lindleya'na* (Lindleyan). ½–1. Bright red. June. Mexico.
,, *lo'ngipes* (long-stalked). ½. Pale red. Monte Video. 1898.
,, *macro'siphon* (long-tubed). ½–1. Bright red. May. Mexico. 1881.
,, *meso'chloa* (green-centred). 1. White, green. June. Buenos Ayres. 1825.
,, ,, *flave'scens* (yellowish). Young flowers straw-coloured.
,, *pu'mila* (dwarf). ½. Rose. September. Chili. 1831.
,, *pusi'lla* (puny). See HAYLOCKIA PUSILLA.
,, *robu'sta* (robust). ½–¾. Rose red. July, August. Buenos Ayres. 1838.
,, *ro'sea* (rosy). ½. Red. May. Havannah. 1823.
,, *se'ssilis* (stalkless). See *Z.* VERECUNDA.
,, ,, *stria'ta* (lined). See *Z.* VERECUNDA.
,, ,, *verecu'nda.* See *Z.* VERECUNDA.
,, *spofforthia'na* (Spofforthian). A hybrid between *Z. carinata* and *tubispatha.*
,, *stria'ta* (channelled). See *Z.* VERECUNDA.
,, *taubertia'na* (Taubertian). Pink, large. Brazil.
,, *texa'na* (Texan). ½–¾. Yellow inside, coppery-yellow outside. Texas. 1824.
,, *Trea'tiæ* (Treatia's). ½–1. White. April, May. Florida. 1880.
,, *tubi'spatha* (tubular-spathed). ½. White, slightly tinged with green. W. Ind.; Venezuela, &c.
,, ,, *hy'brida* (hybrid). See *Z.* SPOFFORTHIANA.
,, *verecu'nda* (blushing). ¾. White, tinted with pale red. April. Mexico. 1824.
,, *versi'color* (various-coloured). ½–¾. White, flushed red and green. January. Maldonado. 1824.
,, *vesti'ta* (clothed). Trop. Amer. (?).

ZEUXI'NE. (From *zeuxis*, the act of uniting; the petals and upper sepal are united. Nat. ord. Orchidaceæ.)
A stove terrestrial orchid. Cuttings or divisions. Fibrous peat, sphagnum, a little loam, and sand.
Z. re'gia (royal). ½. White and green. Leaves with a grey or lilac band along the middle. Ceylon. "Striped King of the Woods."

ZEXME'NIA. (An anagram of *Ximenesia.* Nat. ord. Compositæ.)
A greenhouse, shrubby plant, increased by cuttings under a bell-glass, and an annual that may be sown in the open border.
Z. au'rea (golden). 1½. Bright yellow. September. Mexico. 1829. Greenhouse shrub.
,, *ova'ta* (egg-shaped). 2. Orange-yellow. September, October. Mexico. 1828. Hardy annual.
,, *texa'na* (Texan). See WEDELIA HISPIDA.

ZI'CHYA. (Named after *Countess Zichy*, a German patroness of botany. Nat. ord. *Leguminous Plants.* [Leguminosæ]. Linn. 17-*Diadelphia*, 4-*Decandria.* Referred to Kennedya.)
Z. angustifo'lia (narrow-leaved). See KENNEDYA COCCINEA.
,, *cocci'nea* (scarlet). See KENNEDYA COCCINEA.
,, *glabra'ta* (smooth). See KENNEDYA GLABRATA.
,, *heterophy'lla* (various-leaved). See KENNEDYA COCCINEA HETEROPHYLLA.
,, *inophy'lla* (nerve-leaved). See KENNEDYA COCCINEA.

Z. microphy'lla (small-leaved). See KENNEDYA MICROPHYLLA.
„ *Mo'lly* (molly). See KENNEDYA COCCINEA.
„ *panno'sa* (woolly-*leaved*). See KENNEDYA COCCINEA.
„ *seri'cea* (silky). See KENNEDYA COCCINEA.
„ *tri'color* (three-coloured). See KENNEDYA COCCINEA TRICOLOR.
„ *villo'sa* (shaggy). See KENNEDYA COCCINEA.

ZIE'RIA. (Named after *M. Zier*, a Polish botanist. Nat. ord. *Rueworts* [Rutaceæ]. Linn. 4-*Tetrandria*, 1-*Monogynia*. Allied to Boronia.)
Greenhouse, white-flowered evergreens, from Australia. For culture, see BORONIA.

Z. arbore'scens (tree-like). See *Z.* SMITHII MACROPHYLLA.
„ *hirsu'ta* (hairy). See *Z.* PILOSA.
„ *læviga'ta* (smooth-*leaved*). 3. June. 1822.
„ *lanceola'ta* (spear-*leaved*). See *Z.* SMITHII.
„ *macrophy'lla* (large-leaved). See *Z.* SMITHII MACROPHYLLA.
„ *microphy'lla* (small-leaved). 3. June. 1822.
„ *obcorda'ta* (reversed-egg-*leaved*). 4. June. 1824.
„ *octa'ndra* (eight-stamened). 5. Green. 1825.
„ *pauciflo'ra* (few-flowered). See *Z.* PILOSA.
„ *pilo'sa* (shaggy). 4. June. 1822.
„ *revolu'ta* (curled-back-*leaved*). See *Z.* LÆVIGATA.
„ *Smi'thii* (Smith's). 4. June. 1808. "Sandfly Bush," "Tasmanian Stinkwood."
„ „ *macrophy'lla* (large-leaved). A tree-like, broad-leaved form. 1820.

ZI'NGIBER. Ginger. (From the Indian name. Nat. ord. *Gingerworts* [Scitaminaceæ]. Linn. 1-*Monandria*, 1-*Monogynia*.)
Stove herbaceous perennials, from the East Indies; yellow-flowered, where not otherwise mentioned; division of the roots; fibrous peat and sandy loam. Winter temp., 40° to 45°; summer, 60° to 90°. See GINGER.

Z. ama'ricans (bitter). 3. Penang. 1846.
„ *brevifo'lium* (short-leaved). 1. Yellow; bracts orange-yellow. Philippines. 1886.
„ *capita'tum* (*round*-headed). 4. February. 1820.
„ *Cassumu'nar* (Cassumunar). 2. February. India; Malaya. 1796. "Bengal Root."
„ *chrysa'nthum* (gold-flowered). 8. July. Himalaya. 1821.
„ *Cliffo'rdiæ* (Lady de Clifford's). See *Z.* CASSUMUNAR.
„ *colora'tum* (coloured). 3. Creamy-white; bracts crimson. North-west Borneo. 1879.
„ *Darce'yi* (Darcey's). 2–3. Leaves with a broad creamy-white margin and stripes. 1890.
„ *ela'tum* (lofty). See *Z.* CAPITATUM.
„ *Griffi'thii* (Griffith's). Malacca.
„ *ligula'tum* (strap-*leaved*). 2. Pink. June. 1823.
„ *Mio'ga* (Mioga). 2. Pink. May. Japan. 1796. Greenhouse.
„ *officina'le* (shop). 2. Red. July. Trop. Asia. 1605. "Ginger."
„ *pandura'tum* (fiddle-*lipped*). 5. Pink. June. Burma. 1812.
„ *Pari'shii* (Parish's). 3. Straw, veined purple; bracts with scarlet edge. July. Burma. 1872.
„ *purpu'reum* (purple). See *Z.* CASSUMUNAR.
„ *ro'seum* (rosy). 2. Rose, yellow. August. 1822.
„ *ru'bens* (red). 6. Red. October. 1822.
„ *specta'bile* (showy). 8. Pale yellow, reddish-brown; bracts edged orange-yellow. Malacca. 1904.
„ *squarro'sum* (spreading). 2. Pink. August. Burma. 1822.
„ *wightia'num* (Wightian). S. India.
„ *Zeru'mbet* (Zerumbet). 4. August. India; Malaya. 1690.
„ „ *variega'ta* (variegated). Leaves banded with white.

ZI'NNIA. (Named after *J. G. Zinn*, a German professor of botany. Nat. ord. *Composites* [Compositæ]. Linn. 19-*Syngenesia*, 2-*Superflua*.)
Mexican annuals, scarlet-flowered, with one exception. Seeds in April in a hotbed; seedlings hardened off, and then transferred to the flower-garden, in good, rich, loamy soil. If sown earlier, they are apt to be drawn and attacked by insects. We have had them fine by sowing under a hand-light, without bottom-heat, in the middle of April, and throwing a mat over the glass at night. *Z. elegans* is the species from which most of the garden varieties have been raised.

Z. angustifo'lia (narrow-leaved). 2. July. 1824.
„ *au'rea* (golden). See *Z.* HAAGEANA.
„ *e'legans* (elegant). 2. July. 1796.
„ „ *cocci'nea* (scarlet-*rayed*). 2. August. 1829.
„ „ *Da'rwini* (Darwin's). See GLOSSOGYNE PINNATIFIDA.
„ „ *flo're ple'no* (double-flowered). 1861.
„ „ *viola'cea* (violet). 2. Purple-violet.
„ *haagea'na* (Haagean). 1–1½. Rays golden-yellow or orange. July to September. Trop. Amer. 1862.
„ „ *stella'ta* (starry). Orange-yellow; florets twisted. 1908.
„ *hy'brida* (hybrid). 2. June. S. Amer. 1818.
„ *linea'ris* (linear). 1–1½. Bright deep orange. Mexico. 1887.
„ *multiflo'ra* (many-flowered). 2. August. 1770.
„ *pauciflo'ra* (few-flowered). 2. Yellow. July. Peru. 1753.
„ *revolu'ta* (curled-back). 2. July. 1817.
„ *tenuiflo'ra* (slender-flowered). 2. July. 1799.
„ *verticilla'ta* (whorl-*leaved*). 2. July. 1789.

ZIZA'NIA. (From *Zizanion*, an old Greek name, translated "tare," and supposed to be *Lolium temulentum*. Nat. ord. Graminæ.)
Hardy and stately aquatic grasses for the margins of ponds, tanks, and ornamental water. Seeds, sown as soon as ripe. Wet, boggy or watery places.

Z. aqua'tica (aquatic). 4–6. October. N. Amer. 1886. "Canada or Indian Rice," "Water Oats."
„ *latifo'lia* (broad-leaved). Siberia; Japan.
„ *palu'stris* (marsh). See *Z.* AQUATICA.

ZI'ZIA AU'REA. See THASPIUM AUREUM.

ZIZIPHORA. (From *zizi*, of the Indians, and *phoreo*, to bear. Nat. ord. *Lipworts* [Labiatæ]. Linn. 2-*Diandria*, 1-*Monogynia*. Allied to Monarda.)
Red-flowered, where not otherwise mentioned. Annuals, by seed in April; perennials, by seeds, divisions, and cuttings; dry, sandy loam, and elevated places, such as rock-works; the perennials require a little protection in winter.

HALF-HARDY EVERGREENS.

Z. acinoi'des (thyme-like). ½. July. Spain. 1786. Deciduous.
„ *clinopodioi'des* (basil-like). ½. Pink. June. Siberia. 1803.
„ „ *cane'scens* (hoary). July. 1803.
„ „ *me'dia* (mediate). ½. July. Caucasus. 1803.
„ *dasya'ntha* (thick-flowered). See *Z.* CLINOPODIOIDES.
„ *Puschki'ni* (Puschkin's). See *Z.* CLINOPODIOIDES.
„ *serpylla'cea* (thyme-like). See *Z.* CLINOPODIOIDES MEDIA.

ANNUALS.

Z. capita'ta (*round*-headed). ½. July. Syria. 1752.
„ *hispa'nica* (Spanish). ½. June. Spain. 1759.
„ *tau'rica* (Taurian). ½. Red, purple. August. Tauria. 1816.
„ *tenu'ior* (slenderer). ½. Purplish. June. S. Europe; Levant. 1752.

ZIZYPHUS. (The Egyptian name of *Z. Lo'tus*. Nat. ord. *Rhamnads* [Rhamnaceæ]. Linn. 5-*Pentandria*, 1-*Monogynia*.)
Greenish-yellow-flowered, where not otherwise mentioned. Cuttings of the roots, suckers, and cuttings of ripened shoots under a hand-light or bell-glass, according as the species are hardy or tender; deep, dry loam for the hardy, peat and sandy loam for the tender.

HARDY DECIDUOUS, &c.

Z. flexuo'sa (zigzag). See *Z.* SATIVA.
„ *Gira'ldii* (Girald's). 10–15. Fruits black, edible. N. China. 1907.
„ *incu'rva* (curled-in). 5. Nepaul. 1823.
„ *Paliu'rus* (Paliurus). See PALIURUS AUSTRALIS.
„ *Spi'na-Chri'sti* (Christ's thorn). 6. August. Egypt; Orient.
„ „ *ine'rmis* (unarmed). 6. August.
„ *vulga'ris* (common). 8–10. August. S. Europe to Afghanistan. 1640. "Jujube."

STOVE EVERGREENS, &c.

Z. Caracu'tta (Caracutta). See *Z.* XYLOPYRUS.
„ *Ju'juba* (Jujuba). 30–50. April. India; Malaya. 1759. "Jujube-tree." Greenhouse.
„ *longifo'lia* (long-leaved). India. 1837.
„ *Lo'tus* (Lotus). 2–4. Fruit yellow. Mediterranean region. 1731. "African or Jujube-Lotus." Half-hardy.
„ *melastomoi'des* (Melastoma-like). 6. Australia. 1824. A species of Celtis.
„ *mirtoi'des* (Myrtus-like) and *Z. myrtoi'des* (Myrtus-like). See CONDALIA MICROPHYLLA.
„ *mucrona'ta* (pointed-*leaved*). 30. S. Africa. 1810. Greenhouse.
„ *Nape'ca* (Napeca). 15. Ceylon. 1816.
„ *ni'tida* (shining). See *Z.* SATIVA.
„ *oxyphy'lla* (sharp-leaved). India.
„ *rugo'sa* (wrinkled). India.
„ *sati'va* (cultivated). 6. June. Mediterranean region; temperate Asia. 1820.
„ *Spi'na-Chri'sti trine'rvia* (three-nerved Christ's thorn). E. Ind. 1821.
„ *Xylopy'rus* (Xylopyrus). E. Ind. 1820.

ZOMICA'RPA. (From *zoma*, a short under garment or waistcoat, and *karpos*, a fruit; the ripe fruit bursts at the base, but retains its position, covering the seeds like a waistcoat. Nat. ord. Araceæ.)

Stove perennial herbs with tuberous roots. Offsets; seeds. Fibrous loam, lumpy peat, and sand.

Z. Pytho'nium (Pythonium). 1. Grey-violet. Brazil. 1860.
„ *riedelia'na* (Riedelian). 1. Green. Brazil. 1860.
„ *steigeria'na* (Steigerian). 1. Blackish-purple; spadix fuscous-purple. Brazil. 1860.

ZOMICARPE'LLA. (The diminutive of *Zomicarpa*. Nat. ord. Araceæ.)

A pretty stove Aroid with variegated foliage. Offsets. Fibrous peat, fibrous loam, a few lumps of charcoal and sand.

Z. macula'ta (blotched). Spadix blackish. Leaves dark green, with pale green blotches near the margin. Colombia. 1881.

ZO'RNIA. (Named of *J. Zorn*, a German botanist. Nat. ord. *Leguminous Plants* [Leguminosæ]. Linn. 16-*Monadelphia*, 6-*Decandria*.)

Annuals, seeds in a hotbed, and the plants afterwards bloomed in the greenhouse; perennials, also, by seed, and dividing the plants in spring, and requiring to be kept from frost, and rather dry in winter; rich, light, fibrous loam.

Z. angustifo'lia (narrow-leaved). See *Z.* DIPHYLLA.
„ *bractea'ta* (large-bracted). ½. Yellow. July. N. Amer. and S. Africa. 1824. Greenhouse perennial.
„ *cape'nsis* (Cape). See *Z.* BRACTEATA.
„ *diphy'lla* (two-leaved). 1. Purple. July. Tropics everywhere. 1733. Annual.
„ *e'legans* (elegant). See DESMODIUM ELEGANS.
„ *myriade'na* (myriad-glanded). Brazil.
„ *pulche'lla* (pretty). See DESMODIUM PULCHELLUM.
„ *tetraphy'lla* (four-leaved). See *Z.* BRACTEATA.

ZO'SIMA. (From *zosimos*, having vital powers, or likely to live; the plant has a thick, fleshy stem. Nat. ord. Umbelliferæ. Allied to Heracleum.)

Hardy perennial herb, with a thick stem. Seeds; offsets. Ordinary garden soil.

Z. orienta'lis (oriental). White or pale yellow-green. Caucasus to Afghanistan.

ZOSTERO'STYLIS. (From *zoster*, a ribbon, and *stulos*, a column; the margin of the column sometimes has a membranous margin. Nat. ord. Orchidaceæ. Now referred to Cryptostylis.)

Z. Arachni'tes (Arachnites). See CRYPTOSTYLIS ARACHNITES.
„ *Wa'lkeræ* (Mrs. Walker's). See CRYPTOSTYLIS ARACHNITES.
„ *zeyla'nica* (Cingalese). See CRYPTOSTYLIS ARACHNITES.

ZUCCA'GNIA. (Commemorative of *A. Zuccagni*, a director of the Florence Botanic Garden. Nat. ord. Liliaceæ. Now referred to Dipcadi.)

Z. vi'ridis (green). See DIPCADI FILAMENTOSUM.

ZYGADE'NUS. (From *zugeo*, to be joined, and *aden*, a gland; double glands on the perianth. Nat. ord. *Lily-worts* [Liliaceæ]. Linn. 6-*Hexandria*, 1-*Monogynia*. Allied to Veratrum.)

Hardy, North American, herbaceous perennials. Seeds, and division of the plant in spring; a moist, shady peat-border.

Z. angustifo'lius (narrow-leaved). 1–1½. White. May, June. 1823.
„ *bractea'tus* (bracted). See *Z.* ELEGANS.
„ *commuta'tus* (changeable). See *Z.* ELEGANS.
„ *e'legans* (elegant). 1. White. May. 1811.
„ *Fremo'nti* (Fremont's). 1–1½. Cream. June. California. 1871.
„ *glabe'rrimus* (smoothest). 1. Cream. June. 1811.
„ *glau'cus* (sea-green) of Baker. See *Z.* FREMONTI.
„ *glau'cus* (sea-green) of Nuttall. See *Z.* ELEGANS.
„ *hy'bridus* (hybrid). See MELANTHIUM VIRGINICUM.
„ *leimanthoi'des* (Leimanthium-like). N. Amer.
„ *monoi'cus* (monœcious). See MELANTHIUM PARVIFLORUM.
„ *Muscito'xicum* (fly-poison). 1–1½. White. June. 1758. "Fly Poison."
„ *Nutta'llii* (Nuttall's). 1–1½. White. June. Texas; California. 1883.
„ *virgi'nicus* (Virginian). See MELANTHIUM VIRGINICUM.

ZYGO'MERIS FLA'VA. See AMICIA ZYGOMERIS.

ZYGOPE'TALUM. (From *zugos*, a yoke, and *petalon*, a petal; the union of the bases of the petals and sepals Nat. ord. *Orchids* [Orchidaceæ]. Linn. 20-*Gynandria*, 1-*Monandria*.)

Stove orchids, grown in pots. See ORCHIDS.

Z. africa'num (African). See ODONTOGLOSSUM BICTONIENSE.
„ *aroma'ticum* (aromatic). White, blue. Panama. 1867.
„ *backhousia'num* (Backhousian). Purple, violet, pale yellow. Ecuador. 1877.
„ *Ba'llii* (Ball's). White, rose purple; lip white, blotched with purple. 1900.
„ *Beaumo'ntii* (Beaumont's). Cream, purple-violet. Brazil. 1850.
„ *be'llum* (pretty). Violet, yellow, and brown. Colombia. 1878.
„ *Bino'ti* (Binot's). Green; lip greenish-white, with purple ridges. Brazil. 1905.
„ *brachype'talum* (short-petaled). Green, blue. October. Brazil. 1844.
„ „ *stenope'talum* (narrow-petaled). Purple-brown; lip violaceous. Brazil. 1888.
„ *Bu'rkei* (Burke's). Blackish-purple; lip white, marked with purple. Guiana. 1883.
„ *Bu'rtii* (Burt's). Red-brown, with yellow base. Costa Rica. 1872.
„ *ca'ndidum* (white). 1. White, rose-purple. Brazil. 1850.
„ *ce'rinum* (wax). 1. Pale and deeper yellow. Panama. 1861.
„ *chlora'nthum* (green-flowered). Greenish, fragrant. Country unknown. 1910.
„ (*Promenæ'a*) *citri'num* (citron). See *Z.* XANTHINUM.
„ *Cla'yi* (Clay's). Purple-brown, green, violet-purple. (*Z. crinitum* × *maxillare*.) 1876.
„ *cochlea're* (spoon-*lipped*). 1. White, purple. August. Demerara.
„ (*Warscewicze'lla*) *cochlea're* (shell-shaped). White, blue. Guiana.
„ (*Bo'llea*) *cæle'ste* (sky-blue). Sky-blue, mauve, yellow. Colombia. 1878.
„ *Crepeau'xii* (Crepeaux's). Dark red, spotted and striped with yellow; lip white, violet. Brazil. 1887.
„ *crini'tum* (hairy). Green, blue. November. Brazil. 1828.
„ „ *cæru'leum* (sky-blue). Marked chocolate on green; lip marked violet-blue on white. 1903.
„ *daya'num* (Dayan). Green, white, violet. Colombia. 1872.

Z. *daya'num candi'dulum* (whitish). White, pale purple. Colombia. 1875.
„ „ *rhoda'crum* (rose-pointed). Sepals and petals tipped with rose. 1874.
„ „ *splе'ndens* (splendid). White, marked brown-purple. Colombia. 1875.
„ (*Warscewiczе'lla*) *di'scolor* (two-coloured). Pale and deeper yellow, purple. Costa Rica. 1849.
„ „ *atrocæru'leum* (dark-blue). White, shaded violet; lip violet. 1905.
„ *dormannia'num* (Dormannian). White, sulphur. S. Amer. 1881.
„ *euglo'ssum* (beautiful-lipped). See Z. INTERMEDIUM.
„ *expa'nsum* (expanded). Green, marked with brown. Ecuador (?). 1878.
„ *fimbria'tum* (fringed). White, purple; lip yellow-white, fringed. Colombia. 1880.
„ *forcipa'tum* (pincer-like). Pale yellow, brick-red. Trop. Amer. 1883.
„ *gairia'num* (Gairian). Violet, black-purple; lip purple-rose. Ecuador. 1879.
„ *Gautie'ri* (Gautier's). Green, brown, white, purple. Brazil. 1867.
„ (*Kefferstei'nia*) *Ge'mma* (bud). White; lip with dark blotches. Colombia. 1874.
„ *Gibе'ziæ* (Madame Gibez's). White, unmarked; lip white, veined violet.
„ (*Kefferstei'nia*) *grami'neum* (grass-*leaved*). Green, blue. November. Popayan. 1844.
„ *graminifo'lium* (grass-leaved). Green and purple. 1892.
„ *grandiflo'rum* (large-flowered). Sepals and petals olive-green, striped reddish-brown. Mexico. 1866.
„ (*Bo'llea*) *hemixa'nthum* (half-yellow). White; lip yellow, with darker crest. Colombia. 1888.
„ *interme'dium* (intermediate). Green, blue. November. Brazil. 1844.
„ *jorisia'num* (Jorisian). Lip fringed. Venezuela. 1890.
„ *Klabo'chii* (Klaboch's). Whitish-ochre; lip white, all spotted with purple. Colombia. 1885.
„ *Klabocho'rum* (Messrs. Klabochs'). White, brownish-purple; lip white, crimson-purple. Ecuador. 1879.
„ „ *burfordie'nsis* (Burford). Lip reddish-violet in centre, covered with papillæ. 1879.
„ „ *ornati'ssimum* (much-adorned). Segments tipped with mauve-purple. 1884.
„ *la'cteum* (milky). White, dotted with brown. Panama. 1872.
„ *Lali'ndei* (Lalind's). Pale rose to bright violet; lip golden-yellow. Colombia. 1874.
„ *lamello'sum* (plaited). 1. Yellow-green; lip yellow-white. August. Colombia. 1875.
„ *lamina'tum* (plaited). Pale yellow; lip white. Country unknown. 1885.
„ *lawrencea'num* (Lawrencean). White, tipped mauve; lip velvety-purple. Colombia. 1878.
„ *Lehma'nni* (Lehmann's). White, lined reddish-purple; lip mauve-purple. Ecuador. 1879.
„ *lentigino'sum* (freckled). Green, freckled with purple. Brazil. 1843.
„ *leopardi'num* (leopard-spotted). Green-yellow, spotted with brown; lip mauve-purple. Hybrid. 1886.
„ *Li'ndeni* (Linden's). White, veined with rose-purple on the lip.
„ *Linde'niæ* (Madame Linden's). Light rose; lip white, veined rose. Venezuela. 1894.
„ (*Huntle'ya*) *lu'cidum* (shining). Brown, purple, orange, white. Guiana. 1889.
„ (*Huntle'ya*) *margina'tum* (bordered). White, purple-crimson. Colombia.
„ *Macka'ii* (Mackay's). 1. Green, lilac. March. Brazil. 1825.
„ „ *crini'tum* (hairy). See Z. CRINITUM.
„ „ *interme'dium* (intermediate). Paler; lip large.
„ *maxilla're* (tooth-like-*flowered*). 1. Brown, green. September. S. Amer. 1829.
„ (*Huntle'ya*) *Melea'gris* (Guinea-hen). Tessellated with pale yellow and brownish-purple. Brazil.
„ „ *a'lbido-fu'lvum* (whitish-tawny). White, tawny upwards; lip white, carmine. Brazil. 1868.
„ *micro'pterum* (small-winged). Light green; lip white, with purple bars. Brazil. 1881.
„ *murraya'num* (Murray's). ½. Green, white. July. Brazil. 1837.
„ (*Kefferstei'nia*) *mysta'cinum* (moustached). Yellow-green; lip white, dotted purple. Colombia. 1881.
Z. *obtusa'tum* (bluntish). Green, with brown bars; lip pale violet. 1878.
„ *pa'llens* (pale). Light mauve; lip light ochre, orange. 1881.
„ *Pati'nii* (Patin's). Rosy-pink; lip yellow. Colombia. 1874.
„ *pentachro'mum* (five-coloured). Green, marbled brown; lip white, lined mauve. 1885. Hybrid.
„ (*Warscewiczе'lla*) *pi'ctum* (painted). Lip yellow-white, with dark purple lines. Trop. Amer. 1883.
„ *protherœa'num* (Protherœan). Dark chocolate; lip violet, with reddish markings. 1899.
„ *Rivie'rii* (Rivier's). See Z. INTERMEDIUM.
„ *Rœ'zlii* (Rœzl's). See Z. INTERMEDIUM.
„ (*Promenæ'a*) *Rollisso'nii* (Rollisson's). Pale yellow; lip white, spotted crimson. Brazil. 1843.
„ *rostra'tum* (beaked). ¾. White, brown. September. Demerara. 1827.
„ *ruckeria'num* (Ruckerian). White, green, marked purple. 1885.
„ *russelia'num* (Russelian). Cream, tipped reddish-purple; lip red-purple. Ecuador. 1878.
„ *sanderia'num* (Sanderian). Green, marked with brown; lip blue-purple. 1883.
„ *sanguinole'ntum* (blood-coloured). Straw, with blood-red spots; callus dark purple. Venezuela.
„ *stapelioi'des* (Stapelia-like). Greenish-yellow, barred dark purple; lip purple. Brazil. 1828.
„ „ *hetero'pterum* (various-winged). Partly blotched and streaked. 1883.
„ „ *ni'grum* (black). Green, black. June. 1835.
„ „ *ru'brum* (red). Green, red. June. 1839.
„ *stenochi'lum* (narrow-lipped). See Z. CRINITUM.
„ *tri'color* (three-coloured). See ACACALLIS CYANEA.
„ *triu'mphans* (triumphant). Snow-white; lip blue-black. Colombia.
„ *vela'tum* (veiled). Yellow-white; lip edged crimson; fragrant. Colombia. 1866.
„ *veluti'num* (velvety). See Z. INTERMEDIUM.
„ *Verva'ti* (Vervæt's). White, tipped claret-crimson; lip claret-crimson. 1882.
„ *viola'ceum* (violet). Violet, tipped greenish-yellow. Guiana. 1835.
„ *wailesia'num* (Wailesian). White; lip violet along the middle. Brazil. 1856. Scented.
„ *Walli'sii* (Wallis'). Cream, tipped bluish-violet; lip darker violet. Ecuador. 1869.
„ „ *ma'jor* (larger). Flowers much larger. 1888.
„ (*Warscewiczе'lla*) *Wendla'ndii* (Wendland's). White; lip lined violet-purple. Costa Rica.
„ „ *di'scolor* (two-coloured). Yellow-green; lip white, with violet blotch. Costa Rica.
„ *Whi'tei* (White's). Creamy-white; lip partly yellow. Colombia. 1890.
„ (*Promenæ'a*) *xa'nthinum* (yellow). Yellow, darker in centre; lip spotted. May. Brazil. 1838.

ZYGOPHY'LLUM. Bean-caper. (From *zugos*, a yoke, and *phullon*, a leaf; leaves in pairs. Nat. ord. *Bean-capers* [Zygophyllaceæ]. Linn. 10-*Decandria*, 1-*Monogynia*.)

Greenhouse, yellow-flowered evergreens, and from South Africa where not otherwise mentioned. Annual, seeds in a hotbed in spring, and then the plants hardened off, and placed in the open border. Perennials, by cuttings of half-ripened shoots in sand, under a bell-glass, in heat; sandy peat and fibrous loam, with a little charcoal and freestone.

Z. *a'lbum* (white). 2. White. October. Canaries. 1779.
„ *atriplicoi'des* (orach-like). Armenia; Persia. 1837. Hardy herbaceous.
„ *cocci'neum* (scarlet). 3. Scarlet. Egypt. 1823.
„ *cordifo'lium* (heart-leaved). 6. October. 1774.
„ *Faba'go* (Fabago). 1–4. Yellow, coppery-red at the base. July to September. Mediterranean region, &c. 1596. "Common Bean-Caper."
„ *fœ'tidum* (stinking). 4. June. 1790.
„ „ *insua've* (unpleasant). 4. July. 1790.
„ *frutico'sum* (shrubby). See Z. FRUTICULOSUM BILOBUM.
„ *fruticulo'sum* (subshrubby). 1–1½. July. Australia. 1820.
„ „ *bi'lobum* (two-lobed). Orange. Leaflets narrow. Australia. 1837.
„ *fu'lvum* (fulvous). 3. Tawny-yellow, with red centre. July. 1713.
„ *macula'tum* (spotted). 4. October. 1782.

Z. *ma'jor* (larger). See *Z.* FABAGO.
„ *microphy'llum* (small-leaved). ½. July. 1816.
„ *Morgsa'na* (Morgsana). 3. August. 1732.
„ *prostra'tum* (prostrate). See SEETZENIA AFRICANA.
„ *sessilifo'lium* (stalkless-leaved). 3. July. 1713.
„ *si'mplex* (simple). ½. July. N. and S. Africa; St. Jago. 1825. Annual.
„ *spathula'tum* (spathulate). June. Cape Verd Islands. 1824. Stove herbaceous.
„ *spino'sum* (spiny). 1–2. Yellow, streaked with yellow. July. 1830.

ZYGOSE'PALUM ROSTRA'TUM. See ZYGOPETALUM ROSTRATUM.

ZYGO'STATES. (From *zugos*, a yoke, and *statos*, standing; two processes project from the base of the column and recall the old Roman yoke. Nat. ord. Orchidaceæ.)

Stove epiphytal orchids. Divisions; offsets. Fibre of peat, sphagnum, and crocks, in small baskets, to be suspended, or to be tied on blocks.

Z. *cornu'ta* (horned). Brazil. 1837.
„ *greenia'na* (Greenian). White; lip white, streaked with green. Brazil. 1869.
„ *luna'ta* (crescent-shaped). Brazil. 1837.

ZYZOPHY'LLUM. See ZYGOPHYLLUM.

ZYZY'GIUM or **SYZY'GIUM.** See EUGENIA.

THE END

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